

The background features a 3D isometric grid of light green lines. Scattered throughout are numerous cubes in two shades: a dark teal and a lighter lime green. Some cubes are solid, while others have a square cutout in the center. The overall composition is dynamic and geometric.

UNDERGRADUATE SYMPOSIUM

2020

EASTERN MICHIGAN UNIVERSITY

Welcome to the 40th Undergraduate Symposium!

This day of scholarly and creative presentations by our undergraduate students is the culmination of a year-long collaboration between the students and their faculty mentors. The presentations, posters, performances and exhibits on display today illustrate an impressive level of accomplishment as a result of these collaborations. As you explore the extraordinary breadth and depth of student scholarly and creative activity, you will discover the special synergy of teaching, research, and hands-on learning that have powered the Symposium since its inception.

Indeed, today's event is 40 years in the making. Eastern's Undergraduate Research Symposium is one of the longest standing events of its kind in the country and provides a model for universities that have sought to develop similar programs. In 1980, then professor of chemistry and later provost of the University, Dr. Ronald Collins, conceived the idea of an annual conference opportunity for undergraduate research presentation. This innovative approach to encouraging undergraduate research was supported by then president, John W. Porter and provost, Dr. Anthony Evans. Each subsequent president and provost has continued to support the Undergraduate Symposium and acted to enhance its stature. The first event began with a handful of students and faculty mentors from the College of Arts and Science and, over the years, has evolved into one of Eastern's signature annual events. The Undergraduate Symposium embodies a philosophy of learning that defines the unique educational experience that EMU students receive.

Although the College of Arts and Sciences is the host of the Symposium, student research presentations can span all five EMU Colleges and every undergraduate discipline. Nine years ago, the Undergraduate Symposium expanded beyond oral and poster presentations to include exhibits in the Crossing Lines Design Expo. The addition of this exhibit option engages students whose creative processes involve various 2D and 3D materials.

Many faculty and staff have worked hard to make this Undergraduate Symposium a success. I gratefully acknowledge the efforts of the volunteer Symposium Planning Committee and its chair, Dr. Harriet Lindsay, event coordinator Amy Bearinger, Symposium graduate assistant Sonimar Maldonado, submission site support Tracey Sonntag, and the staff of the College of Arts and Sciences Office of the Dean. Additionally, I want to thank Associate Vice President of Advancement, Jill Hunsberger and Undergraduate Symposium Advancement Committee Chair, Donald Loppnow for their continued fund-raising efforts on behalf of the Symposium.

The faculty sponsors of the student presenters are the expert core of the Symposium. They deserve special recognition for their voluntary efforts. I also want to recognize the families of the students, and the many sponsors and guests who provided essential support for this event and who are committed to the success of our students in their academic pursuits. A special thank you to donors who have supported the work of 14 Symposium Undergraduate Research Fellows for this academic year.

Most especially, my congratulations to you, our students, who are presenting on the occasion of the Symposium's 40th anniversary!

Dana Heller, Dean
College of Arts and Sciences

SCHEDULE OF EVENTS

Friday, March 27, 2020
EMU Student Center

Oral Presentations

Second Floor Auditorium, Student Art Gallery
Third Floor Room 302, 304, 320, 330, 350, 352

Session A	9:00am-10:15am
Session B	10:30am-11:45am
Session C	1:30pm-2:45pm
Session D	3:00pm-4:15pm

Poster Presentations

Third Floor Room 310A/B

Group 1	9:00am-10:30am
Group 2	11:00am-11:45am 1:30pm-2:15pm Room closed over luncheon
Group 3	2:45pm-4:15pm

Crossing Lines Design Expo

Third Floor Room 300, 301, 302
Gallery Exhibit 9:00am-4:00pm

Symposium Luncheon

Second Floor Ballroom 12:00pm-1:15pm

Keynote Speaker

Brenda Alten
Director of Human Resources
Communications
J.M. Smucker Company

Student Emcee

Jaylen Taylor
Four-time Symposium presenter

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- 76 – 80** Geography & Geology
- 80 – 88** History & Philosophy
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- 91 – 96** Music & Dance
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- 122 – 122** Women’s and Gender Studies
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College of Education

- 126 – 126** Leadership & Counseling
- 126 – 128** Special Education & Communication Sciences and Disorders
- 129 – 130** Teacher Education

College of Health & Human Services

- 132 – 135** Health Promotion & Human Performance
- 136 – 138** Health Sciences
- 138 – 141** Nursing
- 142 – 145** Social Work

College of Engineering & Technology

- 147 – 148** Engineering Technology
- 148 – 148** Information Security & Applied Computing
- 149 – 160** Visual & Built Environments

ORAL SESSION A

Room 304

Moderator : Joeseph Engwenyu

Powerful Women: Iron Lady, President Ellen Johnson Sirleaf of Liberia, 2006-2016

Maryan Suleyman

Joseph Engwenya, faculty mentor
History & Philosophy
9:00am

Powerful Women: Wangari Maathai and the Green Belt Movement in Kenya

Thomas Stanley

Joseph Engwenya, faculty mentor
History & Philosophy
9:15am

Resilient Women: Entrepreneurial Igbo Women, Nigeria

Alex King

Joseph Engwenya, faculty mentor
History & Philosophy
9:30am

West African Troops During the Burma Campaign, 1943-1945

Liza Throne

Joseph Engwenya, faculty mentor
History & Philosophy
9:45am

Chinese Investments in Africa: Myth, Fact and Reality

Cody Chambers

Joseph Engwenya, faculty mentor
History & Philosophy
10:00am

Room 320

Moderator : Jeffrey Bernstein

Comparing Trends and Historical High-Low of Unemployment in the U.S.A.

Selena Thai

Khairul Islam, faculty mentor
Mathematics and Statistics
9:00am

The Congressional Staffer's Role in Developing a Politician's Public Persona

Alexa Cooley

Jeffrey Bernstein and Jonathan Carter,
faculty mentors
Political Science & Communication,
Media & Theater Arts
9:15am

Political Experience: Does it Matter? And to Whom?

Heather Weigel

Jeffrey Bernstein, faculty mentor
Political Science
9:30am

The Impact of the Candidate's Race on Voter Opinion

Yssis Patterson

Jeffrey Bernstein, faculty mentor
Political Science
9:45am

Modeling Stock Market and Political Climate: Applying Polynomial Multivariate Regression Models

Emma Krietemeyer

Amani Rashid, faculty mentor
Economics
10:00am

Room 330

Moderator : Tanweer Shapla

Effects of a Service-Learning Experience on English Language Teacher Development

Evelyn West

Cynthia Macknish, faculty mentor
World Languages
9:00am

Beyond our Boundaries

Sydney Jacks

Geneviève Peden, faculty mentor
World Languages
9:15am

Analysis of Parental Involvement in Elementary and Secondary Education

Alexus Bell

Khairul Islam, faculty mentor
Mathematics and Statistics
9:30am

“When Did Hanging Out Get So Complicated?”

Emily Proctor

John Cooper, faculty mentor
Communication, Media & Theatre Arts
9:45am

Exploring the Social Implications of Freedom of Speech on the Internet

Gwenyth Andrusiak

Zenia Bahorski, faculty mentor
Computer Science
10:00am

Room 350

Moderator : Allison Boone Green

Redefining the Teacher Through an Eco-Justice Lens

Shelby Antieau

Amanda Maher, faculty mentor
Teacher Education
9:00am

How the Self-Serving Attributional Bias Affects Student Learning

Natalia Anderson

John Koolage, faculty mentor
History & Philosophy
9:15am

General vs. Special Education: Comparing the Use of Assistive Technology in Multiple Environments

Daniel Collins and Lillia Sheline

John Staunton and Rebecca Stipe, faculty mentors
English Language & Literature
9:30am

Incidental Language Learning through Video Games

Jamie Cameron

Wendy Wang, faculty mentor
World Languages
9:45am

Contemporary Play

Melanie Prince

Christina Mirtes, faculty mentor
Teacher Education
10:00am

Room 352

Moderator Eric Portenga

Old and Deer: A Study of Neoproterozoic Peridotites in Michigan's Upper Peninsula

Rachel Merz

Christine Clark, faculty mentor
Geography & Geology
9:00am

Investigating a 420-Million Year Old Fossil Using Cutting-Edge Tools, Part 2: New Data and Insights

Shawn Steckenfinger

Steven LoDuca, faculty mentor
Geography & Geology
9:15am

Measuring Rock Weathering on the Ft. Wayne and Defiance Moraines Using an N-Type Schmidt Hammer

Alexys Peplinski

Eric Portenga, faculty mentor
Geography & Geology
9:30am

Prairie Legumes Need Soil Microbes: a Species Specific Approach to Successful Prairie Restorations

Janae White

Emily Grman, faculty mentor
Biology
9:45am

An Analysis of Restoration Practices: A Look to the Future

Brynn Ritchey

Emily Grman, faculty mentor
Biology
10:00am

Auditorium

Moderator: John Dorsey

English Folksong and Lyrical Influences on the Phantasy Suite by Thomas F. Dunhill

Victoria Woolnough

Sandra Jackson, faculty mentor
Music & Dance
9:00am

Cello Sonata No.1 in E Minor, Op. 38 Allegro Non Troppo by Johannes Brahms

Grace Frielink

Deborah Pae, faculty mentor
Music & Dance
9:15am

The Music of Finland

Emily Katynski

Joel Schoenhals, faculty mentor
Music & Dance
9:30am

Cultivating Composers: How The Clarinet Sonata By Jennifer Higdon demon- strates Form and Function

Casie LaMay

Sandra Jackson, faculty mentor
Music & Dance
9:45am

"June is the shortest month of the year": Investigating Process & Progress in Creative Spaces

Kristen Hudecz

Molly Paberzs, faculty mentor
Music & Dance
10:00am

Student Art Gallery

Moderator: Anke Wolbert

The Supreme Court, the FCC and Net Neutrality: 14 People Deciding for 300 Million

Maiya Felan

John Cooper, faculty mentor
Communication, Media & Theatre Arts
9:00am

Examining Structures and Accessibility of State Civil Rights Entities

Madelaine Coy

Barry Pyle, faculty mentor
Political Science
9:15am

The Implementation of The 14th Amendment During Reconstruction

Jack Swartzinski

Barry Pyle, faculty mentor
Political Science
9:30am

Tax-Exempt Candidates: the Repeal of the Johnson Amendment

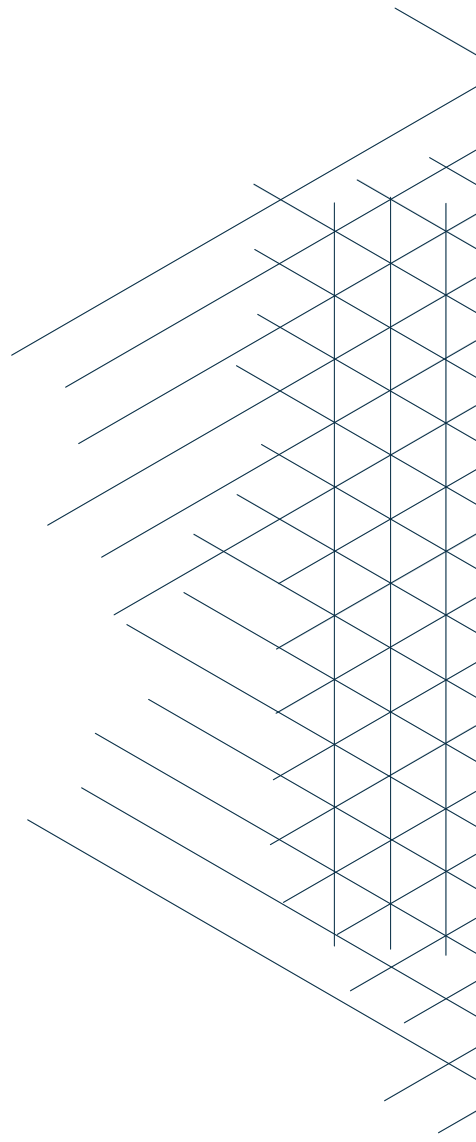
Stephen Rathje

Barry Pyle, faculty mentor
Political Science
9:45am

The Impact of Religion on Public Policy Regarding Climate Change

Julia Kops

Robert Orrange, faculty mentor
Sociology, Anthropology and Criminology
10:00am



ORAL SESSION B

Room 304

Moderator: Joseph Egwenyu

Just Eat!... But It's Not That Simple

Emily Turner

Salima Zaman, faculty mentor
Women's and Gender Studies
10:30am

Marked as Unable to Be: The Endangerment of Black Women Sex Workers

Taylor Amari Little

Brian Sellers, faculty mentor
Sociology, Anthropology and Criminology
10:45am

Rwanda: Universal Access to HIV/AIDS Treatment 25 Years Post-Genocide

Joanne Wisely

Joseph Engwenyu, faculty mentor
History & Philosophy
11:00am

Support for Gays and Lesbians in South Africa: Tensions and Ironies

Heather Weigel

Joseph Engwenyu, faculty mentor
History & Philosophy
11:15am

Female Genital Mutilation in Africa: Cruel or Cultural?

Katelyn Beveridge

Joseph Engwenyu, faculty mentor
History & Philosophy
11:30am

Room 320

Moderator: Barry Pyle

We Need Our Fathers: How State Policies Have Impacted Fatherhood

Lily Nwanesi

Barry Pyle, faculty mentor
Political Science
10:30am

Neoliberal Alienation: How the Capitalist Machine Has Created A Culture of Despair In America

Colton Ray

Ronald Westrum, faculty mentor
Sociology, Anthropology and Criminology
10:45am

Deficit Frameworks and the Racialization of Immigrant Students in U.S. Schools

Kamryn Powell

María Luz García, faculty mentor
Sociology, Anthropology and Criminology
11:00am

Analysis of the Trump Administrations Rhetoric of Electromagnetic Pulses

Marissa Howard

Nick Romerhausen and Patrick Seick,
faculty mentors
Communication, Media & Theatre Arts
11:15am

Zero Tolerance: The Trump Administra- tion's Immigration Policy as a Human Rights Violation

Alexa Cooley

Ebrahim Soltani, faculty mentor
Political Science
11:30am

Room 330

Moderator: Edward Sidlow

Effects of Stress on Health of African American Women in Low Income Neighborhoods

Jada Childs

Heather Janisse, faculty mentor
Psychology
10:30am

Racial and Ethnic Disparities in Mental Health

John Garcez

Charles Graham and Laura Martinez,
faculty mentors
Social Work
10:45am

Cultural Injustices in Sports, Media, and School: Results of In-Depth Student Interviews

Maggie McCullough

Anke Wolbert, faculty mentor
Communication, Media & Theatre Arts
11:00am

Retiring Number 42: How Jackie Robinson's Legacy Pushed Major League Baseball Executive

Lindsey Redmond

Edward Sidlow, faculty mentor
Political Science
11:15am

Pathology of Parkinson's Disease and the Utilization of Exercise

Megan Benzie

Shel Levine, faculty mentor
Health Promotion & Human Performance
11:30am

Room 350

Moderator: Dennis O'Grady

A Review of Childhood Emotional Abuse: What it is and How it Affects Survivors

Emily Tersigni

Kathryn Hughesdon, faculty mentor
Nursing
10:30am

Washtenaw Drug Recovery: An Anthropological Perspective

Daniel Scrochi

Maria Luz Garcia, faculty mentor
Sociology, Anthropology and Criminology
10:45am

Traveling on a Road Paved with Grief

Haleigh Galnares

Ken Saldanha, faculty mentor
Social Work
11:00am

To Ghost or not to Ghost: That is the Question

David Graham

Dennis O'Grady, faculty mentor
Communication, Media & Theatre Arts
11:15am

Room 352

Moderator: Chris Gellasch

Investigating the Links Between Land-Use, Erosion, and Denudation in the George River, Tasmania, Australia

Leah VanLandingham

Eric Portenga, faculty mentor

Geography & Geology

10:30am

How do Road Salts Affect Stream Ecosystem Structure and Function?

Caleb Willette

Kristin Judd, faculty mentor

Biology

10:45am

What is the Source of Elevated Chloride Concentrations in Millers Creek, Ann Arbor During Summer?

Kelly Brown

Chris Gellasch, faculty mentor

Geography & Geology

11:00am

Automating Large Data Set Analysis for Groundwater Fluctuations Due to Pumping

Dillon Kilroy

Christopher Gellasch, faculty mentor

Geography & Geology

11:15am

Visualizing Lead Poisoning Disparity Using GIS – A Case Study in the Metropolitan Area of Detroit

Olivia Pearce

Xining Yang, faculty mentor

Geography & Geology

11:30am

Auditorium

Moderator: John Dorsey

Clair Omar Musser and His Influence on the Popularity of the Marimba

Ian McCrystal

John Dorsey, faculty mentor

Music & Dance

10:30am

Haydn Cello Concerto in C Major

Athena Goppold

Deborah Pae, faculty mentor

Music & Dance

10:45am

New Works by Student Composers: Autumn Air, Passages, and Revival

Casie LaMay, David Rega and Robert Thorburn

Whitney Prince, faculty mentor

Music & Dance

11:00am

The Landmark of Nineteenth Century Music – Liszt's Sonata in B Minor

Megan Angriawan

Garik Pedersen, faculty mentor

Music & Dance

11:15am

The Madrigal: A Genre History and Musical Analysis of the Madrigals of Claudio Monteverdi

Joshua Danielson

Willard Zirk, Brandon Johnson and Robert

Peavler faculty mentors

11:30am

Student Art Gallery

Moderator: Richard Stahler-Sholk

Media Manipulation of the Israeli Palestinian Conflict in the United States

Alissa Kennedy

Richard Stohler-Sholk, faculty mentor
Political Science
10:30am

Historical Memory, Peace, and the Role of the Media in Post-Conflict Regions

Hannah Zwolensky

Richard Stahler-Sholk, faculty mentor
Political Science
10:45am

За Незалежність : Democratization and Democratic Consolidation in Ukraine

Sarah Jessup

Richard Stahler-Sholk, faculty mentor
Political Science
11:00am

A Comparative Study of Scandinavian Colonial Behavior

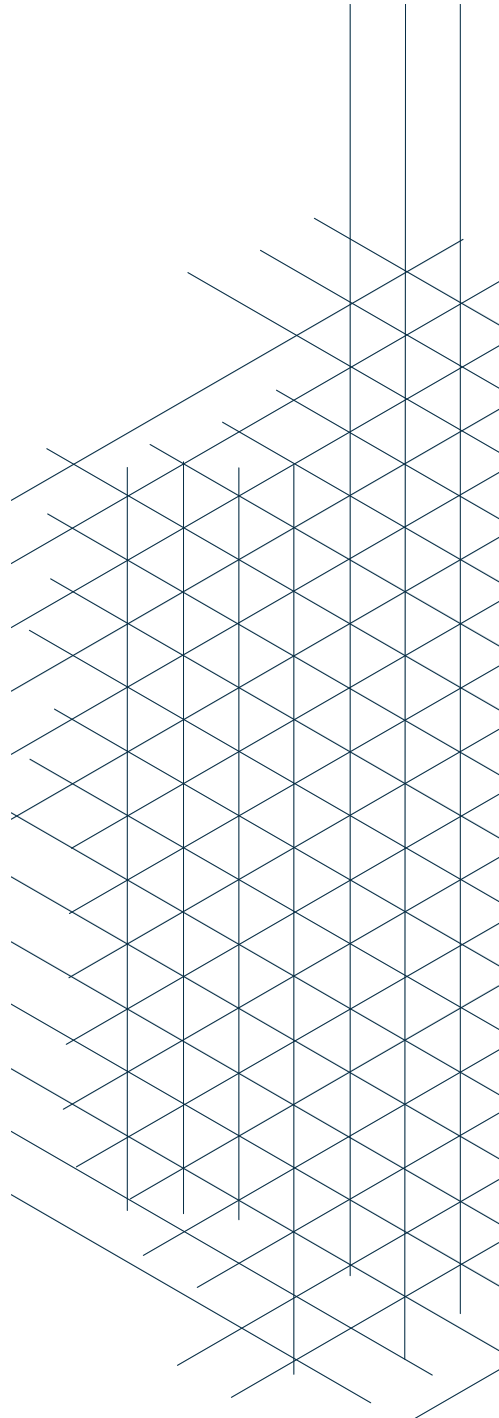
Sarah Maier

Richard Stahler-Sholk, faculty mentor
Political Science
11:15am

Голодомор: A Forgotten Genocide

Sarah Jessup

Kelly Victor-Burke, faculty mentor
Geography & Geology
11:30am



ORAL SESSION C

Room 304

Moderator: Mary-Elizabeth Murphy

The Battlefront Back Home: How Ypsilanti Really Felt About Fighting To Free The Slaves

Leigh Young

Mary-Elizabeth Murphy, faculty mentor
History & Philosophy
1:30pm

“What Right Has Such a Scoundrel to Be Honored by a Top-Supported Institution of Learning?”

Shelbie Torok

Mary-Elizabeth Murphy, faculty mentor
History & Philosophy
1:45pm

Black Dissent: A fight for Student Rights

Christian Watts

Mary-Elizabeth Murphy, faculty mentor
History & Philosophy
2:00pm

Do We Really Love Our Black Sistas? How Black Men Can Support Black Women

Desmine Robinson

Devika Choudhuri and Dyann Logwood,
faculty mentors
Leadership & Counseling
2:15pm

Race Relations in Ypsilanti Government

Josefina van Geloven

Jeffrey Bernstein, faculty mentor
Political Science
2:30pm

Room 320

Moderator: Raymond Rosenfeld

Homelessness and the Mentally Ill: A Policy Analysis

Shayla Blackwell and Megan Morrison

Raymond Rosenfeld, faculty mentor
Political Science
1:30pm

Youth Homelessness: A Policy Analysis

Kylar Chandler and Adrianna Stacey

Raymond Rosenfeld, faculty mentor
Political Science
1:45pm

Accessible Mental Health and Addiction Services in Regards to the Policy Problem of Homelessness

Carmen Coronado and Mya Crampton

Raymond Rosenfeld, faculty mentor
Political Science
2:00pm

Homeless Veterans in America

Blake Harrity and Alexis Krupp

Raymond Rosenfeld, faculty mentor
Political Science
2:15pm

Unaccompanied Homeless Youth and College Homelessness

John Wilkerson

Caren Putzu, faculty mentor
Social Work
2:30pm

Room 330

Moderator: Eric Acton

Why Leigh Bardugo was Asked to Include Content Warnings in Ninth House

Gabrielle Cavett

Margaret Dobbins, faculty mentor
English Language & Literature
1:30pm

Deconstructing Feminine and Influence: Bronzino's Portrait of Eleonora of Toledo and her Son

Nicole Rinkel

Pamela Steward, faculty mentor
Art & Design
1:45pm

Accessibility of Diverse Representation in Jewish Children's Literature

Holly Greca

Jessica Kander, faculty mentor
English Language & Literature
2:00pm

Myth and Marx in Imperialist Japan

Kelly Seitz

Meg Dobbins, faculty mentor
English Language & Literature
2:15pm

Effects of Bilingualism and Immigration on Cultural and Linguistic Identity

Anna Burbo

Wendy Wang, faculty mentor
World Languages
2:30pm

Room 350

Moderator: Martha Baiye

Drag Queen Reading Hour: An Analysis

Paige Brown-Danovi

Margaret Dobbins, faculty mentor
English Language & Literature
1:30pm

New Queer Children's Science Fiction and Fantasy: What We Can Learn from Representation

Jack Collins

Kiel Phegley, faculty mentor
English Language & Literature
1:45pm

Class as Gender: Anxiety in Transitivity

Ronan Sampson

Abby Coykendall, faculty mentor
English Language & Literature
2:00pm

Martin Buber and Pornography: The Objectification of Sex

Omar Khali

C. Áine Keefer, faculty mentor
History & Philosophy
2:15pm

Room 352

Moderator: Dennis O'Grady

The RAP Project Experience

Bethany Linder

Jacquelyn McGinnis, faculty mentor
Special Education & Communication
Sciences and Disorders
1:30pm

Perceptions of Foster Care Workers on Birth Parent Visits

Pallas Schuster

Jennifer Farley, faculty mentor
Social Work
1:45pm

Support, Child Behavior Problems and Parenting Stress

Reyna Lee

Jamie Lawler, faculty mentor
Psychology
2:00pm

Factors Related to Parental Accommodation in Families of Children with Selective Mutism

Kylie Quinn

Carol Freedman-Doan, faculty mentor
Psychology
2:15pm

Training Behavioral Technicians to Implement Discrete-Trial Teaching for Children with Autism

Olivia Harvey

Adam Briggs, faculty mentor
Psychology
2:30pm

Auditorium

Moderator: Tiffany Caesar

With Merit and Objectivity: The White Racial Frame

Mariah Glenn

Tiffany Caesar, faculty mentor
Africology and African American Studies
1:30pm

The Misrepresentation and Dehumanization of Black Men in America

Tajah Muhammad

Imedla Hunt, faculty mentor
Africology and African American Studies
1:45pm

Black Women in the Military Fighting Sexual Assault and Harassment

Traivon Lever

Tiffany Caesar, faculty mentor
Africology and African American Studies
2:00pm

The Intersection of the Color Line and the Thin Blue Line

Maya Mackey

Rusty McIntyre, faculty mentor
Psychology
2:15pm

Police Brutality and Racism in America Against Blacks

Kimberly Thomas

Tiffany Caesar, faculty mentor
Africology and African American Studies
2:30pm

Student Art Gallery

Moderator: Grigoris Argeros

A Critical Evaluation of Liberal Conception of Private Property

Megan Holmes

Ebrahim Soltani, faculty mentor

Political Science

1:30pm

Analysis of the Prospects for Revolution Throughout Africa in the New Decade

Clayton Sigmann

Richard Stahler-Sholk, faculty mentor

Political Science

1:45pm

New Religious Movements in Europe

Reece Zielinski

Ronald Rich, faculty mentor

Sociology, Anthropology and Criminology

2:00pm

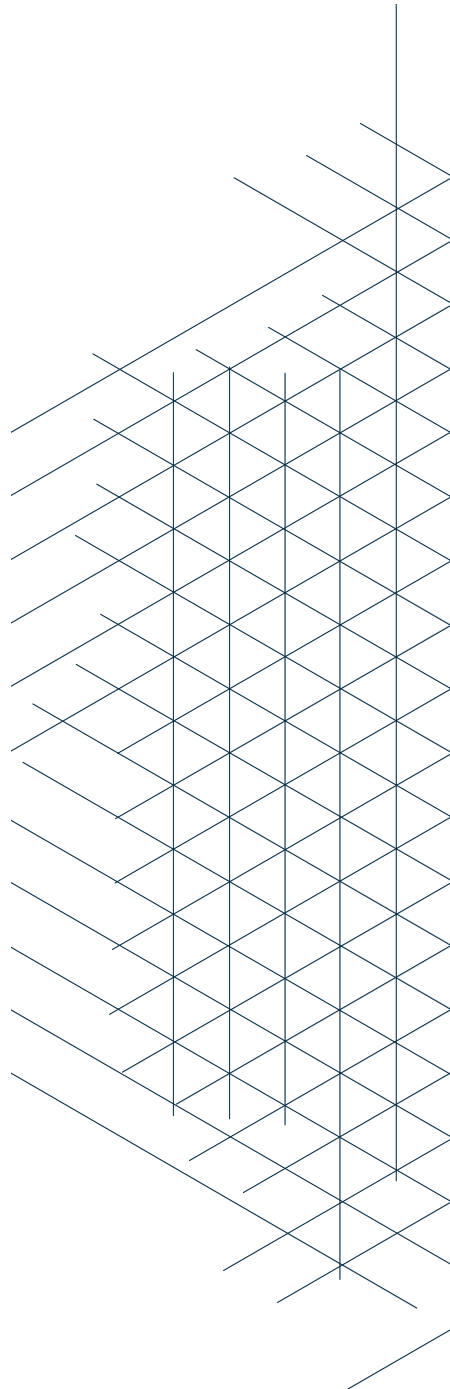
30 Years After the Fall of the Berlin Wall, What Sociocultural Impact was Left Behind and Remains Today?

Grace Gergel

Carla Damiano, faculty mentor

World Languages

2:15pm



ORAL SESSION D

Room 304

Moderator: Dorothy McAllen

“Yo–This Way to EMU”: Eastern Michigan University Recruitment Marketing Strategy from 1980 to 2010

Kaitlyn Eby

Mary-Elizabeth Murphy, faculty mentor
History & Philosophy
3:00pm

“Only a Postponement of the Inevitable”: EMU Faculty, Unionization, and the AAUP

Isaac Vanderwal

Mary-Elizabeth Murphy, faculty mentor
History & Philosophy
3:15pm

Automating Student Check-ins for Honors Events

Joseph Hackbarth, Parker Lazar and Zachariah Pelletier

Krish Narayanan, faculty mentor
Computer Science
3:30pm

Accessibility in the Arts

Gwenyth Deiter

Elena SV Flys, faculty mentor
Communication, Media & Theatre Arts
3:45pm

Improving Course Quality Inside a Prison Classroom

Christopher Heath
Adena Rottenstein, faculty mentor
Psychology
4:00pm

Room 320

Moderator: Natalie Dove

Keyboard Warriors: Social Media as a Tool of Social Movements

Monica Laschober

Richard Stahler-Sholk, faculty mentor
Political Science
3:00pm

Where We Go 1 We Go All: A Public Discourse Analysis of QAnon

Kylar Chandler

Nick Romerhausen, faculty mentor
Communication, Media & Theatre Arts
3:15pm

Online Collaboration Platforms: Communication Implications for Workplace Virtual Teams

Anthony Paz

Jeannette Kindred, faculty mentor
Communication, Media & Theatre Arts
3:30pm

Behavioral Function and Control of Social Media Use

Vasavi Ganesan and Sarah Dixon

Natalie Dove and Marilyn Bonem, faculty
mentor
Psychology
3:45pm

Behavioral Self-Management of Social Media Usage: A Case Study

Sarah Dixon and Vasavi Ganesan

Natalie Dove and Marilyn Bonem, faculty
mentors
Psychology
4:00pm

Room 330

Moderator: Steven Backues

The Fight for the Copley Medal

William Hasey

Mark Whitters, faculty mentor
History & Philosophy
3:00pm

Analysis of Colony Formation in Microcystis Morphospecies

Sean Polidori

Michael Angell, faculty mentor
Biology
3:15pm

Identifying How Atg14 Expression Levels Determine Autophagic flux.

