

MEETING OF MINDS XXV

May 12, 2017

This is the twenty-fifth annual Meeting of Minds gathering. The purpose of this meeting is to promote student achievement, add to the knowledge base of our society and to engage people in the pursuit of excellence.

Each year this conference is held on the campus of one of the participating universities. This year, Oakland University will host 133 oral and poster presentations. The sessions will be held in the Oakland Center (OC) and in South Foundation Hall (SFH).

Oral presentations are grouped into four time slots with multiple sessions at each time. There will be morning and afternoon poster sessions held across from Au Bon Pain Coffee Shop in the Oakland Center. All presentation details can be found in the program. In addition, an alphabetical index of student presenters is included at the back of the program.

We extend a special thanks to all faculty sponsors for the generous time and effort spent in working with their undergraduate students and assisting them in presentation preparation. Faculty sponsor names are included with the abstracts in the program.



Meeting of Minds XXV



Oakland University was founded 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 preeminent metropolitan university that is recognized as a student-centered, doctoral research institution with a global perspective. 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. OU has enrollment of over 20,000 students and is located in suburban northeast Oakland County, OU is easily accessible to millions of Detroit metropolitan residents.



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 graduate degrees in arts and sciences, education, engineering and computer science, business 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. For the 9,300 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.



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.



Meeting of Minds XXV



May 12, 2017

8:30-9:30 am	Registration/Orientation Continental Breakfast	Banquet Rooms, OC
9:30-11:20 am	Poster Session 1	Across from Au Bon Pain Coffee Shop, OC
9:30-10:20 am	Oral Presentations 1 A-F	South Foundation Hall
10:30-11:20 am	Oral Presentations 2 A-F	South Foundation Hall
11:30-11:50 am	Photo Sessions 11:30 - UM - Dearborn 11:40 - UM - Flint 11:50 - OU	Stairway to Banquet Room, OC
11:45-1:15 pm	Lunch Music: Côté Sud Composer: Roland Dyens (1955-2016) Performers: Daniel Byington, Brooke Bowker, Desmond Donned, Keith Kunkel Faculty Sponsor: Bret Hoag, Special Lecturer of Music Student Success Story: Andrea Kozak, Associate Professor of Psychology	Banquet Room, OC
1:30-3:20 pm	Poster Session 2	Across from Au Bon Pain Coffee Shop, OC
1:30-2:20 pm	Oral Presentations 3 A-F	South Foundation Hall
2:30-3:20 pm	Oral Presentations 4 A-C	South Foundation Hall



Meeting of Minds XXV



Oral Presentations

Session 1: 9:30 a.m. to 10:20 a.m.

Session 1A 263 SFH

- 41 Bridge to a Healthy Community**
University of Michigan - Dearborn
Student Authors : Nichole Bowman, Teiana McGahey
Faculty Advisors : Dr. Natalie Sampson
- 52 Impact of chronic illness on positive and negative affect in older adults: Does gender matter?**
University of Michigan - Dearborn
Student Authors : Candice Tudor
Faculty Advisors : Brenda Whitehead
- 59 Shattering the Glass Ceiling: The Impact of STEM Fields on Female Success**
University of Michigan - Flint
Student Authors : Sarah Taipalus
Faculty Advisors : Toko Oshio

Session 1B 265 SFH

- 11 The Similar Effects of Fenfluramine, LSD, Meth, and Cocaine on Valvular Heart Disease**
University of Michigan - Flint
Student Authors : Abdelmajid Jondy
Faculty Advisors : David Duriancik
- 17 Legumes increase monocytes in children with increased risk for cardiovascular disease**
University of Michigan - Flint
Student Authors : Madeleine Long
Faculty Advisors : David Duriancik
- 44 Spectrum of Weighted Right Shift Operator**
University of Michigan - Dearborn
Student Authors : Luis Gutierrez
Faculty Advisors : Hyejin Kim, Yunus Zeytuncu

Session 1C 266 SFH

- 39 "Possession Movies," Literary Nonfiction Panel**
Oakland University
Student Authors : Nate Zachar
Faculty Advisors : Susan McCarty
- 22 Searching, or Something Like It**
Oakland University
Student Authors : Lindsay Olson
Faculty Advisors : Susan McCarty



Meeting of Minds XXV



Oral Presentations

Session 1: 9:30 a.m. to 10:20 a.m.

58 “Sleeping Place,” Literary Nonfiction Panel

Oakland University

Student Authors : Paige Lalain

Faculty Advisors : Susan McCarty

Session 1D 268 SFH

13 No Struggle, No Progress: Challenges of being a nontraditional student

University of Michigan - Dearborn

Student Authors : Yusef Shakur

Faculty Advisors : Ellen Judge-Gonzalez

10 Securing Autonomy in the Basque Country: Creating Cultural Acceptance and Independence.

University of Michigan - Flint

Student Authors : Krysten Perkins

Faculty Advisors : Dr. Jamile Lawand

7 Millennials & Organized Religion Disaffiliation Study

University of Michigan - Dearborn

Student Authors : Zoe Grenfell

Faculty Advisors : Pamela Aronson

Session 1E 269 SFH

23 Penalizing Poverty: Tax Foreclosure Evictions in Detroit

University of Michigan - Dearborn

Student Authors : Grace Moore

Faculty Advisors : Joshua Akers

8 International Criminal Court's Dealings and Perceived Biases With and Towards African Nations and Contra Interactions with Western Governments

Oakland University

Student Authors : Edward Guzman

Faculty Advisors : Alan Epstein

49 Negotiation Tactics of Small Island Developing States (SIDS) regarding Climate Change Talks with Developed Nations

Oakland University

Student Authors : Katherine Eckenwiler

Faculty Advisors : Laura Landolt



Meeting of Minds XXV



Oral Presentations

Session 1: 9:30 a.m. to 10:20 a.m.

Session 1F 270 SFH

- 5 **Writing the past: Historical influence on contemporary creative writing.**
Oakland University
Student Authors : Angelica Dimson, Will Georges, Robert Laidler
Faculty Advisors : Katie Hartsock
- 21 **Surveying for Survey's Sake: Timothy O'Sullivan's Role as Photographer, Leader, and Eyes of the American West**
Oakland University
Student Authors : Krystelle Datu-on
Faculty Advisors : Claude Baillargeon
- 27 **More than meets the eye - Women and erotic art in seventeenth century China**
Oakland University
Student Authors : Jocelyn Chen
Faculty Advisors : Susan Wood

Oral Presentations

Session 2: 10:30 a.m. to 11:20 a.m.

Session 2A 263 SFH

- 43 **The Effects of Bazedoxifene Acetate (BZA) on Estrogen Receptor Alpha in T-47D and MCF-7 Breast Cancer Cells**
Oakland University
Student Authors : Monica Szmyd
Faculty Advisors : Sumit Dinda
- 31 **Retinaldehyde dehydrogenase 2 expression in CD14+ and CD14- mononuclear blood cells**
University of Michigan - Flint
Student Authors : Jennifer Grindstaff
Faculty Advisors : David Duriancik
- 14 **Na⁺/H⁺ Exchanger 9 Regulates Iron Mobilization at the Blood Brain Barrier in Response to Iron Starvation**
University of Michigan - Dearborn
Student Authors : Daniela Gomez Zubieta
Faculty Advisors : Kalyan Kondapalli



Meeting of Minds XXV



Oral Presentations

Session 2: 10:30 a.m. to 11:20 a.m.

Session 2B 265 SFH

53 Fast statistical approximations of computationally intensive numerical solvers for evolution problems

Oakland University

Student Authors : Meiqi Song

Faculty Advisors : Aycil Cesmelioglu, Dorin Drignei

42 Large-Scale Pan-Genome Analysis of Bacterial Species

Oakland University

Student Authors : Cody Clark, Farrah Sitto

Faculty Advisors : Fabia Battistuzzi

3 The relationship between metal ions and tau protein in neurodegeneration

Oakland University

Student Authors : Saba Anwar

Faculty Advisors : Sanela Martic

Session 2C 266 SFH

62 Rivera's Caudillo: Marx in Mexico Today and Tomorrow

Oakland University

Student Authors : Zachary Conklin

Faculty Advisors : Galina Tirnanic

54 A Representation of History, Culture, and Identity Through Spanish Fashion

University of Michigan - Dearborn

Student Authors : Lindsey Mattson

Faculty Advisors : Jorge González del Pozo

34 The Tree of Vice: Disintegration and Transgression in Rosario Tijeras and Fight Club

Oakland University

Student Authors : Sam Schlenner

Faculty Advisors : Aldona Pobutsky

Session 2D 268 SFH

6 Islamophobia in USA -Does it have a psychological explanation? Are there any political reasons behind this issue? What is the effect of Islamophobia on American Muslim Women in particular? What is the role of American Muslim Women in confronting this phobia?

University of Michigan - Dearborn

Student Authors : Machhadie Assi

Faculty Advisors : Kevin Early, Sally Howell



Meeting of Minds XXV



Oral Presentations

Session 2: 10:30 a.m. to 11:20 a.m.

15 The Islamic State's Influence on Western Nations

Oakland University

Student Authors : Katherine Luongo

Faculty Advisors : Diana Orces

30 Untangling the NATO intervention in Libya

Oakland University

Student Authors : Emma Flanigan

Faculty Advisors : Alan Epstein

Session 2E 269 SFH

57 Foreign Language Immersion in an Urban Context: A Culturally Responsive Approach to Teaching French to African American Kindergarten Students

University of Michigan - Dearborn

Student Authors : Robin Wilson

Faculty Advisors : Kristen Dara Hill

37 Ayoreo Kinship and Color Terminology

Oakland University

Student Authors : Jessica Esch

Faculty Advisors : Samuel Rosenthal

24 Application of Principle Component Analysis to Facial Recognition Tasks

University of Michigan - Dearborn

Student Authors : Broderick Wagerson

Faculty Advisors : John Clifford

Session 2F 270 SFH

29 The Ethical Implications of IBM Watson's Medical Research.

Oakland University

Student Authors : Jonathon Abdal

Faculty Advisors : John Halpin

9 The Value of Platonic Ideas in the Age of an Unabashed Demagogue

University of Michigan - Dearborn

Student Authors : Madison Lazarek

Faculty Advisors : Maureen Linker



Meeting of Minds XXV



Oral Presentations

Session 3: 1:30 p.m. to 2:20 p.m.

Session 3A 263 SFH

- 51 **Does Y-285 Stop cause Retinal Degeneration?**
Oakland University
Student Authors : Adam Seidel
Faculty Advisors : Andrew Goldberg
- 33 **Proteins of Eye Disease: Cataracts**
Oakland University
Student Authors : Nishva Patel
Faculty Advisors : Sanela Martic
- 47 **Identification of Osiris Family Required for Tube-Size Regulation in Drosophila Trachea**
Oakland University
Student Authors : Patrick McBride
Faculty Advisors : Lan Jiang

Session 3B 265 SFH

- 4 **Detecting Thermal Discomfort of Building Occupants.**
University of Michigan - Flint
Student Authors : Kristen Rusinek, David Van Alstine
Faculty Advisors : Mohamed Abouelenien, Mihai Burzo
- 12 **A Study on Deletion Strategies for the BoND-Tree in Non-ordered Discrete Data Spaces**
University of Michigan - Dearborn
Student Authors : Ramblin Cherniak
Faculty Advisors : Dr. Qiang Zhu
- 2 **The Square Root of a Matrix**
University of Michigan - Dearborn
Student Authors : Timothy Hollman
Faculty Advisors : John Clifford

Session 3C 266 SFH

- 32 **Children's use of the Minimal Distance Principle and Canonical Sentence Strategy in Understanding Thematic Roles**
Oakland University
Student Authors : Kelsey Moffett
Faculty Advisors : Kuniko Nielsen



Meeting of Minds XXV



Oral Presentations

Session 3: 1:30 p.m. to 2:20 p.m.

35 Consonant Cluster Development in Three-Year-Olds

Oakland University

Student Authors : Marie McGee

Faculty Advisors : Kuniko Nielsen

60 How Children Understand Quantifiers, Both Specific and General, and Generic Statements

Oakland University

Student Authors : Danielle Elder

Faculty Advisors : Kuniko Nielsen

Session 3D 268 SFH

50 Will Smith's Organization & Classification: A Comprehensive Analysis of the Discrepancies Between Democracy and Capitalism

Oakland University

Student Authors : Kristin Tencza

Faculty Advisors : Kellie Hay

18 Laughing at Bombs: An Ideological Analysis of the 1957 U.S. Civil Defense Film "A Day Called X"

Oakland University

Student Authors : Devin Cameron

Faculty Advisors : Valerie Palmer-Mehta

25 "This Is the... 1990s, and point in fact, I can do both:" Nineteenth-Century Gothic Literary Tropes As Reflected in Joss Whedon's "Buffy the Vampire Slayer"

University of Michigan - Dearborn

Student Authors : Blue Profitt

Faculty Advisors : Shelly Jarenski

Session 3E 269 SFH

48 Does Psychopathology Related to Stress and Anxiety Affect Academic Achievement

Oakland University

Student Authors : Alvin Nicholas

Faculty Advisors : Rebecca Malatesta, Scott Pickett

36 A small world game: ("Winner" scenarios) effect of an educational prod on loss aversion & decision making

University of Michigan - Flint

Student Authors : Carl Amrhein

Faculty Advisors : Terrence Horgan



Meeting of Minds XXV



Oral Presentations

Session 3: 1:30 p.m. to 2:20 p.m.

- 55 Who are my biological parents and siblings? A study of children's understanding of biological kinship.**
Oakland University
Student Authors : Katelinn Pawlowski
Faculty Advisors : Lakshimi Raman

Session 3F 270 SFH

- 26 Retired Congresspersons From the State of Michigan**
Oakland University
Student Authors : Joshua Koss
Faculty Advisors : David Dulio
- 19 Faking It and Transgender Visibility: A Step in the Right Direction**
Oakland University
Student Authors : Shannon O'Connor
Faculty Advisors : Rebekah Farrugia

Oral Presentations

Session 4: 2:30 p.m. to 3:20 p.m.

Session 4A 263 SFH

- 46 The Influence of Intermittent Sucrose Access on Ethanol Intake**
Oakland University
Student Authors : Rachel Loweke
Faculty Advisors : Dr. Keith Williams
- 1 Dendritic Cell Development in Aged vs. Young Mice**
University of Michigan - Flint
Student Authors : Brent Smiles
Faculty Advisors : David Duriancik
- 45 An investigation of the role of integrin alpha-6 in human induced pluripotent stem cell development and pluripotency**
Oakland University
Student Authors : Genna Wilber
Faculty Advisors : Luis Villa-Diaz



Meeting of Minds XXV



Oral Presentations

Session 4: 2:30 p.m. to 3:20 p.m.

Session 4B 265 SFH

- 56 The Chapman Brothers and The Disasters of War**
Oakland University
Student Authors : Caitlyn Lawler
Faculty Advisors : Galina Tirnanic
- 40 The Good, the Bad, and the Worst: Mexican Bordello Mamas Through the Lens of Jorge Ibargüengoitia's Las Muertas.**
Oakland University
Student Authors : Ethan Tebbe
Faculty Advisors : Aldona Pobutsky
- 38 Selling Our Mothers for Gold: Prostitution in the Peruvian Amazon Rainforest**
Oakland University
Student Authors : Jiyong Pak
Faculty Advisors : Aldona Pobutsky

Session 4C 266 SFH

- 20 LGBTQIA Identities in "Skyrim," a Popular Video Game**
Oakland University
Student Authors : Jeffery Waters
Faculty Advisors : Jo Reger
- 28 Generational Views of Sexual Orientation**
Oakland University
Student Authors : Catherine Barry
Faculty Advisors : Jo Reger
- 61 LGBTQ Visibility in Children's Television: An Analysis of Steven Universe**
Oakland University
Student Authors : Mia Sara Denis
Faculty Advisors : Rebekah Farrugia



Meeting of Minds XXV



Poster Presentations

Morning Session: 9:30 a.m. to 11:20 a.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 101 Farmers Market Relocation/ Water Crisis Impact on Downtown Flint, 2016/2017**
University of Michigan - Flint
Student Authors : Kristin Ball
Faculty Advisors : Victoria Morckel
- 102 Systems of Government in The Republic: On the Question of Justice and Plato's Warning Against Democracy**
University of Michigan - Dearborn
Student Authors : Heidi Gabr, Ryan Glavin
Faculty Advisors : David Skrbina
- 103 Sequence Analysis of Mutant Chick Embryo DNA**
University of Michigan - Dearborn
Student Authors : Jennifer Byk, Jessica Vo
Faculty Advisors : Marilee Benore
- 104 Which source of social support is more predictive of growth over time?**
Oakland University
Student Authors : Shelby Seyburn, Kyle Vens
Faculty Advisors : Kanako Taku
- 105 Effects of Minimal Groups on Memory**
University of Michigan - Dearborn
Student Authors : Kaci Girard, Paige Malay, Andrew Smith
Faculty Advisors : Robert Hymes
- 107 Survey123 for ArcGIS: A Simple and Versatile Data Collection Tool that Spans Academic Disciplines and Research Questions**
University of Michigan - Dearborn
Student Authors : Alexander Christie
Faculty Advisors : Joshua Akers
- 108 Minimal Groups and Empathy**
University of Michigan - Dearborn
Student Authors : Hana Algahmi, Ruby Issa, Sura Merza, Adel Nasser, Nicholas Paron
Faculty Advisors : Robert Hymes



Meeting of Minds XXV



Poster Presentations

Morning Session: 9:30 a.m. to 11:20 a.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 110 Elucidating the role of integrin alpha6 in neuronal stem cell development.**
Oakland University
Student Authors : Hunter Sorensen
Faculty Advisors : Luis Villa-Diaz
- 111 Effect of a Community-Based Exercise (Bicycling) Intervention on the 'Internal Clock' in Parkinson's Disease**
University of Michigan - Flint
Student Authors : Robert Moore , Leah Parry, Marissa Zudell
Faculty Advisors : Nathaniel Miller
- 112 Biographical Memory: Does categorization increase memory?**
University of Michigan - Flint
Student Authors : Jacob Champagne, Haley Dawson
Faculty Advisors : Peter Molinaro
- 113 One Construct, Two Measures: The Relationship Between the CD-RISC and BRS**
Oakland University
Student Authors : Jenna Duronio, Velinka Marton
Faculty Advisors : Kanako Taku
- 114 Does Childhood Trauma Inhibit the Ability to Perceive Growth in Adulthood?**
Oakland University
Student Authors : Jenna Duronio, Lauren Harrison
Faculty Advisors : Kanako Taku
- 115 Prosocial Behavior in Children with Autism**
Oakland University
Student Authors : Laina Townsend
Faculty Advisors : Jennifer Vonk
- 116 The Effects of the Blank Line Up on the Cross Race Effect**
University of Michigan - Flint
Student Authors : Kevin Michaels, Lea Stites
Faculty Advisors : Peter Molinaro
- 117 Empathic anger and prosocial behavior: Adolescent bully intervention mediated by prosocial and aggressive propensity towards friends and strangers**
Oakland University
Student Authors : John Caldwell, Alex Currington
Faculty Advisors : Mary Lewis



Meeting of Minds XXV



Poster Presentations

Morning Session: 9:30 a.m. to 11:20 a.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 118 A New Twist in the Quasar Radio Dichotomy: The Case of the Missing Outflows**
University of Michigan - Flint
Student Authors : Viktoriah Serra
Faculty Advisors : Rajib Ganguly
- 119 Pronominal Clitics in Double Object Constructions in Dominican Spanish**
Oakland University
Student Authors : Bethany Griffith
Faculty Advisors : Lisa Levinson
- 120 Effectiveness of a Community-Based Exercise (Bicycling) Intervention on Bradykinesia in Parkinson's Disease**
University of Michigan - Flint
Student Authors : Robert Moore, Leah Parry, Marissa Zudell
Faculty Advisors : Nathaniel S. Miller
- 121 Reprogramming of Somatic Cells into Induced Rod Photoreceptors**
Oakland University
Student Authors : Joseph Bires
Faculty Advisors : Luis Villa-Diaz
- 122 Stereoselective Synthesis of Potent Calcium Signal Modulator Acremomannolipin A**
University of Michigan - Dearborn
Student Authors : Uddin Ahmed, Nader Berry, Kevin Saybolt
Faculty Advisors : Xiaohua (Shannon) Li
- 123 Chemical Synthesis of the 2-Deoxy Trisaccharide of Antitumor Antibiotic Landomycin A/E**
University of Michigan - Dearborn
Student Authors : Justin Woodward, Danyang Zhu, Jianglong Zhu
Faculty Advisors : Xiaohua (Shannon) Li
- 124 Sacred Space: Creating Social Spaces within Difficult Living and Work Environments**
University of Michigan - Dearborn
Student Authors : Paris Freeman, Rick Scott
Faculty Advisors : Paul Draus
- 125 The effect of intermittent sucrose consumption related to alcohol dependence, modulated by naltrexone administration**
Oakland University
Student Authors : Shannon Callahan, Anna Roberts
Faculty Advisors : Keith Williams



Meeting of Minds XXV



Poster Presentations

Morning Session: 9:30 a.m. to 11:20 a.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 126 Resiliency: The Competing Theories of Self-Regulation and Psychological Capital**
Oakland University
Student Authors : Jenna Duronio
Faculty Advisors : Matthew McLarnon
- 127 Food Insecurity on College Campuses: Key Themes to Address Student Needs**
University of Michigan - Dearborn
Student Authors : Asma Al-Khshali, Samyka Aloyo, Monica De Roche Brubaker, Teiana McGahey
Faculty Advisors : Carmel Price, Harmony Reppond, Natalie Sampson
- 128 An Assessment of Dietary Requirements of Surinam Cockroaches**
University of Michigan - Dearborn
Student Authors : Ellana Collins
Faculty Advisors : David Susko
- 129 When and Where I Enter: African American Women and the Campaign for Woman Suffrage**
University of Michigan - Dearborn
Student Authors : Kelsey Griffin, Monique Hudson, Alexandra Jaworski, Rachel Oncza, Eva Sagolileh
Faculty Advisors : Georgina Hickey
- 130 Legumes increase natural killer cells in children with increased risk for cardiovascular disease**
University of Michigan - Flint
Student Authors : Jennifer Klapko, Kimberlyn Petty
Faculty Advisors : David Duriancik
- 131 Moral Reasoning & Prosocial Acts: Moral Internalization Values as a Predictor of Adolescent Bystander Intervention in Bullying**
Oakland University
Student Authors : Lara Bede, Maria Kontogouris
Faculty Advisors : Mary Lewis
- 132 Bounds of Injectivity for the Numerical Range of a 2x2 Matrix**
University of Michigan - Dearborn
Student Authors : Brooke Calhoun, Aaron Cofield, Brandon Lee, Brandi Wingate
Faculty Advisors : Hyejin Kim, Yunus Zeytuncu
- 133 An Assessment of Dietary Requirements of Surinam Cockroaches.**
University of Michigan - Dearborn
Student Authors : Michael Mastrogiovanni
Faculty Advisors : David Susko



Meeting of Minds XXV



Poster Presentations

Morning Session: 9:30 a.m. to 11:20 a.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 134 Measurement of Wingbeat Frequency and Altitude of Migratory Flight in Swainson's Thrushes**
University of Michigan - Dearborn
Student Authors : Hassan Al-fanharawi, Aleksa Fortuna, Nicholas Wesner
Faculty Advisors : Melissa Bowlin
- 135 Team building in the workplace - Understanding implicit bias against individuals who identify as homosexual and the effects on workplace productivity**
Oakland University
Student Authors : Isaac Scherer
Faculty Advisors : Melissa McDonald
- 136 Selectivity in the Heavy Metal Removal by Exopolysaccharide (EPS)-Producing Bacterial Isolates**
University of Michigan - Dearborn
Student Authors : Aleksa Fortuna, Adam Oest, Fatima Sulaiman
Faculty Advisors : Sonia Tiquia-Arashiro

Poster Presentations

Afternoon Session: 1:30 p.m. to 3:20 p.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 237 Determining the role that a lens crystallin-derived peptide may play in nuclear cataract caused by crystallin aggregation**
Oakland University
Student Authors : Anthony Premceski
Faculty Advisors : Frank Giblin, Sivakumar Jeyarajan, Anbarasu Kumarasamy
- 238 Relations of shame and guilt with the prosocial behaviors and moral disengagement**
Oakland University
Student Authors : Geena Osowski, Shelby Seyburn
Faculty Advisors : Mary Lewis
- 239 The Heart of Climate Change Countermovement**
Oakland University
Student Authors : Bethany Goss
Faculty Advisors : Laura Landolt
- 240 Experimenting with the H₂SO₄-Mediated Hydrothermal Process to Produce Copper Nanocables**
University of Michigan - Flint
Student Authors : Kaitlyn Sallans
Faculty Advisors : Mojtaba Vaziri