Mukiri Gilruth

Steven Backues, faculty mentor
Chemistry
3:30pm

Identification of the Amino Acids Responsible for Atg11 Binding via Yeast- two Hybrid

Alex Kilgore

Steven Backues, faculty mentor
Chemistry
3:45pm

The Effects of Point Mutations in Atg3 on Autophagic Activity

Jacquelyn Roberts

Steven Backues, faculty mentor
Chemistry
4:00pm

Room 350

Moderator: Martha Baiyee

Osteological Ramifications of Footbinding and High-Heel Wearing

Pariss Gray

Megan Moore, faculty mentor
Sociology, Anthropology and Criminology
3:00pm

Methodology of Prehistoric Site Inter- pretation in Southeast Michigan

Andrew Stachowiak

Bradley Ensor, faculty mentor
Sociology, Anthropology and Criminology
3:15pm

Childhood and Play in Krishna Bhakti Traditions

Makoto Takata

James Egge, faculty mentor
History & Philosophy
3:30pm

Displaced DNA: Genetic Testing and the Pursuit of African Ancestry

Nailah Bush

Antoinette Pressley-Sanon, faculty mentor
Africology and African American Studies
3:45pm

Environmental Racism Research: A Charge to Advocate for the Children

Nailah Leggett

Martha Baiyee, faculty mentor
Teacher Education
4:00pm

Room 352

Moderator: Khairul Islam

Analysis of Factors Affecting Global Life Expectancy

Sadia Sarker

Khairul Islam, faculty mentor
Mathematics and Statistics
3:00pm

Identifying Musical Instruments in an Audio Recording with Recurrent Neural Networks

Brody Erlandson

Andrew Ross, faculty mentor
Mathematics and Statistics
3:15pm

Injection Site Detection in the Two Wide-angle Imaging Neutral-atom Spectrometers (TWINS) Data Set

Matthew Floyd

Roxanne Katus, faculty mentor
Mathematics and Statistics
3:30pm

Modeling Chaos: Studying a Chaotic Electric Circuit

Colin Goodman

Ernest Behringer, faculty mentor
Physics & Astronomy
3:45pm

Auditorium

Moderator: Kathy Stacey

An Apologetic Defense

John Milkovich

Mark Whitters, faculty mentor
History & Philosophy
3:15pm

Poetic Persuasion: Jerk Chicken Pasta

Damon Colston

Raymond Quiel, faculty mentor
Communication, Media & Theatre Arts
3:30pm

Online Collaboration Platforms: Communication Implications for Workplace Virtual Teams

Anthony Paz

Jeannette Kindred, faculty mentor
Communication, Media & Theatre Arts
3:45pm

The Development of Leonardo Da Vinci's Scientific Reputation Through the Mona Lisa

Abigail Martin

Pamela Stewart, faculty mentor
Art & Design
4:00pm

Student Art Gallery

Moderator: Charles Cunningham

To Be or Not to Be: An Analysis of Verb Reduction in Modern English

Ryleigh Byrne

Daniel Seely, faculty mentor
English, Language & Literature
3:00pm

Quotative Inversion and X-bar

Ronan Sampson

Daniel Seely, faculty mentor
English, Language & Literature
3:15pm

Oxford's Tutorial System and Its Potential Application in the American Classroom

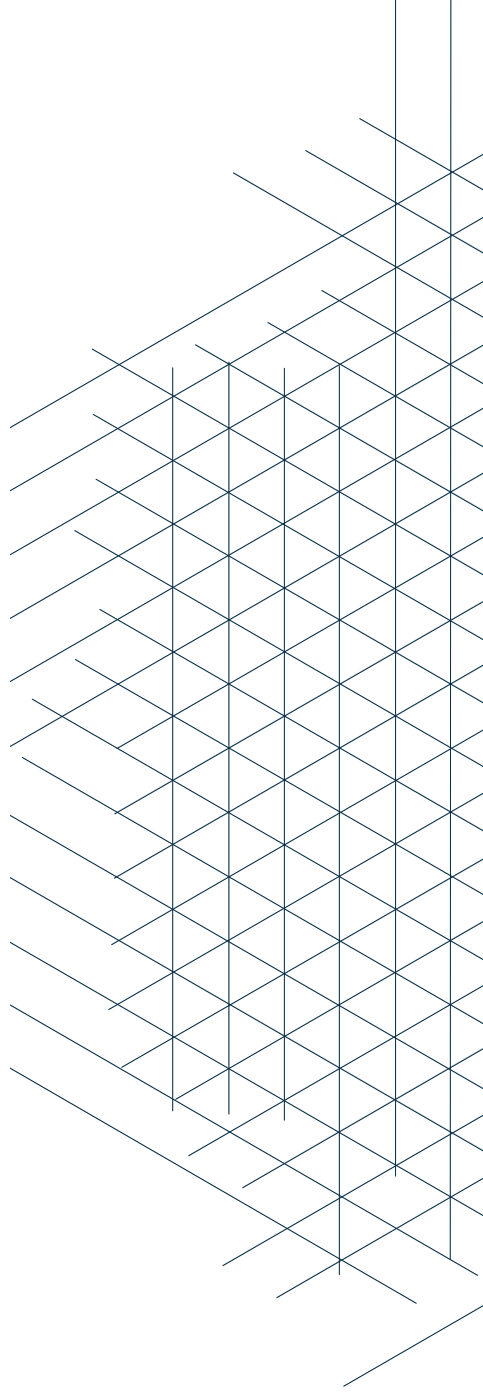
Alyssa Schad

John Staunton, faculty mentor
English, Language & Literature
3:30pm

Justifying Cruelty: The Military Industrial Complex in Catch-22

Christian Jones

Charles Cunningham, faculty mentor
English, Language & Literature
3:45pm



COLLEGE OF

ARTS
&
SCIENCES

AFRICOLOGY AND AFRICAN AMERICAN STUDIES

Displaced DNA: Genetic Testing and the Pursuit of African Ancestry

Nailah Bush

Toni Pressley-Sanon, faculty mentor | Oral Session D | Room 350 | 3:45pm

The Transatlantic slave trade engendered a profound rupture between Africa and its diaspora. For people of African descent, this separation has produced a longing that has traversed time and space. There is extensive scholarship that focuses on this longing. One of the latest tools that people of the diaspora have deployed to connect to their African heritage is genetic testing. While many researchers focus on the scientific outcome of genetic testing, this paper will explore how African diasporic people use genetic testing as a means of bridging the perceived gap between themselves and their continental African counterparts.

With Merit and Objectivity: The White Racial Frame

Mariah Glenn

Tiffany Caesar, faculty mentor | Oral Session C | Auditorium – 1:30pm

My research explores the White Racial Frame, a “white” worldview that encompasses a set of racial stereotypes as well as racialized inclinations to discriminate that were set up centuries ago and are found at the roots of chattel slavery and prejudice (Feagin, 2013). This racial framing has been strengthened by historical events such as slavery in the United States, the founding of the Ku Klux Klan and other related recent events. Systemic racism is a form of racism which is practiced within social and political institutions; it has permeated today’s society partly through social inheritance (Feagin, 2006), as my paper will demonstrate.

Black Women in the Military Fighting Sexual Assault and Harassment

Traivon Lever

Tiffany Caesar, faculty mentor | Oral Session C | Auditorium | 2:00pm

Black women in the military experienced high rates of sexual harassment and assault that are not overtly publicized. They reported more unwanted sexual attention and sexual coercion than White enlistees did. In addition, Black women complained about psychological distress from sexual misconduct experienced at work. This project raises awareness within our service branches to promote and encourage prevention programs, such as SHARP, Sexual Harassment Assault Response & Prevention. This paper suggests solutions to assist SHARP in dealing with black women enlistees and officers through culturally relevant tools.

The Misrepresentation & Dehumanization of Black Men in America

Tajah Muhammad

Imdela Hunt, faculty mentor | Oral Session C | Auditorium | 1:45pm

This paper will explore the misrepresentation and dehumanization of black men through mass incarceration, police brutality, and the mass media. The United States is a country that has institutionally oppressed black men through slavery, Jim Crow laws, institutionalized racism, and the prison industrial systems. To this day, the oppression of minorities continues within various aspects of the American culture. For example, black men are portrayed in the media as thugs, drug dealers and dangerous. This misrepresentation generates an environment of fear and ignorance. These systemic issues negatively impact the lives of black men in America.

Police Brutality and Racism in America Against Blacks

Kimberly Thomas

Tiffany Caesar, faculty mentor | Oral Session C | Auditorium | 2:30pm

Police brutality and systemic racism in America impact African Americans everyday. As an African American woman living in America, this topic is near and dear to my heart. There are countless narratives and experiences concerning police brutality. Innocent black men and women have been beaten, killed and arrested apparently because of their dark skin. Through images, ideas, and thought-provoking questions, I applied Afrocentric theory in my presentation in order to provide a holistic view of this injustice against humanity. In addition, as a scholar activist, I recommend some remedial actions.

Women's Leadership and Violence in South Africa

Jai Lynne Williams

Tiffany Caesar, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 - 10:30am

The dichotomy between women's leadership roles and gender-based violence in South Africa occurs simultaneously. My poster presentation explores two case studies that discuss women's leadership roles and gender-based violence. In addition to leadership roles, my research sheds light on the violence and cover-ups that occur in South Africa due to femicide. Among other examples, my work uses research on Winnie Mandela, such as *Not Just Nelson's Wife: Winnie Madikizela-Mandela, Violence and Radicalism in South Africa* by Shireen Hassim who specializes in feminist theory, social movements and social policies.

ART & DESIGN

Julia // Delilah

Lee Baker

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This is a study of Absence/Presence and color removal. Black and Red fabrics with birds and towers are screen printed with color removal, and two orange pieces of fabric are done with direct application of pigment. Fabrics used include Silk Organza, Silk Crepe de Chine, and cotton.

Mackinac

Lee Baker

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This is a study of patterns and sub-patterns drawing inspiration from historic textile designs. Sub-pattern is the brick repetition pattern of the bikes, and the pattern is the two people. Techniques used include screen printing and block printing onto dyed silk noil, and embroidery over the main pattern.

Klepto's, an Inside Joke Amongst Friends

Austin Brancheau

Leslie Atzmon, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

For this design, I wanted a modern look while still using some of the same color scheme from my original design back in 2016. I wanted to show a missing glass in the design to be humorous and be a visual representation of Kleptomania. The idea behind designing this brand came from a cold December night of bar-hopping. One friend decided to take drinking glass from each location we stopped into. Another friend noticed and said, "You have so many glasses, you could open your own bar!" After everyone settled down from laughing, another friend said, "I got it!" yelling in excitement. "We can call it Klepto's!" Why not make this inside joke a reality?

Camp Kulabunga

Shelby Corich

Leslie Atzmon, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Camp Kulabunga is a four-day retreat, curated by GRiZ and friends, focused on radical inclusion, community, self-empowerment, and wellness. I wanted to give newcomers a sense of the camp without being too specific about the experience. The poster features a photo taken during camp showing the environment and campers in their writing workshop, creating an inviting space for people. This is a "do-it-yourself" journal with a prompt and space for response or action. It includes some of the workshops from camp so a newcomer, or outsider, can experience the camp from the comfort of their homes (or wherever they decide to journal.) The inside covers have pockets to collect whatever the user likes, as well as postcards of actual spaces from camp.

A Study of French Knots

Shelby Corich

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

For this project I was experimenting with french knots on different materials other than typical fabric. Using metal mesh screens I layered up the french knots creating a multi-leveled surface on top of the metal screen. I also used the excess thread to fall down from the backs of the pieces to look like they are flowing from one piece to the next creating the overall composition of this piece. The idea was to make a somewhat 3D piece while still staying in the realm of 2D. The flowing threads create an interaction in the pieces from one section to the next.

Things Have Changed, 2019

Sydney Gutowski

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Things Have Changed was created with the ideas of Mid-Century Modern Architecture and Art Nouveau styled female figures in mind. Bringing together architectural line work with my own rendition of an Art Nouveau female portrait being faintly portrayed on the background. These aspects of the piece are displayed through a color palette I created with the hopes of further correlating the piece to a Mid-Century modern style with the use of reds, blues, yellows, greens, and tans working alongside rusted accent pieces.

Existential Posters

Halie Howard

Leslie Atzmon, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Existential Posters is influenced by the philosophies of life and cosmic horror. These concepts seem more relevant to today's current conflicted socio-economic status. Existential Posters was created to reflect some of the uncaring nature of the world towards the current younger generations.

Reflection

Danielle Jeffries

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Reflections is a project from my fibers class. It depicts a female body with flowers raising up from the foreground. It is a long cotton fabric with a hand painted black gradient background with the female figure screen printed over top both using screen printing inks along with the leaves in the foreground. The lilies are hand dyed silk and appliquéd on through embroidery techniques.

40th Annual Undergraduate Symposium Identity

Jessica Loomis and Francesca Zapata

Ryan Molloy, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The Undergraduate Symposium celebrates the exceptional academic work of Eastern Michigan University students, showcasing student research and creative projects. Hosted by the College of Arts & Sciences, participation is open to undergraduate students from all EMU colleges and disciplines who have been nominated by a faculty mentor and recommended by their department/school. Our goal for the identity was to convey the multidimensional functions and multidisciplinary sides to academia. The use of green hues relates the design to the university colors of Eastern Michigan, while the block shapes speak to the symposium's unique ability to lift students up on a platform to be heard university-wide.

The Development of Leonardo Da Vinci's Scientific Reputation Through the Mona Lisa

Abigail G. Martin

Pamela Stewart, faculty mentor | Oral Session D | Auditorium | 4:00pm

This presentation explores the scientific interests of Leonardo da Vinci and his reputation as a “man of science,” both during the Renaissance and among modern scholars, through a case study of the renowned Mona Lisa. Synthesizing Leonardo's self-fashioned reputation of intellect and contemporary ideas of scientific aesthetic, analyses of the Mona Lisa have focused on the empirical process through which the painting achieves its enigmatic effect. I explore historiographic discussions of topics like optics, anatomy, and psychology, and consider how the Mona Lisa has come to encompass Leonardo da Vinci as both an artist and scientist.

The Darling Denim Skirt

Cheyenne Muter

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

I designed a denim skirt to challenge myself in my last semester at Eastern Michigan University. The denim skirt has a zipper, belt loops, a belt and four pockets with a tiny one in the front. First I sketched my inspiration. I designed my pieces on CAD software, and placed them in an orange peel. Next, the pieces were put in a model and placed in order. Then I put my pieces in a marker. After printing the paper, cutting, and taping all of it together the CAD element is done for the project. Next, I made the skirt out of fabric. I printed out another copy, and attached it to denim fabric. I sewed the fabric, put in a zipper, added in pockets, created a cute belt, and the skirt was done!

Bright Futures Ahead - Target Project

Brittany Powe

Leslie Atzmon, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

In this project, the class used seven target images, arranged into a template, to make a personal, political, social, or purely graphic statement. The circles served as a starting point to create recognizable imagery or patterns. The underlying intent was for us to find our own voices through personal expression. This project allowed me to branch out from computer-based illustration and move toward traditional illustration by using bright oil pastels and conte crayons as my media. The work ended up being a mixed-media collage using traditional portraiture. My theme looks toward the future, turning the targets into bright lights to represent the possibilities and opportunities that await me after I graduate.

The Possibilities of Variable Objects

Kevin Purify

John DeHoog, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

In this project I'm experimenting with making functional objects with a balance between random and systematic choices. Using an algorithm I designed to execute the instructions of Sol LeWitt's Wall Drawing #33, I let one set of the drawings determine the shape and structure for a series of small side tables. I am interested in the idea of a process where the object's form is devoid of choice. To bring them to life, I decided to use wood joined with traditional Japanese joints, and cast concrete for the tops. The finished project will showcase several finished tables as well as models and drawings.

Human Error

Olivia Reames

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This piece was created to be a representation of pattern and sub-pattern. The more dense pattern in the background was inspired by the Art Deco fish scale style pattern. The foreground pattern was inspired by my own work with one line faces, representing the idea of humanity and the similarities & differences of man.

Shy

Olivia Reames

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This piece was created to be a representation of dueling characteristics within myself. There's a quiet more subdued side of me that wants to hide and be unseen, and another which is emotional and proud to take up space, owning who I am and embracing my uniqueness.

Deconstructing Feminine and Influence: Bronzino's Portrait of Eleonora of Toledo and her Son

Nicole Rinkel

Pamela Stewart, faculty mentor | Oral Session C | Room 330 | 1:45pm

This project examines the Spanish symbolism of the dress worn by Eleonora of Toledo, Duchess of Florence, in a portrait by Agnolo Bronzino (c. 1545). The content of my work reflects my growing interest in deconstructing feminine ideals and stereotypes of women in Renaissance art. My research similarly builds upon the social history of Renaissance Florence and an idealized depiction of femininity. By creating an image with traditional feminine symbols, references to her Spanish heritage, and her authority as the Duchess of Florence, Bronzino creates a piece of political propaganda that depicts Eleonora as a powerful matriarch in a prospering political dynasty.

Prayer Rug

Ronan Sampson

Brooks Harris Stevens, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Prayer Rug references the form of a traditional prayer rug and uses text from the Qur'an and Hadith that reflect on health, cleanliness, and financial security – frequent themes in prayer – in conjunction with the layout of the inside of their mouth following a tooth extraction during a time of heightened financial stress. The repetitive motions involved in creating the piece correlate with the ritual repetitive movement of prayer itself. Dental imagery is a recurring symbol in their work due to its relationship to the body, health, and class status.

Prism Title Sequence

Kyle Scott

Ryan Molloy, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This piece was created for the title sequence of the upcoming animated show, Prism. It cycles through eight different logos, which represent the different elements that characters have control over. Each element is associated with a color, as well as a number. White is life and light; red is animals; orange is earth; yellow is energy; green is plants; blue is weather; purple is magic; and black is death and shadows. In the world of Prism, every person has control over at least two elements. The show is focused around the Prism family, who all have 3 or more elements at their disposal.

Killing Our Future

Rachel Sjolander

Andrew Maniotes, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

For this propaganda poster, I wanted to bring awareness to the damage humans cause when we pollute the water with our nets, garbage, and oil. Humans are destroying the earth by not cleaning up after ourselves and the sea turtles are suffering. When they get caught in a net, they either have to happen upon a human to help or they will drown. Because of pollution, the sea turtles are becoming endangered, nothing will change unless we become more aware of how we impact all ecosystems.

Eagle Locator

Kaitlyn Smith

Leslie Atzmon, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The Eagle Locator is an application, branding and promotional material project. The first step of this design process was the initial branding. This includes logos, typefaces, and colors used across all of the designs. After this step was completed, I was able to start designing and prototyping the application. The app is designed to help students become more involved on campus. The app is equipped to show how far away buildings are from your current location, available parking spots, events, and news. Towards the end of completing that stage I designed promotional materials. Including a poster, a series of fliers, and finally a mockup of a possible website as well.

Detroit

Sierra Smith

Andrew Maniotes, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The prompt for this project was to create a poster that shared an aspect of a Michigan city that an outsider would not be aware of. I decided to show the aspect of architecture in the city of Detroit. I have always admired the architecture found within cities because the buildings and structures are individually designed to serve different purposes, while they still all interact with each other to create an environment specific to that city. The design of Detroit is not intended to be an accurate representation of the relative location from one building to the next, but rather to serve as a way to see the beauty that I see in some of the highlighted buildings of Detroit.

Modular Graphic Design

Francesca Zapata

Leslie Atzmon, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

In this project, I used Adobe After Effects, which is motion graphics software, to brush up on techniques that produce smooth animation. At first my rationale was to master the software. However, I realized that, like the graphic design process itself, After Effects involves a variety of methods and explorations, which didn't leave me with a finish line for my project. Instead, I decided to express my concept of the graphic design process using vector shapes and smooth transitions. I used a minimal and anaglyph-inspired color palette to accent rather than overpower my concept. While color is used sparingly, it helps guide the viewer through the wild ride of transitioning flat vectors.

Investigating Interactions Between Arabidopsis VTC1 and KONJAC Proteins

Iqra Akhlaq

Aaron Liepman, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

VITAMIN C DEFECTIVE 1 (VTC1), a GDP-mannose pyrophosphorylase (GMPP) enzyme, plays a vital role in the biosynthesis of carbohydrates in plant cell walls. This enzyme catalyzes interconversion between mannose-1-phosphate and GDP-mannose. Prior studies have demonstrated that interactions between VTC1 and KONJAC proteins in the model plant *Arabidopsis thaliana* enhance VTC1 activity. Our goal is to further characterize these interactions using recombinant *Arabidopsis* VTC1 and KONJAC proteins, produced in *E. coli*. Understanding these interactions can provide more insight about the VTC1 protein and regulation of GMPP activity in plants.

Congeneric Comparisons of Pinus Seed Coat Thickness and the Effect of Pathogens on Seedling Growth

Rida S. Ali

Brian Connolly and Dr. Thomas Mast, faculty mentors

Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

The interactions between seed coat thickness and soil pathogens can affect plant survival and growth. We tested this relationship for three species of pine (*P. strobus*, *P. resinosa*, and *P. banksiana*). Our results showed fungal pathogens in the soil lowered total germination for *P. banksiana* and *P. strobus*. Killing of soil fungi via fungicide reduced *P. banksiana* and *P. resinosa* biomass suggesting phytotoxic effects of this pesticide use. Greater seed coat thickness, measured via scanning electron microscopy, corresponded with improved pathogen resistance. Our results better inform the relationship between *Pinus* seed structure and the influence of fungal pathogen attack.

Growth Under Greater Ambient Light Corresponds with Lower Herbivory for Wild Cucumber

Addison Babinski

Brian Connolly, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Light availability influences many aspects of plant biology. We tested the relationship between light availability and herbivory by growing wild cucumber (*Echinocystis lobata*) under eight light intensities for two weeks. We then conducted feeding trials with the generalist herbivore *Spodoptera exigua*. Herbivores consumed less leaf mass of *E. lobata* plants grown under greater light availability. Larvae fed leaves from plants grown in low light lost more weight suggesting that, while *S. exigua* ate more of this leaf tissue, leaves from low light plants were likely poorer quality. We conclude that variability in *E. lobata* herbivory across a landscape may be a function of light availability.

Promoting Antibiotic Activity from Silent Biosynthetic Gene Clusters in Soil Microbes

Sara Baghdadi

Paul Price, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45 am & 1:30 – 2:15pm

Bacteria are becoming increasingly resistant to antibiotics; however, no novel classes of antibiotics have been approved in over 30 years. We have isolated several soil microbes that produce antibiotics that kill extensively-drug resistant (XDR) bacteria on solid media, but fail to produce these antibiotics in liquid culture. We tested how changing different media components and strain combinations might affect antibiotic production. We see increased antibiotic production when simple sugars in the media are replaced with complex sugars and multiple antibiotic producing isolates are grown together with various stimulatory strains.

Utilization of New Alu Variants as DNA Markers for Advancing Human Population Research

Ashley Banach

David Kass, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Transposable elements are genetic elements that can jump to new chromosomal locations. Over one million Alu elements are present in the human genome and nearly 2,000 of these have integrated recently and are not fixed in human populations. These elements generate presence/absence (dimorphic) variants that are useful in human population studies. We have found three nucleotide variants within one of these dimorphisms, and developed polymerase chain reaction with restriction digest assays to identify and compare these variants in different populations. We propose this research will continue to build on current knowledge of Alu-based markers and advance studies of human population origins.

Understanding the Genetics of Pigmentation in Ball Pythons

Autumn Brown, Kaylee Comai, Dominic Mannino

Hannah Seidel, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00–10:30am

Wild ball pythons from sub-Saharan Africa exhibit a mottled color pattern, composed of yellow- to-red and brown-to-black pigments. Captive-bred animals exhibit variations in this pattern.

These variations are heritable, but little is known about their genetics. Here we investigated the genetic cause of the ‘albino’ and ‘caramel albino’ color variations. Both show a deficit of brown-to-black pigments in the skin. We find that both are likely caused by mutations in genes shared with humans and linked to similar pigment disorders in humans. Our study establishes ball pythons as a model for pigmentation genetics in reptiles and suggests that pigmentation genes are conserved from snakes to humans.

Effects of Soil Microtopography on Legume-Soil Mutualists Interactions

Cori Carson

Brian Connolly, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Soil microtopography, small variations in the soil surface, generates unique microclimates that modify the germination dynamics of sown seeds. However, it is unclear if differences in microtopography influence plant interactions with soil mutualists. Using a native legume (*Desmodium illinoensis*) and commercially provided *Rhizobium* sp. inoculum, we tested how variation in soil microtopography influenced microclimate conditions and seed germination dynamics. Variation in soil temperature increases linearly with variation in soil microtopography. Inoculation with rhizobium slowed germination rates, but germination rates were faster in trays with greater variation in soil microtopography.

The Effect of Rain Events on Microplastic Export in Streams

Morgan Chaudry

Kristin Judd, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Over the past few decades, there has been a boom in the production of plastics that has resulted in microplastic pollution as an emergent environmental concern in aquatic ecosystems. Most research on microplastics has been done in marine ecosystems, but less is known about microplastics in freshwater systems. The aim of this research is to assess microplastics in tributaries to Lake Erie. Additionally, I will track how rain events affect microplastic concentrations in streams. This poster presents preliminary data on microplastics in local tributaries. My research will contribute to an understanding of the emerging threat of microplastics in freshwater ecosystems.

Sticky Yeasts from Natural Fermentations and their Ability to Create Biofilms

Brittney Colvard and Kelly Myah

Daniel Clemans, faculty Mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Probiotic microbes propagate within the human gastrointestinal tract through the formation of biofilms by means of coaggregation. This study investigated the strong interactions of two yeast species isolated from fermented food products. These yeasts were paired with representative gut microbiota, known probiotics, and other microorganisms isolated from sauerkraut and kimchi. These partnerships were characterized using multiple assays to determine the nature of their associations. Further evaluation to assess their ability to form biofilms was completed using a flow cell system and microscopic imaging, which may act as a model for understanding how these associations might occur in the gut.

Diversity in Restored Prairies: Too Much Grass or Bad Soil Microbes?

Savannah Gariepy

Emily Grman, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Human land use has decimated native prairies. Restoring prairie plant diversity has been challenging, partly because one native grass, big bluestem, becomes problematically over-abundant. To investigate whether this occurs because too much big bluestem seed is added or because of the influence of soil microbial communities, we grew several prairie plant species with varied densities of big bluestem in pots with four different soil microbial communities: old and new restorations, remnant prairie, and sterile. We predict that communities grown in older/remnant soils with less big bluestem will yield higher diversity than communities grown in young/autoclaved soils with more big bluestem.

Greater Leaf Area in Introduced Wild Cucumber Populations Implies Increased Conspecific Productivity

Kathleen Gimmarro

Brian Connolly, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Invasive species may flourish due to differences in morphological traits that allow them to out-compete native species. In this study, we examine how leaf area - a proxy for plant productivity - differs between invasive and native populations of wild cucumber (*Echinocystis lobata*). Our analyses indicated that invasive *E. lobata* exhibited greater leaf area than native conspecifics. This implies that greater leaf area may be a physical adaptation of *E. lobata* in non-native ranges, potentially contributing to increased productivity and helping drive the invasion of this species in its introduced range.

Developing and Testing a Cognitive Field Test for Lead-Exposed Wild Songbirds

Samantha Glowacki

Jamie Cornelius, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Many areas in Flint, MI were exposed to lead-contaminated drinking water from 2014-2017, and the leaded-water may have moved into the environment through irrigation. Recent studies have found that juvenile American robins (*Turdus migratorius*) in Flint have blood-lead levels considered dangerous to brain functioning. We developed and tested a feeder puzzle for assessing the cognitive effects of lead in songbirds. The prototype was visited by robins, starlings (*Sturnus vulgaris*), and sparrows (*Passer domesticus*). Starlings were able to solve the puzzle and visited the puzzle in small groups, suggesting that the feeder could be used to evaluate how lead affects songbird cognition and learning.

Generating a Cold Tolerance Catalogue of North American Prairie Grasses

Matthew Jackson

Brian Connolly, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Climate change is increasing the potential for cold damage on juvenile plants, but little is known about how cold tolerance in plants differs between species as they age. We measured the cold tolerance of three temperate grasses with overlapping ranges in North America (*Elymus canadensis*, *Schizachyrium scoparium*, *Bromus kalmii*) at tiller heights ranging from 6-24cm.

We found that seedlings became more cold tolerant as they grew and that *S. scoparium* had the highest LT50 values, indicating it was the least tolerant of the three. Disparate cold tolerance between species may result in shifts in plant community structure if freezing events become more common as a consequence of climate change.

Pistol Shrimp and High-Fin Gobies: Does Behavior Affect Pairing Times?

Amanda Johnson

Cara Shillington, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Red-banded pistol shrimp have a symbiotic relationship with high-fin goby fish, making the pair a popular choice for aquarium hobbyists. With poor eyesight, shrimp rely on the goby to watch for predators while shrimp build burrows where both live. To examine how shrimp and goby find each other, an unpaired goby was isolated in a small box for 24 hours before being released to find an unknown shrimp in a larger tank. These paired animals were then moved to a new tank and similarly introduced. For 15 pairs, we recorded times to find each other and behaviors for unpaired and paired animals. Behaviors were highly variable and we found no correlations in times between the groups.

Developing Tools for Prairie Restoration: Identifying Helpful Rhizobial Bacteria

Garry Lewis and Tany Grant

Paul Price, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Re-introducing native plants to prairie restoration sites has been challenging. Studies indicate that native prairie microbes improve plant establishment in restored prairies. Less is known about the contributions of rhizobial bacteria. We hypothesized that restored prairie soil lacks beneficial strains of rhizobia. We tested this by isolating and identifying strains of rhizobia found in the roots of plants grown in soil from native and restored prairies. We found multiple strains of rhizobia in some plant species grown in soil from both native and restored prairies, suggesting that for some plants, the presence or absence of rhizobia may be less important than rhizobial strain quality.

Advancements in Alu-Based DNA Markers for Studies of Human Populations

Madeline Maki

David Kass, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Alu elements represent the most common short interspersed DNA elements (SINEs) in the human genome with over one million copies. Roughly 2,000 Alu elements are not fixed in the human genome, providing DNA markers that are highly useful in human population studies. Upon sequencing an Alu locus we have identified additional variations for one of these markers and have developed a relatively simple assay to identify the variants among individuals. Thus far, we identified a variant common in American Caucasians yet rare among Asians and Africans. The findings support an increased robustness of our methodology for advancing studies of human populations.

Investigating the Role of Rad51p on DNA Repair in *Saccharomyces cerevisiae*

Aubrey Martin

Anne Casper, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30 am

Fragile Sites are large chromosomal regions that are especially prone to double-strand breaks. This can cause cancer. I am studying how Fragile Site 2 (FS2), on yeast chromosome III, is repaired. I hypothesize that the rad51-A265V (Ala to Val) mutation will cause increased error-prone repair of FS2. This change impairs Rad51p function of binding to the broken end of DNA. I isolated chromosomal DNA and determined chromosome size by CHEF gel electrophoresis and Southern blotting. I used next-generation paired-end sequencing to determine the sequence of the entire genome. I have isolated chromosomes containing a repair event of interest and am in the process of identifying repair pathways.

Collection and Isolation of Ethanol-Producing Wild Yeast from Fish Lake Flora

Maggie McCullough, Aubrey Martin, Alia Frederick

Cory Emal and Brian Connolly, faculty mentors

Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Humans have been using yeast for fermentation for millennia, and we continue to explore novel cultivation methods to isolate and cultivate new, productive varieties. For this study, we examined factors that influence the abundance and viability of yeast on plants found at Fish Lake in Lapeer, MI. In particular, we explored patterns of yeast abundance and growth in the context of different collection sites (e.g., forest cover types). Yeast harvested from various plant structures and forest cover types were used to inoculate a wort solution containing hops and/or ethanol to discourage undesired organisms. Yeast fermentative capability was determined by the change in density of the wort.

Analyzing the Influence of Hypoxia on DNA Repair in *Saccharomyces cerevisiae*

Jordan Montagano

Anne Casper, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Fragile sites are regions of DNA that are prone to gaps and breaks. This can cause problems, including cancer. I am utilizing the yeast *S. cerevisiae* to study how Fragile Site 2 (FS2) on chromosome III is repaired under hypoxic conditions. I hypothesize that hypoxia will induce more error prone repair pathways. I isolated chromosomal DNA using DNA harvest techniques and CHEF gel electrophoresis. Chromosome size was determined through Southern blotting. Next-generation paired-end sequencing was used to determine the sequences of the entire genome. To date, the chromosomes containing a repair event of interest have been isolated and sized and repair pathways are being identified.

Error-prone DNA Repair Does Not Increase in *sgs1*-FD Mutants of *Saccharomyces cerevisiae*

Joseph Oberlitter, Beth Wasserman

Anne Casper, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00–10:30am

Repair of DNA double-strand breaks (DSBs) can lead to mutations and rearrangements, potentially leading to cancer. We are investigating mmBIR, an error-prone DSB repair pathway in *S. cerevisiae*, also seen in cancer cells. We analyzed a previously documented mutation, *sgs1*- F1149D (Phe to Asp), which disrupts its normal interaction with Rad51p, a protein involved in the canonical BIR repair pathway. We hypothesized that *sgs1*-FD mutants will have more error-prone mmBIR than canonical BIR. We collected cells with repaired DSBs, and analyzed their genomic sequences and the sizes of the repaired chromosomes. In *sgs1*-FD mutants we observe no increase in mmBIR, inconsistent with our hypothesis.

The Relationship Between BIOT303 Students' Achievement Goals and Engagement in Reflective Writing

Anna Pathammavong

Chiron Graves, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00–11:45 am & 1:30–2:15pm

Reflective writing offers educators a way to assess how engaged their students are in key metacognitive activities. This study examines the relationship between student achievement goals and their engagement in reflective processes by evaluating reflective writing samples submitted by future elementary school teachers enrolled in a science teaching methods course. Writing samples were analyzed quantitatively using word counts and qualitatively using the organization and content of the writing samples. These data were used to determine whether students with mastery achievement goals were more likely to be engaged in reflective practices compared to students with performance achievement goals.

Food Availability and its Effects on Spatial Habitat Use in Red Crossbills (*Loxia curvirostra*)

Liam C. Pendleton

Jamie M. Cornelius, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Animal movement plays a significant role in the development and fitness of species. The ability to secure resources requires energy spent foraging and is reflected in movement patterns. This study investigates the relationship between food availability and movement patterns of red crossbills (*Loxia curvirostra*). We captured 40 birds through summer and winter months from 2009 to 2017. Birds were fitted with radio transmitters, released and tracked. GPS coordinates were used to generate statistical models to analyze habitat use across conditions. We discuss activity patterns and habitat use in the context of foraging theories, food availability, season and red crossbill foraging ecology.

Can eDNA be used to Detect Phage-Susceptible Cyanobacterial Strains?

Konner Pepper

Michael G. Angell, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Ford Lake contains a bloom-forming cyanobacteria, *Microcystis aeruginosa* which, in its natural system, is subject to viral (phage) predation. Phage-mediated lysis releases host DNA (eDNA) which may be used to detect cyanobacterial strains showing viral susceptibility. Using a laboratory-model system, phage-resistant and non-resistant *Microcystis* strains were co-cultured and infected with the phage, Ma-LMM01. At multiple timepoints post-infection, filter-retained and filtrate DNA was extracted and analyzed by quantitative PCR for the presence of DNA from the susceptible strain. Our hypothesis is that DNA from the phage-susceptible strain will be enriched in the filtrate fraction.

Demonstration of Cofilin Function in *Xenopus laevis* Embryonic Development

Verginio Persicone

Robert Winning, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Cofilin is a protein that functions in the signaling pathway for cell migration; this includes cell migration during embryonic development. This study observed how cofilin functions in embryonic development in the frog *Xenopus laevis*. I hypothesized that loss of cofilin function in *X. laevis* embryos would result in changes in embryonic development. This hypothesis was tested using CRISPR Cas9, a gene editing tool, to induce a mutation in the cofilin gene that would knock out cofilin function in newly fertilized embryos. Results indicate that cofilin plays a vital role in normal embryonic development, and loss of cofilin function results in exogastrulation of the embryo.

Analysis of Colony Formation in *Microcystis* Morphospecies

Sean Polidori

Michael Angell, faculty mentor | Oral Session D | Room 330 — 3:15pm

Microcystis is a toxic blue-green algae capable of forming macroscopic colonies that harm freshwater ecosystems. These colonial structures, known as morphospecies, typically develop as a response to environmental stress. The objective of this study was to characterize colony development and to investigate intragenus interactions during this process. Three different morphologies were sonicated and assessed for their rate of re-formation and cellular arrangement. Quantitative molecular techniques were used to measure the incorporation of lab-adapted *Microcystis* into wildtype communities. Characterization of these interactions may further the effort of preventing algal blooms.

Fzr-1 Knockdown in *C. elegans* to Test the Role of APC/CCdh1 in the Abbreviated Cell Cycle

Cassandra L. Rigor

Hannah S. Seidel, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00–10:30am

Cancer is a leading cause of death worldwide and is characterized by defects in the cell cycle, the program cells use to replicate. One important factor controlling the cell cycle is a protein complex known as the anaphase promoting complex (APC/CCdh1). This complex controls the canonical cell cycle, but whether it functions similarly in the abbreviated cell cycle, a non-canonical form of the cell cycle, is unknown. We examined the role of APC/CCdh1 in the abbreviated cell cycle by turning off its expression in the reproductive system of the model organism *C. elegans*. Our work contributes to our knowledge of APC/CCdh1 function and mechanisms underlying cell-cycle defects in cancer.

An Analysis of Restoration Practices: A Look to the Future

Brynn Ritchey

Emily Grman, faculty mentor | Oral Session A | Room 352 | 10:00am

Ecological restoration, the process of assisting the recovery of damaged ecosystems, is a rapidly developing discipline with a plurality of goals, methods, and outcomes. I argue that restoration is currently backward-looking and needs to shift to a future-looking approach to plan for a changing climate and a growing population. Further, I will explain how philosophy can help us sort out conflicts between different incommensurable values placed on ecosystems. This can help bridge the gap between decisions about money-making ecosystems which provide ecosystem services and intrinsically valuable wild ecosystems.

Impact of Microbial Diversity on *Amorpha canescens* Growth

Tamara Snelson, Scott Larabell, Erasmo Sanchez

Daniel Clemans, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Human agricultural activity has caused lasting damage to prairies, stripping them of their diverse microbial ecosystems causing a decline in native flora. Our study aims to determine which microbial populations support the germination and growth of *Amorpha canescens*; a model for prairie plants. Microbial communities from either remnant or restored prairie soils were used to determine the effect of microbial diversity on the growth of *A. canescens* in a growth chamber. The effects of diverse microbial communities on plant growth and biomass will be measured. Microbial diversity of the soils and inocula will be assessed using DNA sequencing. Data from these analyses will be presented.

Establishing an Axenic Culture of *Microcystis aeruginosa*

Charles Southwell

Michael Angell, faculty member | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Microcystis aeruginosa is a type of cyanobacteria capable of producing toxic algal blooms that pollute freshwater lakes in Michigan, making studying *M. aeruginosa* vital to the environmental conservation of these lakes. In order to better understand *M. aeruginosa*, we attempted to isolate it as an axenic culture, or separate the algal cells from other organisms. To do this, non-axenic cultures of lab grown *M. aeruginosa* were treated with different antibiotics, as well as filtration and dilution. Although there was a significant reduction in non-algal cells, we failed to produce an axenic culture. However, future experimentation using UV light with antibiotics may yield promising results.

Painted Turtle (*Chrysemys picta*) Home Range and Habitat use in a Dam Impoundment

Bria Spalding, Edie Nissen, and Andrew Pampreen

Non-presenting student: Michelle Souza

Katherine Greenwald, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Habitat fragmentation, including damming rivers, is a major threat to species conservation in urban areas. The purpose of our study was to assess the potential effects that the removal of the Peninsular Paper Dam (Huron River, Ypsilanti) might have on Painted Turtles. We tracked eight female Painted Turtles daily over the summer of 2019. Using GPS location data, water depth, and predicted river flow allowed us to make predictions about the future success of native turtles after the dam is removed. Our results suggest that the future river may not be optimal Painted Turtle habitat following the dam removal, and this species should be actively managed throughout the removal process.

Characterization of the VITAMIN C DEFECTIVE 1 Protein of Voodoo Lily (*Amorphophallus konjac*)

Dominic Tigani

Aaron Liepman, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

The VITAMIN C DEFECTIVE 1 (VTC1) protein, a GDP-mannose pyrophosphorylase, is involved in the synthesis of GDP-mannose, a nucleotide sugar substrate used for the biosynthesis of plant cell wall carbohydrates. My research aims to biochemically characterize AkVTC1, a VTC1 homolog from the voodoo lily plant (*Amorphophallus konjac*). Using *E. coli* as an expression host, we have produced recombinant native and epitope-tagged versions of AkVTC1. All versions of this protein accumulate as insoluble inclusion bodies. We have investigated and optimized various mild solubilization and washing treatments aimed to recover active AkVTC1 protein from inclusion bodies.

Soil-mediated Effects of Woody Shrub Invasion on Eastern White Pine (*Pinus strobus*) Germination

Jace Vael

Brian Connolly, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Invasive shrubs can disrupt forested ecosystems by altering local soil microbial communities. These modifications in microbe communities may then influence the establishment of native trees by directly altering seed germination dynamics. In a greenhouse study, we tested how soil conditioning by woody invaders (i.e., Autumn Olive, Honeysuckle) influenced Eastern White Pine (*Pinus strobus*) seed germination. Using soil collected in November 2019, we observed no significant differences in *P. strobus* germination between invaded and cleared forest sites. Future work will assess how seasonal variation in microbial activity influences *P. strobus* germination in invaded and uninvaded sites.

Microbial Manipulation: The Sweet Case of Antibiotic Discovery

Lilly Vael

Paul Price, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Infections caused by antibiotic resistant organisms are increasingly prevalent in healthcare settings. Meanwhile, the discovery of novel antibiotics is stagnating. Microbes naturally produce antimicrobial metabolites to protect themselves and their resources from competing microbes. Our research aims to revitalize the antibiotic discovery process by manipulating the conditions in which microbes produce antimicrobial metabolites. Recent studies demonstrate that when available carbon is restricted to complex polysaccharides, microbes respond by increasing antimicrobial production. By varying the polysaccharide source, we observed distinct differences in antimicrobial production.

To Eat or Not to Eat: Urbanization and the Foraging Behaviors of Michigan Passerines

Victoria Vo

Jamie Cornelius, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm.

Urbanization creates novel obstacles for a variety of wildlife, potentially affecting birds through changes in their foraging behavior. Foraging is shaped by metabolic demand, food preference and food accessibility, among other factors. Urban bird populations may be more successful in obtaining food from complex or non-traditional sources due to repeated exposure to unfamiliar objects. By modifying the accessibility of paired bird feeders, I tested urban and rural bird populations in their ability to access two seed types. Length of visitation, removed seed mass and community composition varied across environments in sometimes surprising ways.

Prairie Legumes Need Soil Microbes: a Species Specific Approach to Successful Prairie Restorations

Janae White

Emily Grman, faculty mentor | Oral Session A | Room 352 | 9:45am

Ecologists aim to restore post-agricultural land to support native prairie plants, but legacies of elevated soil phosphorus disrupt beneficial plant-microbe interactions. We asked how prairie legumes, plants who use microbes to fix nitrogen, are affected by soil microbes and fertilizer. In the greenhouse, we grew 10 legume and 10 non-legume species in native and restored prairie soil; half received phosphorus. Remnant prairie microbes increased the growth of 4 legumes but no non-legumes. These effects were not disrupted by phosphorus; phosphorus increased growth of 3 species. This suggests that the roles of soil microbes and phosphorus in shaping prairie restoration may be more complex.

How do Road Salts Affect Stream Ecosystem Structure and Function?

Caleb Willette

Kristin Judd, faculty mentor | Oral Session B | Room 352 | 10:45am

Freshwater salinization syndrome has many causes including the use of chloride-containing deicing salts. Chloride may affect microorganisms, such as bacteria and fungi, important decomposers in freshwater streams. To understand whether salt impacts bacteria or fungi more strongly, we incubated cotton strips in two streams, then added treatments of salt, fungicide, and salt with fungicide. We assessed decomposition of the strips and the functional community profile. In the rural stream, fungi accounted for 64% of the decomposition; In the urban stream fungi accounted for only 8%. Salt had a greater impact in the rural stream than the urban stream.

Determining the Cooperative Histone Binding Properties of the TTD and PHD Domains of UHRF1 and UHRF2

Sara Abdrabbo

Brittany Albaugh, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

UHRF1 and UHRF2 are epigenetic proteins that vary in expression in several types of cancers. The histone binding properties of these proteins are poorly understood. Previous studies have shown mutating either the TTD or PHD domains of these proteins partially disrupts their ability to interact with histone H3, suggesting both domains participate in binding. We tested this hypothesis by creating double domain mutations in both UHRF1 and UHRF2 proteins and measured the binding affinity to H3 peptides by Fluorescence Polarization. This study will provide information as to how these mutated sites impact histone binding and lead to a greater understanding of these proteins in cancer.

Current Dietary Sustainability and Potential Alternatives with Policy Recommendations

Addison Babinski, Brynn Ritchey, and Jace Vael

Jeffrey Guthrie and Richard Nation, faculty mentors

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Sustainable diets are nutritionally sufficient, environmentally sustainable and cost efficient. With more than 9 billion animals farmed in the US yearly, traditional meat based diets no longer meet these criteria. Animal rearing represents disproportionate resource consumption and no longer ensures global food security. Additionally, red and processed meats have been shown to be carcinogenic and put regular meat eaters at higher risk of medical complications. Our project evaluates typical meat proteins and proposes plant and insect alternatives that better meet the needs of growing populations. We suggest a reduction of animal proteins through personal diet change and wide scale legislation.

Schiff Base Synthesis to Chelate Metal Ions

Nemer Boussi Junior

Lawrence Kolopajlo, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

A Schiff base condensation between tris(2-aminoethyl)amine and these long chain aldehydes : nonal, octanal, and dodecanal resulted in compound with a bi- or tri-dentate ligand, with a hydrophilic head, and a hydrophobic tail. This compound may be useful in chelating heavy metal ions in oil. The reaction was performed at Room temperature, in three ways: neat, and in the solvents dichloromethane (DCM), or toluene. Products were characterized by IR and NMR. Goals of the project include: illustrating a green synthesis of a novel compound that may be used as a heavy metal remediation in oils and soils.

Investigating the Binding Interaction of UHRF1 PHD D334A to H3K9me3

Kaitlyn Bricker

Brittany Albaugh, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Ubiquitin-like, containing PHD and RING finger domains protein 1 (UHRF1) is an epigenetic histone reader protein. D334 of UHRF1 within the PHD is proposed to ionically interact with R2 of H3. To test this possibility, we created a UHRF1 PHD D334A mutant by mutagenesis and analyzed its impact on the binding of H3 peptides by fluorescence polarization. We found that changing the negatively charged aspartic acid to neutral alanine ceased the ability for UHRF1 and H3 to bind. This study has allowed us to better understand the UHRF1-histone interaction.

Characterization of the Histone Binding Properties of D337 UHRF1 Mutants

Nick Butkevich and Mady Basch

Brittany Albaugh, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

UHRF1 is an epigenetic protein involved in cancer regulation. The binding of UHRF1 protein to histone H3 via ionic interactions may cause the repression of tumor suppressor genes. The goal of this project is to determine the role of amino acid D337 in UHRF1 in binding to histone H3. D337 UHRF1 mutants D337A (Aspartic Acid to Alanine) and D337N (Aspartic Acid to Asparagine) were generated by PCR. The mutated DNAs were then transformed and expressed in Rosetta E. Coli. The mutant proteins were purified and the binding affinity of the mutated proteins to histone H3 peptide were measured by fluorescence polarization. The results of this work will be presented.

Synthesis and Antitumor Properties Of cis[Pt(Alkylamines)₂(Oxalate)] Complexes

Lauren Colone

James D. Hoeschele, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Currently, three platinum(II) antitumor complexes have been approved by the FDA for the treatment of various solid cancers. Among the compounds is Oxaliplatin, [Pt(1R,2R-Diaminocyclohexane)(Oxalate)], used in the treatment of cancers of the colon, rectum and, the G.I. tract. We have initiated a research program to synthesize analogs of Oxaliplatin in which the 1R,2R-diaminocyclohexane group is replaced by primary alkyl amines, as in cis-[Pt(RNH₂)₂(oxalate)]. Thus far, two analogs have been synthesized wherein R= methyl and ethyl and a third complex, incorporating the isopropyl amine, is planned. These complexes will be tested for antitumor activity against the L1210 system and then converted to Pt(IV) complexes having the form: [Pt(RNH₂)₂(OH)₂(oxalate)]. The results of these studies will be presented.

Synthesis and Purification of Phenacetin: An analysis of an Organic Chemistry Lab Experiment

Lauren Colone and Tylyn Simpson

Non-presenting authors: Ellen Walker and Odia Sylla

Harriet Lindsay, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30-2:15pm

Our project required us to find a better way to run the classic Williamson ether synthesis of phenacetin. We were able to calculate the waste, atom economy and cost as well as determine the safety concerns of the original experiment. We then used this information as a basis for comparison to alternative methods that we proposed. We suggested two alternative methods to run this experiment: the Mitsunobu reaction and the Williamson ether synthesis with another leaving group. Overall, these reactions all had their advantages and disadvantages, but each could be used in appropriate situations depending on one's priorities with regard to cost, safety, and environmental friendliness.

Antimicrobial Effects of Insulin Growth Factor Binding Protein Peptides

Jonathan Devos

Non-presenting author: Sadaf Dorandish

Hedeel Evans and Deborah Heyl-Clegg, faculty mentors

Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Antibiotic resistance is a serious concern in medicine, and so there is a growing need for novel antimicrobial compounds. Many bacteria adhere to host cells by binding to cell surface glycosaminoglycans. Insulin Growth Factor Binding Proteins (IGFBPs) with heparin binding motifs have cationic amino acids which bind to and disrupt bacterial cell membranes, as well as competitively inhibit bacterial adhesion to host cell surface glycosaminoglycans. The aim of our project is to synthesize novel IGFBP peptide analogs, test their binding affinity to cell surface glycosaminoglycans, and test their efficacy as antimicrobial peptides.

Techniques for 3D Simulation of Autophagic Bodies in Cell Vacuoles

Payton Dunning and Ayanda Brydie

Steven Backues, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

When facing starvation, eukaryotic cells undergo autophagy in order to maintain cellular homeostasis by recycling cellular material to reuse the nutrients. In yeast cells, cellular material is transported to the vacuole in autophagosomes to be degraded. The resulting autophagic bodies can be measured using electron microscopy to generate 2D slices or snapshots of the cell vacuole. These 2D images are not perfect representations and may leave out entire autophagic bodies. To better understand the size, number, and configuration of autophagic bodies within vacuoles undergoing autophagy, this project seeks to generate techniques to simulate 3D autophagic bodies within a cell vacuole.

Investigating Selective Autophagic Protein Interactions with their Principal Organizer, Atg11

Kimberly Edicha and Chase Chitwood

Steven Backues, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Selective autophagy is a function of the cell whereby dysfunctional components (cargo) are encapsulated in a double membrane vesicle (autophagosome) and taken into the vacuole for degradation. Atg11 is a key protein in the organization of other autophagic proteins (Atg) to the site of the cargo. However, the process by which Atg11 does this is still unknown. Mutating amino acids in Atg11's theorized binding sites allows investigation of the structure and function of Atg11. Previous yeast two hybrid data showed that these mutations disrupted binding interactions with multiple partners. We look to reinvestigate these protein interactions using an alternate method, coimmunoprecipitation.

Identification of Spectroscopic Markers of Varietal honeys via NMR

Alia Frederick

Non-presenting authors: Aubrey Martin and Maggie McCullough

Cory Emal, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Honey is typically produced by bees using nectar foraged from flowering plants or the secretions of other insects. When a bee colony visits one primary source, the honey can become enriched in chemical compounds related to that specific source; the result is a 'varietal honey'. With the recent increase in interest in honey as a base for fermented products (e.g. mead) or medicinal purposes, there is an increased need for analytical methods to verify that a particular varietal honey is, in fact, the varietal that the seller claims it to be. Here we present the initial efforts in identifying chemical markers for individual varietal honeys using nuclear magnetic resonance (NMR) spectroscopy.

Identifying How Atg14 Expression Levels Determine Autophagic flux.

Mukiri Gilruth

Steven Backues, faculty mentor | Oral Session D – Room 330 – 3:30pm

Bulk autophagy is a cellular process which involves the recycling of bulk cytosolic material typically under starvation conditions. Patients with perturbed autophagic pathways are often subject to neurodegenerative diseases, thus autophagic research is significant to human health. Autophagy is mediated by a cascade of specialized proteins referred to as ‘autophagy related proteins’ (Atg proteins). Atg14 is a part of a complex (PI3K) which plays an essential role in the formation of autophagosomes. Through the genetic manipulation of promoter and terminator regions as well as a standard autophagic flux assay (ALP), I am examining the relationship between Atg14 expression and autophagic flux

Seasonal Trends in Particulate Matter in SouthEast Michigan

Huma Hussaini

Gavin Edwards, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00-11:45am & 1:30 – 2:15 pm

Of the common air pollutants people are exposed to, one of the least understood is particulate matter, specifically (PM_{2.5}), named as these aerosols are <2.5 μm in diameter. The source of PM_{2.5} is mainly automobile exhaust and these particles can easily be inhaled downwind of sources. Emerging science suggests that individuals receiving exposed to significant levels of airborne PM_{2.5} are subject to several deleterious human health impacts. In this work, we have measured the concentration of PM_{2.5} near campus and have attempted to evaluate the seasonal climatology of this important pollutant. Data from the calendar 2019 are presented and seasonal trends in the level of PM_{2.5} discussed.

Discovering Feline Leukemia Subtypes in Infected Cats and Kittens

Sally J. Kazbour

Heather Holmes and Brittany Albaugh, faculty mentors

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm.

FeLV is a retrovirus that inhibits feline immune systems that ultimately causes infections and other diseases in cats and kittens. It's a fatal disease with no known cure. We have extracted DNA from several deceased cats and kittens with FeLV. The four different types of FeLV are FeLV-A, FeLV-B, FeLV-C, and FeLV-T. The main focus of this research is identifying FeLV-B and/or FeLV-C in the genomic DNA extracted from each sample of blood. We are doing this ultimately to integrate research on Feline Leukemia in the classRoom and into the biochemistry lab as a service learning component. The results will be further sequenced for confirmation to determine if any unique mutations are present.

Identification of the Amino Acids Responsible for Atg11 Binding via Yeast-two Hybrid

Alex Kilgore

Dr. Steven Backues, faculty mentor | Oral Session D | Room 330 | 3:45pm

Autophagy is the process by which cells package & ship material to the vacuole for breakdown. Atg11 is a key autophagy protein that is thought to be a central organizer of other autophagic proteins. Determining which amino acids are necessary for binding will help to get a better understanding of how Atg11 organizes its partners. To determine locations crucial for binding, a series of mutations at predicted binding sites on Atg11 were created. These were tested via a Yeast-2-Hybrid assay to determine which Atg11 mutants lost the ability to bind. Our data suggest that amino acids Y565 & I562 are key for the binding capability of Atg11, or its overall structure.

Exploring the Gene Structure and Function of UHRF2

Brendon Kociba

Non-presenting author: Isaak Miller

Brittany Albaugh, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Epigenetics involves understanding how genes are regulated without changing the DNA sequence. UHRF2 is an epigenetic protein with possible anticancer properties. Two projects will be presented. The first involves designing a mammalian UHRF2 expression plasmid for the purpose of interrogating histone:protein interaction in cells. The second involves the purification of a UHRF2 protein construct that will be used for determining the crystal structure of UHRF2 with histone H3. These projects will provide insights into the mechanism by which UHRF2 interacts with its histone binding partners.

Examining the Contents of Ancient “Perfume” Bottles

Sam Mahan

Ruth Ann Armitage, faculty mentor

Poster Group 2 – Room 310 A/B – 11:00-11:45am & 1:30-2:15pm

This study seeks to identify the contents of eight Greco-Roman ancient glass vessels, called unguentaria, thought to have held perfumes or ointments. Ten samples were collected to determine their composition through multiple analytical techniques. Most of the residues contain fatty acids, which may indicate the presence of animal fats or plant oils. Aroma compounds were suggested by the preliminary data, and have been historically documented for use in perfumes. Two residues contained the pigments galena and malachite, suggesting that they may have been cosmetics. Further analysis will help to narrow the source of the fatty acids and may confirm the presence of aroma compounds.

Isolation of Wild Yeast and Assessment of Fermentative Capabilities

Aubrey Martin

Non-presenting authors: Maggie McCullough and Alia Frederick

Cory Emal, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15 pm

Modern commercial production of fermented alcoholic beverages is typically performed with a pure, cultured strain of *Saccharomyces* yeast, providing predictable and consistent results. However, with a growing interest in using local ingredients for food and beverage production, many producers are seeking out wild yeast captured from local flora with desirable fermentation characteristics. In this study, we describe the capture of wild microorganisms on the campus of EMU and the greater Ypsilanti area. Organisms are assessed based on their ability to produce ethanol from a simple wort solution and their resulting organoleptic qualities.

Synthesis of Peptide Mutants Based on Insulin Like Growth Factor Binding Proteins (IGFBPs)

Jamison McCollum

Non-presenting author: Patrick McCombs

Deborah Heyl-Clegg and Hedeel Evans, faculty mentors

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

IGFBP peptides containing a hyaluronan binding sequence (IGFBP-3 and -5) are able to bind to the sugar hyaluronan, preventing its activation of the cellular receptor CD44 which is responsible for triggering a signaling cascade leading to increased cellular proliferation and tumorigenesis. Because the peptides also contain a heparin binding domain, heparin sulfate competes with hyaluronan for binding, preventing the inhibition of CD44. The goal of this research is to confirm the binding domains by synthesizing mutants that bind to hyaluronan only, heparin only, or neither. IGFBP peptides based on the 18 amino acid C-terminal homologous region of IGFBP-3 and -5 were synthesized and tested.

The NMR Investigation of Silicon Phthalocyanine Derivatives with Various Capping Groups

Rida Oudeif and Daniel Kilgore

Vance Kennedy, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

This research investigates the NMR spectra of Silicon Phthalocyanine Derivatives. This work includes advanced proton NMR techniques (NOESY and COSY), carbon NMR techniques (DEPT and ATP), as well as multinuclear proton carbon techniques. These phthalocyanine compounds are of interest due to their optical properties.

Determining the Structure of a Crucial Catalyst Intermediate in an Alkylation Reaction

Kristine Platt and Ashton Havens

Maria C. Milletti, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Transition metals like rhenium play a crucial role as catalysts, speeding up chemical reactions to make them practical in an industrial setting. We use computational methods to model several possible structures of a rhenium carbonyl catalyst that facilitates the monoalkylation of arenes, a reaction that is used in the synthesis of pharmaceutical compounds. Identification and characterization of the catalyst intermediate structure will give researchers a more complete understanding of the crucial step in the catalytic cycle for this reaction and therefore the ability to improve reaction conditions leading to higher selectivity and yields.

The Effects of Point Mutations in Atg3 on Autophagic Activity

Jacquelyn Roberts

Steven Backues, faculty mentor | Oral Session D – Room 330 – 4:00pm

Autophagy is a highly regulated process of cellular “recycling” by which cellular contents are sequestered by a membrane vesicle, or autophagosome, and delivered to the vacuole for degradation. Autophagy is implicated in aging, neurodegenerative diseases, and cancer. This process is mediated by over 40 Autophagy-related (Atg) proteins. Atg3 is a protein crucial to autophagosome expansion. From previous studies on a similar protein, Atg10, we hypothesize that point mutations in Atg3 will create a defect in autophagic function. Here the effects of mutations in Atg3 on autophagic activity and downstream protein conjugation will be measured by western blotting and chemical assays.

Replacement of Hydrazide Moieties in Inhibitors of Plasminogen Activator Inhibitor-1

Micaela Schempf

Cory Emal, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

The human protein plasminogen activator inhibitor-1 (PAI-1) is largely responsible for the regulation of fibrinolysis, or blood clotting. Mammalian PAI-1 concentrations are typically very low, but abnormally high levels of PAI-1 correlate with a number of common pathological conditions, including stroke, heart attack, and kidney fibrosis. The ability to target and inhibit excess PAI-1 with a selective small-molecule inhibitor in order to treat or prevent these pathologies is desirable. This study focuses on the replacement of the hydrazide functional group in existing PAI-1 inhibitors with functionalities that potentially retain activity and provide improved pharmacokinetic properties.

The Effect of Autophagy Related Protein 10 and its Mutants on Autophagosome Size and Number

Nadia Silvia

Steven Backues, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Autophagy is the cellular degradation process in which cellular contents are encapsulated by double-membrane vesicles, autophagosomes, and delivered to the vacuole to be degraded and recycled. This process is important for cell health and homeostasis. There are approximately 32 different autophagy-related proteins involved. Atg10 is an enzyme that may affect overall autophagic activity by changing autophagosome size and/or number. Our goal is to find mutants that cause a partial loss in Atg10's activity by mutating some residues near the active site and testing the functionality of these mutants by performing western blots and enzymatic assay.