Meeting of Minds XXV



Poster Presentations

Afternoon Session: 1:30 p.m. to 3:20 p.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 241 Multiple Wh-Fronting in Polish**
Oakland University
Student Authors : Jessica Esch
Faculty Advisors : Lisa Levinson, Matt Tucker
- 242 Fanning the Flames of Genius: The Relationship Between Grit and Creativity**
University of Michigan - Dearborn
Student Authors : Bryce Meerhaeghe
Faculty Advisors : Francine Dolins
- 243 ProThro**
University of Michigan - Flint
Student Authors : Nick Kreiner, Blake Ludwick, Max Simon, Matthew Wagner
Faculty Advisors : Na Zhu
- 244 Riluzole Exhibits Synergism with Paclitaxel in treating Triple Negative Breast Cancer Cells**
University of Michigan - Dearborn
Student Authors : Miriam Bukhsh, Waris Jafry, Rachel Sexton
Faculty Advisors : Cecilia Speyer
- 245 The Effects of Acute Stress and Working Memory**
University of Michigan - Dearborn
Student Authors : Jay Sands
Faculty Advisors : Francine Dolins
- 246 Hostility Towards Women Moderates the Relationship Between Childhood Trauma Exposure and Relationship Violence Perpetration**
Oakland University
Student Authors : Daniel Gildner, Amber Lecik
Faculty Advisors : Scott Pickett
- 247 Optimizing Fusion Proteins For Purification and Protease Cleavage in SHuffle T7 Express E. coli**
Oakland University
Student Authors : Jennifer Felisky
Faculty Advisors : Kenneth Mitton
- 248 Deadline in Athens and Greek Corruption: Comparing Fiction and Reality**
Oakland University
Student Authors : Dayna Tan
Faculty Advisors : Adolfo Campoy-Cubillo
- 249 360 Degree Feedback: A Personal Case Study**
University of Michigan - Dearborn
Student Authors : Melissa McCabe
Faculty Advisors : Roger Loeb



Meeting of Minds XXV



Poster Presentations

Afternoon Session: 1:30 p.m. to 3:20 p.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 250 Feeling nervous about feeling nervous: Attachment status and beliefs about anxiety influence life satisfaction in college students.**
University of Michigan - Dearborn
Student Authors : Johnathan Apardian, Tim Carter, Dhyana Guntur, Ruby Issa , Dina Khatib, Christopher Phanord
Faculty Advisors : Caleb Siefert
- 251 Are Two Factors Really Optimal For Studying Adult Attachment: Evidence for an Interpersonal Ambivalence Factor.**
University of Michigan - Dearborn
Student Authors : Saja Almusawi, Johnathon Apardian, Timothy Carter II, Dhyana Guntur, Ruby Issa, Samuel Kassab
Faculty Advisors : Caleb Siefert
- 252 Northside Coffee Co. : How shade-grown coffee promotes biodiversity in the environment**
Oakland University
Student Authors : Kelsey Hoey
Faculty Advisors : Meaghan Barry
- 253 Evaluating College Campus Sexual Assault: Do students' ethnicity or gender affect their perceptions of rape?**
University of Michigan - Dearborn
Student Authors : Kayla Sall, Ellen Stewart
Faculty Advisors : Pamela McAuslan
- 255 PARP-1/PAR Activity in Cultured Human Lens Epithelial Cells Exposed to Two Levels of UVB Light**
Oakland University
Student Authors : Maria Donovan
Faculty Advisors : Frank Giblin
- 256 Should I Stay or Should I Go: Interpersonal Ambivalence is Linked to Stress-Related Symptoms in College Students**
University of Michigan - Dearborn
Student Authors : Saja Almusawi, Johnathon Apardian, Tim Carter, Dhyana Guntur, Ruby Issa, Dina Khatib
Faculty Advisors : Caleb Siefert
- 257 Comparing the Effects of VEGFA-165 and its Anti-Angiogenic B Isoform on the Proliferation of Human Retinal Microvascular Endothelial Cells**
Oakland University
Student Authors : Regan Miller
Faculty Advisors : Wendy Dailey, Kenneth Mitton



Meeting of Minds XXV



Poster Presentations

Afternoon Session: 1:30 p.m. to 3:20 p.m.

Oakland Center, across from Au Bon Pain Coffee Shop

- 258 Limited factor invariance for the Experiences in Close Relationships-Short Form across Caucasian and Arab-American college student respondents.**
University of Michigan - Dearborn
Student Authors : John Apardian, Tim Carter, Dhyana Guntur, Ruby Issa, Saja Almusawi, Christopher Phanord
Faculty Advisors : Caleb Siefert
- 259 Tales From Around the World**
Oakland University
Student Authors : Sarah Allen
Faculty Advisors : Meaghan Barry
- 260 Assessing Barriers to Accessibility of Free Preventive Health Care Resources Available in the Cody-Rouge Neighborhood**
University of Michigan - Dearborn
Student Authors : Alex Reardon, Emma Watters
Faculty Advisors : David Law
- 261 Measuring Interpersonal Ambivalence: Further Evidence For the Psychometric Adequacy and Construct Validity of The Inventory of Interpersonal Ambivalence**
University of Michigan - Dearborn
Student Authors : Saja Almusawi, Johnathan Apardian, Timothy Carter, Dhyana Guntur, Ruby Issa, Dina Khatib
Faculty Advisors : Caleb Siefert
- 262 How can environmental factors affect eye disease?**
Oakland University
Student Authors : Katelyn Silva
Faculty Advisors : Sanela Martic
- 263 The effect of light on dopamine synthesis in the retina**
Oakland University
Student Authors : Maya Sammane
Faculty Advisors : Sheng-Nan Qiao, Dao-Qi Zhang
- 264 Plane Strain Versus Plane Stress in the Mechanical Bidomain Model**
Oakland University
Student Authors : Chad Scribner
Faculty Advisors : Bradley Roth
- 265 When is Advocacy Effective? Examining the Women and Gender Constituency at the United Nations Framework Convention on Climate Change**
Oakland University
Student Authors : Caroline Wolber
Faculty Advisors : Laura Landolt



Meeting of Minds XXV



Poster Presentations

Afternoon Session: 1:30 p.m. to 3:20 p.m.
Oakland Center, across from Au Bon Pain Coffee Shop

- 266 Children's Understanding of the Biological Principle of Kinship**
Oakland University
Student Authors : Lama Hodroj
Faculty Advisors : Lakshmi Raman
- 267 Narcissistic Admiration and Narcissistic Rivalry: How do Narcissists Respond to Daily Status and Inclusion?**
Oakland University
Student Authors : Kelsey Hobbs
Faculty Advisors : Virgil Zeigler-Hill
- 268 Perceptions of Water Quality and Lead Poisoning Knowledge**
University of Michigan - Flint
Student Authors : Gerald Augustin, Drew Boulton
Faculty Advisors : Marsha Lesley
- 269 The F Word**
Oakland University
Student Authors : Taylor Reyes
Faculty Advisors : Meaghan Barry
- 270 Children's understanding family relationships**
Oakland University
Student Authors : Jennifer Ishaq, Gabriela Saenz
Faculty Advisors : Lakshmi Raman
- 271 Microbiological Quality and Antibiotic Resistance of Shrimp Retailed in Rochester, MI**
Oakland University
Student Authors : Andrina Mamo
Faculty Advisors : Satish Walia
- 272 An Exploratory Factor Analysis of Ratings for Self-Defining Memories**
University of Michigan - Dearborn
Student Authors : Danielle Funke, Gina Noguerras, Mariam Saad
Faculty Advisors : Caleb Siefert
- 273 Potential Environmental Conditions That Influence Human Risk Assessment of "creepiness"**
University of Michigan - Flint
Student Authors : Kevin Micheals, Jennifer Ritchie, Logan Rubel, Jason Scimeni, Anna Winkowski
Faculty Advisors : William McKibbin



Meeting of Minds XXV



Abstracts

1 Dendritic Cell Development in Aged vs. Young Mice

University of Michigan - Flint

Student Authors : Brent Smiles

Faculty Advisors : David Duriancik

Abstract : Aging is associated with chronic inflammation which impairs the immune response to infectious disease and less effective vaccine responses. Dendritic cells are antigen presenting cells that derive from hematopoietic stem cells under steady state homeostatic conditions and monocytes during inflammatory states. The objective of this experiment was to determine the effect of aging on dendritic cell development. We hypothesized aged mice would have reduced dendritic cell progenitors compared to young mice. We performed multicolor flow cytometry and ELISA analysis of serum growth factors. There was no significant difference in serum granulocyte/macrophage-colony stimulating factor or Flt-3 ligand. There was no significant difference in percent or total number of common myeloid progenitor cells, macrophage/DC progenitor cells, or common DC progenitor cells between young and aged mice. Aged mice had significantly increased bone marrow macrophages and macrophage expression of CD169 compared to young mice. Based on this data, dendritic cell development is not impaired in aged bone marrow. Further analysis of monocyte to macrophage differentiation will be investigated. These data provide insight to immune cell development in aged populations that can be used for development of vaccines and therapeutic treatments.

2 The Square Root of a Matrix

University of Michigan - Dearborn

Student Authors : Timothy Hollman

Faculty Advisors : John Clifford

Abstract : Let A be an n by n matrix mapping \mathcal{C}^n to \mathcal{C}^n mapping where $\mathcal{C}^n = \{[x_1, x_2, \dots, x_n] \mid x_k \in \mathcal{C}\}$. Then the square root of a matrix A is an operator R such that $R^2 = A$. If we consider some linear transformation $A \in L(V)$ then we can call a number $\lambda \in \mathcal{F}$ an eigenvalue of A , if there exists a value $v \in V$ such that $v \neq 0$ and $Av = \lambda v$. Then by the Spectral Theorem any square matrix A can be diagonalized with the eigenvalues along the diagonal, where the square root of A is then the various combinations of positive and negative square roots of the eigenvalues along the diagonal. For example, the 2 by 2 identity matrix has 4 square roots that satisfy the equation with ± 1 along the diagonals. However, as can be seen there is exactly one positive square root that is unique.

This talk will show how the Spectral Theorem can be applied to obtain a diagonal matrix which will set up for us a simple linear map R that takes the square root of the values along the diagonal. Furthermore, there exist an infinite number of square roots that take their form from this simple idea. However, there is only one unique positive square root. Thus, the eigenvalues must be nonnegative in order for us to take our square root. This is equivalent to saying it is self-adjoint or the conjugate transpose is equal the original matrix.

3 The relationship between metal ions and tau protein in neurodegeneration

Oakland University

Student Authors : Saba Anwar

Faculty Advisors : Sanela Martić

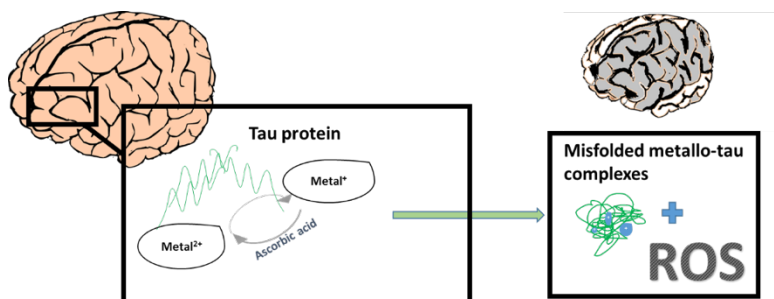
Abstract : Metals play a huge role in normal biological function. However, dysregulation of metal ions leads to the formation of reactive oxygen species (ROS) and/or radicals which cause cell damage and death, resulting in disease. For example, elevated levels of metal ions were found in the abnormal brain plaques and fibrils, which are made up of misfolded proteins, associated with Alzheimer's Disease. One of the biologically relevant molecules which is associated with neurodegeneration, a major hallmark of Alzheimer's Disease, is tau protein. The effects of metal ions on tau protein and how their relationship contributes to neurodegeneration is still



Meeting of Minds XXV



unclear. It is proposed that a series of redox reactions occurring between the two modulates ROS (see figure below) which can lead to damage of surrounding biomolecules. By spectroscopic methods, the formation of ROS between tau and metal ions was monitored. These results will be discussed.



4 Detecting Thermal Discomfort of Building Occupants.

University of Michigan - Flint

Student Authors : Kristen Rusinek, David Van Alstine

Faculty Advisors : Mohamed Abouelenien, Mihai Burzo

Abstract : This research study investigates a new approach to the automatic detection of thermal discomfort in humans. We see this research as a unique step towards the creation of an intelligent climate control system that does not require any explicit input from its users. We introduce a novel data-set that simulates different thermal comfort and discomfort levels and provide a complete analysis of different physiological signals and their capability of differentiating between these levels. Our approach is effective in detecting the specific thermal sensation of human subjects and is expected to enable innovative adaptive control scenarios for enclosed environments resulting in a significant reduction in energy consumption.

5 Writing the past: Historical influence on contemporary creative writing.

Oakland University

Student Authors : Angelica Dimson, Will Georges, Robert Laidler

Faculty Advisors : Katie Hartsock

Abstract : Fiction and poetry frequently borrow from other genres and allude to culture and history to enhance their appeal. For example, Shakespeare used playwriting as a prominent way to display his lyric poetry. Fiction writers often use vast research on their topic to be as well versed in a particular field of study as possible. Our panel will display show a similar use of other genres and topics in our own creative writing. Contemporary fiction and poetry refers and responds to historically and culturally significant elements as myths, revolutions, wars, foundation narratives, and real and legendary figures. Our current writing projects blend aspects such as these with aspects of our own lived experiences in order to create situations and thoughts that are both global and local, public and personal.

Creative writing offers many ways to tell the various stories of human history; at our panel, we will read our own poems and fiction, and open up discussion of how writing that uses the past can make a present impact.



Meeting of Minds XXV



6 Islamophobia in USA -Does it have a psychological explanation? Are there any political reasons behind this issue? What is the effect of Islamophobia on American Muslim Women in particular? What is the role of American Muslim Women in confronting this phobia?

University of Michigan - Dearborn

Student Authors : Machhadie Assi

Faculty Advisors : Kevin Early, Sally Howell

Abstract : The Muslim American community is highly concerned on this sudden rise in Islamophobia. Why so much hate? And who is responsible? How does psychology explain this type of fear? Is it justified and normalized? Who is behind has been busy creating a climate of fear, hate and suspicion of Muslims in America? On the other hand, how does this entire atmosphere have an impact on American Muslim women since their appearance can easily identify them as Muslims? Since women represent strong agents of change, what is the role of American Muslim women in facing this challenge of Islamophobia. How does the accusation about women oppression in Islam play a role in making this challenge even harder?

7 Millennials & Organized Religion Disaffiliation Study

University of Michigan - Dearborn

Student Authors : Zoe Grenfell

Faculty Advisors : Pamela Aronson

Abstract : In the United States, religion has been a fundamental social institution from the beginning formation of this country; yet, in today's society there is a noticeable decline among those affiliated with a religious organization. A survey conducted in 2015 by The Pew Research Center, reported that while those associating themselves with Christianity has dropped, people claiming no affiliation to a religious group has risen ("America's Changing Religious Landscape"). Christianity has served as the dominant religious group in the United States for decades and is currently experiencing the most potent decline. Religion has existed as an exceedingly significant institution in society, being a defining presence in American culture, guiding people in essential differentiations of "what is right or wrong", and aiding in establishing fundamental values and principles. According to a recent study in *PLoS One*, the decline in religion may not only concern itself with contributing factors of affiliation, practice, and religiosity; but resulting from a shift towards secularism (Twenge et al, 1). While acknowledging an apparent overall decline in religion across generations; millennials are presenting noticeably high numbers in those unaffiliated to a religion, compared to older generations (Pew Research Center). As secularism continues to be a promising force in American culture, exploring the rationale behind this particular shift away from Christianity and towards these nonreligious ideologies reveal modern values and norms emerging in American culture. This generation of young adults that are displaying a notable development in detachment from organized religion reflect an altering culture within the United States, and warrant recognition and further analysis.

8 International Criminal Court's Dealings and Perceived Biases With and Towards African Nations and Contra Interactions with Western Governments

Oakland University

Student Authors : Edward Guzman

Faculty Advisors : Alan Epstein

Abstract : Why Uhuru Kenyatta, and not Tony Blair? Why Omar Al-Bashir, and not George W. Bush? This work will examine why the 31 people whom the International Criminal Court (ICC) has sought charges for, are all exclusively African. In 2016, President Yahya Jammeh of the Gambia, echoing growing sentiments on the continent, referred to the International Criminal Court as the "Infamous Caucasian Court". That same year, South Africa, Burundi, and the Gambia withdrew from the court followed in 2017, by an African Union non-binding resolution calling for a mass withdrawal of member states from the court. In addition to examining, perceived bias against Africans in the court, this paper will compare actions taken against African heads of state or government versus the treatment of Western signatories to the court, such as the 2016 decision by ICC prosecutors to rule out trying British Prime Minister Anthony Blair for involvement in the Iraq War, or the



Meeting of Minds XXV



treatment towards Western withdrawn or non-signatories such as President George W. Bush, a former head of state of a United Nations Security Council member, a body which itself is empowered to refer cases to the ICC, even though it consists largely of non-signatories.

9 The Value of Platonic Ideas in the Age of an Unabashed Demagogue

University of Michigan - Dearborn
Student Authors : Madison Lazarek
Faculty Advisors : Maureen Linker

Abstract : I will be conducting an oral presentation assisted by a PowerPoint. My main focus will be the degree to which Platonic ideas of Democracy are relevant to present times. I believe that Plato's predictions about Democracy and its outcomes are analogous to the present state of the United States' government, and I strive to prove this. By tying in ancient philosophical texts to reality, I feel that it will inform people of the importance of studying philosophy.

10 Securing Autonomy in the Basque Country: Creating Cultural Acceptance and Independence.

University of Michigan - Flint
Student Authors : Krysten Perkins
Faculty Advisors : Dr. Jamile Lawand

Abstract : Autonomy is considered to be essential for the growth and innovation of an indigenous group of people. The movement towards establishing cultural and political autonomy within the Basque Country has existed for several centuries. It has brought revitalization of the manifestations of culture and integration within society, which has ultimately shaped Basque identity. To explore the measures the Basque ethnic group has taken to secure autonomy and unified nationalism, this study analyzes the history of the Basques in relation to oppressed expression of culture and self-determination in the 20th century during General Francisco Franco's regime in Spain. In addition, the process of establishing political autonomy after Franco's death and Spain's Constitution of 1978 is highlighted. As a result, all of these leading forces have contributed to the Basque effort of strengthening mainstream cultural influences through the people, language, and education. Examining these aspects will allow for more consideration of the expansion made towards creating cultural acceptance and independence of the Basque Country.

11 The Similar Effects of Fenfluramine, LSD, Meth, and Cocaine on Valvular Heart Disease

University of Michigan - Flint
Student Authors : Abdelmajid Jondy
Faculty Advisors : David Duriancik

Abstract : In 2010, heart disease was the primary cause of death in the United States, with an estimated 380,000 deaths (Disease, 2012). There are various types of heart diseases which lead to the physiological disruption of the heart, blood, and its vessels, with each type having analogous symptoms. With its rapidly growing field, there is a need for new research and data. Valvular heart disease (VHD) is estimated to affect about 2.5% of the United States population (approximately 8 million people), which demonstrates the need for further research (Nkomo, 2006). A drug review will be delivered discussing VHD in relation to the effects of four different drugs: fenfluramine, lysergic acid diethylamide, 3,4-methylenedioxy-methamphetamine and cocaine. Specifically, an in-depth look at their similarities in their physiological mechanisms will be provided.

12 A Study on Deletion Strategies for the BoND-Tree in Non-ordered Discrete Data Spaces

University of Michigan - Dearborn
Student Authors : Ramblin Cherniak
Faculty Advisors : Dr. Qiang Zhu

Abstract : Box queries are a type of query which specifies a set of allowed values for each dimension in a multidimensional space. Indexing vectors in a Non-ordered Discrete Data Spaces (NDDS) for efficient box queries are becoming increasingly important in many applications such as bioinformatics and social media. The



Meeting of Minds XXV



BoND-tree was recently introduced as a new indexing structure specifically designed for box queries. However, earlier work only focused on construction of the BoND-tree and support of efficient box queries. Developing an efficient and effective technique for deletion in the BoND-tree remains an open issue. In this presentation, we give an overview of our study on various deletion strategies for the BoND-tree in NDDs. Specially, we report our empirical findings about the efficiency and effectiveness of these strategies and their comparison with existing ones in the literature. Based on our empirical study, a promising deletion technique for the BoND-tree is suggested.

13 No Struggle, No Progress: Challenges of being a nontraditional student

University of Michigan - Dearborn

Student Authors : Yusef Shakur

Faculty Advisors : Ellen Judge-Gonzalez

Abstract : In this presentation Yusef Bunchy Shakur will share from his personal journey of continuing his education despite facing many challenges internally and externally. Those challenges include being a formerly incarcerated person who returned to society after serving nine years for a crime he did not commit. Shakur relates the commonality of the similar challenges nontraditional students and formerly incarcerated people face of being stigmatized. He returned to a society that was not forgiving of formerly incarcerated people and found himself roaming educational institutions that were not friendly for nontraditional students, and having no map to navigate on this road he was traveling. Despite encountering many social and educational roadblocks, Shakur emerged as a redeemed person that many people respect as a neighborhood organizer earning his Associate Degree of Liberal Arts from Wayne Community College. He is currently attending the University of Michigan Dearborn where he is close to obtaining his bachelor's degree, and the many relationships he has built on campus with faculty members to students has had a mutually beneficial impact.

14 Na⁺/H⁺ Exchanger 9 Regulates Iron Mobilization at the Blood Brain Barrier in Response to Iron Starvation

University of Michigan - Dearborn

Student Authors : Daniela Gomez Zubieta

Faculty Advisors : Kalyan Kondapalli

Abstract : Iron is essential for brain function, with loss of iron homeostasis in the brain linked to neurological diseases ranging from rare syndromes to more common disorders, such as Parkinson's and Alzheimer's diseases. Iron entry into the brain is regulated by the blood-brain barrier (BBB). Molecular mechanisms regulating this transport are poorly understood. Using an in vitro model of the BBB, we identify NHE9, an endosomal cation/proton exchanger, as a novel regulator of this system. Human brain microvascular endothelial cells (hBMVECs) that constitute the BBB receive brain-iron status information via paracrine signals from ensheathing astrocytes. In hBMVECs, we show that NHE9 expression is upregulated very early in a physiological response invoked by paracrine signals from iron-starved astrocytes. Ectopic expression of NHE9 in hBMVECs without external cues induced upregulation of the transferrin receptor (TfR) and downregulation of ferritin, leading to an increase in iron uptake. Mechanistically, we demonstrate that NHE9 localizes to recycling endosomes in hBMVECs where it raises the endosomal pH. The ensuing alkalization of the endosomal lumen increased translocation of TfRs to the hBMVEC membrane. TfRs on the membrane were previously shown to facilitate both recycling-dependent and independent iron uptake. We propose NHE9 regulates TfR-dependent, recycling-independent iron uptake in hBMVECs by fine-tuning the endosomal pH in response to paracrine signals and is therefore an important regulator in iron mobilization pathway at the BBB.



Meeting of Minds XXV



15 The Islamic State's Influence on Western Nations

Oakland University

Student Authors : Katherine Luongo

Faculty Advisors : Diana Orces

Abstract : Why is the Islamic State targeting Western nations? Who is likely to be inspired by the rhetoric of the Islamic State according to Muslim Americans? In this paper, I argue that post-colonialism, that is, the enduring effects of colonization or continuing influence over a territory, may explain why we see terrorist attacks carried out in the name of the Islamic State in Western societies. I focus on the case studies of France, Italy, and the United States, which have similar levels of immigrant populations, but differ in their colonial history and influence as well as the number of Islamic State attacks. I analyze the past and present influence each nation holds in Muslim majority countries as well as examine migration patterns and experiences of second generation migrants. Through semi-structured interviews of Muslim Americans, I find support for the idea that post-colonialism helps in explaining why someone may be inspired by the Islamic State. With this study I hope to offer an alternative understanding of why individuals may turn to extremism and further the dialogue on possible avenues to stop the spread of extremist groups' influence.

17 Legumes increase monocytes in children with increased risk for cardiovascular disease

University of Michigan - Flint

Student Authors : Madeleine Long

Faculty Advisors : David Duriancik

Abstract : Approximately 7.8% of adolescents age 12-19 years old have total cholesterol levels of greater than 200 mg/dL which is considered high as 170 mg/dL is considered healthy for this age. High cholesterol can lead to cardiovascular disease at an early age. Studies have shown that legumes, and particularly navy beans, can lower total cholesterol. The objective of this experiment was to determine the effect of navy bean consumption on immune cell numbers in adolescents at risk for cardiovascular disease. The study assessed children between the ages of 8-13 years old with a total cholesterol greater than 183 mg/dL, HDL less than 60 mg/dL, and LDL greater than 100 mg/dL. These children were then randomly selected to add either navy bean powder or placebo to their diet. Peripheral blood from the children was obtained and flow cytometry performed to identify and quantify monocytes. We observed an increase in total monocytes, a decrease in CD14+ CD16- as well as CD14- CD16+ monocytes, and a slight increase in CD14+ CD16+ monocytes compared to subjects consuming placebo. This pilot study provides justification and feasibility data to further assess legumes as preventative and/or therapeutic interventions in children at risk for cardiovascular disease.