Elucidating amyloid beta Conformations and Interactions with Humanin in Lung Cancer Cell Lines

Alexis Stephens

Hedeel Evans, Deborah Heyl-Clegg, and Jeff Guthrie, faculty mentors

Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Amyloid beta (A-beta), the main component of amyloid plaques found in Alzheimer's Disease, was shown to be protective against certain types of cancer and capable of inhibiting tumor cell growth. In all cancer patients, levels of plasma A-beta 1-40 and 1-42 were reported to be higher than levels of normal controls. Humanin (HN) is a cyto-protective peptide able to directly bind A-beta, blocking its cytotoxic effects. Here, we examined the binding of HN to A-beta assemblies in lung cancer cell lines using antibodies that include the 4G8 antibody that binds to a central hydrophobic sequence on A-beta known to bind HN. To detect A-beta aggregation, dot and/or western blotting were carried out.

Examining the Role of BDNF and Pro-BDNF on Apoptosis and Survival of Lung Cancer Cells

Jaylen E. Taylor

Hedeel Evans, Deborah Heyl-Clegg, Jeff Guthrie, faculty mentors

Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Brain-derived neurotrophic factor (BDNF), is a neurotrophin able to induce the survival of neurons. Mature BDNF is synthesized as a result of proteolytic cleavage of the precursor proBDNF in cells. In neuronal cells, BDNF is known to be associated with cell survival while proBDNF is best characterized for its role in apoptosis. How the BDNF/proBDNF ratio is adjusted in lung cancer cells is largely unknown. Here, we compare the levels of the two proteins in two lung cancer cell lines, A549 and H1299, to test the hypothesis that lack of p53 in H1299, increases transcription of the heparanase gene causing the release of BDNF in the media leading to increased tumor cell growth.

Developing a Process for Identifying the Components of a Mummy “Resin” with Mass Spectrometry

Chelsea Van Buskirk

Ruth Ann Armitage, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Ancient Egyptians used a variety of materials and processes, including salts, oils, tree resins and petroleum products for mummification. The Carlos Museum at Emory University has an Old Kingdom mummy in their collections; this is the only mummy from this time period in North America. To better understand how this mummy was prepared, we are using direct analysis in real time mass spectrometry to analyze mummification materials that were available during the Old Kingdom. Our results will aid in determining how best to carry out studies of “resin” samples from the museum while minimizing the amount of material necessary.

The Microwave-Assisted aza-Prins Reaction of imines and amines

Hope Vaughan

Non-presenting author: Ethan Burke

Harriet Lindsay, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Imines are chemical compounds that can be made from other chemicals in an environmentally-friendly process. One product imines can form through cyclization is a piperidine, which is a ring composed of 5 carbon and a nitrogen. Piperidines are potentially useful building blocks for pharmaceuticals such as Paxil (an antidepressant), Ebastine (an antiallergen/antiasthmatic) and others. We use a new version of the aza-Prins cyclization reaction to form piperidines. In this project, we are investigating the effects of varying imine concentrations and bypassing the additional step to isolate the imine on the amount of desired piperidine product versus the amount of undesired side product produced.

Chromatographic Separation and NMR Characterization of Stacked Silicon Phthalocyanine Derivatives

Alyssa Wadas and Bria Spalding

Vance Kennedy, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Phthalocyanines are compounds of interest due to their optical properties. This research investigates the chromatographic separation and NMR characterization of the stacked, oxygen-bridged trimer and tetramer forms of the Silicon Phthalocyanine (SiPc) oligomers. The goal of this research is to determine the NMR characterization of the oligomers in order to compare the results with the products from experiments that synthesize the Silicon Phthalocyanine oligomers with alcohol side chains of heptanol, octanol and nonanol. The comparison of the NMR characterization of the trimer and tetramer to the synthesized products will help to determine if the binding of the alcohol is successful.

Analyzing the Binding of Proteins and Peptides Involved in both Cancer and Alzheimer's Disease

Asana Williams

Hedeel Evans, Deborah Heyl-Clegg, and Jeff Guthrie, faculty mentors

Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Non-small cell lung cancer accounts for ~ 85% of all lung cancer cases. Amyloid beta (A-beta) is the major constituent of the plaques seen in Alzheimer's disease (AD) patients. Cancer survivors tend to have a reduced risk for AD and vice versa. Acetylcholinesterase (AChE) is known to directly bind to A-beta, increasing its aggregation potentially acting as a tumor growth suppresser. Humanin (HN) is a cytoprotective peptide that also binds A-beta protecting against AD. We hypothesize that AChE and HN both compete to bind with A-beta, with opposing effects on A-beta toxicity. Here, we investigate the interactions between A-beta, AChE, HN in invasive and non-invasive lung cancer cells

Characterizing the Histone Binding Properties of the TTD Stretch in UHRF2

Jenna K. Zoerman

Brittany Albaugh, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

UHRF1 and UHRF2 are histone reader proteins that play a critical role in the epigenetics of cancer. UHRF2 contains an additional ~35 amino acids, called the TTD stretch, that is absent in UHRF1. The purpose of my project is to study the importance of the TTD stretch to histone binding. To do so, we used ligation independent cloning to create a hybrid UHRF1 construct containing the UHRF2 TTD stretch. We expressed, purified and measured the binding affinity of the protein to a histone H3 peptide by fluorescence polarization. These results will allow us to further uncover the roles UHRF1 and UHRF2 play in histone binding, and possibly lead to a better understanding of their roles in cancer.

SCHOOL OF COMMUNICATION, MEDIA & THEATRE ARTS

Where We Go 1 We Go All: A Public Discourse Analysis of QAnon

Kylar Chandler

Nick Romerhausen, faculty mentor | Oral Session D | Room 320 — 3:15pm

Now that Donald Trump has settled into his presidency, subsets of his original following have emerged. One dimension regards a committed following of an individual code named Q. Q communicates directly to their followers through “leaks,” or posts on the anonymous message boards of 4chan and 8chan. This paper explores the themes of these “leaks,” and how each influence the discourse of QAnon followers. Discourse analysis allowed for an in-depth investigation of Q’s “leaks,” surrounding the themes of bolstering credibility, rhetorical questioning, and attacking outside sources.

Poetic Persuasion: Jerk Chicken Pasta

Damon Colston

Raymond Quiel, faculty mentor | Oral Session D | Auditorium | 3:30pm

Poetic Persuasion presents a poem written by Damon Colston that exemplifies both Aristotle’s artistic proofs and the social science theory of Cognitive dissonance. With this performance, the poet persuader enacts the ancient artistic proofs of ethos, pathos and logos while, simultaneously fostering issue awareness and prompting dissonance, and consonance restoration. This presentation will include a brief synopsis of enduring classical and modern theory and a performance of original poetry. The outcome is to create dissonance as he makes us aware of the on-going genocide in China and by the end restore consonance.

Accessibility in the Arts

Gwenyth Deiter

Elena SV Flys, faculty mentor | Oral Session D | Room 304 | 3:45pm

The “NSIP” states that over 48.9 million Americans have a disability. However, theatre and the arts are still struggling to provide accessibility. Which begs the question, for a community that preaches inclusivity, why are we neglecting so many people access? This presentation discusses my research within Eastern Michigan University Theatre’s accessible performances of Still Life with Iris and the preparation of Tartuffe. I will explore new accessible elements and their level of effectiveness based on observation and audience feedback. The goal is to develop potential guidelines to assist future productions to increase their level of accessibility and to promote inclusivity.

Accessibility in the Arts: Installation

Gwenyth Deiter

Elena SV Flys, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This interactive exhibit presents accessible tools used for Still Life with Iris at EMU Theatre. The exhibit includes educational infographics, access tools (such as audio-tactile backpacks), multisensory lobby displays (e.g., 3D models), and feedback stations. The purpose of this exhibit is to inform and share the access services utilized, their function and their effectivity. In summary, this exhibit aims to raise awareness for accessibility and inclusivity in the arts with the EMU community.

The Supreme Court, the FCC and Net Neutrality: 14 People Deciding for 300 Million

Maiya Felan

John Cooper, faculty mentor | Oral Session A | Student Art Gallery | 9:00am

Net neutrality, the concept that the Internet should have unfettered access for all, has been a political football in recent years. Every branch of the government can exert influence as to whether and how net neutrality becomes settled law. This presentation examines the judicial philosophies of the Supreme Court Justices and the regulatory philosophies of the FCC commissioners, and charts a fascinating course on the effects these philosophies could have on the shape and reach of net neutrality as a law.

To Ghost or Not to Ghost: That is the Question

David Graham

Dennis O'Grady, faculty mentor | Oral Session B | Room 350 | 11:15am

Ghosting is the practice of ending a personal relationship by suddenly and without explanation withdrawing from communication. This study explores the practice of ghosting in online relationships through interviews with people who have ghosted and/or been ghosted. Specifically, the study focuses on the kinds of online relationships in which ghosting occurs, why people choose to ghost rather than end the relationship in more direct ways, and the effects of and explanation for being ghosted on the partner who was left behind.

Ellen Degeneres, George W. Bush, and the Social Responsibility of Celebrities

Cameron Harris

Jonathan Carter, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00–11:45am & 1:30–2:15pm

This paper analyzes the relationship between attitudes, actions, and the social responsibility of celebrities, specifically Ellen Degeneres. Applying dramatic criticism, Ellen's response to backlash after being spotted with George W. Bush at a football game together, scholarship on George W. Bush's involvement in the War on Terror as well as anti-LGBT policy, and studies on social responsibility are reviewed. Analysis findings suggested that George W. Bush's involvement in these events negatively affected many people. This image of him is incompatible with Ellen's kind image and their friendship seems hypocritical and questionable because of this.

Analysis of the Trump Administrations Rhetoric of Electromagnetic Pulses

Marissa Howard

Nick Romerhausen & Patrick Seick, faculty mentors

Oral Session B | Room 320 | 11:15am

Electromagnetic pulses are rapid surges of energy that can disrupt or destroy electronic devices. They have the potential to launch an apocalyptic event destroying life as we know it through the destruction of the energy grids which support societies across the world. The Trump administration has recently changed not only the conversations surrounding EMP's but has implemented policy using fear tactics to gain support. This research presentation explores how the Trump administration has shifted the rhetoric of preparation for potential threats.

Scenic Design and Virtual Reality in Theatre: Still Life with Iris

Adam Kruger

Jeremy Hopgood and John Charles, faculty mentors

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This exhibit shows how virtual reality, along with 3D rendering programs such as Sketchup and Vectorworks have enabled more efficiency in the set design process, rather than solely relying on drawings and verbal descriptions. As an EMU scenic designer one is in charge of designing the shape of scenery, paint treatments, and providing technical design drawings and renderings necessary to build the scenery. This installation displays how virtual reality was used in EMU Theatre's production of Still Life with Iris for the set's previsualization process, allowing us to solve problems in design before the actual construction took place.

Cultural injustices in Sports, Media, and School: Results of In-Depth Student Interviews

Maggie McCullough

Anke Wolbert, faculty mentor | Oral Session B | Room 330 | 11:00am

This session will explore the cultural injustices that African American people must continuously overcome in their everyday lives. The purpose of this research is to improve interpersonal relationships by educating the Eastern Michigan community on this important topic. Data was collected through in-depth one on one interviews with African American students at the university. While some people seem to think that issues surrounding African American lives do not exist, this could not be farther from the truth. The interviews allowed us to tackle difficult questions to highlight the often ignored reality of many African American students.

Online Collaboration Platforms: Communication Implications for Workplace Virtual Teams

Anthony Paz

Jeannette Kindred, faculty mentor | Oral Session D | Auditorium | 3:30pm

As more organizations embrace alternative workplace structures, many turn to online collaboration platforms for their team members which enhances productivity, allowing work to be completed remotely. While there is research on the general nature of virtual teams, there has been little research on the implications of specific online collaboration platforms. This study employed interviews with business professionals to illustrate how employees communicate while using online collaboration platforms and explores the differences in usage of the software and the perceived impact that using the software has on the communication of the users.

“When Did Hanging Out Get So Complicated?”

Emily Proctor

John Cooper, faculty mentor | Oral Session A | Room 330 | 9:45am

Television genres evolve over the years to reflect the social and cultural realities of viewing audiences. A sub-genre of the sitcom is the “hangout sitcom” or the “Peter Pan sitcom” in which the main characters appear to be unattached to work of any kind. In this analysis, the author identifies the era of the 90s and the program “Friends” as one without a great deal of real world complications. In the post-911 era of “New Girl” however, increased importance placed on diversity, political realities and economic issues makes the current “hangout sitcom” far more relevant and reflective of our current lives. Thus, this analysis explores the new messages added to entertainment over the years.

#SAYHERNAME: The Power of Black Female Social Movements

Gabrielle Reed

Nick Romerhausen, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Mediated channels continue to be one of the main methods of dispersing pertinent information to and from black communities. Since black women's voices have been stifled due to patriarchy and racism, black women have often used forms of media as a primary means of resistance to build coalitions with other black women and to effectively communicate. This research will specifically examine how past and present media has lent a liberated voice to black women. The research will also analyze closely how prominent black female-led social movements have navigated the theoretical four stages of social resistance movements.

Optimizing Optimism

Halle Stiverson, Olivia Ziemelis

Non-presenting author: Kailey Radwan

Susan Booth, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This exhibit showcases Optimizing Optimism, an app prototype that seeks to address the issues of maintaining positive mental health in the college setting. The app's design focuses around the concept of positive psychology, and has features such as a photo journal, emotion tracker, and connection to other users. The photo journal, which is the main feature, allows the user to use photography to capture positive moments of the day and store them within the app. This constant exposure to positive events trains the brain to recognize the positive aspects of life, and over time will make it more resilient against negative events.

The Association of Perception, Code Switching and Black/Standard English in Interracial Conversation

Sequoia West

Tsai-Shen Shen, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30-2:15pm

Code switching is a social skill and researchers have found that people, regardless of their race or ethnicity, alter how they speak based on the situation they are in. This also relates to the speech accommodation theory, which suggests that speakers of Black English often code switch to accommodate speakers of standard English. This study explores the association between code switching and speaker credibility. Existing literature, the association between standard and Black English, and an individual's perceived credibility is discussed. Moreover, this presentation suggest being mindful of these prejudices.

DEPARTMENT OF COMPUTER SCIENCES

Effects of Data Breaches: The Transformation of Digital Privacy

Randy Andrews

Zenia Bahorski, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Over 500 hundred businesses, including Google and Facebook, had their data stolen in 2018, affecting millions of their users (Identity Theft Resource Center, ITRC, 2019). These companies suffered data breaches due to an attempt to gather sensitive information (Minnesota Attorney General, 2019). While corporations are attempting to outpace data-focused hackers, data breaches exposed over 1.68 million consumer email related credentials in 2018 (ITRC, 2019). This poster examines how data breaches pose a threat to consumer data, as well as how hackers distribute the credentials.

Exploring the Social Implications of Freedom of Speech on the Internet

Gwenyth Andrusiak

Zenia Bahorski, faculty mentor | Oral Session A | Room 330 | 10:00am

Freedom of Speech is one of the most basic rights given to citizens of the United States. Over the years, courts have defined what is considered speech and what forms of speech are protected and from whom. These definitions have evolved with each new form of media, from print to radio to television, however the Internet has presented a unique challenge to regulate given its international nature. Using the legal definitions of protected and unprotected speech, I will explore the different perceptions of Freedom of Speech online and in real life, how these definitions have evolved to encompass the Internet, and the unique issues that the Internet presents to protecting and regulating speech.

Are Smart Contracts Reliable? An Expanded Agency Model Using Deterrents to Enforce Truthful Behavior

Samuel Grone

Weitian Tong, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30–2:15 pm

A core tenet of blockchain technology is trust in the execution of smart contracts. However, selfish users may manipulate the outcome of smart contracts for personal financial gains. Furthermore, interest groups may be formed via bribing by creating dependent smart contracts. To counter such behaviors, applying financial penalties upon dishonest users is a promising approach. We will explore this idea in application by simulating a blockchain environment and identifying the threshold of penalty. In our experiments, users will execute smart contracts based on the preprogrammed confidence in the rationality and trustworthiness of others while accounting for the potential penalty.

Sudoku, Sliding Game, Remember Pairs, Towers of Hanoi, Maze Path

Nikunj Kumar Patel, Hassan Madry

S.Maniccam, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

This project builds Android apps for puzzles such as Sudoku, Sliding Game, Remember Pairs, Towers of Hanoi, and Maze Path. The apps generate puzzles randomly, let the player solve the puzzle, verify that the player follows the rules of the puzzle, check the solution of the player, and optionally show a solution to the puzzle. The project uses Android, Java, XML, and API's to build the apps.

Automating Student Check-ins for Honors Events

Zachariah Pelletier, Joseph Hackbarth, Parker Lazar

Krish Narayanan, faculty mentor | Oral Session D | Room 304 | 3:30pm

The Honors College at EMU hosts multiple events for students and keeps track of student attendance using the old-fashioned pen and paper method. We have designed and developed a web/mobile application to automate this process. Some of the features of this app include, RSVPing, notification of event changes, checking in for guests (both login and card swipe), managing events, and gathering attendance data for event organizers. The check-in feature is tied locationally to a specific device and must be activated by staff at the Honors College. In this presentation, we will present the Honors Event Registration app, which was developed using PHP, JavaScript, and a MySQL database.

Deep Learning PM2.5 in Michigan

Ronald Stempien

Weitian Tong, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Particulate matter with a diameter less than 2.5 micrometers (PM2.5) is the most common form of air pollution, and is linked to various diseases, cancers, and even mortality. The ability to estimate future PM2.5 pollution rates or interpolate PM2.5 pollution rates for unmonitored locations would be of great use to many. For example, local municipalities with these estimates could redirect or toll traffic in areas where high amounts of PM2.5 is expected. The objective of this project is to create a prediction model for PM2.5 pollution using deep learning approaches and big data technologies. We will evaluate the performance of our model with real-world data from Michigan.

Android Apps for Automated Tesla Commands and Two-Person Ridesharing System

Christopher Torrella

S. Maniccam, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00–10:30am

This project builds Android apps for vehicles. One app will allow the owners of Tesla connected vehicles to create multiple automated tasks. These tasks will control user-specified car functions when user-specified events are triggered. The other app will allow two people to own a mini-rideshare service. One will act as a Driver, the other as a Passenger. The passenger can request rides from the Driver through the app, and specify where and when they would like to be picked up. The driver can accept, delay, or deny these ride requests or ask the Passenger to make a change to the request. Arrival time and driver location information will be transmitted to the Passenger.

Using Big Data to Predict Crop Yields

Sarah Yaw

Weitain Tong, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 — 11:45am & 1:30—2:15pm

This presentation will illustrate how the concepts used within the Big Data sector of Computer Science can be used to predict crop yields for a given area (in this case corn growth in Bay County, Michigan) by using climate data and yields of previous crop seasons. The algorithm involved will draw relationships between the seasons weather data as a direct cause for crop growth and use more current weather data for the region to predict how the yield may look at the end of the season. While weather is not the only cause for the success or failure of a crop, it plays a very large part and can be a good predictor.

DEPARTMENT OF ECONOMICS

Presentation Title: Modeling Stock Market and Political Climate: Applying Polynomial Multivariate Regression Models

Emma Krietemeyer

Amani Rashid, faculty mentor | Oal Session A | Room 320 | 10:00am

A polynomial of varying degrees will be studied in relation to fitting models to stock market data. This model will be used to interpolate and extrapolate stock market returns, and their relationship with political climate. The goodness of fitted model will be assessed using the coefficient of determination and other related criteria. An open source software R will be utilized for computational aid.

Drag Queen Reading Hour: An Analysis

Paige Brown-Danovi

Meg Dobbins, faculty mentor | Oral Session C | Room 350 | 1:30pm

Since 2015 events known as “Drag Queen Story Hours” have been hosted at public libraries. At these events, a person who embraces diverse gender expression reads aloud to children. In this paper, I examine how and why “Drag Queen Story Hours” have become a site of conflict in popular media, accused by some of promoting a “transgender agenda.” I argue that the hate against drag queen reading hours is rooted in misogyny and homophobia. Employing the lenses of queer theory and feminist theory, I show that these events are vital in fostering a more tolerant environment for children in the unique cultural space of the public library.

To Be or Not to Be: An Analysis of Verb Reduction in Modern English

Ryleigh Byrne

Daniel Seely, faculty mentor | Oral Session D | Student Art Gallery | 3:00pm

Native speakers of any given language have clear intuitions about what phrasing and structures are acceptable in their language. These are not rules of formal communication, but are part of an unconscious grammatical system in the human mind. This talk focuses on one phenomenon involving these unconscious rules: contractions of forms of “to be.” An English speaker might say, “I’m happy, and you are, too,” but would never say, “I’m happy, and you’re, too.” I will analyze reductions of “to be” in American English, demonstrate where the reduced forms are allowable, reveal the linguistic system constraining them, and place these constraints in a larger theory of syntax.

Why Leigh Bardugo was Asked to Include Content Warnings in Ninth House

Gabrielle Cavett

Meg Dobbins, faculty mentor | Oral Session C | Room 330 | 1:30pm

In this paper, I analyze the controversy surrounding Leigh Bardugo's *Ninth House* (2019). The dark content of the book, including depictions of sexual assault and violence, led many readers to call for the use of trigger warnings. I analyze this request from the lens of feminism, asking why Bardugo, a woman writer, was singled out to include content warnings and why her novel is commonly mistaken as a young adult novel while other comparable texts by male authors are not. My argument draws on marketing practices prior to and following the release of *Ninth House* to expose underlying gender biases that lead books like *Ninth House* to be mislabeled in ways that predispose them to controversy.

General vs. Special Education: Comparing the Use of Assistive Technology in Multiple Environments

Danny Collins and Lillia Sheline

Rebecca Sipe and John Staunton, faculty mentors | Oral Session A | Room 350 | 9:30am

Through experience in special and general education classrooms, we have found a gap in distribution of Assistive Technology (AT). AT is a device or service used to help people with disabilities succeed at a multitude of tasks. Special education teachers understand the necessary interventions for their students, but general education teachers can be overwhelmed with the idea of supporting those with significant learning needs in their classrooms. To improve upon this, we must inform our general education teachers of the opportunities available. AT can be taught to the general education teaching community which will foster growth in the learning ability for students with special needs.

New Queer Children's Science Fiction and Fantasy: What We Can Learn from Representation

Jack Collins

Kiel Phegley, faculty mentor | Oral Session C | Room 350 | 1:45pm

This will be an exploration into the new ways that queer characters are being represented in science fiction and fantasy for children, though this is an extremely rare phenomenon. This presentation will dive into how these characters are being represented, who is writing these representations, and why the literary elements of these books are important to analyze. Queer characters in science fiction and fantasy for children need to be researched in order to understand the views that are being reflected in society to young readers.

Accessibility of Diverse Representation in Jewish Children's Literature

Holly J Greca

Jessica De Young Kander, faculty mentor | Oral Session C | Room 330 | 2:00pm

Jewish Children's Literature includes stories and texts that have been passed down for generations. Among them, there tend to be three main topics/themes typically used when searching for Jewish Children's Literature: Jewish holidays, Jewish folklore, and the Holocaust. Although all of these are important to keep on the shelves of libraries, it can be problematic if these are the only examples of Jewish Children's Literature available to readers. This project explores both the ways in which Jewish Children's Literature has evolved to include more diverse and robust topics/themes over the years and how accessible these texts actually are to young readers.

Justifying Cruelty: The Military Industrial Complex in Catch-22

Christian Jones

Charles Cunningham, faculty mentor | Oral Session D | Student Art Gallery | 3:45pm

Joseph Heller's much celebrated anti-war novel *Catch-22* sets itself apart from most other works in the genre by being ridiculously funny. Yet the humor becomes the vehicle for a scathing criticism of the military industrial complex. As opposed to the Nazis serving as the primary antagonists for the characters in the novel, it's the American military itself. Because the military rewards ineptitude, utterly disregards the well-being of its own soldiers, and encourages a perverse system of ethics, war itself becomes the true villain of Heller's story.

The Academic Caste Generator: The 21st Century Education System

Odia Kaba

Katlyn Dudek, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00–10:30am

Standardized tests have become the unofficial classroom script. From elementary reading groups to college admissions, standardized tests are a centralized component determining academic stance. The tests manifest in different forms all around the world. It is clear that no matter the form or location, there is some degree of competition. Furthermore, the recent explosion of testing scandals has illuminated the inequality present in the system thus reigniting the debate around the topic. Standardized testing has been used for years as an academic benchmark and it is important to evaluate how it has transformed over the years. We must ask, to what extent are these tests necessary?

Class as Gender: Anxiety in Transitivity

Ronan Sampson

Abby Coykendall, faculty mentor | Oral Session C | Room 350 | 2:00pm

Ronan Sampson's "Class as Gender: Anxiety in Transitivity" explores the roles of class and gender as social identities present in Rebecca, as written by Daphne du Maurier, and the later film adaptation directed by Alfred Hitchcock. By highlighting the parallels between gender and class performance, they examine the experience of a class shift as a trans narrative concerning social relationships, peer expectations, identity displacement, and the anxiety of occupying a transient role.

Quotative Inversion and X-bar

Ronan Sampson

Daniel Seely, faculty mentor | Oral Session D | Student Art Gallery | 3:15pm

"Quotative Inversion and X-bar" examines a grammatical construction known as Quotative Inversion, as in the example: "We have to leave now," said Bill. Note that the quoted material comes first in the sentence, as a variant form of Bill said, "We have to leave now." This construction poses certain challenges to modern syntactic theory surrounding the base level structures of grammar. X-bar theory is used to explain the similarity in deep grammar between different languages which, on the surface, appear to have different syntax rules. Through Quotative Inversion, X-bar theory may be able to account for syntactic structure changes within a given language, as well.

Oxford's Tutorial System and Its Potential Application in the American Classroom

Alyssa Schad

John Staunton, faculty mentor | Oral Session D | Student Art Gallery | 3:30pm

In winter 2019, I had the opportunity to study abroad at the University of Oxford in tutorial-style classes, which changed my outlook on higher education and my prospective career as a literature professor. In tutorials, I wrote weekly essays and met one-on-one with a professor each week to discuss the course material. This unique style of higher education challenged my preconceptions about education and what is possible in the classroom. As I discuss my experience at Oxford, I will consider how, in my future classroom, I can combine elements of tutorials into a more traditional lecture- and discussion-based American classroom to attain the benefits of both systems.

Myth and Marx in Imperialist Japan

Cinder Seitz

Meg Dobbins, faculty mentor | Oral Session C | Room 330 | 2:15pm

In this paper, I argue Osamu Dazai's adaptation of a Grecian myth into the short story titled, "Run, Melos!" shows his alignment to the common people through the allegorical writing of myth and folktale. I explore the intersection of Marxist themes, allegory, and historical context of the story by comparing the text to Dazai's life, his alignment with the Japanese Communist Party, and previous Marxist writings. My reading of this short story is important because the historical and political context Dazai writes into his work is often overlooked in his mythical adaptations.

Identity and Transformation in the Children's Novel George

Alissa Zoltowski

Gina Boldman, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00-10:30am

My project was based on the book *George* by Alex Gino. In this novel, George is a transgender female who challenges society's gender standards. As George transitions into Melissa, she learns to self-advocate and gains confidence. Additionally, Charlotte's Web provides a rich allegory to George's plot and themes. I created a music playlist connecting characters to George. Songs were carefully researched and chosen to reflect George/Melissa's emotional impact on both the characters and readers.

DEPARTMENT OF GEOGRAPHY & GEOLOGY

What is the Source of Elevated Chloride Concentrations in Millers Creek, Ann Arbor During Summer?

Kelly Brown

Christopher Gellasch, faculty mentor | Oral Session B | Room 352 | 11:00am

Surface water testing of Millers Creek revealed year-round elevated chloride concentrations above the EPA standard of 250 mg/L. Although road salt is a common source of surface water chloride in winter months, the elevated summer chloride concentrations are puzzling. The goal of this research project was to locate the most likely source of chloride contamination in the creek and determine what is causing high chloride concentrations in the summer months. Field and laboratory analyses of water samples from multiple sites along Millers Creek allowed for a comparison of temporal and spatial trends. Chloride may originate from storm sewers discharging to the creek's headwaters.

Голодомор: A Forgotten Genocide

Sarah Jessup

Kelly Victor-Burke, faculty mentor | Oral Session B | Student Art Gallery | 11:30am

One of the worst manifestations of Russia's historic systematic oppression of Ukraine occurred in the 1930s as Stalin's fledgling grain requisition program singled out Ukraine and resulted in a manufactured famine killing millions and crushing the independence movement. As one of the worst man-made famines in history, Holodomor is largely unknown outside of the region. As previously sealed documents have been released, historians have been uncovering the deadly truth of Stalin's economic programs and the intentional targeting of Ukrainians. The revelation of the gravity of Holodomor sheds light on the historic oppression of Ukraine by Russia that is still seen and felt today.

Automating Large Data Set Analysis for Groundwater Fluctuations due to Pumping

Dillon Kilroy

Christopher Gellasch, faculty mentor | Oral Session B | Room 352 | 11:15am

A large quantity of approximately 500,000 time-series water-level measurements generated by research at several public supply well sites exposed unusual fluctuations in groundwater levels as a result of pumping. This research project developed a MATLAB computer program to efficiently automate analysis of this large data set. This program allows rapid identification, as well as calculation of magnitude and duration, of the water-level fluctuations. With this program, the data series will no longer have to be manually interpreted and graphed. The result will be a fast and efficient way to evaluate the data to determine the various factors that may impact well susceptibility to contamination.

Old and Deer: A Study of Neoproterozoic Peridotites in Michigan's Upper Peninsula

Rachel Merz

Christine Clark, faculty mentor | Oral Session A | Room 352 | 9:00am

The Deer Lake and Presque Isle Peridotites are two ultramafic, Neoproterozoic formations in the Ishpeming Greenstone Belt of Michigan's Upper Peninsula. The Deer Lake was deformed in processes indicative of the regional-scale tectonics of the area, but little study has been done on the mineralogy, extent, and style of alteration. This research aims to better classify the mineralogy of the formation, focusing on textural variations in thin section and chemical analysis of samples, and to correlate the Deer Lake's alteration with that of the Presque Isle, which has been more extensively studied. Comparing the alteration styles will help draw conclusions about the past tectonics of the region.

Visualizing Lead Poisoning Disparity using GIS – A Case Study in the Metropolitan Area of Detroit

Olivia Pearce

Xining Yang, faculty mentor | Oral Session B | Room 352 | 11:30am

Lead poisoning is one of the most pressing issues in Michigan. With the Flint Water Crisis still posing an unprecedented impact on local residents, it is important to understand how lead poisoning is affecting populations in different locations with an evidence based approach. Using GIS techniques, visual representations were created to highlight locations with predominant levels of childhood lead poisoning in the Metropolitan area of Detroit. Further, the analysis explores the social determinants that correlate with the distribution of lead poisoning disparity. This research sheds light on providing evidence to health care policy makers for creating effective prevention programs.