18 Laughing at Bombs: An Ideological Analysis of the 1957 U.S. Civil Defense Film "A Day Called X"

Oakland University

Student Authors : Devin Cameron

Faculty Advisors : Valerie Palmer-Mehta

Abstract : After the second world war, numerous civil defense efforts were undertaken by the United States to respond to Soviet threats of nuclear attack. One such effort was the 1957 civil defense film, A Day Called X. This film was produced as a dramatized portrayal of an evacuation drill in Portland, Oregon, a drill that actually occurred as "Project Greenlight" in 1955. Developed by the CBS Office of Civil Defense Mobilization, in partnership with the Portland Civil Defense program, this short film was broadcast around the country as a demonstration of the potential successes of civil defense efforts nationwide. Using ideological criticism, a form of rhetorical criticism, I seek to identify the discursive construction of American exceptionalism and farce within the film. I argue that the rhetorical construction of an American town's calm, organized response to impending nuclear attack in A Day Called X is farcical in that it provides an unfair, untrue, and idealized picture of a hypothetical American response to the situation. This divergence from likely reality in this fictional representation will be shown to constitute a work of farce. This farce is amplified by the underlying theme of American exceptionalism. In the course of my analysis, I demonstrate that this assertion of superiority bolsters the absurdity of the representation and constitutes what I term "apocalyptic exceptionalism."



Meeting of Minds XXV



19 Faking It and Transgender Visibility: A Step in the Right Direction

Oakland University

Student Authors : Shannon O'Connor

Faculty Advisors : Rebekah Farrugia

Abstract : This argumentative essay outlines the way the MTV television show *Faking It* portrays a character who is transgender- Noah- in mostly favorable and progressive ways. Noah, like other characters in the show is given a narrative that is multidimensional- his character brings awareness and visibility to transgender people and their experiences, but his narrative does not solely revolve around his transgender identity. Discussions include the frequent fixation on transgender people's bodies that has occurred in many previous television shows, the overall progressive theme and intent set by the writers and cast members of *Faking It*, and the casting of Elliott Fletcher, an out transgender man, as the character Noah. Other aspects of *Faking It* that are explored include the show's commitment to diversity and inclusion, their willingness to be political and bring up topics such as the prevalence of LGBTQ+ youth homelessness, and their progressive portrayal of two men kissing. **KEYWORDS:** transgender, representation, visibility, LGBTQ+, progressive

20 LGBTQIA Identities in "Skyrim," a Popular Video Game

Oakland University

Student Authors : Jeffery Waters

Faculty Advisors : Jo Reger

Abstract : Researchers studying different video games have found that there is an overall lack of minority representation and that most video games are in an overarching heteronormative world. Further, researchers have discovered a distaste for the LGBTQIA community among community-based games. I researched the game "Skyrim" to see the LGBTQIA representations in this popular video game. My findings discovered a way to be sexually deviant or queer in a seemingly heteronormative world.

21 Surveying for Survey's Sake: Timothy O'Sullivan's Role as Photographer, Leader, and Eyes of the American West

Oakland University

Student Authors : Krystelle Datu-on

Faculty Advisors : Claude Baillargeon

Abstract : Timothy O'Sullivan is best known for his work as a Civil War and survey photographer from the nineteenth century. His famous photograph, *The Ancient Ruins in the Cañon de Chelle 1871*, showcases his talent as a survey photographer. The photograph shows clear rock formations, which acts as a diagram for the research data of the Wheeler Team. His photographs provided interest in the data provided, and were well received by Congress, who provided the team more funding. O'Sullivan is well known for altering his photographs by masking the sky, tilting his camera, and carefully selecting his views, which sometimes undermines their value as scientific data. There are, however, several valid reasons why O'Sullivan took more scenic, rather than accurate scientific photographs. There was the pressure of fund raising, the limitations in technology, and the difficulties while working in the field. Still, O'Sullivan's photographs served their purpose by validating the data found during the expeditions, providing Congress with quality images for further funding, and documenting the labor of the survey workers.

22 Searching, or Something Like It

Oakland University

Student Authors : Lindsay Olson

Faculty Advisors : Susan McCarty

Abstract : You might be the years you can't remember. In "Searching, or Something Like It" I try to piece together fragments of familial, social and sometimes political events, either publicized or privately recorded, in order to reconcile a clouded view of childhood with my emerging view of family tragedy and the narrative of fear that affected the climate of the mid- to late-80's, particularly due to an uptick in reports of childhood abduction



Meeting of Minds XXV



and molestation. I'm interested in using the essay form to explore how these public events seep into our private lives, how often we find ourselves shaped by things just outside of our control, a sort of osmosis of experience. Is it genetics? Our family histories? The history of our town? Can we point to a national narrative, a story we are all tuning in to? And if I tell you my story does it continue to be mine, or is that the trace—the beginning of the we that we're always talking about.

23 Penalizing Poverty: Tax Foreclosure Evictions in Detroit

University of Michigan - Dearborn

Student Authors : Grace Moore

Faculty Advisors : Joshua Akers

Abstract : Detroit residents are facing an eviction crisis in which thousands of people have lost their homes in the wake of more than 100,000 property tax foreclosures since 2005. Those who fail to pay their property taxes are evicted from their homes, which are then sold at a county-wide auction. This does not happen simply because residents choose to not pay their taxes. Rather, the experience of living in poverty is complex, with people working jobs or living on fixed incomes that do not provide enough money to pay all the bills, especially the high property tax bills that do not correspond to the market values of Detroit homes. This research draws on months of participant observation with the United Community Housing Coalition, a Detroit nonprofit, as they assisted residents facing tax foreclosure, as well as conversations with its staff and clients. This work situates the experiences of those affected by tax foreclosure within the broader practices of property by exploring the complex reasons that people become delinquent on their bills and then targets of eviction. It argues that the massive number of tax foreclosures in Detroit is indicative of a government intent on pursuing market growth and unwilling to recognize and address how it perpetuates the poverty it is now penalizing through tax foreclosure and eviction.

24 Application of Principle Component Analysis to Facial Recognition Tasks

University of Michigan - Dearborn

Student Authors : Broderick Wagerson

Faculty Advisors : John Clifford

Abstract : Principle Component Analysis is a statistical procedure that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principle components. This procedure is commonly used for dimensionality reduction and constructing predictive models and is a powerful data analysis tool. In this work we show how Principle Component Analysis can be used to build facial recognition software.

25 “This Is the... 1990s, and point in fact, I can do both:” Nineteenth-Century Gothic Literary Tropes As Reflected in Joss Whedon’s “Buffy the Vampire Slayer”

University of Michigan - Dearborn

Student Authors : Blue Profitt

Faculty Advisors : Shelly Jarenski

Abstract : For twenty years, "Buffy the Vampire Slayer" scholars have argued that the cult television series is socially and sexually progressive because of its inclusion of a female action hero. However, there are very few arguments that compare the social themes in "Buffy" to that of Victorian Gothic literature. My study evaluates the sexual politics Bram Stoker's "Dracula" alongside those in "Buffy the Vampire Slayer." Particularly, I argue that blood is gendered in both texts, as the male characters fear female blood because in the woman, death is an abject of destruction and creational power. Additionally, female blood in both texts is associated with purity, which is damaging to a woman's moral complexity. My project reveals that in spite of some social and sexual progression, the horror genre still largely reflects Victorian social values. By critically reading both "Dracula" and "Buffy the Vampire Slayer," my research sheds new light on previous "Buffy" scholarship, arguing that the series is not altogether politically advanced.



Meeting of Minds XXV



26 Retired Congresspersons From the State of Michigan

Oakland University

Student Authors : Joshua Koss

Faculty Advisors : David Dulio

Abstract : Conventional wisdom in the study of members of Congress argues that one of the chief goals of elected officials is their reelection. However, this theory does not account for those who willingly retire from Congress. Who are these former members and what activities do they pursue once they leave office? To answer the first question, this project analyzes data on retired members of Congress from the state of Michigan regarding the years they served, party identification, and their age of retirement. The second question in this research, examines the post-congressional careers of former members of Congress and whether their later work has any connections with their time in Congress. In addition to the aforementioned quantitative analysis, a qualitative analysis is conducted through a comparative case study of retired Senator Donald Riegle and former Representative Mike Rogers. This aspect of the study more closely examines their respective career paths through congress and post-congressional vocations.

27 More than meets the eye - Women and erotic art in seventeenth century China

Oakland University

Student Authors : Jocelyn Chen

Faculty Advisors : Susan Wood

Abstract : Born out of curiosity about Chinese men and women's attitudes towards sexuality and its representation in art during the imperial era of China, this essay will attempt to understand the signification of erotic art, and its significance in the conception of gender roles, especially that of women. China's imperial era is both long, with over two thousand years of history, and complex, in terms of ethnic diversity and social development. Therefore, I will focus on erotic art from the seventeenth century by artists operated in the Jiangnan region, where an affluent urban culture thrived despite of the turmoil associated with a dynastic change. At the end of this literary journey, there may be more questions for myself and my audience than answers, but the essay will serve as an instrument to invite new interest in and appreciation of this much neglected and even despised aesthetic tradition in China.

28 Generational Views of Sexual Orientation

Oakland University

Student Authors : Catherine Barry

Faculty Advisors : Jo Reger

Abstract : In different generations, there are different ideals and norms embraced. Previous research has examined these differences. This research addresses the differences between Millennials, Generation X, Baby Boomers and the Silent Generation and their attitudes towards the LGBTQ+ (Lesbian, Gay, Bisexual, Transgender, Queer/Questioning) population. These four groups grew up in different environments that could impact their feelings towards LGBTQ+ people. Through the use of a survey, this research surveyed members of the Rochester Hills community on their attitudes.

29 The Ethical Implications of IBM Watson's Medical Research.

Oakland University

Student Authors : Jonathon Abdal

Faculty Advisors : John Halpin

Abstract : This presentation centers around three themes in order to argue that IBM's Watson supercomputer is susceptible to practical problems. Watson was developed by IBM after a group of employees were inspired by Ken Jennings incredible Jeopardy! run. Watson was initially designed to play Jeopardy! To do this, Watson receives natural language inputs and produces outputs in natural language answers. More recently, IBM has marketed Watson to several different industries including education, advertising, and health care. Watson is



Meeting of Minds XXV



currently doing cancer “research” and other medical work at a number of university hospitals including the ivy league Yale. Overall, Watson is an excellent tool to read all articles in all medical journals on cancer. This comes with some concern of what a supercomputer is capable of doing and how it will conduct research and provide diagnoses. Specific concerns come from Microsoft’s failed Twitter robot, TayTweets (or Tay). Tay was also a computer that received natural language inputs to “comprehend” what was said, and gave natural language outputs. Tay was supposed to be a chatbot that started with a mimic function and was then to learn how people interact on Twitter, in order to learn to interact and tweet on its own. Tay, unlike Watson, was manipulated by the users of Twitter to become racist, anti-semitic, and sexist. The tweets Tay produced were extremely inappropriate and offensive, and in less than a day Microsoft had to shut the project down stating: “We will remain steadfast in our efforts to learn from this and other experiences as we work toward contributing to an Internet that represents the best, not the worst, of humanity.” Tay was manipulated by users who had the aim of exploiting Microsoft’s programming. Academia can often be similarly faulty. For example, Alan Sokal’s intentionally published work on gravity as a postmodern concept was a hoax to show that some journals will publish anything with buzzwords that conform to the views of the editors. Another example is Springer and the Institute of Electrical and Electronics Engineers having to remove 120 papers of pure gibberish written by computers. Watson is expected to read and understand ALL of the cancer research being done. This is a problem as sometimes Watson will come across papers like the examples noted. The goal of this presentation is to present a puzzle in the analogy between Watson and TayTweets. There is an analogous relationship of the internet that feeds TayTweets its information to the professional world that feeds Watson its information. There must be careful attention to the work that IBM’s Watson does. It should be noted to anybody concerned with ethics of technology, bioethics, and research ethics that Watson is subject to the same problems as TayTweets, but that there are potential solutions to the problem.

30 Untangling the NATO intervention in Libya

Oakland University

Student Authors : Emma Flanigan

Faculty Advisors : Alan Epstein

Abstract : In 2011, as the reverberations of the Arab Spring swept across the Middle East, NATO-supported forces assassinated Libyan revolutionary Muammar Qaddafi under the pretense of the Responsibility to Protect doctrine. This paper analyzes the particulars leading up to the assassination of Qaddafi. It argues that there are reasons to speculate that the West had alternative motives for invading Libya that go beyond the Responsibility to Protect doctrine by which the NATO invasion was publicly rationalized, made evident by historical nuances between the West’s relations with Qaddafi’s Libya. The details given in this paper regarding the 2011 assassination serve as a deeper study into the violent and controversial ethics of NATO’s intervention into Libya’s domestic political affairs, and as an example in the broader debate regarding the ethics Global North meddling in the Global South.

31 Retinaldehyde dehydrogenase 2 expression in CD14+ and CD14- mononuclear blood cells

University of Michigan - Flint

Student Authors : Jennifer Grindstaff

Faculty Advisors : David Duriancik

Abstract : Worldwide 250 million pre-school aged children are vitamin A-deficient. Vitamin A deficiency is associated with dysregulated immune cell development resulting in increased morbidity and mortality from infectious disease. In addition, vitamin A reduces autoimmune disease by promoting regulatory cell development. All trans retinoic acid, biologically active vitamin A, is a steroid hormone transcription factor ligand that regulates genes involved in development. Vitamin A circulates in the blood as retinol and is reversibly oxidized to retinaldehyde and irreversibly converted to all trans retinoic acid. The objective of this experiment was to determine the expression of the retinaldehyde dehydrogenase 2 (RALDH2) enzyme in CD14+ and CD14- peripheral blood cells. We used magnetic cell sorting to isolate CD14+ cells from density gradient mononuclear cells from healthy volunteers. Trypan blue counts and flow cytometry were used to determine cell yield and purity. Real time polymerase chain reaction was used to determine relative expression of RALDH2. This data will be used as baseline control data for future experiments in which various treatments will be used to



Meeting of Minds XXV



regulate RALDH2 expression in CD14+ monocyte-derived dendritic cells. These data will provide potential therapeutic targets to improve vaccinations, autoimmune therapies, and cancer immunotherapies

32 Children's use of the Minimal Distance Principle and Canonical Sentence Strategy in Understanding Thematic Roles

Oakland University

Student Authors : Kelsey Moffett

Faculty Advisors : Kuniko Nielsen

Abstract : This study considers children's ability to understand thematic roles in various types of sentences with the use of the minimal distance principle (MDP) and the canonical sentence strategy (CSS). Thematic roles refer to how subject and object nouns relate to the verb (the "doer" of the verb and the "undergoer" of the verb) (Kim & Sells, 2007). MDP (Chomsky, 1969) is a linguistic processing strategy which says the implicit subject (= "doer") of the complement verb is the nearest noun preceding the verb (e.g., the subject of the verb "wash" is Bill, not Mary, in "Bill promises Mary to wash the dishes", but the MDP would predict Mary as the subject). CSS (Slobin & Bever, 1982) is a linguistic processing strategy which says the "doer" of the verb is the first noun (the noun before the verb) and the "undergoer" of the verb is the second noun (the noun after the verb) (e.g. the "doer" of "chase" in "The dog was chased by the cat" is cat, not dog, but the CSS would predict dog as the "doer"). Data was collected from 20 children under the age of five who were asked to identify the "doer" in various types of sentences ("promise" sentences, active and passive sentences). The data was analyzed comparing the correct and incorrect assignment of thematic roles in "promise" sentences and in active and passive sentences. A higher number of correct assignments of thematic roles in active sentences than in passive and "promise" sentences would provide support for the use of the MDP and the CSS. Preliminary data suggests that this study could provide support for Chomsky (1969), which argues that children use the MDP to understand "promise" sentences, and also Baldie (1976), which argues that children use the CSS to understand passive sentences. The use of these strategies would cause children to assign the incorrect thematic roles to the nouns in these sentences.

33 Proteins of Eye Disease: Cataracts

Oakland University

Student Authors : Nishva Patel

Faculty Advisors : Sanela Martic

Abstract : A variety of health and environmental factors can lead to cloudiness of the eye lens, a disease known as cataracts. Cataracts are the world's leading cause of blindness and are currently without a cure. Cataracts may be treated through surgical removal, but remains debilitating in underdeveloped countries. The clouding of eye lens is due to the aggregation of certain protein family in the eye known as the crystallin family. The exact mechanisms of the malfunction of these proteins are not known.

We tested the function of one type of eye crystallin protein known as α -Crystallin. The role of this specific protein is to regulate the aggregation of other proteins and maintain the lens clarity, preventing cataracts. This ability is known as chaperone activity. We measured the chaperone activity of α -Crystallin by monitoring the alcohol dehydrogenase (ADH) protein aggregation using fluorescence. We found that ADH aggregated significantly. Under the given experimental conditions, α -Crystallin did not act as a chaperone. The role of biologically relevant metal ions on protein aggregation and chaperone activity was also evaluated.

34 The Tree of Vice: Disintegration and Transgression in Rosario Tijeras and Fight Club

Oakland University

Student Authors : Sam Schlenner

Faculty Advisors : Aldona Pobutsky

Abstract : Though published three years and 4,000 miles apart, novels Rosario Tijeras (Jorge Franco, 1999, Colombia) and Fight Club (Chuck Palahniuk, 1996, USA) were both born from periods of social unraveling of



Meeting of Minds XXV



their respective countries at the end of the 20th century. On first glance, Rosario Tijeras — the cocaine-fueled tale of a love triangle with a hitwoman in Pablo Escobar's Medellín of the late '80s and early '90s — and Fight Club — a fragmented, violent diatribe about suppressed male aggression in a content, post-Cold War USA — don't have much in common other than large quantities of blood. But upon further examination, they both spring from a rebellion against bourgeois boredom in a suffocating atmosphere of different strains of social disintegration of the early 1990s: subtle and sleepy spiritual death in the U.S., deafening and threatening urban violence in Colombia. Using a reading of the narrative techniques, principal characters and sentiments of both stories, I will propose and back up the similarities of these two literary experiences.

35 Consonant Cluster Development in Three-Year-Olds

Oakland University

Student Authors : Marie McGee

Faculty Advisors : Kuniko Nielsen

Abstract : The purpose of this study is to investigate the production of word-initial consonant clusters in the speech of typically developing three-year-olds. Previous research indicates that the acquisition of consonant clusters is a gradual process which may extend into the early school years (McLeod et. al, 2001). Hence, it is important to understand what degree of development can be expected at various ages and what amount of individual variation can be observed among children. This study aims to characterize consistencies and variation in production both within the speech of individual children and across individuals in the participant group. Participants were typically developing children between the ages of 2:10 and 3:11. Children's speech was elicited using the picture naming task, which included various consonant clusters in the word initial position (e.g., sky, train, plane). The accuracy of the consonant cluster production as well as error types are analyzed.

36 A small world game: ("Winner" scenarios) effect of an educational prod on loss aversion & decision making

University of Michigan - Flint

Student Authors : Carl Amrhein

Faculty Advisors : Terrence Horgan

Abstract : Seventy Midwestern university students participate via Qualtrics. Thirty-five in the control and thirty-five in the experimental group. A 2 x 2 factor mixed quasi-experiment was preformed, experimental condition versus Relationship Awareness. Using an educational prod consisting of a brief description of Nash's equilibrium, six degrees of separation and prospect theory we were able to reduce the loss aversion to helping people the subjects have never met by 67.2% compared to a control group that did not receive the prod. There was also a main effect of an increase in likelihood to help by 17.4% overall. There was also an interaction between relationship awareness (a distant relative versus a stranger) that compounded the in-group bias.

37 Ayoreo Kinship and Color Terminology

Oakland University

Student Authors : Jessica Esch

Faculty Advisors : Samuel Rosenthal

Abstract : In my Honors Thesis, I investigated Kinship and Color Terminology among the Ayore people in Bolivia. Previous studies of Ayoreo did not include any data regarding kinship terminological structure, nor an analysis of the color terms used in the Ayoreo language. My research found four color terms within the Ayore language, including terms for black, white, red and yellow. I will discuss these terms, how these findings compare to previous color terminologies, and what these findings tell us about languages in general. In addition, I collected kinship terminology in Ayoreo and analyzed the structure in comparison with English. Ayoreo kinship terms are organized very similar to English, with terms for Aunt, Uncle, Mother, Father, Cousin, etc, although Ayoreo both distinguishes between male and female cousins, and also distinguishes between older and younger siblings among the ego's generation. I will discuss the kinship structure, as well as briefly demonstrate how these terms are chosen in the lexicon through the Optimality-theoretic of ranked constraints upon the language.



Meeting of Minds XXV



I will also provide an general linguistic analysis on these terms, and explain how these findings reveal how kinship structures can be comprised in other languages.

38 Selling Our Mothers for Gold: Prostitution in the Peruvian Amazon Rainforest

Oakland University

Student Authors : Jiyong Pak

Faculty Advisors : Aldona Pobutsky

Abstract : In this essay I will explore the undisclosed world of prostitution occurring within the rainforests of Peru, specifically focusing on the regions bordering Cusco in the Amazonian department of Madre de Dios. While examining the findings from expert researchers along with my own field work from 2016, I will delve into the reasons as to why this lucrative profession is becoming more common in these regions. My essay will center on environmental and economic factors, namely, communal isolation caused by the jungle's natural enclosure, and the increased activities of illegal gold mining occurring in the heart of the Amazon. I will discuss how the illegal exploitation of gold has attracted women from impoverished rural areas with hopes to work, only to be recruited and coerced into brothels that falsely advertise the promises of domestic work. I will also discuss the dynamics of abuse occurring between the prostitutes' interaction with their pimps and clients in a setting dominated by machismo culture.

39 "Possession Movies," Literary Nonfiction Panel

Oakland University

Student Authors : Nate Zachar

Faculty Advisors : Susan McCarty

Abstract : I am part Native American, and raised Christian. The beliefs and superstitions of Native American culture and the Christian faith are prevalent throughout my family. Some of these belief systems complement each other, while others compete. My personal essay, "Possession Movies," is an exploration of my identity, a search to find my place, as a skeptic in a family of faithful and superstitious.

There has been a strange pattern of "supernatural encounters," throughout my family. My writing of this essay began as nothing more than a mixture of mild curiosity, and Halloween. But from there, through interviewing family members, noting the odd trends and differences between their "experiences," it soon developed into a full investigation into the surprisingly prevalent roles that the supernatural and the metaphysical play, in the lives of both my Christian and Native American relatives.

Horror movies served as a frame of reference, for me, as I listened to these stories and tried to understand the bizarre things my family had experienced; I'd never seen a ghost in person, but I'd seen *Poltergeist*. I was used to suspending my disbelief for movies, so I was able to approach my family's strange tales with an open mind. My knowledge (and love) of horror movies, oddly, allowed me to better empathize with my family as they told me their stories.

"Possession Movies" isn't a search for "authenticity" in the supernatural. I had little interest in determining whether the occurrences in my family were "real" or not. It was more an exploration of how the supernatural, both in film and in the lives of my family, linked us together, or in some cases, separated us.

40 The Good, the Bad, and the Worst: Mexican Bordello Mamas Through the Lens of Jorge Ibargüengoitia's Las Muertas.

Oakland University

Student Authors : Ethan Tebbe

Faculty Advisors : Aldona Pobutsky

Abstract : In his novel, *Las Muertas* (1977) [The Dead Ones], Jorge Ibargüengoitia, a Mexican writer and journalist, created a parodical representation of the infamous Poquianchi case of 1963 that involved a



Meeting of Minds XXV



prostitution ring led by the Poquianchi sisters who allegedly contributed to a string of homicides. Even though Ibargüengoitia drew from the factual information, his portrayal offers a rather sympathetic and comical view of the case and the accused. This viewpoint exposes the corruption of the state and the society as a whole. To be specific, Ibargüengoitia's character development has created a morality scheme that is counterintuitive where the accused are no different from those that they have supposedly wronged. This essay will explore the author's social commentary on crime, gender, and society in Mexico of the 1960s while demonstrating that his approach brings into question the moral fortitude of the society present in the novel.

41 Bridge to a Healthy Community

University of Michigan - Dearborn

Student Authors : Nichole Bowman, Teiana McGahey

Faculty Advisors : Dr. Natalie Sampson

Abstract : The Bridge to a Healthy Community Survey aims to understand underlying health outcomes as they may relate to commercial and transportation land uses, particularly with the development of a new international bridge crossing, in Southwest Detroit. Projections suggest that parts of Southwest Detroit will experience an additional 10,000 heavy diesel trucks passing through daily once the new Gordie Howe Bridge crossing is built, and residents expect worsened quality of life as a result. With funding from the Erb Family Foundation, Kellogg Foundation, Ford Foundation (via the Detroit Hispanic Development Corporation), and the U of M-Dearborn Office of Metropolitan Impact, the SW Detroit Community Benefits Coalition in partnership with U of M-Dearborn, is conducting a household survey to assess baseline health and preferred mitigation measures. As community-based research, teams of residents and students administered 122 household surveys using Qualtrics survey software, which included questions pertaining to demographics, health concerns, perceptions of the neighborhood, and other qualitative data about resident's thoughts and ideas. The goals of this research are to advocate for better protections against negative health outcomes as well as advocating for the solutions that residents express are needed for their community. This presentation will cover a short literary review and preliminary results.

42 Large-Scale Pan-Genome Analysis of Bacterial Species

Oakland University

Student Authors : Cody Clark, Farrah Sitto

Faculty Advisors : Fabia Battistuzzi

Abstract : Identifying the pan-genome of multiple bacterial species is important to identify genome evolution patterns and unique features of individual lineages. Current analyses of pan-genomes have been carried out on few selected prokaryotic species and largely ignore the vast diversity of fully sequenced genomes. Moreover, analyses at high taxonomic levels (e.g., domain) are also very rare, thus leaving a large knowledge gap on trends and patterns in the pan-genome structure across prokaryote species. This study expands previous analyses of pan-genomes to all available bacterial species with a minimum of 10 fully sequenced strains (64 total species, 2,254 total strains). These species represent 13 classes and 9 phyla, thus covering the majority of the diversity within the Bacterial domain. Preliminary data from a single species within each bacterial class show two major trends in the structure of the pan-genomes. The most common trend shows a decrease in the number of core genes with increasing number of strains and a corresponding increase in accessory genes. In the second trend, instead, there is a consistently higher prevalence of either core or accessory genes, which seems to be unrelated to the total number of strains analyzed. These results point to the importance of carrying out comprehensive pan-genome analyses as different classes of bacteria produce different trends. Ultimately, the results produced by these analyses can be used to assess our level of understanding of the genomic complement of a species and, therefore, guide future sequencing efforts towards species whose genome is still largely uncharacterized.



Meeting of Minds XXV



43 The Effects of Bazedoxifene Acetate (BZA) on Estrogen Receptor Alpha in T-47D and MCF-7 Breast Cancer Cells

Oakland University

Student Authors : Monica Szmyd

Faculty Advisors : Sumit Dinda

Abstract : Estrogen, a primarily female hormone, binds to its specific receptor on its target cells and promotes cellular division in organ systems such as the skeletal and reproductive systems. As of 2013, the FDA approved a drug by the name of Duavee for treatment of hot flashes associated with menopause and as a treatment for osteoporosis. However, one of the drugs components, Bazedoxifene (BZA), has ongoing research showing its inhibitory effects on breast cancer cell proliferation. BZA mimics the actions of estrogen. In bone tissue it stimulates bone growth, however, in breast tissue it inhibits cellular growth. This dual action of the drug belongs to a class of drugs known as SERMs. In this study, the effects of BZA alone and in combination with hormones and anti-hormones were examined on expression of Estrogen Receptor- α in ER (+) T-47D and MCF-7 breast cancer cells and cellular viability. Cells were cultured, treated, and underwent several analyses. The results of the study aid in understanding the relationship between BZA and ER in breast cancer cells. Perhaps one day BZA could be a potential therapeutic option for women who suffer from advanced breast cancer and who have not responded to other treatments.

44 Spectrum of Weighted Right Shift Operator

University of Michigan - Dearborn

Student Authors : Luis Gutierrez

Faculty Advisors : Hyejin Kim, Yunus Zeytuncu

Abstract : Let l^2 denote the space of square summable complex sequences and T_w denote the weighted right shift operator. For a fixed bounded sequence $w = (w_0, w_1, \dots)$,

$$T_w(a) = (0, w_0 a_0, w_1 a_1, \dots)$$

$$\text{where } a = (a_0, a_1, \dots) \in l^2.$$

It is clear that T_w is a bounded linear operator and the spectrum of T_w depends on the weight sequence w . This project illustrates the results of a summer research project that focused on analyzing the spectrum of T_w . The results show that a disk of a certain radius, which depends on the weight w , is always included in the spectrum of T_w .

45 An investigation of the role of integrin alpha-6 in human induced pluripotent stem cell development and pluripotency

Oakland University

Student Authors : Genna Wilber

Faculty Advisors : Luis Villa-Diaz

Abstract : The general functions of integrins in cell attachment, gene expression, motility, polarity, shape, proliferation, and survival are well known. These critical functions provide reason for their wide expression across stem cell populations as well as other cell populations throughout the human body. Integrin alpha-6 (ITGA6), is a particular isoform of the integrin family, which is expressed across many stem cell populations, and has been shown to play an integral role in pluripotent stem cell (PSC) self-renewal (Villa-Diaz 2016). Human embryonic stem cells (hESCs) and human induced pluripotent stem cells (hiPSCs) share phenotype and gene expression, although their origin is different. The similarities between these two PSC populations make hiPSCs so widely researched. Thus, we used hiPSCs as a model to determine the role of ITGA6 in hPSC development and pluripotency.



Meeting of Minds XXV



To address this objective, we knocked out ITGA6 in human gingival fibroblasts (hGF) using 3 constructs of CRISPR-Cas9 single-guided (sg) RNAs that target specific nucleic acid sequences of ITGA6, and a CRISPR-Cas9 sg control, which did not target any specific gene sequence, and wild-type (WT) cells as control groups. These five groups of hGFs were then reprogrammed utilizing 4 crucial factors to generate iPSCs: Oct4, Sox2, Klf4 and c-Myc (Takahashi & Yamanaka 2006). The resulting hiPSC colonies were characterized by analyzing the expression of key stem cell markers at RNA and protein levels, colony development, classical morphology, gene expression in embryonic bodies, direct cell line differentiation, methylation of key transcription factors, and chromosomal stability.

We confirmed that parental cells containing the vectors targeting ITGA6 expressed significantly lower levels of ITGA6 mRNA. hiPSC colonies developed in all groups with higher efficiency than in the control group. All colonies, however, showed expression of ITGA6, Oct4, and Sox2 at mRNA and protein levels.

This suggests that the CRISPR Cas9 lentivirus was not 100% efficient which allowed the expression of ITGA6 in a subpopulation of cells. Furthermore, this also indicates that ITGA6 is crucial for the development and maintenance of hiPSCs because no colony developed without the expression of this gene. In the future, we plan to elucidate the mechanism behind colony development involving ITGA6.

46 The Influence of Intermittent Sucrose Access on Ethanol Intake

Oakland University

Student Authors : Rachel Loweke

Faculty Advisors : Dr. Keith Williams

Abstract : The Influence of Intermittent Sucrose Access on Ethanol Intake Intermittent access to sucrose has been known to elicit binge-like behavior in rats and once binge-prone, they may generalize that behavior to other substances. Our goals were to 1) determine if intermittent access would produce binge-like consumption of sucrose, and 2) to determine if the binge-like consumption would increase ethanol self-administration later in life. Rats were first trained to press levers by receiving fluid reinforcers. The rats were individually housed, half of them getting 30 minute intermittent access sessions (only available of MWF) of 5% sucrose solution concurrently available with water and the other half having unlimited access to both 5% sucrose and water. During this 8 week phase of sucrose bottle drinking, they received three periods of overnight unlimited ethanol access - acclimating them to the taste of alcohol before they went back in the chambers for testing. After this stage, the rats were put back into the operant chambers for self-administration of sucrose, with alternating response requirements, for 8 days and only had access to water in home-cages. On day 10, we began an ethanol-sucrose fading procedure wherein ethanol concentration is gradually increased while the sucrose concentration is gradually decreased until the rats are drinking ethanol alone. The rats consumed pure 10% ethanol for about a week on a fixed ratio 1 schedule wherein a single response results in a reinforcer of ethanol fluid delivery. The results showed that rats with intermittent access to ethanol had elevated consumption of 5% sucrose within the first 30 minutes of home-cage access. However, the overall 24-hour consumption did not differ between groups. In operant self-administrations ethanol, the responding was similar for both groups. In conclusion, intermittent access to sucrose induces a binge-like consumption pattern upon initial daily exposure, but fails to generalize to ethanol access in an operant paradigm. Different physiological or neural processes may mediate consumption of the different solutions.

47 Identification of Osiris Family Required for Tube-Size Regulation in *Drosophila* Trachea

Oakland University

Student Authors : Patrick McBride

Faculty Advisors : Lan Jiang

Abstract : Distinct tube-size is critical for the function of human tubular organs such as the lungs, vascular system, and kidneys. Aberrant tube-sizes that arise during development can lead to devastating human illnesses such as polycystic kidney diseases. The *Drosophila* trachea provides a premier genetic system to investigate the fundamental mechanisms that regulate tube-size. We are going to study the function of a novel



Meeting of Minds XXV



subfamily of genes (Osiris 9,15,18,20) found in the trachea of *Drosophila melanogaster* (common fruit fly). Specifically, we will investigate how these genes affect the luminal matrix assembly and cell polarity and how they regulate tube size in the *Drosophila* trachea. By doing this project, we will gain a better understanding of the mechanism of tube size regulation. Since the mechanism of regulation is conserved between humans and flies, we possibly will gain insight into how diseases, like polycystic kidney disease, develop.

48 Does Psychopathology Related to Stress and Anxiety Affect Academic Achievement

Oakland University

Student Authors : Alvin Nicholas

Faculty Advisors : Rebecca Malatesta, Scott Pickett

Abstract : Abstract Psychopathologies are heavily influenced by emotions (Davidson, 2012). This paper addresses different emotional styles and how they play a role in psychological disorders related to stress and anxiety. The main focus will be on psychopathologies related to stress and anxiety, their development in childhood, and how they affect an individual's academic achievement. The main psychopathologies that will be examined includes post-traumatic stress disorder (PTSD), panic disorder, anxiety, and subsequent depression for academic incompetence. Panic, PTSD, anxiety and depression can all have negative effects on an individual if consistent rumination persists (Davidson, 2012), however it is not found that academic achievement will be jeopardized if an individual has one of these disorders. In fact, most of the disorders that are mentioned have little effect on academic achievement with the exception of social anxiety. Social anxiety has the potential to hinder an individual's academic performance in a variety of ways, including the complete avoidance of school and/or fear of communicating with instructor or other classmates because of extreme fears of negative evaluation (Brook, 2014). Studies have shown that individuals with PTSD can still achieve just as well as an individual without the disorder (Vroman & Ness, 2014). Knowing this information can provide encouragement to those who struggle with a psychopathology which should increase the odds for those individuals to still achieve academically. It is also useful information for parents and educators. **Keywords:** Psychopathology, emotion, disorder, loving-kindness meditation, PTSD, anxiety, depression, panic

49 Negotiation Tactics of Small Island Developing States (SIDS) regarding Climate Change Talks with Developed Nations

Oakland University

Student Authors : Katherine Eckenwiler

Faculty Advisors : Laura Landolt

Abstract : My research question explores how some small island states, specifically Tuvalu and the Maldives, have tried to become active in the climate protection movement on an international level and effectively used negotiation tactics to global climate change policy making. The paper summarizes general traits common to small island states, and compares and contrasts several different factors. This will focus on how the SIDS advance their goals of a) getting climate change on the international agenda and b) getting global awareness for their own plight in the media. Success will be identified if a) climate change was addressed in the UN or another regional sphere as a noticeable result of their efforts and b) if a small island state made it to a major media broadcasting level as a noticeable result of their efforts.

50 Will Smith's Organization & Classification: A Comprehensive Analysis of the Discrepancies Between Democracy and Capitalism

Oakland University

Student Authors : Kristin Tencza

Faculty Advisors : Kellie Hay

Abstract : Willow Smith's song Organization and Classification is a political statement, ideological critique and rhetorical appeal that expresses the political and social implications of capitalism and classism through the exemplification of ills that plague our culture as a result of the continual perpetuation of tainted ideologies thus calling for a reformation of the current governmental system and its inherent politics as well as ideologies.



Meeting of Minds XXV



Willow's song Organization and Classification specifically asserts that the socially devised systems of class and race are immensely limiting and impose profoundly detrimental effects upon our governmental infrastructure as well as condition the perceptions of America's youth by perpetuating harmful ideologies in regard to social status. This song is essentially a radical critique of the social hierarchy and how it is systemically as well as strategically set up so that certain people are always exploited. All the while the dominants, or those of greater hierarchical status and thus class, which is solely comprised of wealth and race, are strategically positioned with malice aforethought so as to benefit from the expenditures and the pitfalls of the non-dominants. Willow sheds light on the dominant-submissive relationship that saturates the governmental framework and is employed at large into our popular culture and mainstream media.

51 Does Y-285 Stop cause Retinal Degeneration?

Oakland University

Student Authors : Adam Seidel

Faculty Advisors : Andrew Goldberg

Abstract : This project asks whether Peripherin-2/rds mutation, "Y-285 STOP CODON" causes retinal degeneration in the mouse, and how that process takes place. Peripherin-2/rds is a photoreceptor protein in the retina's rod and cone photoreceptors which is essential for the structure of photoreceptor disks necessary for normal vision. If the photoreceptor disks are unable to form properly or to regenerate, the result is retinal degeneration, or vision loss. Using a mouse model, we can measure the thickness of the retina and evaluate whether or not the Peripherin 2p/rds mutation "Y-285 STOP CODON" causes retinal degeneration in mice. This information will help us understand the potential effect of this mutation in the human eye.

52 Impact of chronic illness on positive and negative affect in older adults: Does gender matter?

University of Michigan - Dearborn

Student Authors : Candice Tudor

Faculty Advisors : Brenda Whitehead

Abstract : With more individuals living well into old age, and with the flourishing advancements of medicine, the population of individuals living with a chronic illness is also growing. It is therefore important to investigate how a chronic diagnosis influences well-being in order to promote better quality of life for those individuals. Here, we investigate a) differences in Positive and Negative Affect (PA/NA) between those who are dealing with a chronic condition and those who are not, and b) how this effect depends on gender. Participants aged 60 and over (N=193 mean age=78.9) filled out the Positive and Negative Affect Scale and a chronic conditions checklist. A 2 (chronic condition vs. no chronic condition) x 2 (female vs. male) ANOVA tested the main effects and interaction PA and NA. The results indicate that those with a chronic condition have significantly lower PA ($p = .03$) and higher NA ($p = .057$); mean analysis revealed that this pattern was more pronounced for women than for men. Chronic conditions effect females by decreasing PA ($p = .006$) and in males by increasing NA ($p = .004$) when compared to non-chronic counterparts. This should be considered when identifying those most at risk for a negative psychological response to a chronic diagnosis, and in developing programs aimed at promoting quality of life in this more vulnerable group of older adults.

53 Fast statistical approximations of computationally intensive numerical solvers for evolution problems

Oakland University

Student Authors : Meiqi Song

Faculty Advisors : Aycil Cesmelioglu, Dorin Drignei

Abstract : Partial differential equations are the cornerstone of modeling in modern science and engineering. Finding their solutions often requires using computationally intensive numerical solvers that may take an extensive amount of time to output a highly accurate answer. We employ statistical methods to speed up the computation of numerical solutions of partial differential equations with space and time components while maintaining the accuracy. A two-dimensional linear parabolic partial differential equation that models the



Meeting of Minds XXV



diffusion of a chemical contaminant in porous media with unknown permeability parameters is used to demonstrate our fast approximation methodology. The contaminant concentration is approximated numerically using finite elements in space and finite differences in time. Based on the space-time output data at a small sample of permeability parameters, Kriging methods from geostatistics are extended to obtain a fast approximation for the numerical solver. In turn, this is used to accelerate the investigation of the relationship between the permeability parameters and the contaminant concentration. Future work includes increasing the sample size sequentially to assess the quality of the resulting statistical approximation.

54 A Representation of History, Culture, and Identity Through Spanish Fashion

University of Michigan - Dearborn

Student Authors : Lindsey Mattson

Faculty Advisors : Jorge González del Pozo

Abstract : A Representation of History, Culture, and Identity Through Spanish Fashion Lindsey M. Mattson
Faculty Sponsor: Jorge González del Pozo Abstract Spanish fashion is something that exists all around us, but we may not be aware of it, nor the true meaning behind what is seen. Many people associate the color black, a flamenco dress, or a fan with Spain, but it's only the surface. To fully understand Spanish fashion, this study has looked back in history to trace its roots, uncovering cultural influences, as well as political, social, and economic characteristics and changes throughout Spanish history, from the 10th century to present day, that have directly influenced the creation and evolution of Spanish fashion. Trends and characteristics throughout history will be examined to understand their implications and representations of the country's identity. The rise of the Spanish Empire in the 16th century put Spain in the spotlight in terms of fashion, setting trends for the rest of Europe. After a period of great expansion, the empire began to dissipate, which allowed France, England, and Italy to jump ahead in fashion. Despite this, Spanish attire still evolved in its own way and has left an impact on the world of fashion. It is ultimately a representation of the country's complex identity, comprised of its unique history, hybrid society, as well as the political, social, and economic changes that have occurred to shape Spanish society today. Modern vehicles of Spanish fashion, such as designers, brands, and institutions will be used as examples to demonstrate how they project Spanish history, culture, and identity to the world through their designs and exhibitions.

55 Who are my biological parents and siblings? A study of children's understanding of biological kinship.

Oakland University

Student Authors : Katelinn Pawlowski

Faculty Advisors : Lakshmi Raman

Abstract : The study focuses on investigating 4 and 5 year olds understanding of biological kinship. In contemporary times, many children will experience new individuals coming into their lives because of remarriage. The purpose of this study is to see if children understand that these new individuals are not their biological relatives.

56 The Chapman Brothers and The Disasters of War

Oakland University

Student Authors : Caitlyn Lawler

Faculty Advisors : Galina Tirnanic

Abstract : Contemporary British artists Jake and Dinos Chapman, also known as the Chapman brothers, have been appropriating The Disasters of War since 1993. Completed in the early nineteenth century in Spain, The Disasters of War is a set of eighty-three prints by Francisco Goya that show gruesome images of the torture and brutality that human beings inflict upon one another in times of war. For over two decades, the Chapman brothers have been making countless reproductions of this series in a variety of mediums including drawing, painting, print, and sculpture. In 2001, they bought one of the few complete remaining sets of The Disasters of War from the British Museum for £25,000 and defaced each of the eighty-three prints within the series. They painted clown and puppy faces, and other fantastical creatures over every visible victim, and retitled the newly



Meeting of Minds XXV



modified series *Insult to Injury*. In the act of defacement, the Chapman brothers have subjected *The Disasters of War* to its own trauma. Goya has left behind of legacy of humanism by exposing the figures in his work to humiliation, suffering and violence. In the process of dehumanizing his figures, he illustrates that there is nothing noble about war: it signifies a collapse in meaning, the point at which civilization fails. The human body is an agent of pain and war, capable of creation and destruction. He depicts the human form in an abject state to address the inhumanity of war in the 19th century, furthermore confronting the inherent flaws of humanity. In turn, the Chapman brothers continue Goya's legacy throughout their appropriations. I will focus on *Insult to Injury*, in particular, to prove that this work is more than just an act of defacement; it addresses the inhumanity of war in the twenty-first century.

57 Foreign Language Immersion in an Urban Context: A Culturally Responsive Approach to Teaching French to African American Kindergarten Students

University of Michigan - Dearborn

Student Authors : Robin Wilson

Faculty Advisors : Kristen Dara Hill

Abstract : This presentation and article outlines some culturally responsive approaches that are relevant to foreign language immersion in an African American kindergarten classroom in an urban context. The use of gestures, collaborative conversations, and auditory-visual approaches are discussed. Additionally, the role of student motivation in the kindergarten foreign language immersion classroom is examined in relation to students' responses to the instructional approaches. The qualitative data was obtained through a pre-service teacher classroom practicum experience and based on classroom observations and informal interviews with the classroom teacher.

58 "Sleeping Place," Literary Nonfiction Panel

Oakland University

Student Authors : Paige Lalain

Faculty Advisors : Susan McCarty

Abstract : In writing, the story to be told typically influences and inspires the form through which it is presented. In my writing explorations, however, form is my foremost inspiration, and the avenue through which I am able to approach my creative projects. "Sleeping Place," as with all of my literary nonfiction, operates in the mode of fragmentation. This essay is a collection of small memories, fragments, which I braid and build to reconcile my past and present, to begin to understand how I exist *now* within the confines of my particular thematic web. In the case of this piece, I was guided by a cycling of personally-driven themes including chaos, awareness of mortality, affinity for things past, and issues of the American upper middle and upper class, wherein I examine the relationship between escalating wealth and unfulfilled desire. These ideas are anchored in my visits to the cemeteries of Chicago's northwest suburbs, comparison of the more affluent of these suburbs, recollections of episodes of extreme sadness and defeat, researched examination of a series of train accidents in the area, and my study of Latin. In a fragmented, non-chronological narrative, coherence is attempted by fusing each piece to the same, major inquiry—In "Sleeping Place," for example, how many ways can one experience death while alive, and what is the key to unlocking the space between these two worlds? From there, which of these ways feel positive? Which cause discomfort? Though guided by specific questioning, ultimately, this essay is not concerned with solving any of the larger problems it explores. Rather, it busies itself with sharing life's unrelenting motion, how the placidity of cemeteries allows me to step outside of a disturbed world. This piece offers a glance through my lens, an invitation to experience the wonderment of walking quietly among the dead, and a warning for when you go too far—For when you wake them, and they know you're there.



Meeting of Minds XXV



59 Shattering the Glass Ceiling: The Impact of STEM Fields on Female Success

University of Michigan - Flint

Student Authors : Sarah Taipalus

Faculty Advisors : Toko Oshio

Abstract : Though gender equality is becoming increasingly prevalent in the American education system, STEM (Science, Technology, Engineering, and Mathematics) programs are still dominated by male students. This situation is troubling when one considers current trends in the STEM workforce: According to Yonghong Xu (2015), an associate professor at the University of Memphis, "...a growing demand is anticipated for the STEM workforce; in the meantime, National Math and Science Initiatives (2012) predicted a shortage of approximately three-million skilled STEM workers by 2018" (p. 519). The lack of gender equality in STEM majors not only decreases the benefits of diverse perspectives in such programs, but also reinforces conventional gender roles. Yet, researchers have shown that women who pursue careers in these fields are more likely to be financially stable than their non-STEM counterparts and to be leaders within their communities.

60 How Children Understand Quantifiers, Both Specific and General, and Generic Statements

Oakland University

Student Authors : Danielle Elder

Faculty Advisors : Kuniko Nielsen

Abstract : The purpose of this study is to explore the extent to which children have formed an understanding of quantifiers and evaluate how their understanding may be different from that of adults. The quantifiers under investigation include "all" and "some", in both specific and general uses. Children were presented questions utilizing the quantifiers "all" and "some" in both specific and general uses and compared to the responses of adults. The results of this study indicate that children interpret quantifiers differently than adults do, and as their age and linguistic capacity increases, their perception and use of these quantifiers may become more sophisticated, eventually achieving an adult-like level of competence.

61 LGBTQ Visibility in Children's Television: An Analysis of Steven Universe

Oakland University

Student Authors : Mia Sara Denis

Faculty Advisors : Rebekah Farrugia

Abstract : Despite the strides in LGBTQ visibility over the past few decades, much can still be done in children's media. Some may argue there have been multiple animated shows that featured LGBTQ themes and/or characters, but rarely are they central to the story. Among today's popular children's animated television series, Steven Universe, a fantasy/action coming-of-age story, presents one of the most progressive LGBTQ portrayals. In two key episodes, this show depicts a healthy lesbian relationship through the character Garnet while demonstrating how these characters also play an important role in the plot beyond their sexuality. Due to its place in popular culture, Steven Universe can have a greater impact than other LGBTQ animated works have had before and sets an example for current and future children's television shows to follow.

62 Rivera's Caudillo: Marx in Mexico Today and Tomorrow

Oakland University

Student Authors : Zachary Conklin

Faculty Advisors : Galina Tirnanic

Abstract : In 1929 Diego Rivera began his mural cycle entitled The History of Mexico, located in the grand stairwell of the north wing at the National Palace in Mexico City. The mural consists of three major themes that form a triptych composition across the north, west, and south walls of the stairwell: The Aztec World (1929-30), From Conquest to 1930 (1929-31), and Mexico Today and Tomorrow (1934-35). Rivera's mural is part of the state commissioned muralist movement of the 1920s and 30s, which emphasized the indigenous heritage of the Mexican people and served as propaganda for the Mexican government. On August 13th, 1929, Rivera



Meeting of Minds XXV



composed preparatory sketches for the monumental National Palace mural, which consisted of all three parts of the mural cycle. While the first two parts of the cycle did not stray much from the original sketches, the final phase of the cycle displays a different narrative than the original. Rivera's original sketch depicts workers operating machinery and working together as a united force while a serpent coils around a mountain, similar to the first phase of the mural cycle. By contrast, the finished product depicts Mexico in a state of revolt against fascists and bourgeois powers, while Marx appears as a 'god-like' figure leading the proletariat Mexican people to a socialist utopian future. The drastic change in composition and imagery leaves open many questions about the artist's idealistic vision of the political state of Mexico during this time. I argue that Diego Rivera's *Mexico Today and Tomorrow* (1934-35), conveys a message of continual revolutionary tension and that the artist asserts Marx as the caudillo, or "strongman" that Mexico lacks, in order to solidify Rivera's own ideological agenda.