Measuring Rock Weathering on the Ft. Wayne and Defiance Moraines using an N-Type Schmidt Hammer

Alexys Peplinski

Eric W. Portenga, faculty mentor | Oral Session A | Room 352 | 9:30am

Geologically dated boulders (erratics) left behind in Michigan by ice sheets could be used to reconstruct Michigan's glacial history. Such dating requires that erratics be in their original landscape position, which is difficult to know because humans often move erratics. Measuring the rock hardness of erratics using a Schmidt Hammer may help assess whether erratics have been moved. If not moved, younger erratics should be harder than older erratics. Data show that erratics on the younger Defiance Moraine and those on the older Ft. Wayne Moraine in Washtenaw County have similar hardness values. These erratics may not be in their original position and may not be useful for geological dating.

Investigating a 420-Million-Year-Old Fossil using Cutting-Edge Tools: Part 2 – New data and Insights

Shawn Steckenfinger

Steven LoDuca, faculty mentor | Oral Session A | Room 352 | 9:15am

This investigation expanded upon research presented at Symposium 39 concerning a problematic but well-preserved fossil from the Silurian Period (420-million years old). To overcome limitations of equipment available on campus, we used a state-of-the-art scanning electron microscope (SEM) at U of M. In backscattered electron (BSE) mode, this instrument was able to resolve details of the specimen that were not otherwise visible with EMU's SEM. These new details allowed us to achieve a better understanding of the anatomy of the specimen and to refine our previous 3-D model reconstructions. Similar fossil specimens from other geologic units examined with this SEM provided additional insights.

Assessing Links between Land Use, Erosion, and Denudation in the George River, Tasmania, Australia

Leah VanLandingham

Eric W. Portenga, faculty mentor | Oral Session B | Room 352 | 10:30am

New meteoric ^{10}B denudation rates were measured in 8 tributaries of the George River Basin, Tasmania, Australia to test how well they replicate traditional in situ ^{10}Be erosion rates. ^{10}B denudation rates may be useful for measuring erosion in regions where the ^{10}Be method is unusable. ^{10}B rates from five samples replicate ^{10}Be rates well, but three headwater samples do not. Here, I hypothesize that deep incision associated with land-use change from native vegetation cover to production forestry and agriculture will result more sediment being supplied to streams, which would keep ^{10}B rates in headwater streams from replicating ^{10}Be rates.

Exploratory Data Analysis of Car Charge Stations and Electric Vehicle Ownership in the United States

Anastasios Zaharias

Xining Yang, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45—4:15pm

The rise of electric vehicles (EV) began with various motivations, including to reduce potential fossil fuel consumption. Deployment of charging stations at convenient locations and the use of sustainable sources of electric power distribution is a worthy start and is in the midst of a personal-transportation revolution. To understand the current stage of EV's saturation in the US, the trends of electrifying the automobile industry could be revealed by studying the relationship between EV ownership and electric car charging stations. This study aims to analyze this relationship using exploratory data analysis and GIS. Tables, graphs, and maps will be supplied to assess the current status.

DEPARTMENT OF HISTORY & PHILOSOPHY

How the Self-Serving Attributional Bias Affects Student Learning

Natalie Anderson

John Koolage, faculty mentor | Oral Session A | Room 350 | 9:15am

The self-serving attributional bias (SSAB) is a very common human bias. The SSAB, however, is at odds with being a good learner, since learning (often) requires learning from failure. In this paper, I explain controlled failure as part of good learning activity design. This design (among others) should include a metacognitive component wherein students are asked to learn about learning from failure, which requires them to come face to face with their own SSAB. In order to alleviate this conflict, I advocate for two designs found in the teaching literature: after-event reviews and guided reflection.

Female Genital Mutilation in Africa: Cruel or Cultural?

Katelyn Beveridge

Joseph Engwenyu, faculty mentor | Oral Session B | Room 304 | 11:30am

Female genital mutilation (FGM) is the removal or mutilation of the external female genitalia for non-medical reasons. This paper revisits the FGM controversy as we enter a new decade with the medical evidence surrounding the devastating health effects of the practice at the forefront. This paper also examines the evidence that FGM is a deliberate perpetuation of gender inequality in African nations, which has generated an increasingly passionate opposition to the practice from all over the world. The paper concludes that ideologies sustaining FGM, such as cultural and religious ethos, as present and entrenched as they may be, do not justify the continuation of the practice today.

Chinese Investments in Africa: Myth, Fact and Reality

Cody Chambers

Joseph Engwenyu, faculty mentor | Oral Session A | Room304 | 10:00am

The rapid and steady rise of Chinese investments in Africa in recent decades, have led to some extreme assumptions in the Western media about what good or evil China might be up to in the continent. This paper seeks to disentangle myth from fact regarding Chinese investments in Africa. Secondly, the paper argues that the bulk of the existing case studies, show neither strong evidence of a new resurgent Chinese resource imperialism, nor some unusual imagined acts of Chinese benevolence. Rather, the paper concludes that the investments seem to benefit both parties in their own peculiar ways.

“Yo—This Way to EMU”: Eastern Michigan University Recruitment Marketing Strategy from 1980 to 2010

Kaitlyn Eby

Mary-Elizabeth Murphy, faculty mentor | Oral Session D | Room 304 | 3:00pm

Since 1851, EMU experienced a plethora of external and internal conflicts and successes that directly affected the overall well-being of the University. In the early days of the Michigan State Normal College, successes and failures did not affect the college's general stability. But in the twentieth century, EMU's issues magnified, typified by financial concerns, enrollment matters, and the perception of the University throughout the state. Between 1980 and 2010, Eastern Michigan University actively shaped enrollment marketing strategies to improve the overall University perception as a result of situational factors affecting the school, including finances, enrollment, and the local economy.

The Fight for the Copley Medal

William Hasey

Mark Whitters, faculty mentor | Oral Session D | Room 330 | 3:00pm

The Copley Medal is one of the most prestigious science awards in Britain, comparable to the Nobel Prize. While the theory of evolution is widely attributed to Charles Darwin, some evidence shows that Alfred Russel Wallace should have received more credit. In my presentation, I will play a pupil of John Stuart Mill, a philosopher and contemporary of Darwin who would have endorsed Wallace to win the Copley Medal. Mill supported the hypothetical speculative method over induction, which made him an “underdog” in his time as an opponent of emerging scientific investigation.

Martin Buber and Pornography: The Objectification of Sex

Omar Khali

C. Áine Keefer, faculty mentor | Oral Session C | Room 350 | 2:15pm

It is always necessary to evaluate the ways in which we relate to technology and how our relationship with it affects our intersubjective relationships. One of those facets of technology worth exploring is pornography. In my essay, I use Martin Buber’s distinction between the I-It and I-Thou realms to discuss the ways in which pornography can objectify sex, and thus move the act of sex into the I-It realm. First, I will explore what is meant by the I-It and I-Thou realms. Then, I will discuss the implications involved in placing sex in the I-It realm and how that alters the definition of sex in a romantic relationship.

Resilient Women: Entrepreneuring Igbo Women, Nigeria

Alex T. King

Joseph Engwenyu, faculty mentor | Oral Session A | Room 304 | 9:30am

Activist groups in Africa have attempted getting women to take greater leadership roles in directing policies, but their success has been uneven. Pre-colonial Nigerian societies reserved leadership positions for women, but today’s Nigeria does not. This study compares women’s organizations in nineteenth and twentieth century Igboland, Nigeria, with their influence today. Igbo women regained some leadership after the 1980s. Interestingly, this was linked to the economic recession which spurred association networks for self-reliance, self-improvement, and activism. This study claims that public policy for the future of Southeast Nigeria can expect greater influence from Igbo women.

An Apologetic Defense

John Milkovich

Mark Whitters, faculty mentor | Oral Session D | Auditorium | 3:15pm

In this presentation, I perform the character of Aristocles, Plato's alter-ego in a Reacting educational game. The scene is the trial of Socrates in 399 B.C.E. Plato historically did not give a defense of Socrates, because Socrates defended himself at the trial. This defense is known now as The Apology. My performance of the speech closely follows Socrates, but I attempt to explain certain defense claims more clearly so that a modern reader or listener may understand. The language used, however, is still archaic English to transport the audience more directly into the trial.

'Memento Mori'

John Milkovich

Ronald Delph, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00–10:30am

1527 C.E., Rome is burning. The last of the Roman defenders have been slain, and the city has fallen into the hands of a savage band of mercenaries who set fire to homes and pillage monumental sites. This and the events leading to the sack of Rome are the setting for my play Memento Mori. The play tells the story of three different groups of people who are all involved with the event. A group of Germans uproot their lives after a tragic loss and fight desperately through Italy until eventually taking Rome, a group Swiss Mercenaries hired to protect the pope and search for a local spy known as "the Ghibelline," and finally a Roman household that is trying to keep itself from falling apart.

Phoenician Funerary Masks and Pendant/Head Beads: A Feature Analysis and Catalogue

Alexandria Miller

Philip Schmitz, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

This ongoing project is a catalogue of funerary masks and beads found at Levantine sites, particularly from Phoenician contexts. The catalogue compiles known Phoenician masks, head beads, and related objects into a single diverse collection. These artifacts are then categorized by a feature analysis, identifying and recording potential patterns and common stylistic traits among them. Specific aspects and traits of each artifact, such as eye shape, colors applied, size, find spot, chronological age, and material composition are recorded. This allows for artifact comparison. The catalogue system is malleable to allow for future adjustments and additions.

All Bodies are Good Bodies

Avery Sheibels

C. Áine Keefer, faculty mentor

Poster Group 1 | Room310 A/B | 9:00 – 10:30am

“All Bodies are Good Bodies” is a 15 piece portfolio consisting of nude figure studies and various parts of the female anatomy. All pieces are done on toned tanned paper using graphite and white colored pencil. This portfolio was made as a culminating final project for Feminist Theory, to employ the philosophical skills learned in the course applied to a relevant topic of choice. The goal of this project is to recognize the dissonance between the female bodies we see in the media and the bodies that women in the real world have. It includes pieces that contrast each other as well as statement pieces that draw attention to other body image issues many women face.

Powerful Women: Wangari Maathai and the Green Belt Movement in Kenya

Thomas Stanley

Joseph Engwenyu, faculty mentor | Oral Session A | Room304 | 9:15am

This paper is a tribute to the late Dr. Wangari Maathai, the 2004 Nobel Peace Prize Laureate and the first African woman to receive this honor “for her contribution to sustainable development, democracy and peace.” The paper narrates Maathai’s early pioneering career as a preface to the watershed year, 1977 when she launched the Green Belt Movement (GBM) for purposes of “restoring the environment, creating income for rural women, and fostering self-governing cooperatives to continue the work”. The GBM was far from the simple idea of planting trees. Wangari Maathai transformed the movement into an economic platform for change, and a political mobilization forum for self-emancipation.

Powerful Women: Iron Lady, President Ellen Johnson Sirleaf of Liberia, 2006-2016

Maryam Suleyman

Joseph Engwenyu, faculty mentor | Oral Session A | Room 304 | 9:00am

This paper is a tribute to “Iron Lady” Ellen Johnson Sirleaf, Africa’s first elected two-term female President of Liberia. I narrate Sirleaf’s early career as a peace activist, which led to her 2011 Nobel Peace Prize. But the focus of the paper is President Sirleaf’s performance during her two terms as president. I ask: What is the balance sheet of her achievements measured against failures, under the circumstances of post-Civil War Liberia which she inherited? What was the President’s administrative style— “feminist”, “female”, or traditional “state patriarchy?” And, did style matter to her as a pioneering African female head of state?

Childhood and Play in Krishna Bhakti Traditions

Makoto Takata

James Egge, faculty mentor | Oral Session D | Room 350 | 3:30pm

The Hindu Scripture Bhagavata Purana tells the story of Krishna, the Supreme God come down to earth as a divine child, whose cheeky pranks and subversive misbehavior are elevated to the highest and most esoteric ways of beholding the divine. This seems in contrast with the rest of the text, which falls in line with other Vedic prescriptions about the behavior for children that seem to discourage such spontaneous childhood play. I argue that in traditional Brajvasi dramas about Krishna, the child actors that make up the casts are thought to embody Krishna’s childhood play in ways that adult actors do not have access to, which reconciles these perspectives in the popular tradition.

West African Troops During the Burma Campaign, 1943-1945

Liza Jane Throne

Joseph Engwenyu, faculty mentor | Oral Session A | Room 304 | 9:45am

The Burma Campaign was part of the South-East Asian theatre of World War II. West African troops, mostly from Nigeria and the Gold Coast, joined the campaign as part of the Royal West African Frontier Force. The troops were deployed in the Burma Campaign, 1943-1945, with West Africans constituting the 81st and 82nd Divisions, organized into battalions during training in 1943. This paper addresses the challenges of terrain, morale, patrols and actual military battles in two major campaigns; and reinforces the contention that African troops in general, and West African troops in particular, were indispensable in the defeat of the Japanese and the reconquest of Burma.

“What Right Has Such a Scoundrel to Be Honored by a Top-Supported Institution of Learning?”

Shelbie Torok

Mary-Elizabeth Murphy, faculty mentor | Oral session C | Room 304 | 1:45pm

In 1971, Civil Rights advocate Julian Bond was invited to Eastern Michigan University to be the honored commencement speaker and recipient of an honorary degree. In response to this invitation, Michigan residents, current students, and alumni wrote a total of 237 letters to University Regents, protesting Bond's appearance. Using spatial analysis from ArcGIS, I visually map the location of protest letters and tie this opposition to a backlash against black student protests on campus in the 1960s and 1970s.

“Only a Postponement of the Inevitable”: EMU Faculty, Unionization, and the AAUP

Isaac Vanderwal

Mary-Elizabeth Murphy, faculty mentor | Oral Session D | Room 304 | 3:15pm

This project recounts the collective bargaining election that unionized Eastern Michigan University faculty with representation by the American Association of University Professors (AAUP). I spent several weeks at the University Archives at Halle Library, where I examined meeting minutes, newspaper clippings, and memos to faculty from the late 1960s to early 1970s in the AAUP collection. In this paper, I reveal the interesting narrative of faculty unionization at EMU, where local episodes intersected with broader historical patterns at universities in Southeastern Michigan.

Black Dissent: A Fight for Student Rights

Christian Watts

Mary-Elizabeth Murphy, faculty mentor | Oral Session C | Room 304 | 2:00pm

This paper analyzes the events which led to the 1969 black student protests on Eastern Michigan University's (EMU) campus. I focus on the ways that the administration, including EMU President Harold Sponberg, failed to negotiate effectively with black student organizations on campus, such as the Black Student Union, and neglected to provide civil rights and liberties for black students and faculty. Using collections from the EMU Archives, I demonstrate that black students forged an important coalition with the student government to address racial issues on campus that are still relevant today.

Support for Gays and Lesbians in South Africa: Tensions and Ironies

Heather J Weigel

Joseph Engwenyu, faculty mentor | Oral Session B | Room 304 | 11:15am

Although South Africa is currently the only African nation to offer full rights and legal protections to sexual minorities and led the global charge in protecting citizens from discrimination based on sexual orientation, the South African people are not quite in line with their government on homosexuality and its legal standing. While most nations appeal to public opinion to protect gay and lesbian rights, the South African government strives to prevent the masses from being empowered to overturn them. This paper explores this irony and concludes that legal protection may not be sufficient for protecting marginalized minorities.

Rwanda: Universal Access to HIV/AIDS Treatment 25 Years Post-Genocide

Joanne Wisely

Joseph Engwenyu, faculty mentor | Oral Session B | Room 304 | 11:00am

To date, at least three African countries have achieved the threshold of "universal access" for HIV/AIDS treatment to their populations. One of these countries is Rwanda, an unlikely candidate that underwent genocide in 1994, which claimed an estimated 1,000,000 lives. Following this atrocity, Rwandans sought healing by changing the narrative of their country and investing in public health as an important component of reconstruction and democratization efforts. Using Rwanda as a case study, this research chronicles the development of a coordinated healthcare system that delivers HIV/AIDS treatment, infection prevention measures, and other forms of primary care to over 80% of the population.

The Battlefield Back Home: How Ypsilanti Really Felt About Fighting to Free The Slaves

Leigh Young

Mary-Elizabeth Murphy, faculty mentor | Oral Session C | Room 304 | 1:30pm

The American Civil War was a time of great hardship that saw the splitting of the unified country to a nation divided. Our most frequently established narrative is one of simplicity: the Northern States wished to abolish slavery while the Southern states fought for the preservation of the institution. Actually, the reality was far more complicated. Through extensive research of newspapers in Southeastern Michigan, I argue that Ypsilanti was not a city that could fit easily into such a restrictive box. Ypsilanti men may have gone off to fight for the North and Lincoln, but their attitudes surrounding slavery and the shared opinions of their families back home was one of intolerance.

CENTER FOR JEWISH STUDIES

Impact of Contemporary Antisemitism on Jewish-American Identity

Sarah Weiss

Martin Shichtman, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

National data consistently shows that Jewish people are the most likely targets of religion-based hate crimes in the United States, with a 99% increase in reported incidents from 2015 to 2018. Drawing from semi-structured interviews conducted during the month following the deadly Pittsburgh synagogue shooting of 2018, I present a narrative analysis examining how contemporary acts of anti-Semitism—from microaggressions to major hate crimes—influence Jewish identity among American college students. This work expands on current literature to understand how Jewish-American identity is differentially impacted by experiences and perceptions of anti-Semitism.

DEPARTMENT OF MATHEMATICS AND STATISTICS

Analysis of Parental Involvement in Elementary and Secondary Education

Alexus Bell

Khairul Islam, faculty mentor | Oral Session A | Room 330 | 9:30am

Parental involvement in children's education has a significant impact on children's successes in Elementary and Secondary Education. It appears that parental involvement differs significantly with respect to many factors. In this study, we employ statistical analysis of parental involvement discrepancies due to children's and parental characteristics. We utilize public use data for Elementary and Secondary Education from the U.S. National Center of Education.

Teachers' Designed Tasks to Develop Students' Statistical Thinking and Data Analysis Skills with CODAP

Jordan Draper

Stephanie Casey, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

The project analyzed how preservice teachers use both ESTEEM, Enhancing Statistics Teacher Education with E-Modules, and CODAP, Common Online Data Analysis Platform, materials in their planned classroom instruction. Enhancing Statistics Teacher Education with E-Modules (ESTEEM) is a research project funded by the National Science Foundation that focuses on the problem many educators face when attempting to teach statistics. This project's goal was to gather and analyze data from approximately 100 preservice mathematics education students from all over the United States so as to compare demographic characteristics of the teachers and the qualities of their CODAP-enabled tasks.

Identifying Musical Instruments in an Audio Recording with Recurrent Neural Networks

Brody Erlandson

Andrew Ross, faculty mentor | Oral Session D | Room 352 | 3:15pm

Machine learning, in particular artificial neural networks, have shown great promise in completing difficult tasks. With artificial neural networks, we have identified what instruments are playing in an audiofile; even when multiple instruments are playing at once. Using recurrent neural networks (RNN), we analyze an audio file, in .05 seconds slices, to more accurately determine what instruments are playing when. For every slice, we put the melspectrogram of the slice through a layer of the RNN. First, we run the audio file through an RNN to tell us what instruments are playing. Then through multiple different nets, according to instrument, find out what note each instrument is playing.

Injection Site Detection in the Two Wide-angle Imaging Neutral-atom Spectrometers (TWINS) Data Set

Matthew Floyd

Roxanne Katus, faculty mentor | Oral Session D | Room 352 | 3:30pm

A geomagnetic storm is a change in earth's magnetosphere, which originates from solar activity and propagate through the solar wind. Geomagnetic storms can evoke a response called magnetic reconnection. This reconnection phenomenon can cause high energy ions to be injected into the near-earth plasma sheet, which causes a spatially dependent temperature spike. Using the Two Wide-angle Imaging Neutral-atom Spectrometers (TWINS) energetic neutral atom measurements, specifically around peak storm intervals, the temperature throughout the near-earth space can be calculated via flux measurements. The goal of the project is to search for and analyze these injection sites within the TWINS temperature data.

A.I. Learns to Play Simple Video Games

Drew Parmelee

Ovidiu Calin, faculty mentor | Poste Group 1 | Room 310 A/B | 9:00 – 10:30am

The purpose of this project is to create an A.I. application that learns to play various video games provided by the Open AI Gym library. These games include pong, breakout and cartpole. The goal is to make the A.I. application as general as possible, so that the programmer should not have to hard code anything, as the A.I. will understand the rules of the games from data and associated rewards.

Analysis of Factors Affecting Global Life Expectancy

Sadia Sarker

Khairul Islam, faculty mentor | Oral Session D | Room 352 | 3:00pm

This project utilizes data retrieved from the World Health Organization, an agency under the United Nations, that deals with health-related topics internationally. The dataset contains the life expectancy of 194 countries through the year 2000 to 2015 along with other information. The main objective of this study is to determine whether life expectancy can be predicted using the various variables given in the dataset such as infant deaths, adult mortality, alcohol consumption, amount of schooling, expenditure on healthcare, BMI, and other related variables. To address this objective, a variety of suitable statistical methodologies will be applied.

Comparing Trends and Historical High-Low of Unemployment in the USA

Selena Thai

Khairul Islam, faculty mentor | Oral Session A | Room 320 | 9:00am

The Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics (LAUS) program provides annual employment rates in the USA, by years and states. We utilize the historical BLS LAUS data to perform analysis of the US unemployment rates over time, and compare the state-wise current rates with the corresponding high-low rates and Michigan unemployment rates with the national rates.

SCHOOL OF MUSIC & DANCE

The Landmark of Nineteenth Century Music – Liszt's Sonata in B Minor

Megan Angriawan

Garik Pedersen, faculty mentor | Oral Session B | Auditorium | 11:15am

Franz Liszt, one of the most significant composers in the 19th century, exerted a great and multifaceted influence on the development of classical music and pianism in the Romantic era. The uniqueness of his musical language and his writing for the piano distinguish him from all his contemporaries. This study focuses on his most important piano work, Sonata in B Minor, a dramatic and compelling piece. A landmark of 19th-century music, this single movement work requires attention to structure and direction from both performer and listener. This presentation will show Liszt's well-executed long-range plan in the relationship of motives and harmonic regions in this piece.

The Madrigal: a genre history and musical analysis of the madrigals of Claudio Monteverdi

Josh Danielson

Willard Zirk, faculty mentor | Oral Session B | Auditorium | 11:30am

The madrigal is a musical genre of secular song, usually for several unaccompanied voices. Claudio Monteverdi, an important madrigal composer of the Renaissance period, expanded the form from simple to more complex and chromatic, gaining its own identity. This presentation will include analyses of several of Monteverdi's madrigals as well as singers to perform and demonstrate stylistic practices that need to be considered.

Cello Sonata No. 1 in E Minor, Op. 38 Allegro Non Troppo by Johannes Brahms

Grace Frielink

Deborah Pae, faculty mentor | Oral Session A | Auditorium | 9:15am

During the summer of 1862, Johannes Brahms began composing his Cello Sonata No. 1 in E Minor, finishing the piece in 1865. It contains three movements: Allegro Non Troppo, Allegretto quasi Menuetto, and Allegro. Dedicated to Dr. Josef Gänsbacher, it is considered not only one of his most famous works, but also a standard within the cello repertoire today. The opening to the Allegro Non Troppo establishes a hauntingly beautiful thematic melody in the lowest register on the cello. Throughout the first movement, traded back and forth between the piano and the cello creating a dark fairy tale-like listening experience.

Haydn Cello Concerto in C Major

Athena Goppold

Deborah Pae, faculty mentor | Oral Session B | Auditorium | 10:45am

Joseph Haydn's Cello Concerto in C Major was composed between 1761 and 1765. Written for renowned cellist and friend of Haydn, Joseph Weigl, it was composed in the beginning of the Classical era but had many Baroque era elements such as adorned notes and dramatic motifs. For approximately two hundred years, it was missing, until archivist Oldrich Pulkert discovered it in the Prague National Museum in 1961. The authenticity of the score was proven through Haydn's catalogue of 1765, which contained the same melody. Thanks to Haydn's organized catalogues, Pulkert was able to present the now acclaimed cello concerto that every great modern cellist has performed and recorded.

“June is the shortest month of the year”: Investigating Process & Progress in Creative Spaces

Kristen Hudecz

Non-presenting authors: Haley Barker and Madeline Kreps

Molly Paberzs, faculty mentor | Oral Session A | Auditorium | 10:00am

In Summer 2019, Kristen Hudecz developed a dance work exploring some of the under told stories of LGBTQ+ identifying individuals, titled, “June is the shortest month of the year.” This creative project explores the work’s deeper foundation of queer power and protest throughout history, the concepts of socially-driven art in the dance and performance world, and Hudecz’s personal development of a “creative process” for generating dance repertoire within the context of modern society. With this project, Hudecz will begin to unpack her perceptions and experiences as a social justice-oriented performer and choreographer, as well as the development of her recent aforementioned work.

The Music of Finland

Emily Katynski

Joel Schoenhals, faculty mentor | Oral Session A | Auditorium | 9:30am

As a geographically distanced country under several stages of foreign rule, Finland did not join the classical music scene until the late 18th century. Since then, Finland has brought forth many important composers and vast amounts of repertoire, and yet it remains severely underrepresented in the classRoom and concert halls. This presentation will trace the development of Finnish music from the late 18th century through the early contemporary era and characterize its national style with examples from solo piano literature, and further contextualize with familiar European history.

Cultivating Composers: How Clarinet Sonata by Jennifer Higdon Demonstrates Form and Function

Casie LaMay

Sandra Jackson, faculty mentor | Oral Session A | Auditorium | 9:45am

Jennifer Higdon is one of the most influential living composers in the music world today, and has been a recipient of two Grammy Awards and a Pulitzer. Her resume includes commissions from prestigious ensembles including the Philadelphia Orchestra, the Chicago Symphony and others. Clarinet Sonata, originally written for viola, was arranged for clarinet by Higdon in 2011. This presentation will focus on movement II, Declamatory, commenting on the form and specifically how it breaks rules of the typical sonata while still staying true to the sonata style. Also discussed will be the importance of Higdon's writing, including this work for clarinet and piano.

New Works by Student Composers: On Autumn Air, Passages, and Revival

David Rega, Casie LaMay, and Robert Thorburn

Whitney Prince, faculty mentor | Oral Session B | Auditorium | 11:00am

These three works were written by students in MUSC 415A, Applied Composition. On Autumn Air, by David Rega, imagines a wondrous flight over a forest of flaming red, yellow, and orange. Its animated rhythms, lyrical melodies, and powerful climaxes invite you to see the beauty of nature. Passages, by Casie LaMay, is a lilting trio for flute, oboe, and bassoon. Its intertwining melodic lines take the listener on a colorful and sometimes mysterious journey. Revival, by Robert Thorburn, is a lyrical, bright piece with a moment of darkness midway through that eventually gives way to the return of the hopeful opening theme. It depicts the loss and gradual restoration of something dear.

Clair Omar Musser and His Influence on the Popularity of the Marimba

Ian McCrystal

John Dorsey, faculty mentor | Oral Session B | Auditorium | 10:30am

Clair Omar Musser (1901-1998) was a musician, educator and businessman who devoted his life's work to the marimba. He performed in hundreds of concerts highlighting the instrument and toured around the country with his acclaimed 100-member marimba orchestra. As an educator, he taught percussion at Northwestern University for 10 years. He was renowned as an instrument designer and innovator, eventually opening an instrument manufacturing company bearing his name that still makes products today. This study will focus on his complete influence on the marimba in the 20th century along with the impact he made on the legitimacy of the instrument.

What's Democratic about Gordon's Music Learning Theory?

Emma Sturm

Heather Shouldice, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Democratic education is the process of guiding students to participate and effect change in our society. Music Learning Theory is a recently-developed approach to music learning that proposes all human beings have music aptitude and thus aims to foster the development of musical ability in all human beings so that they can become functioning music-makers in their daily lives. We don't know the extent which Music Learning Theory prepares students, however, and we don't know the extent to which instruction rooted in MLT aligns with the principles of democratic education. The purpose of this study is to examine the ways Music Learning Theory prepares students to participate democratically in society.

English Folksong and Lyrical Influences on the Phantasy Suite for Clarinet by Thomas F. Dunhill

Victoria Woolnough

Sandra Jackson, faculty mentor | Oral Session A | Auditorium | 9:00am

Phantasy Suite, by Thomas F. Dunhill (1877–1946), is a character piece that was influenced by English lyricism and folk songs. While growing up, Dunhill listened to the comic operettas by Gilbert and Sullivan, and his compositions were also influenced by his peers Ralph Vaughn Williams, Gustav Holst, and John Ireland while all were students attending the Royal College of Music. Vaughan Williams and Holst commonly used English folk songs in their compositions. This presentation will illustrate how these influences manifest themselves throughout the different movements of the Phantasy Suite by Thomas Dunhill.

DEPARTMENT OF PHYSICS & ASTRONOMY

Assessing Ozone Abundance with the ExoPlanet Ozone Model

Sean Brown

Dave Pawlowski, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

The Exoplanet Ozone Model (EOM) is a modeling tool that simulates planetary conditions and generates an ozone abundance profile, providing a means to predict atmospheric conditions on exoplanets too distant for in situ observation. EOM uses measurable quantities, such as solar radiation and atmospheric composition with known photochemical processes to generate an abundance profile. Originally, EOM featured a set of photochemical equations limited to reactions of O, O₂, and O₃, but has been updated to include reactions involving CO₂. Presented here are simulations using the updated EOM software, showing ozone abundance profiles for a range of planetary conditions.

Analyzing the Chaotic Motion of a Magnetic Torsion Oscillator

Taylor Callis

Ernest Behringer, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Chaotic motion occurs in a surprising number of places in everyday life. I used computational techniques to model the chaotic motion of a magnetic torsion oscillator designed and built by researchers at the California State University at Chico. The oscillator is periodically driven and can exhibit stable and chaotic motion. I identified the conditions for which the motion changed from stable to chaotic using phase space plots, bifurcation diagrams, and Poincaré sections. I will show animated versions of these representations to give further insight into the development of chaos in this system.

How Dry is Science at EMU?

Samuel Curran, Michael Kowalski, and Sabrina Lunsford

Diane Jacobs, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

EMU physics faculty have observed temperature and humidity fluctuations, in Strong Hall laboratories, large enough to interfere with student experiments and research endeavors. High humidity levels adversely affect some experiments in optics and static electricity. We built and programmed systems to continuously monitor and log temperature and humidity conditions for several months; we present our preliminary data with a detailed analysis of the trends. We will make our data available to the physics faculty so they can use it, in conjunction with the EMU Physical Plant, to optimize the experimental conditions in Strong Hall.