101 Farmers Market Relocation/ Water Crisis Impact on Downtown Flint, 2016/2017

University of Michigan - Flint

Student Authors : Kristin Ball

Faculty Advisors : Victoria Morckel

Abstract : This research examines the impact of major events (i.e. the Flint Farmers' Market relocation and the Flint water crisis) on the economic health of downtown Flint. The portion of the study that I will present relies on information that I gathered by interviewing local business owners in the downtown. The study seeks to provide data on several outcomes of the Market's relocation on downtown business, such as number of customers, number of employees, and profits. This study also considers the impacts of the Flint Water Crisis on businesses because an accurate assessment of trends in the downtown area since 2014 simply cannot ignore the potential effects of this event. Though the study is ongoing, I will present trends that emerged during the interviews and will discuss the potential implications of these trends for downtown Flint.

102 Systems of Government in The Republic: On the Question of Justice and Plato's Warning Against Democracy

University of Michigan - Dearborn

Student Authors : Heidi Gabr, Ryan Glavin

Faculty Advisors : David Skrbina

Abstract : The purpose of this essay study is to examine in a detailed manner Plato's analysis of democracy and justice. It aims to critically explore various concepts and ideas discussed throughout the books of Plato's *Republic*, and then analyze the implications for modern political science. I will investigate the question of the nature of justice as laid out in Books I through IV, then consider the question of how justice should be established in a system of government as discussed in later books. After exploring and establishing the details of Plato's Kallipolis, I will consider Plato's rejection and critique of the four other forms of government and the implications for the present day. *Republic* raises not only the question of what justice is, but also how justice can be established—if it can be at all—on the governmental level. In terms of political strategy, Plato proposes an ideal state governed by "philosopher kings." He lays out very specific conditions for this state, proposing a concrete social hierarchy running from the philosopher kings (possessing souls of gold) to the guardians/auxiliaries (possessing souls of silver) to the working class (possessing souls of bronze/iron). With the establishment of the perfect city ruled by philosopher kings, Socrates goes on to discuss—or rather, critique—other forms of government below the Kallipolis. In the final section, I will examine Plato's challenge of democracy in ancient Athens, and how this challenge reflects itself in the modern debate. I will consider modern thoughts and arguments which coincide with Plato's rejection of democracy, in order to assess whether he was right; and if so, to what degree. Plato's democracy, after all, was much different from modern, large-scale, representative democracy. Even so, there are obvious lessons that apply, particularly to American democracy, and the question of its justice or injustice.



Meeting of Minds XXV



103 Sequence Analysis of Mutant Chick Embryo DNA

University of Michigan - Dearborn

Student Authors : Jennifer Byk, Jessica Vo

Faculty Advisors : Marilee Benore

Abstract : Riboflavin Binding Protein is a transport glyco-phospho-protein found in all oviparous species, required for transport of the vitamin riboflavin needed for proper embryonic development. A mutant strain of chickens cannot synthesize the protein; the embryos lacking riboflavin die after the thirteenth day of incubation. DNA was extracted from the embryos. Several kits were utilized and compared to determine the best method to isolate pure DNA in large yield. Sequence comparisons to wild-type white leghorn chickens are used to confirm the DNA sequence causing the mutation.

104 Which source of social support is more predictive of growth over time?

Oakland University

Student Authors : Shelby Seyburn, Kyle Vens

Faculty Advisors : Kanako Taku

Abstract : Posttraumatic growth (PTG; Tedeschi & Calhoun 1996), 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."* Social support has been found to play a predictive role in the development of PTG in youth. 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 test if the causal relationships between social support and PTG that were found in the previous cross-sectional study would be replicated by longitudinal design. Adolescents ($N=394$) completed the Multidimensional Scale of Perceived Social Support ($\alpha=.89$) and three weeks later, completed the PTG Inventory Short Form ($\alpha=.90$). Multiple regression analyses predicting PTG by three sources of social support showed special person ($\beta=.14$, $p<.03$) was the only significant predictor of growth at time 2, supporting our hypothesis [R squared $=.072$]. Results also showed special person to be the significant predictor of a PTG domain, *"Relating to Others,"* ($\beta=.27$, $p=.001$, R squared $=.077$). In order to facilitate cognitive processes essential for growth, an adolescent may seek out a form of social support that provides nonjudgmental validation of their thoughts and feelings. Friends and family may not be able to fill this role due to pre-existing bias's. While the present findings support the impact of receiving support from a special person, further examination is needed to understand the nature of an adolescents' special person.

105 Effects of Minimal Groups on Memory

University of Michigan - Dearborn

Student Authors : Kaci Girard, Paige Malay, Andrew Smith

Faculty Advisors : Robert Hymes

Abstract : Prejudice has always been one of the cornerstones of social psychology. With minimal groups - a way of categorizing people into groups with no meaning - we have come to understand more about in-group biases and how prejudice works. In this study, subjects were individually given an estimation task and then assigned the category of overestimator - an artificial group with no deeper meaning. Subjects then performed a sorting task and answered a questionnaire on their impressions of overestimators and underestimators. Afterward, subjects were shown images of what they were told "overestimators had deemed meaningful in the past". This photoset includes images rated as positive, negative, and neutral. Another set was done with underestimator photos, previously established to have the same arousal ratings as the ones in the overestimator group. After completing two empathy questionnaires, subjects returned to the photo sets mixed together with additional photos not presented. Subjects organized these photos based on which estimator group they remembered the photos belonging. Due to in-group bias, we expect subjects will remember and more accurately place photos shown to be meaningful to overestimators. This would highlight better memory with in-group experiences.



Meeting of Minds XXV



107 Survey123 for ArcGIS: A Simple and Versatile Data Collection Tool that Spans Academic Disciplines and Research Questions

University of Michigan - Dearborn
Student Authors : Alexander Christie
Faculty Advisors : Joshua Akers

Abstract : Survey123 is an application add-on for ArcGIS online. It allows for the creation of customized surveys that can be accessed from a mobile application. Because the app uses a simple and familiar interface, it requires little training. The mobile app can be used on or offline to collect survey questions and geographic information. The ability to customize and offline capabilities provide a host of opportunities for use in all academic disciplines and research ranging from housing to animal populations.

108 Minimal Groups and Empathy

University of Michigan - Dearborn
Student Authors : Hana Algahmi, Ruby Issa, Sura Merza, Adel Nasser, Nicholas Paron
Faculty Advisors : Robert Hymes

Abstract : People tend to favor their own group over outside groups, even when the groups are arbitrary (Tajfel, 1969). In other words, people look at themselves and members of their own group in a more positive way than they view anyone from an outside group. The purpose behind this experiment is to study ingroup favorability and consider the effects that minimal groups would have on the subjects' ratings of photographs labeled as either ingroup (overestimator), or outgroup (underestimator). The category of overestimator or underestimator is assigned randomly following the completion of a dot estimation task, in which subjects were shown a slide with several dots on it for one second, after which they would estimate the number of dots they saw. Those who estimated a higher number of dots than were actually shown were placed into the overestimator category, as far as the subjects were concerned. What they were not told was that all subjects were placed into the overestimator group, regardless of their responses during the dot estimation task. The purpose behind this deception was to see whether or not ingroup favorability would still be present. The expected outcome was that subjects would consistently rate overestimator statements more highly than underestimator statements, due to the ingroup favorability bias discussed previously. Each session has two participants to complete the minimal groups procedure, which assigns them to the arbitrary group of overestimators. They then are shown 72 statement cards purportedly made by either overestimators or underestimators and have to assign each to the group they believe stated them. Next, they rate 72 images, purportedly selected by overestimators or underestimators as particularly meaningful to them, in terms of pleasantness and how excited they felt in response. Finally, participants complete questionnaires to assess how empathetic they are. Data collection is still ongoing but will be completed before the MOM showcase.

110 Elucidating the role of integrin $\alpha 6 \beta 1$ in neuronal stem cell development.

Oakland University
Student Authors : Hunter Sorensen
Faculty Advisors : Luis Villa-Diaz

Abstract : Integrin $\alpha 6 \beta 1$ has been shown to play an integral role in the maintenance of human embryonic stem cells (hESC). In neuronal stem cells (NSCs) it is known that integrin $\beta 1$ is necessary in the formation of neural rosettes in conjunction with laminin. Neural rosettes are radial arrangements of columnar cells that express proteins and properties of NSCs found in developing neural tubes. Since the heterodimer of $\alpha 6 \beta 1$ is a laminin receptor, this indicates a possible role of integrin $\alpha 6$ in the development of NSCs. Therefore, we investigated the role of integrin $\alpha 6$ in NSCs in vitro. We differentiated hESCs into neural rosettes, and performed immunocytochemistry to identify key proteins such as musashi, and sox2 as NSC's markers, β tubulin as neuronal marker, and to determine the expression and localization of integrin $\beta 1$, $\alpha 6$, and its b isoform along its downstream mediator FAK. In neural rosettes we identified that $\alpha 6$ and $\beta 1$ are co-localized in Sox2 and Musashi positive



Meeting of Minds XXV



cells, indicating they are present in NSCs. Both integrin $\alpha 6$ and $\beta 1$ were found expressed in the lumen of NSCs while FAK and Sox2 were found to co-localize in the cell nucleus. Interestingly, integrin $\alpha 6$ B form was localized differently than the A form of integrin $\alpha 6$. The B isoform of $\alpha 6$ was localized in the distal portion of cells, while the $\alpha 6$ form is widely distributed along the membrane of NSCs. This suggests specific roles for each isoform of integrin $\alpha 6$ in the development and function of NSCs. We are planning on using CRISPR/Cas9 to knock-out integrin $\alpha 6$ in these cells and determine its importance in the development and function of NSCs and neural rosette formation.

111 Effect of a Community-Based Exercise (Bicycling) Intervention on the 'Internal Clock' in Parkinson's Disease

University of Michigan - Flint

Student Authors : Robert Moore , Leah Parry, Marissa Zudell

Faculty Advisors : Nathaniel Miller

Abstract : Parkinson's disease (PD) is a neurodegenerative disorder marked by bradykinesia (slowed movement). Slowing of the internal clock is hypothesized to underlie bradykinesia. Previous research suggests that exercise can affect the internal clock rate. To test these hypotheses, we measured bradykinesia in PD patients before and during participation in a community-based, exercise intervention, Pedaling for Parkinson's™ (PFP). Data were compared to a sample of healthy, age-matched controls. Participant's tapped their foot at their preferred rate (spontaneous motor tempo; SMT) at baseline, 4- and 8-weeks of PFP. We measured the median time between foot taps during a sequence of 31 taps. Patients had faster SMT than controls at baseline ($p < .05$). We also found marginally faster SMT over 8 weeks of PFP ($p = .09$). These findings suggest that the internal clock 'speeds up' with PD and that PFP continues to 'speed up' the clock.

112 Biographical Memory: Does categorization increase memory?

University of Michigan - Flint

Student Authors : Jacob Champagne, Haley Dawson

Faculty Advisors : Peter Molinaro

Abstract : Biographical memory consists of specific events collected throughout an individual's life, based on personal experiences, specific objects, and people, at particular times and places. Individuals often attempt to recall as much information as possible – with no direct memory management system. This manner of recall might not be representative and may offer a narrow range of accuracy. We are interested in exploring whether exposing individuals with various categories allows them to remember more biographical details of other individuals, expanding their recall. This research is significant in interrogation sessions for learning about people of interest and eye-witness interviews, and also in other research on memory recollection and ways in which we can encourage and stimulate memories of other people.

113 One Construct, Two Measures: The Relationship Between the CD-RISC and BRS

Oakland University

Student Authors : Jenna Duronio, Velinka Marton

Faculty Advisors : Kanako Taku

Abstract : Despite growing interest in resilience, there are many discrepancies regarding the definition and measurement of this construct (Luthar, Cicchetti, & Becker, 2000). The Connor-Davidson Resilience Scale (CD-RISC) assesses resilience from a multidimensional perspective which addresses personal qualities that contribute to the ability to successfully cope with stress (Connor & Davidson, 2003). The Brief Resilience Scale (BRS) was developed to assess resilience as a unitary construct through the root definition of resilience—the ability “to bounce back” from stress (Smith et al., 2008). The purpose of this study was to test the hypothesized relationships between the three-level indices of CD-RISC-10 (i.e., total, subscales, and the most indicative item No.5) and the BRS in a sample of adolescents. Adolescents ($N=358$) completed the BRS, and three weeks later, completed the CD-RISC-10. Pearson's correlations were used to test the hypotheses. Results supported the hypotheses in that the relationships between the BRS and CD-RISC-10 total scores, and each of the three



Meeting of Minds XXV



sub-scale scores (Personal Competence; Trust in one's instincts, tolerance, and strength; and Positive acceptance of change) were all positive, ranging from $r = .47$ to $r = .55$, all $p < .01$. Additionally, Pearson's correlations revealed a significant relationship between the BRS and CD-RISC-10 total scores, $r(356) = .60$, $p < .01$, as well as between the BRS total score and item No.5 of the CD-RISC-10, $r(356) = .43$, $p < .01$. The results suggest a large overlap between the two resilience measures, which contributes to the content validity of each of the measures. While this relationship is large and significant, the fact that the correlations were not incredibly large can be accounted for based on the general terminology utilized by the BRS and the more specific, personal qualities expressed by the CD-RISC-10. Merging the two measures should be considered in order to unify this similar conceptualization of resilience.

114 Does Childhood Trauma Inhibit the Ability to Perceive Growth in Adulthood?

Oakland University

Student Authors : Jenna Duronio, Lauren Harrison

Faculty Advisors : Kanako Taku

Abstract : Research has demonstrated that an individual's most impactful trauma experienced in childhood elicits higher posttraumatic stress symptoms (PTSS) in adults when compared to adults who experienced their most traumatic event in adulthood (Ogle & Rubin, 2013). The impact of childhood trauma on reported posttraumatic growth (PTG) in adulthood is unknown. PTG is defined as positive outcomes experienced through the struggle with trauma (Tedeschi & Calhoun, 1996). The purpose of this study is to test the hypothesis that adults who experienced both childhood and adulthood trauma (Group 1) will report lower PTG, higher PTSS, and higher hyperarousal than adults who experienced only adulthood trauma (Group 2). Participants completed the PTG Inventory Short Form and the Impact of Events Scale-Revised through an online survey. Results showed that no significant differences were observed between Group 1 ($n=67$, $Mage=31.60$, $SD=12.60$) and Group 2 ($n=22$, $Mage=33.00$, $SD=.60$) in PTG and hyperarousal. A Mann-Whitney U test yielded marginal significance in PTSS scores: Group 1 ($Mdn=30.00$) and Group 2 ($Mdn=3.00$), $U=472.50$, $p=.07$. Experiencing childhood trauma may not inhibit growth, but rather provide more opportunities to grow and additional time to undergo key processes of PTG such as rumination. Future research should assess how time since childhood trauma, specific age when trauma occurred, or perceived trauma severity may have greater impacts on the ability to perceive growth in adulthood.

115 Prosocial Behavior in Children with Autism

Oakland University

Student Authors : Laina Townsend

Faculty Advisors : Jennifer Vonk

Abstract : There have been almost no formal assessments of the development of moral thinking or behavior in children with autism. In particular, researchers have not examined the extent to which children with autism behave prosocially. That is, to what extent do they engage in acts in order to benefit others? Given known deficits in theory of mind – the capacity to represent the thoughts and feelings of others – it is assumed that they may be less likely, compared to typically developed children, to choose to share with another individual when the act of sharing has no consequence for themselves. Thus, we tested several children ranging in age from 3-12 on a version of the dictator game, which we previously presented to typically developed children between the ages of 3-5. Results are pending but data will be collected this month.

116 The Effects of the Blank Line Up on the Cross Race Effect

University of Michigan - Flint

Student Authors : Kevin Michaels, Lea Stites

Faculty Advisors : Peter Molinaro

Abstract : People are better at identifying people of their race compared to people of other races according to the Cross Race effect (Young, Hugenberg, Bernstein, & Sacco, 2011). The Cross Race effect was first thought to happen because of people's lack of interaction with people of other races, leading to a lack of "perceptual



Meeting of Minds XXV



expertise" when distinguishing faces from other races (Young, Hugenberg, Bernstein, & Sacco, 2011). Now, a new paradigm of the Cross-Race effect shows that people may be processing cross race faces differently because of social cognition and other motivational factors (Pica, Warren, Ross, & Kehn, 2015). So far, no new line-up techniques have been able to minimize the effects of the Cross Race effect even when people are made aware of the effect. This study will attempt to use a Blank Line up to differentiate people based on their ability to identify suspects to see if those who are better at identifying faces also experience a smaller Cross Race effect. References Pica, E., Warren, A. R., Ross, D. F., and Kehn, A. (2015). Choosing your words and pictures wisely: when do individuation instructions reduce the cross-race effect?. *Appl. Cognit. Psychol.*, 29, 360–368. doi: 10.1002/acp.3112. Young, S., Hugenberg, K., Bernstein, M., & Sacco, D. (2011). Perception and motivation on face recognition. *Personality and Social Psychology Review*, 16, 116-142. Doi:10.1177/1088868311418987.

117 Empathic anger and prosocial behavior: Adolescent bully intervention mediated by prosocial and aggressive propensity towards friends and strangers

Oakland University

Student Authors : John Caldwell, Alex Currington

Faculty Advisors : Mary Lewis

Abstract : Bullying is pervasive during adolescence, and its consequences are deleterious for all involved. Thus, factors that motivate bystanders to intervene are important to uncover in order to reduce the frequency with which bullying occurs. Vitaglione and Barnett (2003) found that empathic anger motivates youth to engage in prosocial aggression in order to defend victims during bullying situations; however, we propose that that this relationship is mediated by youths' propensity to also act prosocially and aggressively toward friends and strangers. One hundred middle school students (Mage = 14.27 , SD = 1.03, 52% female) and their mothers (Mage = 43.90, SD = 5.81) watch two bullying video clips. One sequence of clips involved an in-group victim (same ethnicity) and the other involving an out-group victim (of Asian descent). Each child-mother dyad discussed whether and the ways in which adolescents might intervene as bystanders. In addition, the adolescents completed measures assessing empathy (empathic concern, perspective taking, empathic anger) as well as prosocial and aggressive behavior toward friends and strangers. Conversations were transcribed verbatim and coded for the nature of taking responsibility (intervening) – helping the victim, confronting the bully, or seeking authority figures. Pearson correlations will be used to examine bivariate relationships and multi-mediation analysis will assess the proposed model. Possible implications for understanding empathic anger in bullying confrontation are discussed. Keywords: adolescent, aggression, bullying intervention, empathic anger, prosocial

118 A New Twist in the Quasar Radio Dichotomy: The Case of the Missing Outflows

University of Michigan - Flint

Student Authors : Viktoriah Serra

Faculty Advisors : Rajib Ganguly

Abstract : A previous study of mass outflows from growing black holes ("quasars") observed with the Cosmic Origins Spectrograph onboard the Hubble Space Telescope revealed questions about the bias either with regard to the orientation of the systems, or of something physically different between system that shine in the radio band ("radio-loud") and those that don't ("radio-quiet"). Of the one-hundred and forty-six radio-quiet quasars observed, thirty-nine showed the outflow in ultraviolet absorption by the N(4+) ion. Comparatively, of the nineteen radio-loud quasars that were observed, none N(4+) absorption. We hypothesize that sample of radio-loud quasars is biased in the orientation such that we do not see the outflows, rather than there being a physical difference. Nearly all of the radio-loud quasars are observed in a particular orientation. To further test this hypothesis, we are observing a sample of 11 radio-loud quasars with a variety of orientations. We present the results of our new Hubble Space Telescope observations thus far, along with the orientations of the objects and a possible solution to this mystery.



Meeting of Minds XXV



119 Pronominal Clitics in Double Object Constructions in Dominican Spanish

Oakland University

Student Authors : Bethany Griffith

Faculty Advisors : Lisa Levinson

Abstract : In this paper, I examine the grammaticality constraints of Dominican Spanish pronominal clitics in double object constructions. Pronominal clitics are a special type of pronoun. For example, the noun phrases in the Spanish double object sentence, “Doy el libro a María”, or “(I) will give the book to Maria”, can be replaced with “se (it) and “lo” (her) as in “Se lo doy”, which means the same thing with context but employs pronominal clitics. In this study, I examine the grammaticality judgements of Dominican Spanish speakers from Santo Domingo and compare speakers who have learned English or Haitian Creole with those who have not. This comparison can show whether learning English has impacted the kinds of sentences these speakers find grammatical. This test will be conducted through a questionnaire that asks speakers to rate how grammatical they find the sets of sentences. Such sentences include clitic orderings found ungrammatical in other variants of Spanish, such as “*Le me complicaron la vida a mi hija” or “They complicated my daughter’s life on me”. The paper discusses the extent to which pronominal clitic ordering in Dominican Spanish, with its proximity to Haitian Creole and English, remains consistent to other forms of Spanish.

120 Effectiveness of a Community-Based Exercise (Bicycling) Intervention on Bradykinesia in Parkinson’s Disease

University of Michigan - Flint

Student Authors : Robert Moore, Leah Parry, Marissa Zudell

Faculty Advisors : Nathaniel S. Miller

Abstract : Parkinson’s disease (PD) is a neurodegenerative disorder marked by slowed movement (bradykinesia). While medications are primarily used to treat PD symptoms, medication effectiveness is limited and wanes over time. Exercise has been suggested as an adjunctive intervention to mitigate PD symptoms. Here, we measured the effectiveness of an 8-week, community-based exercise intervention, Pedaling for Parkinson’s™ (PFP), on mitigating bradykinesia in 12 PD patients; results were compared to 13 healthy, age-matched controls. Bradykinesia was measured as the median fastest hand tapping inter-tap interval (ITI) over a sequence of 31 taps and the variability between ITIs at baseline and, again, after 4- and 8-weeks. Participants had marginally faster tapping (less bradykinesia) over 8 weeks of PFP ($p=.06$), but were also significantly more variable relative to controls ($p=.02$). Potential explanations for this pattern of results will be discussed.

121 Reprogramming of Somatic Cells into Induced Rod Photoreceptors

Oakland University

Student Authors : Joseph Bires

Faculty Advisors : Luis Villa-Diaz

Abstract : Age-related macular degeneration (AMD) is a progressive disease in which patients experience deterioration of their visual acuity, which leads to irreversible blindness. There are two forms of AMD. Exudative AMD is also known as wet AMD and the non-exudative AMD is also called atrophic and dry AMD. The primary cause of AMD is retinal atrophy due to the death of retinal pigment epithelial (RPE) cells and their overlying photoreceptors (PRs): rods and cones. As greater portions of the retina atrophies, scar tissue forms and vision deteriorates. To reverse this process, we attempted to convert the fibroblasts that make the scar tissue into rod PR cells. Our hypothesis is that mature and functional rod PRs are derivable in vitro by directly reprogramming fibroblasts via forcing the expression of transcription factors (TFs) necessary for PR development. Our methodology consists of overexpressing TFs in fibroblasts obtained from NRL-GFP positive transgenic mice and using immunocytochemistry for the analysis of NEUROD1 and CHX10 expression. We tested thirty-two combinations formulated by mixing of the following TFs: OTX2, CRX, NR2E3, NRL, and NEUROD1. Our results showed different rates in NRL-GFP-, CHX10-, and NEUROD1-positive cells among the 32 diverse groups of TF combinations. The highest rates of NRL-GFP-, CHX10-, and NEUROD1-positive cells were in the groups where OTX2 and CRX were overexpressed alone and together. This result suggests that OTX2 and CRX may have multiple regulatory roles in the expression of genes related to early PR development and might be necessary



Meeting of Minds XXV



components in the reprogramming process of fibroblasts into rod PRs. Although NEUROD1 contributes to several differentiation pathways, including early retinal ganglion cell formation, we found that when overexpressed alone and in different combinations with the other TFs, the expression of NRL and CHX10 decreased, indicating a less efficient transformation. To improve the reprogramming efficiency, we will investigate the effect of RAX and PAX6 overexpression in combination with OTX2 and CRX. Furthermore, we will recreate the conditions the retinal environment, in vitro, by co-culturing the fibroblasts with RPE cells derived from embryonic stem cells. This environment will be used in combination with the overexpression of the above-identified TFs to determine if the reprogramming of induced rod cells can be enhanced.