Implementing a Mechanical Vibration Control System and Locking Circuit for Atomic Sensing Research

David T. DeLisle,

Eric Paradis, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00–11:45am & 1:30 – 2:15 pm

The long-term goal of this research effort is to use rubidium (Rb) atoms as electric-field sensors via controlled laser probes. Two important steps for the experiment are implementation of a Vibration Control System (VCS), and completion of a frequency locking circuit for an existing laser system to provide active stabilization. The VCS will be used to stabilize the experiment and reduce any outside sources of noise. The feedback circuit will enable the laser system to excite the atoms to a more energetic state. Once the circuit is implemented, an existing laser setup will be used to probe the quantized atomic states of Rb vapor within a glass cell.

Modeling Chaos: Studying a Chaotic Electric Circuit

Colin Goodman

Ernest Behringer, faculty mentor | Oral Session D | Room 352 | 3:45pm

Chaotic systems are present in everyday life, such as a heart experiencing arrhythmia. I learned to model chaotic systems by studying the chaotic electric circuit described by Tamaseviciute et al. I modified Python code to model the evolution of the circuit output for several ranges of circuit settings. Results from the model show stable behavior, period doubling, and chaotic behavior. I will describe the methods used to analyze the predicted behavior of the oscillator, and my work to experimentally test the model.

DEPARTMENT OF POLITICAL SCIENCE

Homelessness and the Mentally Ill: A Policy Analysis

Shayla Blackwell and Megan Morrison

Raymond Rosenfeld, faculty mentor | Oral Session C | Room 320 | 1:30pm

The number of mentally ill homeless persons in the United States is increasing. This research aims to determine what the cause is and what programs need to be implemented to reduce this number. Our research consists of comparing four different policy alternatives including Housing First, permanent supportive housing (PSH), PATH (Partnership. Accountability. Training. Hope.), and the coordinated systems approach. After analyzing these programs, we will present our recommendation of the policy we believe best supports the goal of reducing homelessness in the mentally ill community.

Youth Homelessness: A Policy Analysis

Kylar Chandler and Adrianna Stacey

Raymond Rosenfeld, faculty mentor | Oral Session C | Room 320 | 1:45pm

Youth homelessness is a major problem in the United States. On any given night 41,000 unaccompanied youth ages 13-25 experience homelessness. The biggest cause of youth homelessness is family dysfunction. Implications of youth homelessness include issues surrounding education, mental health, continued incarceration, et. al.. This paper explores the policy environment and potential policy solutions being put forward. After weighing the benefits of potential policy alternatives, we recommend a policy package comprised of policies that are preventative, promote family preservation, and would create a federal kinship care program.

The Congressional Staffer's Role in Developing a Politician's Public Persona

Alexa Cooley

Jeffrey L. Bernstein and Jonathan Carter, faculty mentors

Oral Session A | Room 320 | 9:15am

Men have been dominant in U.S. politics for decades, resulting in an environment that rewards those who adhere to traditional male gender roles. These roles are partially shaped by communications staffers, who manage the politician's public persona. Based on interviews with Republican and Democratic U.S. House of Representatives communications staffers, this project analyzes how staffers consider gender when preparing Members of Congress for public engagements. I use both political science and communication theory, as well as considerations of age, gender, and political party, to determine how politicians are advised to present themselves and negotiate gendered expectations.

Zero Tolerance: The Trump Administration's Immigration Policy as a Human Rights Violation

Alexa Cooley

Ebrahim Soltani, faculty mentor | Oral Session B | Room 320 | 11:30am

In 2018, the Trump Administration implemented the zero-tolerance policy at ports of entry to the United States. This policy aims to discourage illegal migration into the US and to reduce the burden of processing asylum claims that officials believe are often fraudulent. Due to a global rise in conflict, persecution, and lack of economic opportunity, there are 70.8 million displaced people in the world. The US is receiving record numbers of those migrants, especially from Latin America. I analyze the Trump Administration's Immigration Policy in the context of the United Nations Declaration of Human Rights and explore the sociopolitical consequences of this policy.

Accessible Mental Health and Addiction Services in Regards to the Policy Problem of Homelessness

Carmen Coronado and Mya Crampton

Raymond Rosenfeld, faculty mentor | Oral Session C | Room 320 | 2:00pm

The United States has a homeless population that's been increasing since the 1970s. Mental illness and substance use has a causative relationship to homelessness, due to a lack of accessibility to appropriate services. It is imperative to examine the relationship between mental health and substance use disorders and homelessness. Understanding the intersectionality of the issues will assist in producing viable solutions. The policy recommendation being presented is a combination of the Housing First Approach, the Coordinated Systems Approach, and the Homelessness Multidisciplinary Street Team. Collectively, these approaches will overall reduce homelessness in the United States.

Examining Structures and Accessibility of State Civil Rights Entities

Madelaine Coy

Barbara Patrick and Barry Pyle, faculty mentors

Oral Session A | Student Art Gallery | 9:15am

The United States has made a string of efforts to positively impact the protection of civil rights. The most recent efforts stem from the creation of governmental systems specifically designed to monitor and defend the civil rights and liberties of individuals in America. However, as these entities are being further developed and regarded in the light of new generations of activism, little is being addressed on the basic structures and methods of these existing entities. The goal of this presentation is to revisit the history and development of civil rights entities in the states, as well as to define the basic structures being utilized to fulfill a common goal of accessibility, efficiency, and effectiveness.

A Critical Evaluation of Liberal Conception of Private Property

Megan Holmes

Ebrahim Soltani, faculty mentor | Oral Session C | Student Art Gallery | 1:30pm

With liberal and socialist ideas coming to the forefront of U.S. politics, it's important to examine their ideological foundations not only to have a better understanding of the political culture in which we live, but also to be a more informed citizen within society. In this paper I will elaborate on a capitalist perception of liberalism. Karl Marx describes capitalism as being a system of exploitation, the main source of which being the institution of private (bourgeois) property. This project serves to create a critical understanding of exactly what a capitalist perception of private property means and how it plays out in our society, through the application of this perception to our relevant, real-life context.

За Незалежність : Democratization and Democratic Consolidation in Ukraine

Sarah Jessup

Richard Stahler-Sholk, faculty mentor | Oral Session B | Student Art Gallery | 11:00am

The 2014 Maidan Revolution sparked Ukraine's reinvigorated push for democracy and detachment from Russia's influence. In examining Ukraine's historic path towards democratization, one must consider the level of democratic consolidation that has taken place to accurately predict the likelihood of an enduring democracy in the state. Ukraine's unique geopolitical situation and relatively young government makes it an important case study for the future of new democracies in states all around the world. By examining illiberal democracies, competitive authoritarian regimes, and Western democracies, the question is, will Ukraine develop a healthy democracy in the post-Soviet region?

Media Manipulation of the Israeli Palestinian Conflict in the United States

Alissa Kennedy

Richard Stahler-Sholk, faculty mentor | Oral Session B | Student Art Gallery | 10:30am

This presentation examines media manipulation of the Israeli-Palestinian conflict in the U.S. including the impact on public opinion and policy making. The study compares histories of the conflict through the lens of multiple U.S. mass media news sources to media in the Middle East. The analysis will highlight any inconsistency and categorical syllogism in these sources. While media consumers may hold fixed views of this conflict or others, education on media manipulation can allow audiences to consider the information they are provided through a more critical lens.

Homeless Veterans in America

Alexus Krupp and Blake Harrity

Raymond Rosenfeld, faculty mentor | Oral Session C | Room 320 | 2:15pm

The policy problem of homeless veterans living with mental illness is prominent within the United States. The policies surrounding this issue have failed to end homelessness in veterans and is a multifaceted problem. Current programs and policies support mental health and social services but fail to connect at-risk and currently homeless veterans to programs they can benefit from. The lack of prevention efforts and holistic practices during and after serving, with a combination of negative experiences with comprehensive care and self-management support, contributes to veteran homelessness. Currently, there is extensive legislation regarding homeless veterans in America, but it is not sufficient.

Keyboard Warriors: Social Media as a Tool of Social Movements

Monica Laschober

Richard Stahler-Sholk, faculty mentor | Oral Session D | Room 320 | 3:00pm

Social media has become a crucial tool of social movements in the digital age. This presentation will address the use of social media as a mechanic of social movements. I will examine social media's utilization in the Arab Spring, the Hong Kong protests, and the Black Lives Matter movement in terms of platforms used, methods of protest, how the messages were received, and how effective social media was.

A Comparative Study of Scandinavian Colonial Behavior

Sarah Maier

Richard Stahler-Sholk, faculty mentor | Oral Session B | Student Art Gallery | 11:15am

What are the impacts of Scandinavian colonial behavior on the contemporary welfare states throughout Scandinavia? To answer this question, this project examines the colonial history of all four Scandinavian states in connection to its impact on the modern welfare state. These cases will be compared with Germany, the United Kingdom, and the United States, to assess the connection between historical colonial behavior and the extensiveness of the welfare state. How extensive the welfare provisions are in a given state has a huge impact on the citizenry, and can give an indication as to how much a state values the health and well-being of its people.

We Need Our Fathers: How State Policies Have Impacted Fatherhood

Lily Nwanesi

Barbara Patrick and Barry Pyle, faculty mentors | Oral Session B | Room 320 | 10:30am

Fathers hold key roles in the lives of their children. Children who grow up with fathers in the home tend to remain in school, participate less in delinquent behavior, and develop strong family ties. However, federal policies, such as the Aid to Families with Dependent Children Act (1935), have indirectly (and perhaps unintentionally) lead to a decrease of fathers in the home. Recently, multiple states have adopted policies to reverse this indirect effect. In this paper, I study the effectiveness of these new policies using various data sources. Specifically, I test whether these new policies affect the number of fathers in jail and fathers estranged from the family as well as in the home

The Impact of the Candidate's Race on Voter Opinion

Yssis Patterson

Jeffrey L. Bernstein, faculty mentor | Oral Session A | Room 320 | 9:45am

Race has always played a role in politics, but is its role as significant as we think? To understand the role race does play in politics, I developed a survey to determine whether a candidate's race impacts a voter's perception of that candidate. The survey used experimental methodology to reveal that political party identification mattered more in these ratings than other factors, including race. Race simply did not have as much of a significant impact as might have we thought. The overall impact of this research is to further determine and explain the outsized significance of political party identification in modern American politics.

Tax-Exempt Candidates: The Repeal of the Johnson Amendment

Stephen Rathje

Barry Pyle, faculty mentor | Oral Session A | Student Art Gallery | 9:45am

In political elections and social movements, Protestant and Evangelical Christians display a historical tendency to support candidates that appear contrary to their religious beliefs and practices. In this paper, I address, explore, and illustrate the intersection between the Church's historical tax-exempt status and President Trump's attempted repeal of the Johnson Amendment, as well as their implication for various religious institutions based on size and their apparent acceptance by the American populace. Ultimately, I draw conclusions on the practice of allowing religious institutions and similar groups to donate to political campaigns.

Retiring Number 42: How Jackie Robinson's Legacy Pushed Major League Baseball Executives to Make Remarkable Decisions for Both Baseball and America

Lindsey Redmond

Edward Sidlow, faculty mentor | Oral Session B | Room 330 | 11:30am

Jackie Robinson is known for becoming the first African American Major League Baseball player, breaking the color barrier for many athletes, and becoming a true figure of admiration. His influence on history and sports has America remembering and honoring him even 60 years following his retirement from Major League Baseball. However, honoring a person as remarkable as Jackie Robinson does not come easily. In this research, I examine the ways in which we honor and respect Robinson today, which include retiring the number 42 and the creation of the annual "Jackie Robinson Day". I will further examine the actors that were involved in initiating the substantial decisions made to celebrate Robinson today.

Analysis of the Prospects for Revolution Throughout Africa in the New Decade

Clayton Sigmann

Richard Stahler-Sholk, faculty mentor | Oral Session C | Student Art Gallery | 1:45pm

This research will focus on the continent of Africa, looking to see the prospects for revolution in various states, paying attention to current political, economic, and societal aspects. The analysis applies theories ranging from Karl Marx in the mid 1800's to Charles Tilly a century later, focusing on social divides and state crisis. Studying the motivations for revolutions will help better comprehend the impacts revolution will have on a national society and the international community.

The Implementation of The 14th Amendment during Reconstruction

Jack Swartzinski

Barry Pyle, faculty mentor | Oral Session A | Student Art Gallery | 9:30am

The 14th Amendment plays a vital role in defining the Reconstruction era, the Civil Rights movement, and the creation of a Bill of Rights. What were the original intentions of the framers of the 14th Amendment? How did it influence the former States of the Confederacy? How did the Court apply the 14th Amendment during Reconstruction, and how did the end of Reconstruction influence the Court's interpretation of the 14th Amendment in the subsequent decades? While the 14th Amendment may have failed to bring about immediate change, ultimately it fulfills the promise of Reconstruction to create constitutional standards for the National Government to take aggressive action for the protection of Civil Liberties.

Race Relations in Ypsilanti Government

Josefina van Geloven

Jeffrey L. Bernstein, faculty mentor | Oral Session C | Room 304 | 2:30pm

This research project examines race relations in Ypsilanti government in recent years. The focus is on specific incidents that have heightened racial tensions between Ypsilanti's residents and government officials. Some of these incidents include the creation of a special commission to combat racial inequalities between Ann Arbor and Ypsilanti and the appointment of the fire chief amid accusations of racial discrimination. This research is conducted through interviews, as well as a review of public records. The goal is to explain the current state of race relations in the Ypsilanti government and to explore how they could possibly be improved in the future.

Political Experience: Does it Matter? And to Whom?

Heather J. Weigel

Jeffrey L. Bernstein, faculty mentor | Oral Session A | Room 320 | 9:30am

Throughout the last several election cycles, a constant topic of political conversation has been political experience. Differences have arisen in public opinion over satisfaction with the status quo and how “experienced” politicians contribute to it, since they comprise the “establishment.” Differences also exist among the public in the type of experience (level and category) they prefer their representatives to have. This paper seeks to explore how voters regard political experience and the political establishment, how these concepts may be conflated, and how perceptions about the positive and negative values of political experience may differ across demographics.

Historical Memory, Peace, and the Role of the Media in Post-Conflict Regions

Hannah Zwolensky

Richard Stahler-Sholk, faculty mentor | Oral Session B | Student Art Gallery | 10:45am

Historical memory, political conflict, and peacebuilding have long been affected by the role of the media. This presentation explores how all three of these phenomena coincide with each other in geographic regions that have cycles of conflict and instability. The way in which these events are covered and the extent to which they are showcased may have grave impacts on the development of peace and the maintenance of an accurate historical memory in regions that have experienced internal conflict. This presentation will analyze the impact of the media on the historical memory and prospects for peacebuilding in the following regions: the Basque Country, Catalonia, and Guatemala.

Effects of Stress on Health of African American Women in Low Income Neighborhoods

Jada Childs

Heather Janisse, faculty mentor | Oral Session B | Room 330 | 10:30am

Obesity is more prevalent in populations of African American women than any other population in the U.S. Furthermore, stress has been found to disproportionately affect the health of African American women when compared to European American women. This project aims to examine the relation between stress, body mass index, environment, and socioeconomic disparity amongst women of color. A sample of 100 African American women from low-income, Detroit neighborhoods participated in the current study. Surveys were utilized to assess variables of interest, including the African American Women's Stress Scale. Study results can help inform best practices for health interventions in communities of color.

Behavioral Self-management of Social Media Usage: A Case Study

Sarah Dixon and Vasavi Ganesan Shanthi

Natalie Dove and Marilyn Bonem, faculty mentors | Oral Session D | Room 320 | 4:00pm

When social media usage is excessive and interferes with constructive activities, it would be useful to have information regarding the behavioral contingencies that maintain such behavior so that interventions aimed at controlling usage could be matched to the functions of the behavior. Yet, very little research has been conducted with this aim. Behavioral techniques incorporating self-management are particularly suitable to this problem. Techniques such as goal-setting, social precommitment, and pausing that have been applied to other problematic behavior would be applicable to control usage of social media. A self-management case-study will be presented.

The Interaction of Body Talk and Body Dissatisfaction on Disordered Eating in Adolescent Boys

David Farris

Non-presenting authors: Ellen Hart,

Aidan Schmitt, Ahmad Zalt and Clara Nelsen

Chong Man Chow, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45-4:15pm

Past research suggests that engagement in negative body talk is related to disordered eating among young men. The current study examined the moderating role of body dissatisfaction in the relationship between negative body talk and disordered eating in adolescent boys. Participants completed self-report questionnaires of the variables of interest. Results showed that body dissatisfaction and negative body talk interact to predict disordered eating, such that when body dissatisfaction is high, engagement in high levels of body talk is related to greater disordered eating behavior. Future research should continue to address the role of body talk in eating behavior among adolescent boys.

The Effect of Effort on Preference when Motivation is Low

Ali Ghannam

Silvia von Kluge, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00–11:45am & 1:30–2:15pm

Leon Fessinger's work on cognitive dissonance showed that we come to love that for which we suffer. In this research we speculated that effort creates a preference for the effortful task. We ran a within-group study with rats to test this effect. Mildly thirsty rats either worked through a maze (effortful) or were placed in a Skinner box (no effort) to find water. The water was presented with one of two odors that were equally preferred (almond and banana). After the trials two measures of preference were used to determine which odor they now preferred.

Socioeconomic Risk, Parenting and Child Health in African American Families

Delaney Hansen

Heather Janisse, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45–4:15pm

Parents play an important role in shaping the developmental outcomes of their children. Research shows that parent behavior is a key predictor of outcomes like child health and well-being. Parents in low-income communities experience additional socioeconomic risks that can make parenting more difficult and contribute to poorer health outcomes for children. The purpose of the current study is to examine the relation between socioeconomic risk, parent behavior and child health outcomes in a sample of African American families from low-income neighborhoods. Fifty-six mothers with a preschool age child participated in the current study. Survey measures were utilized to assess study variables.

Training Behavioral Technicians to Implement Discrete-Trial Teaching for Children with Autism

Olivia B. Harvey

Adam M. Briggs, faculty mentor | Oral Session C | Room 352 | 2:30pm

Behavioral skills training (BST) is an evidence-based training protocol that is most commonly comprised of (a) instructions, (b) modeling, (c) rehearsal, and (d) feedback. The purpose of the current study was to evaluate the influence of each BST component in a sequential manner to determine the most effective and efficient method for training behavioral technicians to implement discrete-trial teaching for children diagnosed with autism. Preliminary results suggest the feedback component was necessary for all participants to reach the mastery criterion (100% correct across three consecutive sessions). We discuss implications of these results and directions for future research.

Training Behavioral Technicians to Implement Discrete-Trial Teaching: A Literature Review

Olivia B. Harvey

Non-presenting author: Samantha Zohr

Adam M. Briggs, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45–4:15pm

Early intensive behavioral intervention is an empirically-supported treatment that has the potential to mitigate core and associated features of autism. Although we have a powerful intervention for treating children diagnosed with autism, less is known about training behavioral technicians to implement discrete-trial teaching (DTT). Research indicates behavioral skills training (BST) is an effective method for training behavioral technicians. Over the past decade, researchers have replicated and extended research in this area in an attempt to make it more effective and efficient. This review summarizes recent advancements in the BST literature for training technicians to implement DTT.

Improving Course Quality Inside a Prison Classroom

Christopher Heath

Non-presenting authors: Lillian Ellis and Rachel Normandin

Adena Rottenstein, faculty mentor | Oral Session D | Room 304 | 4:00pm

Student feedback is an important source of data to improve course quality. Research has shown this to be true in both psychology courses (Goldfine, Foley, & McNeil, 2008), and courses taught within correctional facilities (Darling, 2002). This research project explored student satisfaction within a single Psychology of Women course taught at a local women's correctional facility. Student evaluations were administered and collected during each class session (seven in total) of one semester. Quantitative and qualitative analyses revealed several themes which will be used to improve course quality in future semesters.

Support, Child Behavior Problems, and Parenting Stress

Reyna Lee

Angela Staples and Jamie M. Lawler, faculty mentors

Oral Session C | Room 352 | 2:00pm

Research has found a link between child behavior problems and parenting stress, but it is not clear what moderates this effect. This study aimed to examine if social support buffers stress levels from the effects of child behavior problems. As part of an ongoing study, data from a subgroup of participants were examined. Parents of toddlers completed the Parenting Stress Index, Eyberg Child Behavior Inventory, and the Social Support Questionnaire. Results revealed that child behavior problems lead to increased parenting stress, but only when a parent's social support levels are low. Therefore, social support acts as a protective factor for parents coping with challenging child behaviors.

Ethnic Identity, Religious Coping, and Mental Health

Lisa Liu and Megan Pejsa-Reitz

Karen Saules, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Research indicates lower depression severity among people with high religious involvement (McCullough & Larson, 1999). The current study – an online survey of religiosity, ethnic identity, and depression – examined whether religiosity and strength of ethnic identity may protect against depression. Depression was not associated with positive religious coping, but it was associated with feelings of spiritual tension, conflict with, and abandonment. Strength of ethnic identity was associated with both positive and negative forms of religious coping. Future research should explore how these variables might interact to have both positive and negative relationships with mental health.

The Intersection of the Color Line and the Thin Blue Line

Maya Mackey

Rusty McIntyre, faculty mentor | Oral Session C | Auditorium | 2:15pm

The interactions between police officers and minorities in the United States have come under scrutiny in recent years. Recurring incidents in which police officers kill unarmed Black men have brought about accusations of racism and abuse of power within the police force. By surveying police officers and related security or cadet persons this research will evaluate how occupational identity and other personal identities connect in these populations. The expected outcome of this study is that African American police officers will have a more intense sense of occupational identity in comparison to African American civilians. Findings will be discussed.

BMI and Body Dissatisfaction's Influence on Relationship Satisfaction in Romantic Couples

Clara Nelsen

Non-presenting authors: Ellen Hart, Aidan Schmitt, Ahmad Zalt and David Farris

Chong Man Chow, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Research shows that romantic partners' body images are related to each other and to the overall relationship satisfaction. Research indicates that women's body satisfaction is related to their perception of their male partners satisfaction with their bodies. We investigated the relationship between BMI and body dissatisfaction in predicting relationship satisfaction among romantic couples. Regression analysis shows that perceived partner satisfaction with one's own body is the strongest predictor of relationship satisfaction for both men and women.

Relationship Commitment and Participation in Caregiver Skills Training

Lyndsey Peterson

Non-presenting author: Samantha Zohr

Claudia Drossel, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30-2:15pm

In the context of program evaluation for group skills training for family care partners of individuals with dementia (funded by the Michigan Health Fund), electronic medical and archival video records will be reviewed to examine the relationship between client statements of commitment and engagement in training. Client responses on items of the Dyadic Adjustment Scale, measuring the degree to which a person would fight for their relationship, will be analyzed regarding aspects of client engagement and follow-through (i.e., number of sessions attended, number of conversational volleys, homework completed). Barriers to skills training, such as physical or emotional limitations, will be considered.

Factors Related to Parental Accommodation in Families of Children with Selective Mutism

Kylie Quinn

Non-presenting author: Kira Boneff

Carol Freedman-Doan, faculty mentor | Oral Session C | Room 352 | 2:15pm

Selective Mutism (SM) is an anxiety disorder in which when a child is prompted to speak when they feel uncomfortable (e.g. at school), they cope with their anxiety by not speaking at all. The purpose of this presentation is to address accommodation, one of the main aspects that may negatively reinforce a child's anxious silence, and some factors that may influence accommodation itself. We will examine 50-75 parents with a child diagnosed with SM through several standardized questionnaires about their own anxiety and accommodation, as well as their child's anxiety. The expected results are that there will be correlations between symptom severity and the amount of accommodation provided.

Training Toward Collaborative Medical and Behavioral Services

Jessica Riley

Non-presenting author: Samantha Zohr

Claudia Drossel, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30–2:15pm

One of the principles of geropsychology is that behavioral health-care should intersect with medical services. The implementation of a collaborative care training program, funded by the Michigan Health Fund, will be evaluated via an electronic medical record review. This review will examine the number of releases on record for the exchange of information between behavioral and medical providers for all clients served by this program, and the proportion of releases that are accompanied by actual receipt of medical records or documented correspondence between providers. Results will provide information on barriers to collaborative care in psychology training clinics.

Behavioral Function and Control of Social Media Use

Vasavi Ganesan Shanthi and Sarah Dixon

Marilyn Bonem and Natalie Dove, faculty mentors

Oral Session D | Room 320 | 3:45pm

Social media was introduced more than 30 years ago, but usage has grown exponentially in the past ten years. Research has focused on demographic information regarding who uses it and how much, and also on the psychological impact such as the relationship between usage and personality types, academic performance, characteristics of mental health, work productivity and frequency and quality of face-to-face interactions. Despite focus on negative implications, there may be benefits of usage. Furthermore, when social media interferes with constructive activities, it would be useful to have information regarding effective methods of self-management.

Parent Anxiety, Parenting and Child Emotion Regulation

Rylee Smith

Jamie Lawler, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45–4:15pm

Anxious parents often speak harshly and are overprotective, which can negatively influence their child's self-regulation skills (Kiss et al., 2014). When parents use an indirect, inconsistent, or power-based limit-setting style, their child tends to have poorer self-regulation skills than those whose parents use a teaching-based limit-setting style (Lecuyer-Maus, & Houck, 2002). In a study consisting of parents and their children aged 24-48 months old, participants who reported symptoms of anxiety also reported poor emotion regulation in their child. Parents who showed poor structure and limit setting also reported low emotion regulation in their child.

The Effect of Effort on Preference when Motivation is High

Ethan Vaughn

Silvia von Kluge, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

The cognitive dissonance studies of Fessinger famously demonstrated that organisms -- from rats to children and college students -- come to like things that made them suffer. Our research explored whether rats would prefer stimuli associated with a non-aversive but effortful experience over stimuli that required no effort at all. Using equally preferred scents (banana and almond) we tested whether 'thirsty' rats preferred the scent associated with the effortful task of completing a complex maze. This experiment used 20 hours of water deprivation and two measures of preference.

Attachment Styles, Body Dissatisfaction, and Disordered Eating: Self-esteem as a Possible Mediator

Ahmad Zalt

Non-presenting authors: Ellen Hart and Aidan Schmitt

Chong Man Chow, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45–4:15pm

Previous research suggests that adolescent girls are at high risk for developing body dissatisfaction attitudes and disordered eating habits. Insecure attachment has been found to predict these outcomes. A mediation model was proposed to examine the potential mediating role of self-esteem in the relationship between insecure attachment and body dissatisfaction and disordered eating. Statistical analysis determined a significant association of anxious and avoidant attachment with body dissatisfaction through self-esteem. Self-esteem did not, however, mediate the relationship between insecure attachment and disordered eating behavior.

DEPARTMENT OF SOCIOLOGY, ANTHROPOLOGY AND CRIMINOLOGY

Validation of a Technique for Rehydrating Mummified Fingerprints

Dylan Blatt

Megan Moore, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

The goal of this study is to replicate and validate a process by which fingerprints can be obtained from mummified human remains for the purpose of identifying unknown decedents. Our approach is based on using a sodium carbonate solution to rehydrate the mummified finger pads for fingerprinting. Based on previous methods from the scientific literature available, we tested variations in submersion time, the amount of soft tissues submerged, as well as pairing with other techniques to enhance fingerprint ridge visibility.

Osteological Ramifications of Footbinding and High-Heel Wearing

Pariss Gray

Megan Moore, faculty mentor | Oral Session D | Room 350 | 3:00pm

Historically, many cultures sustained trends of feet as a key feature of femininity. This project analyzes foot distortion of post-twentieth century Chinese women who practiced footbinding along women who often wear high-heels. The calcaneus and last four metatarsal bones of the foot are permanently distorted in footbinding. Yet, the effect on density of the trabecular bone, hips, and knees are also seen in constant high-heel wear. I argue that constant flexion and abnormal loading on the foot increase degradation of tissue and affect quality of physical activity later in life. Practice of femininity norms that emphasize small, high arched feet, may contribute to further osteological issues.

Human Skeletal Morphology in a sample of Modern Non-Binary Individuals

Kari Havenaar

Megan Moore, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Human skeletal morphology for sex estimation is useful for identification of an unknown individual after death. Approximately 1.4 million individuals in the United States are transgender. Sadly, there are increasing rates of homicide against individuals of the LGBTQ+ community. This study enables identification of non-binary individuals through the creation of a database of measurements and skeletal features/characteristics of non-binary sex individuals. In this study there are 5 male to female transsexuals, two females who identified as male, and 5 males who identify as female. The information gained from these individuals creates more accurate identification for future cases.

A Comparison: Chemical and Maceration Processing Methods

Jordan B Jones

Megan Moore, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

There are various reasons why animal remains need to be properly preserved. Different methods of preservation may be used depending on the case, some are better for forensic or DNA preservation and some are better for cleaning remains for museum or educational purposes. The various methods are chemical-based, water maceration, and some more natural approaches. The remains of eight different animal species were processed. Chemical-based methods proved to degrease and whiten, maceration proved to be quick and effective, and the natural methods proved to be the least damaging, but tedious. Each method has pros and cons, but all of the methods have helped to further scientific research.

The Impact of Religion on Public Policy Regarding Climate Change

Julia Kops

Robert Orrange, faculty mentor | Oral Session A | Student Art Gallery | 10:00am

The United States is indisputably a global superpower that other countries use to model their economy, politics, and even values. Its founding was by those seeking religious freedom, and many years later religion continues to be a prominent value in American culture. Within religious groups there are elites who have connections in corporations and government, and it is thought that this connection has influenced the ability to enact policy designed to ease the effects of climate change. This study seeks to explore the connections among elites through a historical comparative lens to explain the current state of inaction from the world's politicians.

Marked as Unable to Be: The Endangerment of Black Women Sex Workers

Taylor Amari Little

Brian G. Sellers, faculty mentor | Oral Session B | Room 304 | 10:45am

This study presents an investigation of the linkage between Black women full-service sex workers' endangerment risk to the location of Blackness and specifically Black cis and trans womanhoods being outside of a human category, as well as inherently criminal. This study takes into consideration Black transness in order to more fully capture Black womanhoods and their sexual politics. It carefully examines how Black women are not allowed to have a 'self'. It asserts that social movements that continue lacking the grammar to explore Black people's (lack of) connection to the modern concept of Human will remain inadequate for Black people's survival.

Addressing the Stigma of Alzheimer's Disease in Arab Americans

Megan Morrison

Kristine Ajrouch, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45-4:15pm

Alzheimer's disease (AD) is a sensitive topic. For Arab Americans, it can be more challenging because of community stigma. One way to address stigma is through health learning events. The purpose of this research is to understand the meanings of stigma and track how effective health learning events are in disseminating information to successfully address AD stigma. Data are analyzed from 4 focus group discussions with Arab American AD caregivers and from evaluation surveys (N=235) completed post-event. Findings help understand how stigma is understood among Arab Americans and clarify the effectiveness of community health learning events to overcome stigma.