122 Stereoselective Synthesis of Potent Calcium Signal Modulator Acremomannolipin A

University of Michigan - Dearborn

Student Authors : Uddin Ahmed, Nader Berry, Xiaohua (Shannon) Li, Kevin Saybolt

Faculty Advisors : Xiaohua (Shannon) Li

Abstract : Acremomannolipin A, a novel glycoconjugate isolated from *Acremonium strictum*, was found to be a potent calcium signal modulator. Structurally,acremomannolipin A contains a D-mannopyranoside Beta-linked to a polyol. In this presentation, we will describe our synthesis of Acremomannolipin A in which the key beta-mannopyranosidic linkage has been successfully constructed via cesium carbonate-mediated stereoselective anomeric O-alkylation.

123 Chemical Synthesis of the 2-Deoxy Trisaccharide of Antitumor Antibiotic Landomycin A/E

University of Michigan - Dearborn

Student Authors : Xiaohua (Shannon) Li, Justin Woodward, Danyang Zhu, Jianglong Zhu

Faculty Advisors : Xiaohua (Shannon) Li

Abstract : The landomycins are a family of angucycline antitumor antibiotics isolated from *Streptomyces cyanogenus*. Among the landomycins, landomycin A possesses a broad spectrum of antitumor activity against a range of 60 cancer cell lines. Structurally, landomycin A contains an angular tetracyclic core as well as a hexassacharide subunit consisting of two repeat units of trisaccharide, while landomycin E contains one copy of this trisaccharide subunit. Although it is known that landomycin A inhibits DNA synthesis and G1/S cell cycle progression, the specific mechanism of action on cancer cells has not yet been determined. In this presentation, we will describe our concise synthesis of this 2-deoxy trisaccharide subunit of landomycin A/E.

124 Sacred Space: Creating Social Spaces within Difficult Living and Work Environments

University of Michigan - Dearborn

Student Authors : Paris Freeman, Rick Scott

Faculty Advisors : Paul Draus

Abstract : Sacred Space Our poster submission is a combination of a two year student directed effort of community engagement in urban sociology studies at the University of Michigan – Dearborn. The poster will recount efforts made by students to develop and create healthy social spaces within a substance abuse rehabilitation agency while learning about the surrounding urban neighborhoods in the City of Detroit. The poster aims to give a visual account of the evolving groups within the agency and client participation in the process of creating these spaces. A verbal explanation accompanies the visual to show how ethnographic, geographic, and field methods were used while focusing on theories of urban sociology. Our objective is to show sociological theories of place and how creative social spaces may influence change within a difficult living and working environment.



Meeting of Minds XXV



125 The effect of intermittent sucrose consumption related to alcohol dependence, modulated by naltrexone administration

Oakland University

Student Authors : Shannon Callahan, Anna Roberts

Faculty Advisors : Keith Williams

Abstract : Intermittent access to sucrose solution in rats has been shown to model binge-like behavior, which could predict future alcohol dependence. Naltrexone (NTX), an opioid antagonist, is capable of reducing the rewarding properties of both sucrose and alcohol consumption. The purpose of this study was to determine if intermittent access to sucrose resulted in binge-like behaviors, if intermittent or chronic access to sucrose affected ethanol consumption, and if NTX administration diminished reward-seeking behavior. Female Sprague-Dawley rats ($n = 32$) were trained to press levers in operant chambers to receive food pellets and sucrose solution. After operant training, rats were exposed to intermittent or chronic sucrose solution in their home cages for 8 weeks. Half of the rats ($n = 16$) were randomly assigned to intermittent access, in which they received 24 hour access to sucrose solution 3 days per week. The remaining rats ($n = 16$) received access to sucrose solution for 24 hours every night. Three days per week (Monday, Wednesday and Friday), acute sucrose consumption was measured after 30 minutes with the intent of capturing binge-like patterns of consumption. Following home-cage drinking, rats were placed in operant chambers to evaluate ethanol self-administration. Rats pressed levers to receive a sucrose and ethanol mixture, with the concentration of ethanol increasing as sucrose concentrations decreased. To assess the dose-dependent effects of NTX, rats were randomly assigned to receive one of four doses of NTX intraperitoneally (1, 3, 10, 30 mg/kg) compared to saline injections. After injection of either solution, rats self-administered sucrose solution in operant chambers. Results indicated that the intermittent group significantly drank more fluid during 30-minute binges compared to the chronic group. Group differences did not emerge during ethanol self-administration. Varying NTX doses did not differentially reduce sucrose self-administration, demonstrating no significant dose-dependent effects of NTX upon sucrose self-administration. Additionally, the 30 mg/kg dose significantly diminished responding between intermittent and chronic groups, resulting in less sucrose self-administration among intermittent rats. Future research should replicate our findings, as well as modify our research design, to successfully demonstrate susceptibility to alcohol dependence as a result of binge-like patterns of sucrose consumption.

126 Resiliency: The Competing Theories of Self-Regulation and Psychological Capital

Oakland University

Student Authors : Jenna Duronio

Faculty Advisors : Matthew McLarnon

Abstract : Luthans and colleagues (2007) developed a measure to assess positive psychological capital (PsyCap), or an individual's positive psychological state comprised of four facets: self-efficacy, optimism, hope, and resilience. Of particular interest is resilience, defined as the capacity to 'bounce back' from adversity (Luthans et al., 2007). However, McLarnon and Rothstein (2013) pointed out that this definition of resilience is lacking in that it overlooks the dynamic nature of resiliency as a process of recovery involving cognitive, affective, and behavioral self-regulatory processes, and developed the Workplace Resiliency Inventory (WRI) to assess this perspective. Little research has examined the overlap between these competing theories surrounding the construct of resiliency. The purpose of this study was to use a multiple regression analysis to examine the multivariate relationship between the PsyCap resiliency construct and the cognitive, affective, and behavioral self-regulatory process components of the WRI. Using data from 400 undergraduate students, results revealed that the self-regulatory components of the WRI accounted for 28.6% of the variance ($R^2 = .286$, $p < .001$) in the PsyCap resiliency facet. More specifically, affective and cognitive self-regulation demonstrated significant relations with PsyCap, $b = .126$, $p < .005$, and $b = .373$, $p < .001$, respectively. Behavioral self-regulation was not found to relate significantly with the PsyCap's resiliency facet, $b = -.045$, $p = .247$. On one hand, our results suggest moderate overlap between the WRI and PsyCap measures of resiliency, which was predominantly driven by associations involving affective and cognitive self-regulation. On the other hand, a non-significant relation between behavioral self-regulation and PsyCap suggests that PsyCap may not adequately assess critical behavioral components of the resiliency construct, thereby leading to questions regarding its content validity. Implications for future theory development and empirical research will be highlighted during the poster session.



Meeting of Minds XXV



127 Food Insecurity on College Campuses: Key Themes to Address Student Needs

University of Michigan - Dearborn

Student Authors : Asma Al-Khshali, Samyka Aloyo, Monica De Roche Brubaker, Teiana McGahey

Faculty Advisors : Carmel Price, Harmony Reppond, Natalie Sampson

Abstract : As the costs of college (e.g. tuition, room and board) for undergraduate degrees in the United States increase, more and more students face economic challenges that result in food insecurity. In order to combat this problematic phenomenon, colleges and universities have started their own food pantries to aid and serve their students. On October 16, 2016, 30 representatives from 16 Michigan campuses came together at the Michigan Food Pantry Summit to discuss their existing pantry or plans for a new pantry to address the growing need of food insecurity on college campuses. We collected data about the challenges of pantry work and identified 6 key themes amongst the problems and solutions learned: (1) MI campus pantries function within complex university and college systems, (2) MI campus pantries face real resource challenges, (3) MI campus pantries require meaningful data to demonstrate needs & impacts, (4) MI campus pantries strive to meet diverse needs, (5) MI campus pantries rely on diverse on- and off-campus partnerships, and (6) MI campus pantries must strive for sustainability. These themes identify the challenges and opportunities for development and implementation of pantries, as well as the need for effective related interventions to address cross-cutting socioeconomic needs of students. The purpose of this presentation is to discuss some of these issues that campus pantries face in addressing food insecurity and the effect that food insecurity has on student success and well-being.

128 An Assessment of Dietary Requirements of Surinam Cockroaches

University of Michigan - Dearborn

Student Authors : Ellana Collins

Faculty Advisors : David Susko

Abstract : This study evaluates the dietary preferences for food waste of Surinam cockroaches, (*Pycnoscelus Surinamensis*) for the purpose of blatticomposting (i.e. composting with cockroaches). Several different feeding trials were established for the cockroaches, using common household discarded food scraps. Items included oven-dried samples of lettuce, grapes, apples, bananas, and banana peels. Similar sized cockroaches were fed fixed amounts of these food items for a two-week duration. Weight gain of the roaches and mass of food consumed are used to estimate optimal roach growth and composting success. To date, preliminary food trial results indicate that lettuce is a preferred food waste item. Total weight of roaches, roach frass, and food consumed frass will continue to be measured in order to evaluate blatticomposting success.

129 When and Where I Enter: African American Women and the Campaign for Woman Suffrage

University of Michigan - Dearborn

Student Authors : Kelsey Griffin, Monique Hudson, Alexandra Jaworski, Rachel Oncza, Eva Sagolileh

Faculty Advisors : Georgina Hickey

Abstract : "When and Where I Enter": African American Women and the Campaign for Woman Suffrage This project explores the biographies of five African American women who campaigned for woman suffrage in the 19th and early 20th century. Beyond suffrage, these women engaged in education, abolition, medicine, music, poetry, writing, and a wide variety of civil rights activism. Despite their wide-ranging accomplishments, these women have been routinely excluded from suffrage history, and often overlooked in accounts of the early civil rights movement. With their unique approach to suffrage, they developed a vision for uplifting their families and communities, understanding suffrage as a tool to combat racial discrimination and promote African American advancement. This research has involved in-depth engagement with a variety of primary sources, including newspapers, photographs, census and organizational records, and works of the activists themselves. The biographies produced by this project are being featured in the online journal and database Women and Social Movements in the United States.



Meeting of Minds XXV



130 Legumes increase natural killer cells in children with increased risk for cardiovascular disease

University of Michigan - Flint

Student Authors : Jennifer Klapko, Kimberlyn Petty

Faculty Advisors : David Duriancik

Abstract : Approximately 7.8% of adolescents age 12-19 years old have total cholesterol levels of greater than 200 mg/dL which is considered high as 170 mg/dL is considered healthy for this age. High cholesterol can lead to cardiovascular disease at an early age. Studies have shown that legumes, and particularly navy beans, can lower total cholesterol. The objective of this experiment was to determine the effect of navy bean consumption on immune cell numbers in adolescents at risk for cardiovascular disease. The study assessed children between the ages of 8-13 years old with a total cholesterol greater than 183 mg/dL, HDL less than 60 mg/dL, and LDL greater than 100 mg/dL. These children were then randomly selected to add either navy bean powder or placebo to their diet. Peripheral blood from the children was obtained and flow cytometry performed to identify and quantify natural killer cells. We observed a slight increase in total natural killer percent of lymphocytes and CD56 dim/CD16+ natural killer cell subsets in subjects consuming navy bean compared to subjects consuming placebo. This pilot study provides justification and feasibility data to further assess legumes as preventative and/or therapeutic interventions in children at risk for cardiovascular disease.

131 Moral Reasoning & Prosocial Acts: Moral Internalization Values as a Predictor of Adolescent Bystander Intervention in Bullying

Oakland University

Student Authors : Lara Bede, Maria Kontogouris

Faculty Advisors : Mary Lewis

Abstract : Peer group pressure is the most effective means of interfering during bullying episodes. Observational research suggests that when bystanders stand up for the victims, bullying immediately stops over 50% of the time (Hawkins et. al., 2001). Ryan and Connell's (1989) theory of internalization indicates that self-perceptions of the reasons for underlying behavior are differentiated along a continuum of autonomy. This continuum is comprised of hierarchical categories that can be represented by different prosocial motivations, namely external, introjection, and identification. The aim of this study is to examine ways in which moral internalization values can predict whether a bystander would choose to intervene in a bullying situation, and the ways he/she would choose to do so. A sample of 100 mother ($M=43.90$, $SD=5.81$) and adolescent ($M=14.27$, $SD=1.03$) dyads viewed a sequence of bullying series, both in-group and outgroup scenarios. Adolescents completed the Moral Values Internalization Scale to assess their overall value internalization, in addition to other measures. Transcripts were coded for the ways in which adolescents would take responsibility or not as a bystander. Pearson's correlation will be used to determine the relationship between moral internalization and the frequency of comments regarding bystander intervention.

132 Bounds of Injectivity for the Numerical Range of a 2x2 Matrix

University of Michigan - Dearborn

Student Authors : Brooke Calhoun, Aaron Cofield, Brandon Lee, Brandi Wingate

Faculty Advisors : Hyejin Kim, Yunus Zeytuncu

Abstract : Let $\mathbf{c}(t)$ be a closed simple curve with area \mathbf{A} and a fixed perimeter \mathbf{I} , isoperimetric inequality of $\mathbf{c}(t)$ is given by,

$$\frac{P^2}{A} \geq 4\pi$$

only achieving equality when the $\mathbf{c}(t)$ is a circle. Since ancient times, the isoperimetric is has been proven and known in the second dimension. Today, this inequality is still important and has many applications (what are they?) and most of all, many are interested in proving that that the inequality is also true for three dimensional solids. Our research focuses on proving the 3-D isoperimetric inequality by looking at solids of revolution and showing that a sphere is the only solid which satisfies the equality. We will discuss the history of the isoperimetric problem, proofs for the two-dimensional case, and our new proof for the three-dimensional case.



Meeting of Minds XXV



133 An Assessment of Dietary Requirements of Surinam Cockroaches.

University of Michigan - Dearborn

Student Authors : Michael Mastrogiovanni

Faculty Advisors : David Susko

Abstract : This study examines the dietary requirements of the Surinam cockroach (*Pycnoscelus surinamensis*) in order to evaluate their use in blatticomposting (i.e. composting with roaches). A series of feeding trial experiments are being conducted utilizing artificial food blocks made with agar embedded with known amounts of proteins and carbohydrates to determine whether the roaches select a certain ratio of proteins and carbohydrates in their diet. If a preferred ratio exists, roach weight gain will be measured to determine if the ratio results in optimal growth. Preliminary results appear to demonstrate that the roaches exhibit preferential feeding for carbohydrates over proteins, meaning their preferred dietary ratio is likely to contain more carbohydrates than proteins. Weight changes of roaches, food sources, and roach frass produced over the duration of specific experiments will all be accounted for from each different feeding trial when determining a potential optimal ratio of carbohydrates and proteins in the roach diet.

134 Measurement of Wingbeat Frequency and Altitude of Migratory Flight in Swainson's Thrushes

University of Michigan - Dearborn

Student Authors : Hassan Al-fanharawi, Aleksa Fortuna, Nicholas Wesner

Faculty Advisors : Melissa Bowlin

Abstract : The small migratory bird, Swainson's Thrush, has a large migratory range, wintering as far south as South America and breeding as far north as Alaska and Canada. Migratory flight in small birds is energetically expensive, as it is a costly method of transport, though its rate of transport is the greatest compared to other locomotive methods like swimming. In thrushes, altitude during migratory flight varies constantly, by as much as hundreds of meters, resulting in a more energetically costly flight than if a single, unvarying altitude was maintained. During one Thrush's 6-hour flight, 90 minutes (2:15:25 to 3:45:25) were analyzed in 15s intervals for a quantitative count of wing beats every 13s, disregarding 2s bursts of unidentifiable data. From this, wing beat frequency was calculated, total pause lengths recorded and data flight bursts noted. From this flight, effective wing beat frequency (pause length included) averaged 11.24 ± 0.81 wing beats/s with actual wing beat frequency (pause lengths omitted) averaging 11.25 ± 0.81 wing beats/s, increasing or decreasing respectively with altitude change. Migratory thrushes actively slow their wing beat frequency and increase pause percentage during descent, and although not yet definitive, increase wing beat frequency and decrease pause frequency during ascent events in a comparable fashion. Maintenance of wing beat frequency during flight is implicated in maintenance of altitude, with changes in this frequency being potentially explained as a response to atmospheric conditions, an attraction to the red lights of communication towers, or orientation and navigation related events during flight.

135 Team building in the workplace - Understanding implicit bias against individuals who identify as homosexual and the effects on workplace productivity

Oakland University

Student Authors : Isaac Scherer

Faculty Advisors : Melissa McDonald

Abstract : Past research has documented negative emotions individuals feel while working with homosexuals of both sexes in an observational, naturalistic work setting. The present research study attempts to focus on 1 on 1 contact between heterosexual individuals and someone of the same sex who identifies as homosexual, with the purpose of examining the reactions heterosexual individuals experience during cooperative dyadic tasks while working closely with someone of the same sex that identifies as homosexual. To test this hypothesis researchers involved in this study paired 100 male and 100 female participants with a confederate of the same sex and allowed them to complete a set of inventories analyzing demographics, personality, disgust, and social dominance. Upon completion of these inventories, participants are instructed to complete a timed cooperative paired task in the form of assembling a small puzzle, using communication only to instruct a blindfolded confederate to build the puzzle. When the puzzle is completed participants are instructed to complete a second



Meeting of Minds XXV



set of inventories analyzing positive and negative affect and interpersonal judgment. Based on previous research, it is expected that individuals will show more negative emotions when interacting with someone of the same sex who identifies as homosexual, evaluate the partner more negatively, and take longer to complete the cooperative task.

136 Selectivity in the Heavy Metal Removal by Exopolysaccharide (EPS)-Producing Bacterial Isolates

University of Michigan - Dearborn

Student Authors : Aleksa Fortuna, Adam Oest, Fatima Sulaiman

Faculty Advisors : Sonia Tiquia-Arashiro

Abstract : Routine discharge of pollutants such as heavy metals into water systems has led to an increase in metal contamination of aquatic environments. Due to the presence of a large number of negative charges on the external cell layers, EPS-producing bacteria have been considered as very promising chelating agents for the removal of positively charged heavy metal ions from water solutions. This study aims to assess the selective removal of Pb, As, Cd, Cr, Cu, Mn, Ni and Zn by two R2A and two LB strains isolated from Saint Clair River. Dialysis assays were performed in mono- and bi-metal solutions. Metal removal in monometal solutions ranked Pb>Zn>Cu>Mn>Cd>Ni>As=Cr. This ranking was similar to the bi-metal solutions, with little to no removal of As and Cr. Overall, Pb was the preferred metal in bi-metal solutions and its maximum uptake was greater (2601 mg Pb/g dry mass) than observed in the monometal solutions (95-203 mg Pb/g dry mass), suggesting stimulation of Pb uptake. This result also implies that the strains showed high specificity and almost exclusive selectivity towards Pb, suggesting their use in the recovery of Pb from bi-metal solutions. The uptake of other metals was greater in monometal solutions than in bi-metal solutions, demonstrating inhibition of the metals. The LB isolates were not as efficient in removing metals as the R2A isolates in both mono- and bimetal solutions. Among the four strains, R19 showed the highest metal removal and can be a good candidate for metal recovery and removal in metal contaminated waters.

237 Determining the role that a lens crystallin-derived peptide may play in nuclear cataract caused by crystallin aggregation

Oakland University

Student Authors : Anthony Premceski

Faculty Advisors : Frank Giblin, Sivakumar Jeyarajan, Anbarasu Kumarasamy

Abstract : Cataract is a leading cause of blindness worldwide. The most common type is nuclear cataract (opacification in the lens center) that is associated with an age-related increase in oxidative stress. Our laboratory has developed a model for nuclear cataract in which guinea pigs are treated with hyperbaric O₂. The treatment causes aggregation of lens proteins, as well as degradation of the lens protein alpha crystallin into products which include alphaA (66-80) crystallin-derived peptide. The same peptide is present in old human lenses and human nuclear cataracts. It is believed that such peptides may induce crystallin aggregation; however, the mechanism needs to be elucidated. This research was conducted to determine whether alphaA (66-80) peptide will bind to guinea pig alphaA crystallin *in vitro*, creating hydrophobic patches that may accelerate aggregate formation. A fluorescence polarization (FP) assay was developed to test protein binding with peptide at different times over a 24-hour interval. Recombinant guinea pig alphaA crystallin was expressed in *E.coli* cells and purified using liquid chromatography. A fluorescein-tagged alphaA (66-80) crystallin peptide was obtained from Genscript. An initial increase in FP was observed at 4 hours, but values dropped by 24 hours, indicating protein aggregation. Bovine serum albumin (BSA) served as a control protein and was found to produce a continuous increase in FP for 24 hours. Transmission electron microscopy (TEM) analysis was used to visualize the interaction between the proteins and peptides. At 24 hours, TEM analysis showed large aggregates in long spherical chains for the alphaA peptide incubated with the alphaA crystallin. BSA incubated with the peptide did not show any such aggregation after 24 hours. The results demonstrate that the alpha (66-80) peptide can bind to guinea pig alphaA crystallin, promoting aggregation, and are applicable to the development of nuclear cataract, as well as other protein aggregation diseases such as Alzheimer's and Parkinson's.



Meeting of Minds XXV



238 Relations of shame and guilt with the prosocial behaviors and moral disengagement

Oakland University

Student Authors : Geena Osowski, Shelby Seyburn

Faculty Advisors : Mary Lewis

Abstract : Past research has investigated the associations of moral emotions such as shame and guilt in relation to moral behavior (Tangney et al., 2007). Guilt is associated with reparative behavior and responsibility acceptance. Similarly, prosocial behavior is associated with moral emotions and well-being of others. Shame, on the other hand, is associated with blaming victims and diffusing responsibility, both characterizations of moral disengagement (Menesini & Camodeca, 2008; Johnson & Connelly, 2016). The purpose of this study is to examine how guilt relates to prosocial behavior and how shame relates to moral disengagement in a sample of American adolescents. Mother-adolescent dyads (N = 100) engaged in open-ended discussions about being a bystander in bullying scenarios. Comments were transcribed and coded for the type of responsibility the individual took in intervening or withdrawing from the bully situation. Participants also completed an array of self-report measures including the Test of Self-conscious Affect (TOSCA; Tangney, Wagner, & Gramzow, 1989). It is hypothesized that those who report more guilt will have a higher frequency of engagement codes, exhibiting prosocial behavior, and those who report more shame will have a higher frequency of disengagement codes. Results will be analyzed using a Pearson correlation, and findings will relate to the association between moral emotions and bullying intervention.

239 The Heart of Climate Change Countermovement

Oakland University

Student Authors : Bethany Goss

Faculty Advisors : Laura Landolt

Abstract : The Heartland Institute is one of the major proponents of the counter-climate movement. It has been the subject of numerous scientific and political theoretical examination. Most scholars looking at the Heartland Institute talk about the mechanics of the Institute's NIPCC report, which presents contrary information about Climate Change and the UN supported IPCC. This particular work will discuss the Institute's global influence in the framework of Bob's Rival Transnational Advocacy Networks, in which Non-Governmental Organizations, International Governmental Organizations, and individuals work to establish a norm and breakdown the establishment of an opposing norm. In this case, the Heartland Institute is interested in the deconstruction of the Climate Protectionist Movement's claim that Global Warming is occurring rapidly, and this phenomena is the result of human industry. There are key markers for Transnational Advocacy Networks which are discussed at great length, such as the Institute's annual conference and the attendance of like-minded NGOs to this conference. There is the publicity the Institute received when it and its partners attended the COP21 Paris Forum which was discussing Climate Change. Also, the funding of related- and potential partners- of the Heartland Institute in Canada and Australia are examined in order to determine the level of the Institute's patronage for these organizations. The Heartland Institute lives up to its name, as it remains at the heart of the Climate Change Countermovement

240 Experimenting with the H₂SO₄-Mediated Hydrothermal Process to Produce Copper Nanocables

University of Michigan - Flint

Student Authors : Kaitlyn Sallans

Faculty Advisors : Mojtaba Vaziri

Abstract : Silver nanocables can be synthesized by mixing silver nitrate, glycerol, and sulfuric acid and heating the solution under pressure. It was tested to see if copper nanocables could be made in a similar fashion by substituting copper nitrate for the silver nitrate. As the concentration and ratios were adjusted, high amounts of copper sulfate and crystallized copper were created. Although the samples look promising, at the time of this submission, copper nanocables were not confirmed.



Meeting of Minds XXV



241 Multiple Wh-Fronting in Polish

Oakland University

Student Authors : Jessica Esch

Faculty Advisors : Lisa Levinson, Matt Tucker

Abstract : This paper explores the sentence structure of Polish (a Slavic language) with respect to the linguistic phenomena “multiple wh-fronting” (MWF) and “superiority” which many Slavic languages possess. Serbo-Croatian displays MWF phenomenon in (1), where both wh-questions can be moved to the front of the sentence and still remain grammatical. (1) Ko koga voli? who whom loves ‘Who loves whom?’ Although both question words can be fronted, there appears to be a constraint upon this movement in Serbo-Croatian: the subject wh-question must precede the object wh-question, as shown in (2) below: (2) * Koga ko voli? whom who loves ‘Who loves whom?’ *marks ungrammaticality However, no such constraint appears in Russian, another Slavic language, where the wh-questions can be order in either construction without causing ungrammaticality, as seen in (3). (3) Kogo kto ljubit? whom who loves ‘Who loves whom?’ Based off these findings in Slavic languages, it is hypothesized that Polish also has MWF and superiority constructions. Newly collected Polish data that test for the grammaticality of such sentences will be presented. The paper further explores the interactions with simple wh-movements (like (1)-(3)) and more complex types of movements like wh-islands and echo question constructions.