Deficit Frameworks and the Racialization of Immigrant Students in U.S. Schools

Kamryn Powell

María Luz García, faculty mentor | Oral Session B | Room 320 | 10:45am

Immigrant children experience adverse conditions in the United States' school systems. This study is a critical examination of the frameworks that racialize immigrant students and obscure racial inequalities through ideologies that interpret cultural difference as a deficit. Such approaches expect minority students to model their cultural and linguistic practices after the dominant white culture while simultaneously receiving and viewing their efforts in racialized ways. These ideologies embrace whiteness as normal and hide race and its inequalities by approaching cultural diversity as a deficit, which furthers "culture clash" justifications.

Neoliberal Alienation: How the Capitalist Machine Has Created A Culture of Despair in America

Colton Ray

Ronald Westrum, faculty mentor | Oral Session B | Room 320 | 11:00am

Drawing from socialist theories of alienation, observations of American politics and propaganda, and studies conducted by the American Journal of Preventive Medicine and Center of Disease Control on youth death rates, I make the case for restructuring socio-economic and political systems in the United States. By reinforcing notions of human nature as being driven mostly by selfish reasons, the ideology of capitalism has convinced Americans that being unmotivated, inauthentic, consumerist, and mentally ill is solely a result of personal choice or genetics, rather than byproducts of a system where its institutions don't value human labor, and social relations are turned into business schemes.

Washtenaw Drug Recovery: An Anthropological Perspective

Daniel Scrochi

María Luz García, faculty mentor | Oral Session B | Room 350 | 10:45pm

Current models of addiction rely on paradoxical viewpoints of recovery being dependent solely on free will (dominant in the juridical, punitive realm) while simultaneously robbing addicts of their agency by presenting them as victims of their disease (as dictated by the biomedical narratives). Noting the presence of these contradictory yet dominant narratives of punitive and biomedical explanations at different facilities, this study takes a systematic view to examine how these ideas affect daily interactions. It analyzes the meanings of, and opportunities for, recovery as historically and socially configured, while grounded in the lived experience of addicts and recovery personnel.

Methodology in Prehistoric Site Interpretation in Southeastern Michigan

Andrew Stachowiak

Bradley Ensor, faculty mentor | Oral Session D | Room 350 | 3:15pm

Archaeological settlement patterns – the distribution of site types (e.g., permanent settlements versus temporary camps) – can inform on prehistoric human-environmental interaction and social structure. There are, however, problems with interpreting site types in Southeast Michigan. Two sites previously interpreted as settlements and one interpreted as a camp are re-examined using seven methods for site type identification and new data from the EMU Archaeology Field School. The results from some methods confirm the previous interpretations while those from others do not. The assumptions behind the various approaches and their applicability for Southeast Michigan need further consideration.

New Religious Movements in Europe

Reece Zielinski

Ronald Rich, faculty mentor | Oral Session C | Student Art Gallery | 2:00pm

In recent decades, there have been a number of contemporary Neopagan, Native Faith, and religious revitalization movements that started all across Europe. Through a literature review on these contemporary Neopagan and Native Faith movements, also known as New Religious Movements (NRMs), this study applies and defines certain concepts that relate to this field, and attempts to apply the theories and concepts found in the literature to ethnographic examples in the world today. It concludes that many of these NRMs are responses to globalization, colonialism, and nationalistic processes found commonly in the world today, with an intense focus on constructing “authentic” identities.

DEPARTMENT OF WOMEN'S AND GENDER STUDIES

Just Eat!... But It's Not That Simple

Emily Turner

Salima Zaman, faculty mentor | Oral Session B | Room 304 | 10:30am

The present research seeks to answer the following big picture question: what is it about the current media that makes girls and women all over America obsess about their body image to the point in which many of them develop eating disorders? The media continuously objectifies women, pressuring them towards impossible beauty standards. Although eating disorders affect a select group of people internally, it is still a universal problem. In order to lower the risk of women in America developing eating disorders, there has to be a major shift in the culture—a shift of how women are portrayed throughout the media. The present research ends by demonstrating different ways this culture shift can happen.

DEPARTMENT OF WORLD LANGUAGES

Effects of Bilingualism on Cultural and Linguistic Identities

Anna Burbo

Wendy Wang, faculty mentor | Oral Session C | Room 330 | 2:30pm

This presentation reports on a case study of a Chinese student's experiences of learning English and attending school in the United States, and how such experiences have shaped his cultural and linguistic identities. Sociocultural and sociolinguistic factors such as choice of language use are examined in relation to the transient nature of the sociocultural identities of a bilingual speaker.

Incidental Language Learning through Video Games

Jamie Cameron

Wendy Wang, faculty mentor | Oral Session A | Room 350 | 9:45am

Languages are usually learned in a classroom setting that at times can be boring to sit through and intimidating for learners. Video games as a worldwide hobby have been around for decades and are intended to be fun. What if the best of both activities could be combined without always realizing it? This paper explores the idea that language can be learned by playing video games and interacting with other players through virtually shared experiences, while making friends along the way.

30 Years after the Fall of the Berlin Wall: What Sociocultural Impact was Left behind and Remains Today?

Grace Gergel

Carla Damiano, faculty mentor | Oral Session C | Student Art Gallery | 2:15pm

Marginalization and separation are present in Berlin even after the demolition of its physical boundaries. This presentation discusses the concept of “the wall in the head” in a former East and West Germany, how formerly separated communities in the same nation have come back together to grow into one, and what these lingering boundaries mean today.

Beyond Our Boundaries

Sydney Jacks

Geneviève Peden, faculty mentor | Oral Session A | Room 330 — 9:15am.

This oral presentation is accompanied by a slideshow about elementary schools in France. As a future teacher of French, I want my classroom and the education system to be the best it can be. In order to do that, I believe we can learn from education systems other than our own and take the positives of something and build upon it. This presentation examines several aspects of the French education system (including the structure of their grade levels, the content instructed, homework, grading system, and what a typical week’s schedule resembles), and ends with an overall comparison and conclusion of the two.

Effects of an Academic Service-Learning Experience on English Language Teacher Development

Evelyn C. West

Cynthia Macknish, faculty mentor | Oral Session A | Room 330 | 9:00am

This project examines how an academic service-learning project helped future English language (EL) teachers grow. TESOL (Teaching English to Speakers of Other Languages) students planned and implemented an afterschool program to support young English learners at Estabrook Elementary School. Using Piaget's theory of constructivism, this hands-on, real-world learning opportunity allowed TESOL students to construct their own understanding and reflect on the experience. TESOL students first developed an afterschool EL program and put into practice their own lessons. Then, through reflection journals and critical discussions, students used metacognitive strategies to strengthen their expertise. As the 'students-turned-teachers' reflected on their learning, they grew as EL teachers in ways they would not have without this program.

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DEPARTMENT OF LEADERSHIP AND COUNSELING

Do We Really Love Our Black Sistas? How Black Men Can Support Black Women

Desmine Robinson

Devika Choudhuri and Dyann Logwood, faculty mentors

Oral Session C | Room 304 | 2:15pm

The Black woman is often cast in the role of the primary care provider for the Black race. Though this is an honor worthy of respect, Black women occupying this role may struggle with personal health, identity, and more. When Black men understand how Black women cope with different modern and historical challenges in contrast to other women, they may be more equipped to love and support the women in their community. This project aims to ignite Black male sensitivity to the struggles of Black women in hopes of inspiring Black men to take more initiative in projects geared towards promoting self-awareness, accountability and healing. This project exposes young Black men to literature, films, scholarly presentations, and music lyrics that express the lived experiences of the Black woman.

DEPARTMENT OF SPECIAL EDUCATION & COMMUNICATION SCIENCES & DISORDERS

Why Individuals with Learning Disabilities Refuse to Request Accommodations in Higher Education

Karlee Fillmore

Rhonda Kraai, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Research shows that individuals with self-reported specific learning disabilities who use accommodations in higher education experience less difficulty completing assignments. However, only a minority of individuals with specific learning disabilities report actually using accommodations, even though they describe academic obstacles and struggle to complete assignments. This mixed methods research study aimed to explore why individuals with learning disabilities refuse to request available accommodations in higher education.

Stroke Education in the African American Community

Noelle Edwin

Audrey Farrugia, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45–4:15pm

African Americans have a higher chance of having a stroke compared to any other race or ethnicity. In order to understand how much knowledge African American college students have about strokes, an open-ended questionnaire was completed. The results were qualitatively analyzed in order to make recommendations about whether there should be an increase in stroke education in the African American higher education community.

Dyslexia in College-Aged Students

Kailah Hardy

Rhonda Kraai, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

This study was conducted to investigate underlying dyslexia symptoms within the college-aged population. Many students with dyslexia who attend college continue to struggle with academic subjects and content. Major focuses of this study include but are not limited to supports available to college students with dyslexia; IEPs vs. 504 plans and their availability to college students with dyslexia; what symptoms/challenges still persist at the college level; and how individuals with dyslexia cope. To determine lingering effects, interviews were conducted with three individuals with dyslexia. A qualitative analysis of those interviews will be shared in this poster presentation.

Selective Service: Experiences of Speech-language Pathologists Serving Underrepresented Populations

Maymuna Jamil

Audrey Farrugia, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Members of underserved populations, particularly those of low socioeconomic standing, are less likely to receive speech-language pathology services. Through a series of in-depth interviews, this study observed the experiences of speech-language pathologists working with underserved populations in order to understand how they help such populations. The subjects included at least one speech-language pathologist from each of the following settings: school, clinic, hospital, and skilled nursing facility. Results of this study yielded common themes in working with members of low socioeconomic standing, as well as implications for improving the accessibility of speech-language pathology services.

The RAP Experience

Bethany Linder

Jacquelyn McGinnis, faculty mentor | Oral Session C | Room 352 | 1:30pm

The Recreational Activity Project (RAP) is an opportunity for EMU students to partner with a student enrolled in the Washtenaw Intermediate School District's program for those who are eligible for continued special education services up through age 26. During this experience, EMU students are given the chance to connect with an individual with a disability and develop a relationship with them. As a sibling of two sisters with cognitive impairments, I have prior knowledge of how daily tasks can either be easy or difficult for someone with a disability. Partnering with a young adult through this project enabled me to compare and contrast the strengths and barriers experienced by individuals with intellectual disabilities.

Looking Through My Eyes: A Study of Self-Concept of Individuals with Autism Spectrum Disorders

Andrea McCreedy

Derrick Fries, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

The knowledge base surrounding autism spectrum disorders is continually evolving, especially in the last few decades. There is still limited knowledge about how individuals on the autism spectrum view themselves at different developmental stages of life. This study aimed to augment to paucity of research that exists in this area. Specifically, this investigation focused on individuals' self-perception in terms of social life, personality, mental health state, and how others view them.

DEPARTMENT OF TEACHER EDUCATION

Redefining the Teacher Through an EcoJustice Lens

Shelby Antieau

Amanda Maher, faculty mentor | Oral Session A | Room 350 | 9:00am

Viability on Earth is not just a congregation of living organisms working together. Rather, it is a complex network of interconnecting mechanisms that must carry out life and sustainability. As we enter the age of global warming, our planet has become silhouetted by an ecological crisis. The author argues that teachers must adopt roles as caretakers of the Earth; otherwise, our planet that we treat as a commodity will deteriorate into a lifeless vessel. Adopting an eco-Justice lens, the author makes a theoretical argument that's imperative to include environmental awareness in education, so that we can save what is supposed to be our home.

Environmental Racism Research: A Charge to Advocate for the Children

Nailah Leggett

Martha Baiyee, faculty mentor | Oral Session D | Room 350 | 4:00pm

Environmental Racism is the disproportionate impact of environmental hazards on people of color. It includes institutional rules, regulations, policies or government and/or corporate decisions that deliberately target certain communities for locally undesirable land uses and lax enforcement of zoning and environmental laws. A case in point is the Flint water crisis of 2014, which manifested in corrosive water pipes leaking lead in the drinking water. Many lives were affected and children of color disproportionately. Therefore, the author is urging early childhood professionals, especially teachers, to advocate on behalf of the children and their families.

Contemporary Play

Melanie Prince

Christina Mirtes, faculty mentor | Oral Session A | Room 350 | 10:00am

Contemporary Play can be described as the current conditions of a society or culture with respect to the environment, people and materials influencing children's play behaviors. More specifically, this research allows us to gain a better understanding of the use of technology among preschool children during typical play routines at school and at home. While observing the children, the key considerations include the purpose of the technology tool, the amount of time/how often the child was engaged with technology play, and the language requirements of the technology task. This data informs adults on providing ECE environments that follow best practices on play using technology in preschool.

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Pathology of Parkinson's Disease and the Utilization of Exercise

Megan Benzie

Shel Levine, faculty mentor | Oral Session B | Room 330 | 11:30am.

An estimated 1% of people over the age of 75 suffer from Parkinson's disease. While there is no specific test to confirm a diagnosis of this slow progressing disease, the triad of functional symptoms in Parkinson's consists of rigidity, bradykinesia, and tremor. Parkinson's patients are often prescribed Levodopa, and physical therapy, such as the Lee Silverman Voice Treatment, focused on motor tasks can improve the quality of life and improve symptoms in these patients. This presentation will cover the pathology of Parkinson's Disease, including diagnosis and treatment options, the use of physical therapy, and the importance of patient education to improve quality of life.

Theory-based Correlates of Physical Activity in Overweight and Healthy Weight Freshmen

Chloe Catallo

Catherine Gammon, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Correlates of health-enhancing physical activity (PA) may vary by weight status, thereby impacting for PA promotion across college campuses. This study explored theory-based psychological correlates of PA among overweight (OW) & healthy-weight (HW) college freshmen. Students had height and weight measured. They also completed a survey on PA & psychological factors. For OW freshmen (n=35), the strongest correlates of PA were identified motivation & self-efficacy. For HW freshmen (n=62), the strongest correlates were integrated motivation & perceived competence for exercise. The groups differences indicate that PA interventions tailored to weight status may be more effective than a generic approach.

Athletes Substance Abuse and Mental Health

Brandon Carreathers

Jeffrey Schulz, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

The pressure of being an NCAA athlete at the NCAA level is comes from a variety of sources. Furthermore, injury may lead to loss of self-identity and subsequent mental health issues. Research shows that about 52% of professional football players have reported using opioids, and almost all college athletes have reported using alcohol. In addition, about 33.2% of NCAA athletes who reported have had an occurrence of depressive issues. This presentation will answer many questions regarding drug abuse in athletes, such as why do so many athletes careers result in drug abuse. In addition, this presentation will cover the role of mental health in substance abuse within the athletic community.

Psychological predictors of physical activity among college-aged males and females

Shakena Hannah

Catherine Gammon, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Identifying predictors of health-enhancing physical activity (PA) can help develop interventions to increase PA. This study explored psychological factors associated with PA among college freshmen. Data on PA and psychological factors were collected from 65 females & 35 males. The strongest significant correlates of PA among females were intrinsic motivation and perceptions of exercise competence. Among males the strongest significant correlates were integrated motivation and exercise autonomy. Because correlates of PA were different between groups, PA interventions targeting freshmen may be more effective if tailored to gender-specific psychological predictors.

Accuracy of self-reported height and weight in collegiate athletes

Jacob Hausch, Megan Hare and Cailyn Van Camp

Rebecca Moore and Andrew Cornett, faculty mentors

Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

The purpose of this study was to determine if collegiate athletes self-report accurate heights and weights. EMU athletes (n=57) filled out a questionnaire regarding their current heights and weights. A researcher then objectively measured each athlete's height and weight. Results showed that self-reported height was greater than measured height by a mean difference of 1.1 ± 1.7 cm ($t=3.44$, $p=0.001$). Self-reported weight was less than measured weight by a mean difference of -0.7 ± 1.7 kg ($t=3.40$, $p=0.001$). This study provides evidence that collegiate athletes are capable of self-reporting accurate heights and weights, but they consistently overestimate their height and underestimate their weight.

Exercise as a supplement for treatments of various cancers

Casey Gavigan, Rachel Stark and Bethany Berger

Shel Levine, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Cancer is characterized by abnormal and uncontrollable cell division and results in the loss of almost 10 million lives every year. Apart from genetics and environmental factors, risk factors for cancer include smoking, alcohol consumption, excessive body fat, physical inactivity, and poor nutrition. While early detection remains the best way to beat cancer, certain treatments are needed to manage its progression. Pharmacology is traditionally used to treat cancer, but pharmacological treatments come along with harsh side effects. Our presentation will focus on how exercise alleviates some side-effects from the life-saving treatments and maximizes the recovery process.

SLAP Lesions of the Shoulder

Rachel Neil

Aaron Struminger, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

A superior labrum anterior-posterior (SLAP) tear can lead to pain in overhead athletes because of the density of nerve fibers present in the area. When evaluating patients for SLAP tears, clinicians perform multiple tests and confirm their diagnosis via Magnetic Resonance Imaging. Conservative rehabilitation to strengthen the rotator cuff and biceps is often the first strategy to relieve pain because surgical repair may be career-ending. However, athletes may opt for surgical treatments, which include debridement and surgical repair. This presentation will cover the anatomy of the injury, how SLAP tears can be diagnosed, and options for recovery, including rehabilitation and surgery.

Accuracy of Self-Reported Physical Activity Data Among College Students

Casey Skeens

Catherine Gammon, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Knowing how many college students meet national physical activity (PA) guidelines can indicate the need for PA promotion. Self-reporting PA levels via questionnaires is a feasible assessment method, although they are only useful if reporting is accurate. Activity monitors can give researchers a relatively accurate estimate of PA levels in this population. This study compared self-reported and monitor-measured PA from 35 college students. Estimates of health-enhancing PA from the questionnaire and monitor were not significantly different. Questionnaires to assess PA may be accurate and more cost-effective, but researchers should understand that a small degree of over-reporting exists.

The Effects of Gut Health on Mental Health

Cali Curlee

John Carbone, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30–2:15pm

Humans create mood and cognition-regulating neurotransmitters naturally, with up to 90% of serotonin produced in the gut. Imbalanced neurotransmitter levels have been linked to depression and anxiety. This research study evaluates potential connections between intake of microbiome-influencing foods/beverages and mental health. In addition to comparisons against the existing research literature, the data presented will allow for evaluation of the hypothesis that consuming limited amounts of pre/probiotic foods is associated with greater prevalence of depression and anxiety than a diet rich in pre/probiotics.

The Effects of Aquamin on Bacteria

Janelle Janisse

Lynne Shetron-Rama, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

The dietary supplement Aquamin, a mineral compound composed of calcium, magnesium and other trace elements, is a potential therapy for Inflammatory Bowel Disease. The effects of Aquamin on representative pathogenic and commensal gut bacteria was investigated using Minimum Inhibitory Concentration (MIC) assays, antibacterial assays and time-kill assays. So far, this study has not found a decrease of in-vitro growth of bacteria when treated with Aquamin.

Advancing Cultural Competency and the Knowledge of Best Practices for Future Health Professionals

Sydney Lawson

Sarah Walsh, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Specific discriminatory cases and pervasive biases in healthcare history have resulted in mistrust and reduced quality of care. Health professions students need cultural competency training to prevent these wrongs and to increase continuity and quality of care. Results from a literature review on bias-free writing, historical discrimination within healthcare and best practices to become culturally competency will be presented. The literature review will serve as the foundation for a brief cultural competency training for EMU health professions students using the 7th edition APA Style Guide as a framework.

Focus Group Research for Health Promotion in Faith-Based Communities

Meghan Pendleton

Heather Hutchins-Wiese and Andrea Zakrajsek, faculty mentors

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Diet-related chronic diseases are commonplace, but can be mitigated with interventions that focus on modifiable risk factors such as nutrition and other lifestyle behaviors. The purpose of this project was to identify individual, social, and environmental factors that affect nutrition for potential health promotion programming. Focus groups were conducted with three faith-based organizations using tenants of community-based participatory research. Emerging themes pertained to barriers, facilitators, and desired supports for healthful nutrition. Identifying these types of themes within a community can allow creation of relevant and efficacious interventions.

Researching Self-Perceived Confidence in Occupational Therapy Students

Jessica Cheyenne Sherwood and Navkiran Kaur

Jayne Yatzak, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

The purpose of this descriptive study was to determine how academic and professional experiences offered through Eastern Michigan's occupational therapy program may increase or decrease an OT student's confidence in their professional role. In this study, an OT student's confidence was understood through their ability to define and demonstrate what occupational therapy is, as well as their ability to work on an interdisciplinary team. The findings of this study inspired further research which will explore Level I fieldwork and its effectiveness in enhancing OT students self-perceived confidence and competence.

Mediterranean Diet Adherence, Fatty Acids, and Vitamin D in Postmenopausal Women

Elizabeth Tedeschi

Heather Hutchins-Wiese and Lynne Shetron-Rama, faculty mentors

Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Chronic low-grade inflammation, which has negative health effects, is associated with increased age. Research on inflammation, diet, vitamin D, and bone health are inconclusive. The aim of this hypothesis generating study was to assess the impact of dietary intake on vitamin D and inflammation as mitigators of bone mineral density (BMD) in postmenopausal women. Assessments included a Food Frequency Questionnaire, serum vitamin D and inflammatory markers, and BMD. Our study showed that increased adherence to the Mediterranean Diet and dietary fat intake positively correlated with anti-inflammatory fatty acid blood markers and serum vitamin D, respectively without associations with BMD.

SCHOOL OF NURSING

Nursing Student Confidence in Implementing Comfort Measures with the Laboring Client

Heily E. Alvelo-Saada

Holly Hopkins, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00 – 11:45am & 1:30 – 2:15pm

Labor and delivery can be intimidating, therefore searching for ways to overcome any fears is crucial. Non-pharmacological pain management is an important nursing skill used in making the experience as comfortable as possible. For this project, student self-efficacy in implementing comfort measures with the laboring client was examined at Eastern Michigan University's School of Nursing. A survey tool by Davies and Hodnett (2002) was utilized for this assessment. Results indicated that students were not fully confident in their ability to perform comfort measures. After examining teaching methods, it was determined that improved simulation experiences may be beneficial to students.

Bacterial Urinary Tract Infections (UTIs)

Noor Ashur

Frank Schaller, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45-4:15pm

Bacterial Urinary Tract Infections (UTIs) are extremely common, especially among females because they have shorter urethras than males, increasing the likelihood of bacteria entering the urinary tract. Some people have recurring UTIs and end up taking long-term antibiotics. UTIs often lead to painful urination and overall can impede a patient's daily life. The purpose of this poster is to educate on bacterial UTIs: the causes, classifications, signs and symptoms, diagnosis, treatment, and ultimately prevention. Educating the public on UTIs can lead to earlier identification and treatment. Implementing preventative measures can also reduce the incidence of UTIs.

Health Promoting Behaviors and Levels of Positive Mental Health in Filipino Nurses

Daniella Diaz

Meriam Caboral-Stevens, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45 – 4:15 pm

Evidence has shown that nurses lack integrating this practice into their own lives. The purposes of this study are to explore Health-Promoting Behavior of Filipino nurses and to assess the level of Positive Mental Health of Filipino nurses. Health Promoting Lifestyle Profile II and Positive Mental Health are the surveys used and are distributed through Redcap. The study is in progress. Findings from this study may be used to develop programs for nurses on promoting self-care and positive mental health.

Do Postpartum Doulas Help People Achieve Their Breastfeeding Goals?

Allison Giniel

Holly Hopkins, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00-11:45am & 1:30-2:15pm

People often require support to meet their breastfeeding goals. Because breast milk is the optimal source of nutrition for the growth and development of infants, many support persons exist to aid the breastfeeding dyad, postpartum doulas (PPD) among them. PPD are non-clinical professionals trained to provide in-home support related to infant feeding and parent-baby wellness. To determine which domains of PPD support help people achieve their breastfeeding goals, a survey based on the eleven domains of PPD care identified by McComish and Visger (2009) was completed by clients who received PPD care and breastfed an infant within the last three years.

Mandatory Organ Donation and Transplantation

Jessica Moore

Jennifer Avery and Opal Lesse, faculty mentors
Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

There is currently a large number of clients who are waiting to receive donated organs, as theirs have either failed or are no longer working properly. As of right now, if someone is interested in donating organs, they have to take it upon themselves to sign up on a donor registry. Switching to a mandatory organ donation or opt-out system would help to increase the number of available donors but is not without controversy. The purpose of this poster is to demonstrate the value of organ donation and explore the necessity of changing the donation process in order to increase the number of lives that could be saved.

Addressing Nurse Burnout and Ways to Prevent Said Burnout

Kelsey Neumann

Jennifer Avery and Opal Lesse, faculty mentors
Poster Group 3 | Room 310 A/B | 2:45 – 4:15pm

Globally, and Nationally, nurse burnout is a problem that not only affects nurses, but patients as well. The purpose of this poster is to provide a description of nurse burnout within healthcare, and methods of addressing/preventing nurse burnout. This research could be used to begin implementing burnout prevention strategies into hospitals, and it could also be used as a stepping stone for further research into this topic.

Healthcare Disparities for the LGBTQ+ Population

Hannah Niehaus

Holly Hopkins, faculty mentor
Poster Group 2 | Room 310 A/B | 11:00–11:45am & 1:30–2:15pm

This comprehensive literature review addresses healthcare disparities for the Lesbian, Gay, Bisexual, Transgender, Questioning/Queer+ (LGBTQ+) population. Fear, a decreased access to care, as well as implicit and explicit discrimination significantly affect the quality of care and overall health outcomes for individuals in this community. The impact of a lack of quality, culturally competent education on the disparities this minority group experiences is examined. Curriculum addressing the needs of the LGBTQ+ population can help to reduce such barriers. Relevant educational requirements for nurses nursing students were compared to requirements for medical, dietetic, and social work students.

An Educational Workshop for Nursing Students in Order to Decrease the Stigma Surrounding Opioid Use

Brooke Raap

Frank Schaller, faculty mentor | Poster Group 3 | Room 310 A/B | 2:45-4:15pm

America endures a death toll equivalent to September 11th every 3 weeks due to the current opioid crisis. Nursing students are well positioned to make an impact on diminishing the opioid crisis. Many nursing curriculums have not adapted to meet the need for education about opioid use disorder and opioid overdose, which calls for an educational workshop on recognizing symptoms of opioid abuse or addiction. Literature shows there is stigma surrounding this topic. Objectives of the workshop include recognition of opioid use disorder, prevention of opioid overdose, overcoming stigma, and sharing of local resources. The workshop will take place at the EMU School of Nursing.

A Review of Childhood Emotional Abuse: What it is and How it Affects Survivors

Emily Tersigni

Kathryn Hughesdon, faculty mentor | Oral Session B | Room 350 | 10:30am

Sections used for this oral presentation are taken from the literature review of the author's Senior thesis project. This presentation will use literature from 2009 to 2019 that was found through a database search of keywords. This oral presentation will go over the criteria for diagnosing emotional abuse during childhood, as well as the mental health and psychosocial effects of emotional child abuse. A comparison of emotional abuse to the effects of sexual and physical abuse on children will also be presented.

Protect and Serve

Jacquelyne Ali

Perry Silverschanz, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

“Police officers are at increased risk for suicide” (Violanti et al., 2009, p.1) and officers tend to not reach out to mental health services in fear of being deemed “unfit for duty.” This fear doesn’t allow officers to fully express their concerns. To better determine how to develop mental health resources most beneficial for police officers in helping to prevent suicide, this project explores and consolidates what is known about police officer mental health and resource options. Future plans are to develop a survey to gather information from officers themselves about what approaches and resources may be most helpful or most readily accessed.

Prevalence of Housing Insecurity Among Eastern Michigan University Students

Jacob Blevins and Joelle Summers

Catherine Gammon and Julie Harkema, faculty mentors

Poster Group 1 | Room 310 A/B | 9:00–10:30am

Students experiencing housing insecurity (an unstable living situation) face significant challenges & are more likely to drop out of college. We assessed the prevalence of housing insecurity among EMU students. Data was collected from 450 students (undergraduate & graduate, from all colleges). Preliminary results indicate 52% and 46% experienced at least 1 indicator of housing insecurity in the 12 months and 30 days (respectively) prior to data collection. Furthermore, 2.6% of respondents had experienced homelessness since starting college. Housing insecurity appears to be common among college students at EMU; affordable housing resources may support students’ academic achievement & retention.

Traveling on a Road Paved with Grief

Haleigh Galnares

Ken Saldanha, faculty mentor | Oral Session B | Room 350 | 11:00am

The grieving process is complex and can be difficult to navigate. Everyone grieves on their own pathway, each processing it differently. Social work is presently moving away from using the stages of grief model. The word “stages” implies that the grieving process is linear. However, we have learned that grief is not linear. Two theories that explain grief differently are the continuing bond theory (Klass, Silverman, and Nickman, 1996), and four tasks of mourning (Worden, 2009). I will be analyzing the role that each of these theories have played in my own grief journey. Beginning a conversation permits us to overcome stigma and the myth that grieving should occur in private. Practice implications with adults will also be discussed.

Racial and Ethnic Disparities in Mental Health

John Michael Garcez

Charles Graham and Laura Martinez, faculty mentors

Oral Session B | Room 330 | 11:00am

Mental health is one of the biggest issues affecting the United States today, not just in its prevalence but also in how difficult it is to get treatment. These problems are exacerbated when race and ethnicity began to play a role. This presentation aims to give a comprehensive look at the issue of mental health disparities. We will begin by looking at the history of how health disparities have been previously addressed through policies and organizations. Then, we will examine which populations are being affected the most by it, along with how it impacts not only them but everyone else as well. Finally, we will explore possible solutions, including eliminating biases within current policy.

Single Parent Households: Adolescent Development

Shannon Hawkins, Jr.

Celeste Hawkins, faculty mentor

Poster Group 2 | Room 310 A/B | 11:00–11:45am & 1:30–2:15pm

Healthy adolescent development is influenced by a variety of factors. When youth grow up in a two-parent household, there are significant advantages. According to Amato (2005), advantages may include, a higher standard of living, more effective parenting, a better emotional connection to both parents, and fewer events of stress. Compound-ed with those dilemmas, those who grow up in two-parent households experience higher academic performance (Amato, Patterson, Beattie, 2015; Amato 2005), which would leave those who do not grow up in those environments at a disadvantage from the very beginning. This literature review discusses the effects of single parent households have on adolescent's development and their education, alongside with discussing the overall impact of family structure.

Perceptions of Foster Care Workers on Birth Parent Visits

Pallas Schuster

Jennifer Farley, faculty mentor | Oral Session C | Room 352 | 1:45pm

The relationship between birth parents and foster care workers can impact birth-parent visitations, which are an integral part of the reunification plan. This study aimed to explore perceptions that foster care workers hold regarding birth parents and visitations. To assess this, the researcher conducted semi-structured interviews with foster care workers that focused on birth parents' strengths, areas of needs, and the purpose of visitations. The results of this study will expand the understanding of foster care workers' perceptions of birth parents, which can guide relationship-building practices related to birth parents and birth parent visitations.