242 Fanning the Flames of Genius: The Relationship Between Grit and Creativity

University of Michigan - Dearborn

Student Authors : Bryce Meerhaeghe

Faculty Advisors : Francine Dolins

Abstract Generating novel solutions under stressful conditions typically requires endurance (grit) and insight into restructuring the components of a problem (creativity). The objectives of this study were to investigate the relationship between grit and creativity, and to explore how the effects of stress and personality traits may be correlated with these two constructs. Studies of grit revealed that perseverance of effort, a subscale of the construct, has shed light on grit’s connection to personality as both could be used as predictors of performance (Rimfeld, Kovas, Dale, & Plomin, 2016). Recent studies of creativity have shifted toward how one uses information rather than spontaneous creation, opening the concept up to further inquiry and exploring its relationship to personality: defining creative styles and how one would use the stimuli around them to solve a problem (Wang, Chen, Zhang, & Deng, 2016). However, despite the shared foundation in personality, little research has been done connecting grit to creativity directly. The present study tested undergraduate students majoring in varied disciplines at the University of Michigan-Dearborn. ranging from traditional STEM fields (e.g., Mathematics) to traditional creative studies (e.g., Art and Art History). We used the Grit (Grit-O) and Short Grit (Grit-S) Scales as well as the Kaufman Domains of Creativity Scale (DoC), to investigate the hypothesis that individuals scoring high in creativity within their respective fields would also score high in grit. The Big Five Inventory (BFI) and the Perceived Stress Scale (PSS) were used to explore individual differences in these measures. Our results showed that grit and creativity shared a strong correlation with personality as a mitigating factor, reinforcing previous findings while adding a new dimension to the relationship of all three. However, response to stress was found to have an inverse relationship with the two when used as a factor, indicating that while stress may promote grit, it may also inhibit creativity.

243 ProThro

University of Michigan - Flint

Student Authors : Nick Kreiner, Blake Ludwick, Max Simon, Matthew Wagner

Faculty Advisors : Na Zhu

Abstract : The ProThro offers a high-speed football launcher that shoots a football automatically through a conveyor into the wheel launcher. The design was based on generating a launch of 30-40 yards at a 20-degree angle with a tight spiral on the football. This unit would create an innovative method to practice and develop throwing and catching skills for athletes. This, along with recreational use, can be used to promote healthy activities and entertainment for children and adults. The ProThro is in indirect competition with the established



Meeting of Minds XXV



company called JUGS (JUGS Sports). The ProThro has additional features that the JUGG's football launcher does not incorporate, which gives it a competitive edge on the market. The ProThro not only offers an automatic feed, but also the capabilities of a return net aspect, meaning a football may be thrown back at the net and will funnel to the conveyor where it will be processed to correctly and accurately be launched again to the receiver.

244 Riluzole Exhibits Synergism with Paclitaxel in treating Triple Negative Breast Cancer Cells

University of Michigan - Dearborn

Student Authors : Miriam Bukhsh, Waris Jafry, Rachel Sexton

Faculty Advisors : Cecilia Speyer

Abstract : Triple Negative Breast Cancer (TNBC) is an aggressive form of breast cancer that does not respond to drugs targeting ER+/PR+ or HER2+. Paclitaxel is routinely given to treat TNBC. However, paclitaxel induces toxicity and a high percentage of patient tumors are resistant. We've previously demonstrated that riluzole, an FDA approved drug for ALS inhibits TNBC growth. In this study, we explore synergism between riluzole and paclitaxel. A synergistic effect on cell proliferation was observed via MTT assay in various TNBC cells with strongest synergism observed in paclitaxel resistant cells. Enhanced apoptosis was also demonstrated by measuring cleaved PARP and caspase-3. In vivo, riluzole also enhanced the cytotoxic effects of paclitaxel on TNBC tumors. The results of this study suggest that combination treatment of riluzole with paclitaxel would be effective in treating TNBC patients because it would reduce toxicity and would be beneficial for patients whose tumors are resistant to paclitaxel.

245 The Effects of Acute Stress and Working Memory

University of Michigan - Dearborn

Student Authors : Jay Sands

Faculty Advisors : Francine Dolins

Abstract : Stress affects multiple areas of the body, including the circulatory and nervous systems, consequently effecting long-term health outcomes (Slavich, 2016; Benham, et al., 2009). Stress also has an effect on memory, in particular, working memory and attentional processes (Qin, et al, 2009). The present study examines the relationship between acute stress (brief stressors) and working memory. Using an EKG to measure heart rates, participants assigned to the experimental condition were asked to perform a mental arithmetic task while receiving negative feedback as a "stressor" before completing a working memory task. For comparison, those participants in the control group were exposed instead to a neutral stimulus and asked to complete a simple working memory task. The results are discussed in relation to theories of visual attention, computation involving the visual-spatial sketchpad and working memory, and effects of brief stressors on cognition (Amso, 2016; Baddeley, 2012).

246 Hostility Towards Women Moderates the Relationship Between Childhood Trauma Exposure and Relationship Violence Perpetration

Oakland University

Student Authors : Daniel Gildner, Amber Lecik

Faculty Advisors : Scott Pickett

Abstract : A total of 132 undergraduate men completed surveys assessing their hostility towards women, childhood trauma, and relationship violence. Results showed hostility towards women moderated the relationship between childhood trauma and relationship violence such that only individuals with high hostility towards women perpetrated more relationship violence as exposure to childhood increased.



Meeting of Minds XXV



247 Optimizing Fusion Proteins For Purification and Protease Cleavage in SHuffle T7 Express E. coli

Oakland University

Student Authors : Jennifer Felisky

Faculty Advisors : Kenneth Mitton

Abstract : Many mammalian, including human, proteins fold into their functional native state with the assistance of chaperone proteins in an oxidizing environment quite different from the reduced cytoplasmic space of bacteria. Functional human proteins with disulfide bonds are difficult to manufacture in bacteria for these reasons. To make a recombinant disulfide-rich human growth factor in bacteria, we used a SHuffle strain of E. Coli, which is modified to have an oxidized cytoplasm and to express a disulfide shuffling chaperone. An initial version of Maltose Binding Protein (MBP)-Norrin was made and purified efficiently using the MBP system. The expression construct was made in the pD454-MBP plasmid. However, we were unable to cleave the expressed fusion protein due to inaccessibility of the proteolytic cleavage site. Molecular models of the protein suggested that the cut site was inaccessible between the MBP and Norrin domains. Based on that hypothesis, we redesigned a second version with a short-flexible linker segment on the Norrin side of the cleavage site and one short plus rigid alpha helical domain on the MBP side. This version was cleavable with 90% efficiency using HRV3C protease. **Conclusion:** We successfully developed a linker design strategy for improving proteolytic cleavage accessibility that can be used in bacterial protein production using the MBP-hybrid protein method. Using a combination of flexible and rigid linkers can aid in improving access of a rather large protease to the cleavage site.

248 Deadline in Athens and Greek Corruption: Comparing Fiction and Reality

Oakland University

Student Authors : Dayna Tan

Faculty Advisors : Adolfo Campoy-Cubillo

Abstract : In the novel *Deadline in Athens*, author Petros Markaris paints an intriguing picture of 1990s Greece that employs corruption, murder, and ultimately an international organ transplant and child trafficking crime ring to link an immigrant couple, catty news reporters, a gruff police detective, crooked government ministers, and influential media executives. At first, these elements may seem outlandish and farfetched, as they are the fictional foundation of a detective novel. However, when examining the novel under a literary microscope in the context of recent Greek history, it is apparent that Markaris' fictional narrative is based on a thorough analysis of the media climate and relationships among the media, police, and government in 1990s Greece. This paper compares Markaris' fictional corruption to tangible corruption among these three factions of Greek society and ultimately demonstrates a parallel between fiction and reality. This investigation may raise additional questions and skepticism regarding the role of the media, police, and government and the climate of potential corruption that intertwines this contentious threesome.

249 360 Degree Feedback: A Personal Case Study

University of Michigan - Dearborn

Student Authors : Melissa McCabee

Faculty Advisors : Roger Loeb

Abstract : Individuals naturally alter their behavior in different settings. 360-degree feedback surveys provide an overall measure of an individual's personal behavior styles. In this case study the author completed two different 360-degree feedback instruments using the same participating raters. The results are measured qualitatively by this author's lived experience in reviewing the feedback and being debriefed on action plans. Quantitatively the scores are compared and contrasted in order to assess the pros and cons of each survey. These results were used to consider the individual's self-perspective and the participating raters' overall perspective of the individual. Conclusions are discussed. Each survey is evaluated for its usefulness and future directions are provided. Although this is a case study, the overall process can be generalized.



Meeting of Minds XXV



250 Feeling nervous about feeling nervous: Attachment status and beliefs about anxiety influence life satisfaction in college students.

University of Michigan - Dearborn

Student Authors : Johnathan Apardian, Tim Carter, Dhyana Guntur, Ruby Issa , Dina Khatib, Christopher Phanord

Faculty Advisors : Caleb Siefert

Abstract : Adult Attachment theory (Mikulincer & Shaver, 2007) holds that attachment status impacts one's life experience in many ways. Prior research with college students links their satisfaction in college to attachment status. The present study seeks to expand on this work by looking at the contributions of interpersonal ambivalence, the core component of fearful-attachment, which is rarely examined in such studies. A total of 261 students (48.7% male; mean age = 20.15 (SD = 4.91) participated in this study. With regards to race/ethnicity, 47.1% identified as Caucasian, 24.1% identified as Arab-American/Middle Eastern, 6.9% identified as African-American/Black; 4.6% identified as Asian-American/Asian, 5.4% identified as Latin-American/Hispanic, 1.5% identified as Native American, 0.8% identified as Native Hawaiian, and 9.6% identified as "other". After giving consent, participants completed self-report measures, including measures of life satisfaction, attachment status, and beliefs about anxiety. Life satisfaction was negatively related to attachment avoidance ($r = -.42$, $p < .01$) and anxiety ($r = -.50$, $p < .01$), as well as interpersonal ambivalence ($r = -.61$, $p < .01$). Students who believed that anxiety was controllable were more satisfied ($r = .53$, $p < .01$). Consistent with prior research, the two attachment dimensions were predictive of life satisfaction ($R = .60$, $R^2 = .35$, $F(2, 255) = 70.73$, $p < .01$). The interaction between these dimensions did not improve prediction, but the inclusion of interpersonal ambivalence at Step 3 did ($R = .66$, $R^2 = .42$, $F(2, 255) = 70.73$, $p < .01$; $R^2 = .07$, $F(1, 251) = 31.69$, $p < .01$). In this model, the contribution of interpersonal ambivalence was larger ($B = -.39$), than that of avoidance ($B = -.14$) and anxiety ($B = -.21$). Beliefs regarding anxiety also improved prediction and examination of beta weights suggested that individuals high in attachment anxiety and/or interpersonal ambivalence are less satisfied in life due, in small part, to feeling that anxiety is something that cannot be controlled. Results are discussed in relation to earlier research in this area, limitations in the study are highlighted, and next steps for this work are stated.

251 Are Two Factors Really Optimal For Studying Adult Attachment: Evidence for an Interpersonal Ambivalence Factor.

University of Michigan - Dearborn

Student Authors : Saja Almusawi, Johnathon Apardian, Timothy Carter II, Dhyana Guntur, Ruby Issa, Samuel Kassab

Faculty Advisors : Caleb Siefert

Abstract : There is wide consensus that adult attachment is best conceptualized along two orthogonal dimensions: attachment anxiety and avoidance. This has led attachment researchers to rely heavily on scales that assess these two factors. An unintended consequence is that this may limit research on some aspects of attachment, such as fearful-avoidance. The present study examines if items from a new measure of adult attachment, the inventory of interpersonal ambivalence (IIA-18), create a unique factor from the two primary attachment dimensions. We hypothesized that IIA-18 items would have strong loadings on their own factor, would not cross-load onto other factors. Data for this project were gathered from a large online data collection using Mturk ($N = 700$) and an in-person data collection using college student research participants ($N = 540$). In both studies, participants provided informed consent and then filled out the IIA-18 and self-report measures of adult attachment. Results indicated that the data were appropriate for factor analysis (e.g., KMO value of $> .80$; all correlations on the anti-image diagonal $> .50$; scales fit a normal distribution). We tested two- and three-factor models. When selecting factors, we considered the scree plot, factor loadings, and simplicity of the models. The two-factor model was excellent for identifying the two primary factors with all avoidance items loading on one factor and all anxiety items loaded on another factor. There was considerable cross-loading of the IIA-18 items. In the three-factor model, IIA-18 items loaded entirely on a unique third factor, while avoidance and anxiety items continued to create their factors. The three factors accounted for 56% of the overall variance. As expected, the correlations between the anxiety and avoidance factors were quite small ($r = .17$, $p < .01$), while the correlation between the ambivalence factor and the avoidance ($r = .57$, $p < .01$) and anxiety factors ($r = .54$, $p < .01$) were large. Thus, the present finding suggests that the IIA-18 is measuring the diagonal vector between the two primary attachment dimensions, as expected. Overall, the findings support using the IIA-18 as a



Meeting of Minds XXV



compliment to dimensional adult attachment measures in future studies. Next steps for this research are discussed, as are limitations.

252 Northside Coffee Co. : How shade-grown coffee promotes biodiversity in the environment

Oakland University

Student Authors : Kelsey Hoey

Faculty Advisors : Meaghan Barry

Abstract : Northside Coffee Co. is a coffee house based in Chicago, IL that focuses on natural coffee growing techniques. By trading directly with farmers all around the world they are able to cultivate and sustain working relationships with the growers which helps in getting the best coffee. The farmers they trade with are also practicing shade-grown coffee techniques—meaning that the coffee is grown in the existing forest with little to no alterations to the foliage. Shade-grown coffee promotes biodiversity in the forest while providing people with organic coffee beans.

253 Evaluating College Campus Sexual Assault: Do students' ethnicity or gender affect their perceptions of rape?

University of Michigan - Dearborn

Student Authors : Kayla Sall, Ellen Stewart

Faculty Advisors : Pamela McAuslan

Abstract : Caucasian and Arab-American female and male students attending a Midwestern (USA) public university reported their perceptions of a sexual assault scenario. After reading a rape vignette concerning a heterosexual college couple, participants gave their impressions of the victim and perpetrator's relationship, level of responsibility for the outcome, and whether or not the scenario would qualify as sexual assault. Half of the sample received a vignette in which the couple had a prior sexual history, and the other half received a story where the couple had not engaged beyond kissing. It is hypothesized there will be gender and ethnic differences in viewing the scenario as rape and whether the couple had a prior sexual history will affect how severely participants view sexual assault. Insight into how gender and ethnicity affect participants' views of sexual assault can be utilized to better understand how to design effective, comprehensive sexual education programs for the future.

255 PARP-1/PAR Activity in Cultured Human Lens Epithelial Cells Exposed to Two Levels of UVB Light

Oakland University

Student Authors : Maria Donovan

Faculty Advisors : Frank Giblin

Abstract : Age related cataracts are the second leading cause of blindness in the United States. Cortical cataract (an opacification in the lens periphery) is a major type of this disease; however, little is known about its mechanism of formation. One cause is known to be solar UVB radiation, possibly through UVB-induced damage to DNA present in the lens epithelium. Here, we investigated DNA damage and repair in cultured human lens epithelial cells (LECs) exposed to two different intensities of UVB light, 0.9mW/cm^2 and 0.09mW/cm^2 . Following UVB exposure (peak wavelength of 312 nm), cells were incubated for various times, and analyzed for DNA strand breaks (TMR Roche Red), reactive oxygen species (CellROX), cell viability (MTT), and fluorescence immunocytochemistry, with the latter assay employing antibodies for the DNA repair enzyme poly(ADP)-ribose polymerase 1 (PARP-1) and poly(ADP)-ribose (PAR) polymers. The results indicated a biphasic mechanism for the higher dose of UVB in which a first phase of DNA strand breaks were repaired immediately after exposure, and then followed by a second phase of strand breaks at 90 min, which were repaired again. In contrast, for the lower dose of UVB there was only an initial occurrence of DNA strand breaks and repair. Other events



Meeting of Minds XXV



occurring 90 min after the high UVB dose included a dramatic second phase of PARP-1 activation and PAR formation, bursts of reactive oxygen species formation (superoxide and H_2O_2) both within the mitochondria and nucleus, a translocation of PAR from the nucleus to the mitochondria, and an ultimate 70% loss of cell viability occurring after 24 hrs. The results provide evidence for an important role for PARP-1 in protecting the human lens epithelium against low levels of UVB light, and possibly participating in the triggering of cell death following exposure to toxic levels of radiation.

256 Should I Stay or Should I Go: Interpersonal Ambivalence is Linked to Stress-Related Symptoms in College Students

University of Michigan - Dearborn

Student Authors : Saja Almusawi, Johnathon Aparidian, Tim Carter, Dhyana Guntur, Ruby Issa, Dina Khatib

Faculty Advisors : Caleb Siefert

Abstract : For many young adults, college is a time of transition. For some, that transition can be stressful. Attachment status has been linked to the ability to manage stressors in various life situation. The present study examines if attachment status and healthy dependency influence college student's experience of stress related physical symptoms (e.g., headaches; nausea). We proposed that individuals high in interpersonal ambivalence would experience less satisfaction and more stress-related symptoms. A total of 332 students (46.7% male; mean age = 19.85 [SD = 4.24]) voluntarily participated in this study. Of these, 43% identified as Caucasian, 22% identified as Arab-American/Middle Eastern, 9.3% identified as African-American/Black; 7% identified as Asian-American/Asian, 6.3% identified as Latin-American/Hispanic, 1.2% identified as Native American, and 10.2% identified as "other". After providing informed consent, participants completed a series of self-report measures, including measures of interpersonal ambivalence, attachment, healthy dependency, and stress-related physical symptoms. Experiencing a greater number of stress-related physical symptoms was associated with both attachment anxiety ($r = .18$, $p = .02$), avoidance ($r = .22$, $p < .01$), and interpersonal ambivalence ($r = .31$, $p < .01$), and negatively linked to healthy dependency ($r = -.36$, $p < .01$). Mediation analyses indicated that associations between the two attachment dimensions and stress-related physical symptoms were almost entirely explained by interpersonal ambivalence. The relationships between interpersonal ambivalence and stress-related physical symptoms was partially explained by healthy dependency ($R^2 = .04$, $F(1, 150) = 6.34$, $p = .01$). Overall, results suggest that students in college with high levels of interpersonal ambivalence experience higher stress and more frequent or intense physical symptoms associated with stress. As expected, these difficulties seem to be linked, at least in part, to challenges relying on others in a healthy manner. Results are discussed in the context of prior research, study limitations are noted, and future directions are reviewed.

257 Comparing the Effects of VEGFA-165 and its Anti-Angiogenic B Isoform on the Proliferation of Human Retinal Microvascular Endothelial Cells

Oakland University

Student Authors : Regan Miller

Faculty Advisors : Wendy Dailey , Kenneth Mitton

Abstract : Vascular endothelial growth factor (VEGF) is an essential protein involved in signaling pathways that trigger proliferation and angiogenesis (growth of blood vessels). This factor has two isoforms, a and b. While VEGFA-165a has been found to induce proliferation and therefore cause angiogenesis, isoform b is currently being studied and appears to have anti-angiogenic properties in certain cells. This is of clinical importance because the ability to halt abnormal growth of blood vessels could lead to the development of treatments for certain retinal diseases, such as diabetic retinopathy. However, previous studies haven't been done with human retinal microvascular cells (HRMECs) specifically. Therefore, the Pediatric Retinal Research Lab at the Eye Research Institute of Oakland University, carried out proliferation assays to compare the growth effects of the two different isoforms on HRMECs. Through the usage of a calibration curve created by our lab, we were able to correlate the signal from the scanner to a rough estimate of the number of cells present per well. Using this data, we found that the proliferation of the cells treated with the b isoform were either statistically higher or not



Meeting of Minds XXV



statistically different from the proliferation with the a isoform. Based on these results, the b isoform appears to not have an anti-angiogenic effect on human retinal microvascular endothelial cells.

258 Limited factor invariance for the Experiences in Close Relationships-Short Form across Caucasian and Arab-American college student respondents.

University of Michigan - Dearborn

Student Authors : John Apardian, Tim Carter, Dhyana Guntur, Ruby Issa, Saja Almusawi, Christopher Phanord

Faculty Advisors : Caleb Siefert

Abstract : Several self-report measures have been developed to study attachment in adult romantic relationships. One widely used measure is the experiences in close relationships-short form (ECR-S; Wei et al., 2007). Research generally supports the psychometric adequacy and construct validity of the ECR-S, and confirmatory factor analysis (CFA) supports the measures factor structure. The invariance of the ECR-S factor structure, however, has not been tested across all groups. In the present study, we examine if the ECR-S factors are invariant across Caucasian and Arab-American college students. A sample of 562 college students participated in this study, of these 403 identified as Caucasian (50.01 % Male), 159 identified as Arab-American (38.8% Male). After providing consent, participants filled out a series of measures, including the ECR-S. CFA was conducted using AMOS, we initially specified a factor model, with 6-item per Attachment Anxiety and 6-item per Attachment Avoidance. Consistent with Wei et al., we controlled for positive and negative wording for items. Initial fit for the model was adequate to poor. Modification indices indicated that fit would improve notably for both groups if two error terms were allowed to correlate. Fit statistics for model, (referred to as Model 3) showed adequate fit for Caucasians ($X^2(39) = 164.16, p < .001$; RMSEA = .09; CFI = .93; NNFI = .88) and for Arab-Americans ($X^2(39) = 62.65, p < .001$; RMSEA = .06; CFI = .96; NNFI = .94). Next, we tested for strict factor invariance by comparing a model in which every path, variance, and correlation was constrained across groups ($X^2(103) = 314.12, p < .001$; RMSEA = .06; CFI = .91; NNFI = .89), with a model in which these variables were freely estimated across groups ($X^2(78) = 226.80, p < .001$; RMSEA = .06; CFI = .94; NNFI = .90). A X^2 difference test, however, was significant, indicating that the model was not fully invariant across groups ($X^2 = 87.32, p < .001$). We examined variations of this model and determined what aspects of the model are and are not invariant. The results of this study are discussed in light of prior research, limitations are noted, and next steps are described.

259 Tales From Around the World

Oakland University

Student Authors : Sarah Allen

Faculty Advisors : Meghan Barry

Abstract : Tales from Around the World is an animated digital book that tells stories from around the world that explain natural occurrences. Through the animated text and images, the goal of the ebook is to engage children in a dynamic reading experience to encourage them to read more. (Attached is a PDF file of the cover and selected pages that are not animated. To view the animations, please visit:

<https://indd.adobe.com/view/19294cfa-6e0e-495e-a582-c57fb0303aa5>)

260 Assessing Barriers to Accessibility of Free Preventive Health Care Resources Available in the Cody-Rouge Neighborhood

University of Michigan - Dearborn

Student Authors : Alex Reardon, Emma Watters

Faculty Advisors : David Law

Abstract : In line with the goals outlined by the National Prevention Strategy, employees at Joy-Southfield CDC and Covenant Community Care are working to forge the connections between clinical and community preventive services in order to empower people and eliminate health disparities. That being said, sometimes these connections are difficult to make. Currently, community members are not utilizing available free preventive health care resources at lower rates than desired. Our project aims to assess the barriers and factors



Meeting of Minds XXV



responsible for these low rates. Ultimately, the results of the assessment could lay the groundwork for future barrier-related interventions.

261 Measuring Interpersonal Ambivalence: Further Evidence For the Psychometric Adequacy and Construct Validity of The Inventory of Interpersonal Ambivalence

University of Michigan - Dearborn

Student Authors : Saja Almusawi, Johnathan Apardian, Timothy Carter, Dhyana Guntur, Ruby Issa, Dina Khatib

Faculty Advisors : Caleb Siefert

Abstract : Current measure of adult attachment may be somewhat limited in terms of measuring fearful attachment. The key component of this style is ambivalence about interpersonal closeness. Individuals high in fearful attachment are aware of a desire for connection with others, while simultaneously fearing they will be hurt if they let others get close. We developed the Inventory of Interpersonal Ambivalence (IIA) to directly assess interpersonal ambivalence. An early study with this measure suggested adequate psychoemetrics. The present study follows up on these findings. College students (N = 415; 47.2% male) made up the study sample. The ethnic makeup of the sample was as follows: 44.3% identified as Caucasian/White; 22.7% identified as Middle-Eastern/Arab-American; 7.5% identified as Asian/Asian-American; 8.7% identified as Black/African-American; 6.3% identified as Hispanic/Hispanic-American; 1.2% identified as Native American, and 9.2% identified as "Other". After providing consent, participants filled out a series of questionnaires tapping attachment status, life satisfaction, and self-view. The IIA achieved strong psychometric properties, with excellent internal consistency ($\alpha = .90$) and all IIA items showing corrected item-to-scale correlations of .39 or greater (Mean = .54 [SD = .05]). A principal components analysis suggested three intercorrelated factors explaining 50% of the variance (the first factor accounted for 37% of the variance). The IIA showed the expected pattern of correlations with attachment prototype scores, specifically, the association with fearful attachment was largest ($r = .52, p < .01$), followed by secure prototype fit ($r = -.46, p < .01$), followed by preoccupied prototype fit ($r = .23, p < .01$) and the dismissive prototype fit ($r = .22, p < .01$). The IIA was also associated with attachment anxiety ($r = .45, p < .01$) and attachment avoidance ($r = .45, p < .01$). Consistent with theoretical predictions, IIA total scores were also negatively associated with self-esteem ($r = -.55, p < .01$) and reduced subjective well-being ($r = -.52, p < .01$). Hierarchical regressions, with the two attachment dimensions entered on the first step and the IIA-18 entered on the second step, revealed that interpersonal ambivalence incrementally improved the prediction of both self-esteem and life satisfaction beyond what was accounted for by the attachment dimensions. Overall, these data provide early evidence that interpersonal ambivalence is a meaningful construct that relates to current measures of adult attachment in theoretically anticipated ways. Implications of these findings are discussed within the context of prior studies. Limitations are noted and next steps for developing the measure are described.

262 How can environmental factors affect eye disease?

Oakland University

Student Authors : Katelyn Silva

Faculty Advisors : Sanela Martić

Abstract : The crystallin protein, commonly found in the eye, brain, and other areas of the body, prevents protein aggregation which leads to diseases.¹ Specifically, the protein aggregation leads to clouding of the eye lens causing degeneration or cataracts. A contributing mechanism of degeneration may be linked to the formation of radicals, which may be induced by radiation or metals. Hence, understanding how UV-irradiation and metal ions contribute to protein aggregation leading to eye diseases is critical. We evaluated the effects of radiation in the presence of metal ions (Cu (II), Zn (II), Fe (II), and Fe (III) perchlorate salts) on the aggregation of the crystallin peptides. The aggregation of the metallo-peptides was detected by transmission electron microscopy. The aggregate morphologies were modulated in the presence of certain metal ions and after radiation. References 1 Banerjee, P. R.; Pande, A.; Shekhtman, A.; Pande, J. Molecular Mechanism of the Chaperone Function of Mini- α -Crystallin, a 19-Residue Peptide of Human α -Crystallin. *Biochemistry*. 2015, 54, 505-515.



Meeting of Minds XXV



263 The effect of light on dopamine synthesis in the retina

Oakland University

Student Authors : Maya Sammane

Faculty Advisors : Sheng-Nan Qiao, Dao-Qi Zhang

Abstract : The effect of light on dopamine synthesis in the retina Maya Sammane¹, Sheng-Nan Qiao^{1 2}, Dr. Dao-Qi Zhang¹ (¹Eye Research Institute, Oakland University, MI; ²Institute of Brain Science, Fudan University, China) Dopamine is an important neurotransmitter responsible for a variety of functions in the central nervous system. This chemical messenger is involved in light adaptation of the visual system. Light adaptation is essential to visual acuity in a world where the eyes must instantly adapt to changing light conditions. However, the effect of different light conditions on dopamine synthesis levels in the retina remains unclear. The retina contains three classes of photosensitive cells: rods function mostly under dim light conditions, while cones and melanopsin ganglion cells function under bright light conditions. The objective of this study is to determine how each photoreceptor class contributes to dopamine synthesis levels. To achieve this objective, a western blot protein quantification assay was used to determine relative dopamine synthesis levels in retinas from mice. Single photoreceptor function-only mice were used to represent each photoreceptor's response to various light conditions. We found that rod-function-only mice had the highest TH expression under dim light when compared to bright light and dark conditions. Cone-function-only mice had higher TH expression under bright light versus dark conditions. Melanopsin-function-only mice also exhibited higher TH expression under bright light versus dark conditions. The results suggest that dim light conditions lead to increased dopamine synthesis levels via rods and bright light conditions potentially increase dopamine synthesis levels via cones and melanopsin ganglion cells.

264 Plane Strain Versus Plane Stress in the Mechanical Bidomain Model

Oakland University

Student Authors : Chad Scribner

Faculty Advisors : Bradley Roth

Abstract : The mechanical bidomain model is a mathematical model that describes the biomechanics of cardiac tissue. The model is represented by an elastic coupling between two solid phases, the extracellular and intracellular spaces. The mechanical bidomain model describes membrane forces that control mechanotransduction and remodeling. Most two-dimensional (x,y) calculations based on mechanical equilibrium assume plane strain, the displacement in the z direction is zero. Another assumption, which may be more appropriate for thin monolayers of cells, is plane stress. Plane stress is when the normal and shear stress in the z direction is zero. Our goal is to solve a simple yet fundamental biomechanical problem using the mechanical bidomain model, first assuming plane strain, and then plane stress. The partial differential equations governing the displacement of the tissue were solved analytically for a tissue contracting along the myocardial fibers. Plane strain predicted zero displacement, so mechanotransduction does not occur. Plane stress predicted a boundary layer of mechanotransduction at the edge of the tissue. These different results indicate that researchers must be careful to specify plane stress versus plane strain when modeling the biomechanics of tissue.

265 When is Advocacy Effective? Examining the Women and Gender Constituency at the United Nations Framework Convention on Climate Change

Oakland University

Student Authors : Caroline Wolber

Faculty Advisors : Laura Landolt

Abstract : Women's rights are a crucial aspect of environmental rights, because women, particularly those in the developing world, are disproportionately harmed by climate change (Alston, 2013). Women's greater vulnerability to climate change is explained by higher levels of poverty, increased familial responsibilities, less frequent land ownership, lower levels of education, and increased risk of death during a 'climate event' such as a hurricane or tsunami (Dankelman, 2010; Alston, 2013; Women Watch, n.d.). In response to these patterns, women's environmental rights non-governmental organizations (NGOs) have begun to advocate for greater



Meeting of Minds XXV



attention to women's vulnerability in various domestic and international domains. One arena where these NGOs are particularly active is in the Women and Gender Constituency (WGC) of the United Nations Framework Convention on Climate Change (UNFCCC). However, little is known about whether, why, how, and how often the UNFCCC follows the recommendations of the WGC, as well as whether, why, how, and how often the recommendations of other marginalized groups who are affected by climate change (Ciplet, 2014). My research explores these questions through a series of observations and interviews at the 2017 UNFCCC in Bonn, Germany. By examining the advocacy efforts of the WGC, I seek to determine how this group can advocate more successfully to improve the lives of the women in the developing world who are so adversely affected by climate change.

266 Children's Understanding of the Biological Principle of Kinship

Oakland University

Student Authors : Lama Hodroj

Faculty Advisors : Lakshmi Raman

Abstract : This study investigates children's understanding of the biological principle of kinship. One design will investigate the child's understanding of parent relationships to their kin. Another design looks at the understanding of birth order in regards to the siblings. The children will be presented with various vignettes highlighting the relationships between the child and the parent as well as the child and sibling with corresponding images that illustrate the individual characters.

267 Narcissistic Admiration and Narcissistic Rivalry: How do Narcissists Respond to Daily Status and Inclusion?

Oakland University

Student Authors : Kelsey Hobbs

Faculty Advisors : Virgil Zeigler-Hill

Abstract : Narcissism is a complex and multifaceted construct that has been described in various ways (e.g., overt vs. covert, grandiose vs. vulnerable). Back et al. (2013) proposed the Narcissistic Admiration and Rivalry Concept (NARC) model to account for the dualistic nature of narcissism. The NARC model argues that individuals can maintain their grandiose self-views by employing two independent but coexisting strategies: assertive self-enhancement (narcissistic admiration) and antagonistic self-protection (narcissistic rivalry). We will present the results of a recent study that used the NARC model to gain a more nuanced understanding of how individuals with narcissistic tendencies respond to daily experiences concerning status and inclusion. This study includes data from 356 undergraduates (124 men, 232 women) who completed a self-report measure of narcissism as well as daily measures concerning their perceived status, perceived inclusion, and state self-esteem for up to 7 days (a total of 1,415 daily measures were completed which is an average of 3.97 daily measures for each participant). We analyzed the data using a series of multilevel models due to the fact that observations at one level of analysis were nested within another level of analysis (i.e., daily measures were nested within individuals; Bryk, Raudenbush, & Congdon, 1998). At a conceptual level, these models involved two steps. In the first step, a regression equation was estimated for each individual at Level 1 (the within-person level) to yield intercept and slope coefficients that serve as an index of the association between variables at the daily level (e.g., Does state self-esteem tend to be higher on days when people perceive their status to be higher?). For the second step, Level 2 analyses (the between-persons level) examined whether the regression slopes obtained from the Level 1 analyses differed across individuals depending on their level of narcissistic admiration and narcissistic rivalry (e.g., Are individuals with high levels of narcissistic admiration especially likely to report higher levels of state self-esteem on days when they perceive their status to be high?). Our results supported our hypothesis such that narcissistic admiration emerged as a significant moderator of the association between daily perceived status and state self-esteem ($b = .10$, $p = .02$). That is, individuals with high levels of narcissistic admiration reported the highest level of state self-esteem on the days when they perceived themselves to have relatively high levels of status. Our discussion will focus on the implications of these results for the understanding of narcissism.



Meeting of Minds XXV



268 Perceptions of Water Quality and Lead Poisoning Knowledge

University of Michigan - Flint

Student Authors : Gerald Augustin, Drew Boulton

Faculty Advisors : Marsha Lesley

Abstract : In February 2016, Dr. Hanna-Attisha and colleagues released a study revealing that blood lead levels in children of Flint, Michigan had risen significantly since the decision to change water sources from Lake Huron to the Flint River. The corrosiveness of the water has caused the lead pipes that supply the city's water to break down and release lead into the water, contaminating it. Although lead is the main concern there are also other contaminants such as bacterial build-up of E. Coli and a possibly Legionella, along with carcinogenic trihalomethanes because of the over-chlorination. For our study, we surveyed the people of Flint on the University of Michigan-Flint campus to evaluate their perceptions of the Flint water crisis and determine which areas of knowledge regarding lead poisoning and prevention methods are going unknown. Our goal was to identify the level of comfort people have about Flint water in different settings and to fill the knowledge gaps through educating the public by giving them information about absorption and prevention methods that they need. Findings from our study indicate that there is a lack of knowledge regarding lead poisoning prevention and there still continues to be skepticism over whether the water in the area is safe to drink.

269 The F Word

Oakland University

Student Authors : Taylor Reyes

Faculty Advisors : Meaghan Barry

Abstract : The F Word was my thesis project from the fall semester of 2016. This project, which I created from the ground up, delves into what I consider the f word: feminism. This is a real-life podcast and each episode touches on a different subject matter regarding feminism: the triumphs and failures that determine the female, male, and all other genders. What will be created is a poster series that showcases each of the episodes current subjects: rape, female sexuality, and successful women. You can find the current episodes at the website www.thefword.net

270 Children's understanding family relationships

Oakland University

Student Authors : Jennifer Ishaq, Gabriela Saenz

Faculty Advisors : Lakshmi Raman

Abstract : The study examines children's understanding of kinship relationships between siblings and parents. We are interested in determining if children recognize that kinship does not change based on external relationships.

271 Microbiological Quality and Antibiotic Resistance of Shrimp Retailed in Rochester, MI

Oakland University

Student Authors : Andrina Mamo

Faculty Advisors : Satish Walia

Abstract : In 2009, the United States imported 589,670 metric tons of farmed shrimp worth more than \$6 billion from Asia. Antibiotics are used in the shrimp ponds to stimulate growth and to retard the incidence of diseases caused by overcrowded, factory farm conditions. The indiscriminate use of these antibiotics may select bacteria resistant to multiple antibiotics, and such bacteria may transfer their antibiotic resistance determinants to pathogenic bacteria. The aim of the study was to investigate the prevalence and the antimicrobial resistance patterns of gram-negative bacteria isolated from shrimp retailed in Rochester, Michigan. In this study, a total of 16 shrimp samples were collected from retail grocery stores located in Rochester, MI. Out of 16 samples, 63% showed positive growth for *Vibrio* spp. as indicated by growth on TCBS agar. In this study eighty-three gram-negative bacterial isolates were tested for antibiotic susceptibility against six antibiotics (gentamicin [GEM], tetracycline [TET], ampicillin [AMP], ciprofloxacin [CIP], chloramphenicol [CHL], and ceftazidime [CEF]) by Kirby-Bauer method of disk diffusion. Bacteria showed high rates of resistance against ampicillin (58%), while a moderate rate was observed for gentamicin (35%) and intermediate resistance towards tetracycline (20%) and



Meeting of Minds XXV



ciprofloxacin (20%). A low resistance rate was recorded against chloramphenicol (11%). Ceftazidime clavulanic acid resistance was found in 25% of the samples. Seven percent of the isolates were resistant to 4 antibiotics, displaying 3 different patterns. 22 out of 83 samples (27%) were resistant to a combination of 3 or more antibiotics. Only one isolate, AM 100, was resistant to 5 antibiotics. (GEM, TET, AMP, CHL, CEF). The heterotrophic bacterial count on Tryptic Soy Agar plates were ranging from 7.8×10^2 CFU/g to 4.18×10^3 CFU/g, meeting the microbiological quality standards for human consumption. The results of this study revealed the ubiquitous nature of *Vibrio* spp. in shrimp at retail. To reduce the potential risk of *Vibrio* infections due to handling or consumption of undercooked seafood, good manufacturing practice as well as safe handling and processing should be encouraged.

272 An Exploratory Factor Analysis of Ratings for Self-Defining Memories

University of Michigan - Dearborn

Student Authors : Danielle Funke, Gina Noguerras, Mariam Saad

Faculty Advisors : Caleb Siefert

Abstract : It is possible that one's autobiographical memories may say something about one's personality. Previous research has linked self-defining memories to personality characteristics. The purpose of the present study is to examine the factor structure of a rating system for coding self-defining memories. A sample of 86 participants (59.3% female) consented to this study. Regarding ethnic identity, 55.8% identified as Caucasian, 4.7% identified as African-American, 15.1% identified as Arab-American, 11.6% identified as Asian, 5.8% identified as Hispanic, and 7% identified as "Other." Participants completed the study in small groups of four or less. Participants first completed a series of self-report measures, and then completed the Talking About Life Events (TALE) task. In the TALE task, participants are asked to a recall self-defining memory for nine different prompts. A self-defining memory is defined as 1) an event that occurred over a year ago, 2) an event that involves strong emotions, 3) an event that has been reflected on multiple times, and 4) an event that shaped who you are today. Undergraduate raters, blind to all data on the participant, were later trained to rate the memories using a number of scales. Raters achieved good to excellent inter-rater reliability (ICC (2,3) > .65 for all 16 scales). These ratings were subjected to a Principal Axis Factor Analysis (with Direct Oblim Rotation). We examined multiple models, before settling in a three-factor model. The three factors explained 57% of the variance in the data. Fourteen of the sixteen scales had clear factor loadings on a single factor. The three factors involved a negative emotion-withdrawing factor, a positive emotion-in control factor, and an aggressive factor. The aggression and negative emotion-withdrawing factors were moderately related ($r = .37$, $p < .01$), but neither factor was strongly related to the Positive Emotion-In Control Factor (r values of $< .20$). Overall, the findings suggest that self-defining memories can be viewed as varying based on three dimensions. Results are discussed in relation to prior studies on self-defining memories. Limitations and next steps are also included.

273 Potential Environmental Conditions That Influence Human Risk Assessment of "creepiness"

University of Michigan - Flint

Student Authors : Kevin Micheals, Jennifer Ritchie, Logan Rubel, Jason Scimeni, Anna Winkowski

Faculty Advisors : William McKibbin

Abstract : The term "creepy" seems to be commonly understood as a description expressing an unpleasant feeling of fear or uneasiness. However, little is understood about the psychological mechanisms underlying this sensation. Two prior studies have examined characteristics associated with creepiness. These studies demonstrated a relationship between creepiness and trustworthiness. The studies also showed evidence that the ambiguity of a situation may influence perceptions of creepiness. Finally, persons who represent an ambiguous threat may be perceived as creepier. The present study seeks to address environmental conditions that may affect the perception of creepiness. Our study has participants view photographs of criminals who committed non-violent, non-sexual crimes and criminals who committed violent sexual crimes in two separate lighting conditions. We hypothesize that the photographs in the dark lighting condition will be rated creepier on average than the photographs viewed in the bright lighting condition. We further hypothesize that photographs of criminals convicted of violent sexual crimes will be rated creepier on average in both lighting conditions than the criminals who were convicted of non-violent, non-sexual crimes.



Meeting of Minds XXV



INDEX

Abstract	Name	Session	Abstract	Name	Session
29	Abdal, Jonathon	2F	27	Chen, Jocelyn	1F
122	Ahmed, Uddin	AM	12	Cherniak, Ramblin	3B
134	Al-fanharawi, Hassan	AM	107	Christie, Alexander	AM
108	Algahmi, Hana	AM	42	Clark, Cody	2B
127	Al-Khshali, Asma	AM	132	Cofield, Aaron	AM
259	Allen, Sarah	PM	128	Collins, Ellana	AM
251	Almusawi, Saja	PM	62	Conklin, Zachary	2C
256	Almusawi, Saja	PM	117	Currington, Alex	AM
258	Almusawi, Saja	PM	21	Datu-on, Krystelle	1F
261	Almusawi, Saja	PM	112	Dawson, Haley	AM
127	Aloyo, Samyka	AM	127	DeRoche Brubaker, Monica	AM
36	Amrhein, Carl	3E	61	Denis, Mia Sara	4C
3	Anwar, Saba	2B	5	Dimson, Angelica	1F
258	Apardian, John	PM	255	Donovan, Maria	PM
250	Apardian, Johnathan	PM	113	Duronio, Jenna	AM
261	Apardian, Johnathan	PM	114	Duronio, Jenna	AM
251	Apardian, Johnathon	PM	126	Duronio, Jenna	AM
256	Apardian, Johnathon	PM	49	Eckenwiler, Katherine	1E
6	Assi, Machhadie	2D	60	Elder, Danielle	3C
268	Augustin, Gerald	PM	37	Esch, Jessica	2E
101	Ball, Kristin	AM	241	Esch, Jessica	PM
28	Barry, Catherine	4C	247	Felisky, Jennifer	PM
131	Bede, Lara	AM	30	Flanigan, Emma	2D
122	Berry, Nader	AM	134	Fortuna, Aleksa	AM
121	Bires, Joseph	AM	136	Fortuna, Aleksa	AM
268	Boulton, Drew	PM	124	Freeman, Paris	AM
41	Bowman, Nichole	1A	272	Funke, Danielle	PM
244	Bukhsh, Miriam	PM	102	Gabr, Heidi	AM
103	Byk, Jennifer	AM	5	Georges, Will	1F
117	Caldwell, John	AM	246	Gildner, Daniel	PM
132	Calhoun, Brooke	AM	105	Girard, Kaci	AM
125	Callahan, Shannon	AM	102	Glavin, Ryan	AM
18	Cameron, Devin	3D	14	Gomez Zubieta, Daniela	2A
250	Carter, Tim	PM	239	Goss, Bethany	PM
256	Carter, Tim	PM	7	Grenfell, Zoe	1D
258	Carter, Tim	PM	129	Griffin, Kelsey	AM
251	Carter, Timothy	PM	119	Griffith, Bethany	AM
261	Carter, Timothy	PM			
112	Champagne, Jacob	AM			



Meeting of Minds XXV



INDEX

Abstract	Name	Session	Abstract	Name	Session
31	Grindstaff, Jennifer	2A	46	Loweke, Rachel	4A
250	Guntur, Dhyana	PM	243	Ludwick, Blake	PM
251	Guntur, Dhyana	PM	15	Luongo, Katherine	2D
256	Guntur, Dhyana	PM	105	Malay, Paige	AM
258	Guntur, Dhyana	PM	271	Mamo, Andrina	PM
261	Guntur, Dhyana	PM	113	Marton, Velinka	AM
44	Gutierrez, Luis	1B	133	Mastrogiovanni, Michael	AM
8	Guzman, Edward	1E	54	Mattson, Lindsey	2C
114	Harrison, Lauren	AM	47	McBride, Patrick	3A
267	Hobbs, Kelsey	PM	249	McCabee, Melissa	PM
266	Hodroj, Lama	PM	41	McGahey, Teiana	1A
252	Hoey, Kelsey	PM	127	McGahey, Teiana	AM
2	Hollman, Timothy	3B	35	McGee, Marie	3C
129	Hudson, Monique	AM	242	Meerhaeghe, Bryce	PM
270	Ishaq, Jennifer	PM	108	Merza, Sura	AM
108	Issa, Ruby	AM	116	Michaels, Kevin	AM
250	Issa, Ruby	PM	273	Micheals, Kevin	PM
251	Issa, Ruby	PM	257	Miller, Regan	PM
256	Issa, Ruby	PM	32	Moffett, Kelsey	3C
258	Issa, Ruby	PM	23	Moore, Grace	1E
261	Issa, Ruby	PM	111	Moore, Robert	AM
244	Jafry, Waris	PM	120	Moore, Robert	AM
129	Jaworski, Alexandra	AM	108	Nasser, Adel	AM
11	Jondy, Abdelmajid	1B	48	Nicholas, Alvin	3E
251	Kassab, Samuel	PM	272	Nogueras, Gina	PM
250	Khatib, Dina	PM	19	O'Connor, Shannon	3F
256	Khatib, Dina	PM	136	Oest, Adam	AM
261	Khatib, Dina	PM	22	Olson, Lindsay	1C
130	Klapko, Jennifer	AM	129	Oncza, Rachel	AM
131	Kontogouris, Maria	AM	238	Osowski, Geena	PM
26	Koss, Joshua	3F	38	Pak, Jiyong	4B
243	Kreiner, Nick	PM	108	Paron, Nicholas	AM
5	Laidler, Robert	1F	111	Parry, Leah	AM
58	Lalain, Paige	1C	120	Parry, Leah	AM
56	Lawler, Caitlyn	4B	33	Patel, Nishva	3A
9	Lazarek, Madison	2F	55	Pawlowski, Katelinn	3E
246	Lecik, Amber	PM	10	Perkins, Krysten	1D
132	Lee, Brandon	AM	130	Petty, Kimberlyn	AM
17	Long, Madeleine	1B			



Meeting of Minds XXV



INDEX

Abstract	Name	Session	Abstract	Name	Session
250	Phanord, Christopher	PM	43	Szmyd, Monica	2A
258	Phanord, Christopher	PM	59	Taipalus, Sarah	1A
237	Premceski, Anthony	PM	248	Tan, Dayna	PM
25	Profitt, Blue	3D	40	Tebbe, Ethan	4B
260	Reardon, Alex	PM	50	Tencza, Kristin	3D
269	Reyes, Taylor	PM	115	Townsend, Laina	AM
273	Ritchie, Jennifer	PM	52	Tudor, Candice	1A
125	Roberts, Anna	AM	4	Van Alstine, David	3B
273	Rubel, Logan	PM	104	Vens, Kyle	AM
4	Rusinek, Kristen	3B	103	Vo, Jessica	AM
272	Saad, Mariam	PM	24	Wagerson, Broderick	2E
270	Saenz, Gabriela	PM	243	Wagner, Matthew	PM
129	Sagolileh, Eva	AM	20	Waters, Jeffery	4C
253	Sall, Kayla	PM	260	Watters, Emma	PM
240	Sallans, Kaitlyn	PM	134	Wesner, Nicholas	AM
263	Sammane, Maya	PM	45	Wilber, Genna	4A
245	Sands, Jay	PM	57	Wilson, Robin	2E
122	Saybolt, Kevin	AM	132	Wingate, Brandi	AM
135	Scherer, Isaac	AM	273	Winkowski, Anna	PM
34	Schlenner, Sam	2C	265	Wolber, Caroline	PM
273	Scimeni, Jason	PM	123	Woodward, Justin	AM
124	Scott, Rick	AM	39	Zachar, Nate	1C
264	Scribner, Chad	PM	123	Zhu, Danyang	AM
51	Seidel, Adam	3A	123	Zhu, Jianglong	AM
118	Serra, Viktoriah	AM	111	Zudell, Marissa	AM
244	Sexton, Rachel	PM	120	Zudell, Marissa	AM
104	Seyburn, Shelby	AM			
238	Seyburn, Shelby	PM			
13	Shakur, Yusef	1D			
262	Silva, Katelyn	PM			
243	Simon, Max	PM			
42	Sitto, Farrah	2B			
1	Smiles, Brent	4A			
105	Smith, Andrew	AM			
53	Song, Meiqi	2B			
110	Sorensen, Hunter	AM			
253	Stewart, Ellen	PM			
116	Stites, Lea	AM			
136	Sulaiman, Fatima	AM			