Complex Post Traumatic Stress Disorder in Adolescents

Meghan Talbot

Jillian Graves, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Adolescents are exposed to complex and interpersonal traumas such as child maltreatment, neglect, violence, and/or sexual abuse. Researchers are beginning to believe that the diagnostic criteria for post-traumatic stress disorder (PTSD) does not describe the effects that adolescents experience in childhood. This has resulted in a new but controversial sibling condition of PTSD that was recently published in the International Classification of Diseases (11th edition). This literature review will explore how interpersonal traumas impact brain development in adolescents with complex PTSD and its impact on relationships, school performance, and health. This presentation will also explore evidenced-based treatment options that promote adolescent resiliency in individuals with complex PTSD, and examine the controversy that has surrounded the proposed mental health condition for adolescents including its similarities and overlaps to borderline personality disorder (BPD).

Unaccompanied Homeless Youth and College Homelessness

John Wilkerson

Caren Putzu, faculty mentor | Oral Session C | Room 320 | 2:30pm

The College Cost Reduction and Access Act of 2007 provides a term, Unaccompanied Homeless Youth (UHY), which college financial aid offices can use as a way for students who are homeless to apply for financial aid as an independent. This could have an impact on the financial resources a student could receive; however, a cursory examination of some financial aid websites does not discuss this classification. This study examines the financial aid websites for all colleges and universities in Michigan using a standardized set of search criteria. This presentation will discuss the findings of this study and the implications for using UHY as a tool to reduce homelessness among college students.

COLLEGE OF

ENGINEERING
&
TECHNOLOGY

3D Printed Polypropylene Transtibial Sockets

Avery Dumas IV

Lamar Stewart, faculty mentor | Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

This paper illustrates the fabrication of lower leg transtibial socket prosthetics. These prosthetics are made from polypropylene and manufactured from the fused deposition modeling (FDM) additive manufacturing process. As part of this investigation, studies on material behavior of the transtibial sockets are examined by modulus of elasticity E , Poisson's ratio ν , yield strength S_y , and ultimate strength S_u . Price differences of materials, manufacturing process, and optimal design for wearers are also reviewed.

Trash Collecting Robot

Zach Seltz, Albert Wu and Rami Mustafa

Ali Eydgahi, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The main focus of this project was to innovate a new cleaning robot. The robot was designed with a unique arm component allowing itself to obtain larger-size waste. It was also programmed to accomplish its task with the functionality of two ultrasonic sensors. With these two sensors, the robot could search for waste in a given area and prompt a command to gather its targeted waste into its removable container. Through trails of testing, the robot's unique arm proved to be very effective in obtaining its intended waste. All these components are linked together through Lego's NXT P-brick. Hence the robot could execute different programs accordingly to its specified tasks.

Optimizing and Presenting a Manufacturing Process with Process-Simulate and Virtual Reality

Madeleine Yaw

Hamza Al Jundi, Herman Tang and Emadeddin Tanbour, faculty mentors

Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Simulation in manufacturing allows us to create and experiment on multiple virtual models of a process to save resources that would be used in creating physical models. We modeled the process of manufacturing part of a car chassis with welding, forming, bending and other processes using a program called Process-Simulate. We used the method of Discrete Event Simulation to integrate this model into Eastern Michigan University's Virtual Reality lab to allow for a more immersive viewing of the process. This project aims to make it easier and more cost-effective for those who regularly work on manufacturing processes to present their work to those who do not specialize in manufacturing.

SCHOOL OF INFORMATION SECURITY AND APPLIED COMPUTING

The Importance of Web Accessibility for Better User Experience

Anna Rue

Bilquis Ferdousi, faculty mentor | Poster Group 1 | Rooms 310 A/B | 9:00 – 10:30am

Website accessibility is an important aspect for having better user experience on the Web. Ensuring that all web users get the user-friendly experience when using the same website is crucial for effectiveness of the website. The more users can interact with a usable website, the more likely users will have a satisfying web experience. Considering diverse users' needs helps to develop and create websites that enable universal users to have better experience. This also helps to find websites without any issue using search engines, which is the easiest way for users to come across a new website to access information. This presentation will focus on how to design and develop user friendly interface of a website for universal users.

SCHOOL OF VISUAL & BUILT ENVIRONMENTS

Fashion Forecasting of the Future

MacKenzie Arpi

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This presentation features the importance of fashion trend forecasting and general aspects of the process. The trends I will be presenting connect with the integration of a new world of fashion and the trends that ensue. The presentation reflects on current trends in society while linking these trends that are on the horizon and connecting this to the world and the industry.

Gerber CAD Pajama Creation

MacKenzie Arpi

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Poster presentation featuring different techniques used when creating content in Gerber CAD. The creation I made by free handing a pattern based on measurements, using CAD to create the overall pattern, cutters must, orange peel, and assuring that it fit properly. After completing the preliminary steps, execution of final sewing is completed. The garment is a pajama set for a friend.

Next HUB University

Alaa Bakkar

Diane Guevara, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

How does space affect our learning experience? 95% of respondents in a study of mind, said that time spent in nature improved their mood. The study also presented sense of nature helps with well-being, and increases attention span. Next HUB is a space that provides students and faculty with multiple types of interaction spaces. Emphasis, an important design principle, is implemented using biophilia and biomimicry in areas around the university. Greenery is the main concept in this space, whether it's a hanging garden, a green wall, or as simple as a plant. Next HUB University targets all age groups and encourages interaction among peers. Many areas in the space encourage that concept.

3D Virtual Merchandising

Hannah Bolzak

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Mockshop is a 3D virtual merchandising software which allows for the simulation of a retailing planogram for the planned merchandising of a store. This presentation portrays a layout of a women's contemporary fashion boutique and the stores appropriate merchandising plan.

Digital Fashion Line

Hannah Bolzak

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The software Adobe Illustrator is capable of creating line and pattern flats for use in the fashion industry. This presentation exhibits a woman's clothing line for a prospective apparel line in the spring.

CAD Dress Design

Ally Burgor

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Exploration of Gerber CAD Pattern Development Software to create a wearable garment.

NEXT HUB University

Alondra Chavez

Diane Guevara, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

NEXT University is adding a new "HUB" that offers learning spaces that reflect the most recent research on "Active Learning". Education is an ongoing process for people of all ages and its teaching methods should be flexible to suit individuals' needs. Agile spaces allow for ease in transitioning between different learning and teaching modes while fostering collaboration. Repetition of organic forms and bright colors are incorporated to benefit occupants cognitively and emotionally. Learning at all ages is reflected in the cooking class where kids and adults are encouraged to work alongside one another, while hourly childcare intends to increase the number of student parents.

Maxi Dress Design

Victoria Daniels

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This Maxi Dress Design was inspired by Bounce' and Pretty Little Things. Developed and designed using a 2-D CAD software with details such as a deep side slit and cut-out back. This submission will illustrate the concept, various steps during the design process, then into the fabric layout needed for the manufacturing step.

Adaptive Reuse – The Transformation of Lane Hall

Elizabeth Ehinger and Christopher Loveland

Shinming Shyu, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Addressing the sustainable notion of adaptive reuse, this project focuses on transforming Lane Hall, a historic building located downtown Ann Arbor, Michigan, into a multi-use facility featuring a bike shop, restaurant, coffee shop, wine bar, art gallery, etc. The project attempts to highlight an emerging lifestyle: casual, healthy, yet engaging. To reflect the cultural diversity and academic richness of the college town, our concept statement is as follows: Mindfulness to historical characteristics through a modern lens, this design intends to bridge the generational gap and create a communal gathering space for all while embracing the concept of intentionality.

A Virtual Reality Representation of the Detroit Dry Docks Design Proposal

Elizabeth Ehinger

Jiang Lu, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This project delves deep into the 360° panoramic rendering capabilities of Lumion. The Detroit Dry Docks research and construction documents created in Studio 5 are used to create a 3D Sketch Up model. Lumion software is used to create realistic 360° renderings of various portions of the building featuring the design and how it impacts the surrounding space.

Menswear Fashion Collection

Seth Ferzo

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Created a menswear fashion line using Adobe Illustrator. Researched trend forecasting of menswear fashion markets to utilize the process. Inspired by designs of current menswear designers and industry standards I was able to create a line that has a new twist in fashion for men. Created wholesale line sheets for product development and design.

Retail Store 3D Design

Seth Ferzo

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This inspiration of the retail store design was my passion Merchandising and Design technology. I created a digital retail store using MockShop technology. I utilized my skills and created and optimized an area of retail space using 3D design technologies. I was able to apply fixtures, merchandise, decor, lighting, decor, display windows, fitting Rooms and signage to my digital store.

Exploration of the Blouse: Creative Design

Seth Ferzo, Thomas Firth and Alyssa Shreve

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Inspiration comes from a montage of sustainability, vintage designer clothing, and intriguing finds on Pinterest. Showcased will be three different types of tops. A Western-style shirt, a cardigan, and a crop top. The collective goal is to create a garment that is fitted to our own figures. A cumulative workflow will proceed accordingly. Measurements of self are taken to determine the size of garments. Pieces are created via hand and software in CAD. Data is sent to an industrial cutter where the parts are cut from the materials. The finished product are sewn or constructed as a paper mockup. Fascination at the number of possible results should be invoked within the viewers.

Serenity Park

Maya Gaynier

Deb de Laski-Smith, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This model is inspired by the Barcelona Pavilion designed by Miles van der Rohe and Kevin Lynch's five Elements of Legibility that people use to navigate environments—paths, edges, districts, nodes, and landmarks. Walls are edges that define boundaries in the park area. The firepit is considered a node as people can easily distinguish this area. Paths help people understand the areas of travel. The overhang and waterfall act as landmarks. When considering districts, the ground level space and below-ground space are two distinct zones. The ground level space is more crowded as people pass through it. Conversely, the below-ground space is a more relaxing area.

Steelcase Student Competition: NEXT Hub University

Olivia Grant

Diane Guevara, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The bee symbolizes community and brightness. Following the bee means to discover a new destination for growth. NEXT Hub University promotes growth, diversity, collaboration and learning. Open collaboration areas for students and faculty to work together and communicate, allows for communal and individual growth. Bright, open spaces make students eager to learn and energizes them. Natural elements and materials incorporated into the design allow for people to be immersed in the feeling of being outdoors, which can increase well-being and productivity. NEXT Hub creates a place for people with all types of needs to grow.

Wholesale Diffusion Fashion Markets - Dize

Ian Hanna

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The focus of my study was to create a wholesale diffusion fashion line utilizing adobe illustrator. Using trend forecasting resources such as Donegar and Panetone I have been able to forecast out a viable fashion diffusion collection for the consumer. By predicting these trends my collection will be marketable to not only direct to the consumer but also various wholesale entities.

Adaptive Renovation of Lane Hall

Karley Hass, Kelly Dykstra and Megan Wilbur

Shinming Shyu, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Lane Hall's renovation project intends to transform the building into a bright and energetic multipurpose space providing an array of options targeted towards students, professors, and the Ann Arbor community. Upon entering the building a towering green wall rises up to a skylight in the roof above, bringing natural light to the lively main floor where patrons can grab a quick bite at the Acai Bowl Shop, get a cup of coffee, stop by the tech gadget or home decor store, or visit the gym to climb the two-story rock wall. Leading to the second floor is a central glass staircase which offers a Japanese restaurant, office space, yoga studio, and a balcony overlooking the rock wall.

Hand-Crafted Table & Stool

Raina Hammitte

Diane Guevara, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The table and stool are composed of poplar and red oak wood. The process started with a design and model comprised of wood dowels and matte board. The design was then exported to a SketchUp drawing. Creating the table requires use of a lathe machine to turn the legs in the desired shape and taper. The table top is poplar wood and the legs and side rails are red oak. A hand plane is an essential tool to smooth the table top. The stool is created with lathe work, half-lap joinery, mortise and tenon joinery, file and rasp work, and an inlay created using a CNC router and chisel. The stool is poplar wood except for the red oak inlay.

Legible Environments and Spatial Development

Mariah Henderson

Deb de Laski-Smith, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

We are guided through our physical environment by the information we gather from our surroundings. This process, known as way-finding, encompasses how visual cues help us navigate and orient ourselves in a space, and how we ultimately create a mental map based on the information we gather from our environments. Visual attributes in this design differ slightly, an intentional change that helps contribute to spatial awareness. These differences are small but are essential in helping us to navigate and to create a mental map of our surroundings. The legible environment leads to unconscious ease of use and reinforces the recognition of our environment.

Sustainably Designed Transportable Residence

Mariah Henderson

Shinming Shyu, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The sustainable design movement has caused us to question the effects of our work as designers on both humanity and our natural environment. Evidence of our negative impact on the ecosystem is undeniable and we must design for the health and well-being of future generations by protecting the natural environment. This design highlights the possibility of a fully sustainable residence with little to no negative impact on the health of the environment or of the residents who will occupy the home. It implements many sustainable elements, including passive ventilation, rainwater collection system, tankless water heater, photovoltaic panels, water saving fixtures, and energy-efficient appliances.

Dual-Purpose Pavilion

Abigail Herman

Deb de Laski-Smith, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

When designing this wooden model, special attention was paid to Kevin Lynch's Five Components of Legibility, which are paths, edges, districts, nodes, and landmarks. Vertical and horizontal lines are a major design element that serve as structural support for the walls, the path's cement pattern, the seating area, the borders, and the pool. Additionally, the layout is designed to have a formal gathering space on one end and a relaxing, open space on the other, with paths and nodes successfully transitioning between the two spaces. The goal is to create a luxurious space that also provides comfort and incorporates various design principles.

Development of an Augmented Reality Application to Explore Eastern's Campus

Jayne Hopkins

Pamela Speelman and Corbin Reeves, faculty mentors

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Augmented Reality (AR) is an immersive way of viewing 3D computer generated assets in a real-life environment. AR creates a change in perception by adding objects to our local environment that cannot be seen without using the camera of a portable device. While Virtual Reality (VR) brings the player into an alternate universe, AR brings the alternate universe to the player. AR has potential for substantial growth in the video game development world. Therefore, I am applying my knowledge of AR and create an easily accessible 3D model map of Eastern Michigan University's campus. The use of a phone's camera allows users to get a close-up, 360° view so they should never get lost again.

Minimalistic Designs

Brittany Jurgens

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

I was inspired to create a minimalistic line of clothing using grey and purple tones through the concepts of “all the rage” fashion. This creation was done utilizing adobe illustrator program creating fashion flats for production. With use of trend and color forecasting I was able to create this line of clothing.

Steampunk Serenade: a Hybridization of Past and Present

Jessie Klimala

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Steampunk is a genre of science fiction set in a surrogate historic past where the utilization of advanced technologies are based on steam power. I am enamored with styles from the early modern period, and want to incorporate the modernistic attributes of the steampunk spirit. The classic features are the corset, coat, and undergarments. The updated, stylized focal points are the skirts, jacket, boot covers, and shirt. Body measurements are translated to dimensions for each article of clothing. Patterns are created both by hand on paper and through software, GerberCAD. After cutting, the items are sewn together into a complete, wearable garments. A dream transferred into reality.

Next Hub University

Brooke Konwinski

Diane Guevara, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Inspirational interiors consisting of daylighting and elements of nature improve the productivity of students and faculty. By providing students of Next Hub University with the option to engage in vestibular stimulation through swings and hammocks, the overall wellbeing of students will significantly increase. Modern design collaborates with modern learning features to create a high-level learning facility for both students and faculty. Balance will also be used throughout the design. Branding and color schemes imitate global exploration to encourage students to venture into the global job market upon completion of a degree at Next Hub University.

Sustainable Design Shelter

Brooke Konwinski, Sarah Gowell and Jillian Sitkiewicz

Shinning Shyu, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Addressing the drastic global climate and its massive negative impacts on natural and built environments, this project is a design for a sustainable shelter. The design idea of this project is conveyed through a physical model, specifications book, and material board that collectively display concepts of sustainable design as well as high functionality of the space. There are many design features in the model that highlight sustainable ideas: solar panels, clerestory windows, a green roof, and more. The specifications book contains sustainable furnishings, finishes, lighting, and appliances. We aim to create a space that is not only functional but also aesthetically pleasing.

Assessment of Parking Facilities' Impact on Student Academic Achievement at a Public College

Kai Le

Suleiman Ashur, faculty mentor

Poster Group 1 | Room 310 A/B | 9:00 – 10:30am

Eastern Michigan University (EMU) entered a thirty-five-year agreement in 2018 with Provident Resources Group that provided a parking operator, LAZ Parking, to manage EMU parking facilities (Slagter, 2019; Partridge, 2019). With this new agreement, the university strengthened the institution's financial position; however, several aspects of campus parking facilities appear to be of great concern to students at EMU. This poster examines the extent to which EMU parking facilities' features influence student academic achievement. In addition, it proposes a conceptual framework that may help parking administrators and planners improve student satisfaction with campus parking facilities.

3-Dimensional Store Design

Nakia Lemon

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

My inspiration for this project was designed from research on fashion industry apparel trends. I designed a 3-D model using MockShop Virtual Retailing Software that included store fixtures, display windows, decor, fitting Rooms, cash wrap, back storage space, and merchandise. This research has enabled me to pursue my passion in the retail industry for Visual Merchandising.

Creating Planograms for Retail Spaces Using MockShop

Marina Masters

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

This design features a detailed retail store including different planned elements of the space. Utilizing MockShop enabled the creation of a virtual three-dimensional store by using different design elements to create a functional and efficient space. Included in the space are store fixtures, decor, merchandise, lighting, flooring, display windows, fitting Rooms, and signage.

Transformative Skirt with Flippable Pleats

Allison Menge

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

The transforming skirt is a project that aims to bring duality to a garment with a theatrical approach. The skirt utilizes a system similar to that of venetian window blinds where one side of the panel is secured to a stable waistband while the outward end is looped to a waistband that can be moved sideways by the wearer. Once slid across, the panels will overlap each other while hiding the sliding function in the waistband. The skirt can be made with a variety of paired fabrics, but for this project I have chosen a floral “day” print and a starry “night” print. This pair demonstrates the transition from day to night in an imaginative way.

Sustainable Shelter Design

Eveline Que

Shinning Shyu, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Inspired by the consequences created by hurricane Katrina and Maria, the purpose of this project is to create a prototype of sustainable housing to shelter those impacted by natural disasters. The floor plan is designed in compliance with ADA accessibility requirements and highway transportation regulations. In addition to the balsa wood model, there is a specification book listing sustainable materials and appliances, and a materials board to indicate materials. More sustainable features to implement include a green roof, solar panels, and a strategy for collecting rainwater for irrigation.

Fashion Line - Fine Threads

Lauren Riley

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

I was inspired to create my fashion line, Fine Threads, through fashion trend research and development. I created my line with a design program, Adobe Illustrator. Here I was able to take the sketches which were then digitally recreated on a croquis. Next, a flat template was used to create the fashion line. When creating the designs I took into consideration all different categories of apparel. Inspiration comes from classic fashion pieces. My goal is to make pieces that resembled Haute Couture, signature pieces that are not available anywhere else.

MockShop Planogram Store Design

Larisa Sloan

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

MockShop is a Virtual Retailing design software that allows stores to create three-dimensional layouts for product presentations. I was inspired to learn this software for the passion I have for Visual Merchandising and design. My 3D model includes store fixtures, lights, merchandise, decor, lighting, flooring, display windows, fitting Rooms, and signage.

The Art of the Handbag

Lauren Riley and Asia Wilson

Julie Becker, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

Handbags and bags in general have always been a substantial commodity in cultures all over the world. Louis Vuitton, Fendi, and Gucci are fashion designers known for their bags whom have also served as our inspiration. The objective of our projects is to revamp what we own in order to make it better, based on experience. Workflow for our ventures consists of detailed measurements that are manufactured in the software known as GerberCAD. A digitizer, or digital tracer, are also used. Upon fulfillment, the data is sent to a large industrial cutting machine which will then carve the pieces out of the fabric or other material used.

Utilization of MockShop for Planogram Design

Olivia Wash

Holly Mosher, faculty mentor

Crossing Lines Design Expo Exhibit | Rooms 300/301/302 | 9:00am – 4:00pm

MockShop is a 3D program used by professional visual merchandisers to design store layouts. Planograms are visual guides created for implementation of the designs. I designed my own store, placed fixtures and clothing based on my store's objectives. The design process begins with a handmade physical representation of the store concept. It is then transformed into the digital version. Fixtures and apparel items are strategically placed based on techniques and principles of design.

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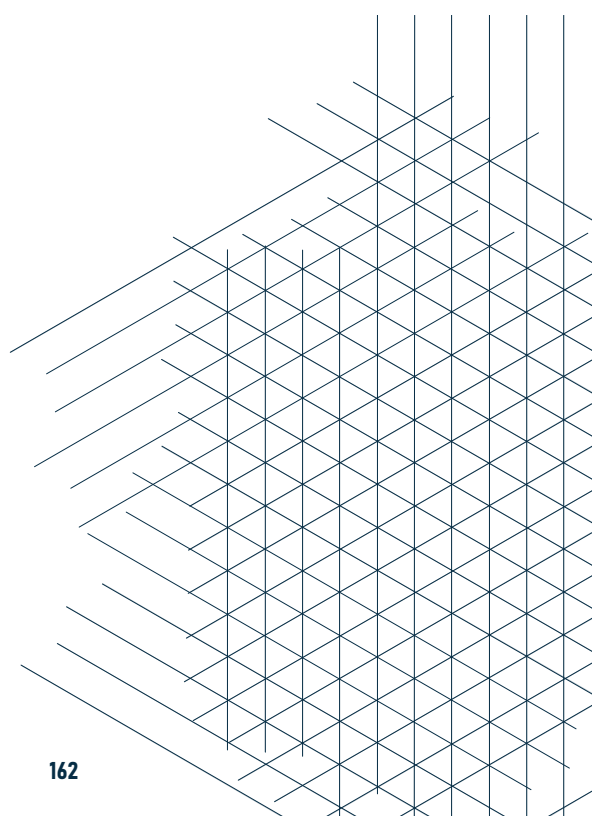
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We are pleased to recognize the 2019–20 Symposium Undergraduate Research Fellows, the faculty mentors, and the individuals or organizations who contribute financially to support undergraduate research.

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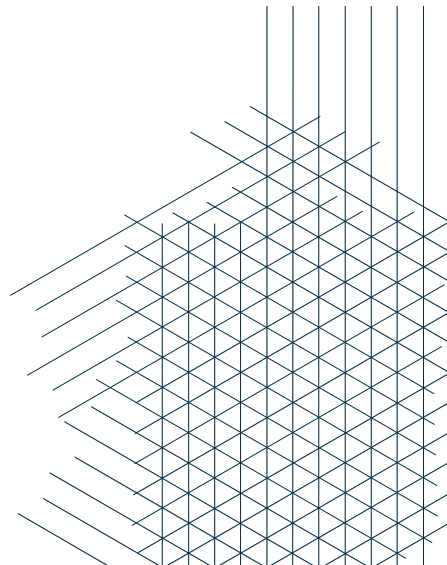
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THANK YOU

Our appreciation is extended to the following Eastern Michigan University offices and individuals who contribute annually to the success of the event:

Francesca Zapata and Jessica Loomis, graphic design student designers, and faculty mentor Ryan Molloy, Art & Design

EMU Office of the Provost, Academic Affairs

EMU Office of Admissions

Tracey Sonntag, Christine Deacons and the staff of Academic Support Services

EMU Information Technology

Ann Eisenburg and students of the Honors College

EMU Catering and Dining Services

Jill Hunsberger, Lisa Comben and the EMU Foundation staff

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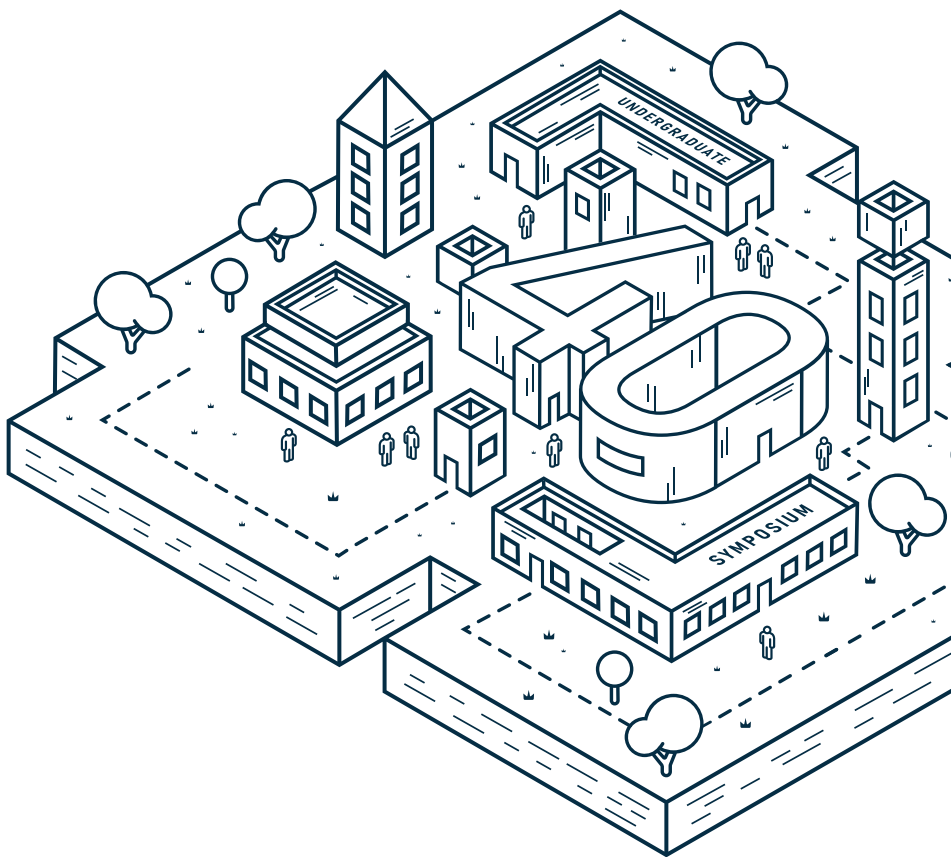
Susan Gardner and the Event Planning Office

Paul Lehman, Music & Dance

Intermedia Gallery Group (IGG)

Paul Majeske, JillAnne Bauer, Megan Gore and Karen Gabrys, Event Photo Opportunity Team

We extend a special thank you to Steinway Piano Gallery of Detroit for their support to provide a Steinway piano for student performances.



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30	Akhlaq, Iqra	Poster Group 1 - 310 A/B - 9:00am — 10:30am
142	Ali, Jacquelyne	Poster Group 1 - 310 A/B - 9:00am — 10:30am
30	Ali, Rida	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
138	Alvelo-Saada, Heily	Poster Group 2 - 310 A/B - 11:00 — 11:45am & 1:30 — 2:15pm
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139	Ashur, Noor	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
48	Babinski, Addison	Poster Group 2 - 310 A/B - 11:00 — 11:45am & 1:30 — 2:15pm
31	Babinski, Addison	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
31	Baghdadi, Sara	Poster Group 2 - 310 A/B - 11:00 — 11:45am & 1:30 — 2:15pm
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96	Brown, Sean	Poster Group 1 - 310 A/B - 9:00am — 10:30am
32	Brown, Autumn	Poster Group 1 - 310 A/B - 9:00am — 10:30am
71	Brown-Danovi, Paige	Oral Session C - 350 - 1:30pm
51	Brydie, Ayanda	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
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150	Burgor, Ally	Design Expo - 300/301/302 - 9:00am — 4:00pm
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24	Corich, Shelby	Design Expo - 300/301/302 - 9:00am – 4:00pm
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97	Curran, Samuel	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
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63	Deiter, Gwenyth	Design Expo - 300/301/302 - 9:00am – 4:00pm
97	DeLisle, David	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
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51	Dunning, Payton	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
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107	Ganesan, Vasavi	Oral Session D – 320 - 4:00pm
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153	Hanna, Ian	Design Expo - 300/301/302 - 9:00am — 4:00pm
133	Hannah, Shakena	Poster Group 1 - 310 A/B - 9:00am — 10:30am
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127	Hardy, Kailah	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
134	Hare, Megan	Poster Group 1 - 310 A/B - 9:00am — 10:30am
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109	Harvey, Olivia	Oral Session C - 352 - 2:30pm
110	Harvey, Olivia	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
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127	Jamil, Maymuna	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
136	Janisse, Janelle	Poster Group 2 - 310 A/B - 11:00 — 11:45am & 1:30 — 2:15pm
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34	Kelly, Myah	Poster Group 2 - 310 A/B - 11:00 — 11:45am & 1:30 — 2:15pm
102	Kennedy, Alissa	Oral Session B - Student Art Gallery - 10:30am
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56	Kilgore, Daniel	Poster Group 1 - 310 A/B - 9:00am — 10:30am
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82	King, Alex	Oral Session A - 304 - 9:30am
156	Klimala, Jessie	Design Expo - 300/301/302 - 9:00am — 4:00pm
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55	Mahan, Samantha	Poster Group 2 - 310 A/B - 11:00 — 11:45am & 1:30 — 2:15pm
103	Maier, Sarah	Oral Session B - Student Art Gallery - 11:15am
37	Maki, Madeline	Poster Group 1 - 310 A/B - 9:00am — 10:30am
32	Mannino, Dominic	Poster Group 1 - 310 A/B - 9:00am — 10:30am
25	Martin, Abigail	Oral Session D - Auditorium - 4:00pm
55	Martin, Aubrey	Poster Group 2 - 310 A/B - 11:00 — 11:45am & 1:30 — 2:15pm
38	Martin, Aubrey	Poster Group 1 - 310 A/B - 9:00am — 10:30am
38	Martin, Aubrey	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
158	Masters, Marina	Design Expo - 300/301/302 - 9:00am — 4:00pm
56	McColum, Jamison	Poster Group 2 - 310 A/B - 11:00-11:45am & 1:30 — 2:15pm
128	McCreedy, Andrea	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
95	McCrystal, Ian	Oral Session B - Auditorium - 10:30am
65	McCullough, Maggie	Oral Session B - 330 - 11:00am
38	McCullough, Maggie	Poster Group 3 - 310 A/B - 2:45 — 4:15pm
158	Menge, Allison	Design Expo - 300/301/302 - 9:00am — 4:00pm
77	Merz, Rachel	Oral Session A - 352 - 9:00am

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83	Milkovich, John	Oral Session D – Auditorium - 3:15pm
83	Milkovich, John	Poster Group 1 - 310 A/B - 9:00am – 10:30am
83	Miller, Alexandria	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
39	Montagano, Jordan	Poster Group 1 - 310 A/B - 9:00am – 10:30am
140	Moore, Jessica	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
98	Morrison, Megan	Oral Session C – Auditorium- 1:30pm
119	Morrison, Megan	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
21	Muhammad, Tajah	Oral Session C – Auditorium- 1:45pm
147	Mustafa, Rami	Design Expo - 300/301/302 - 9:00am – 4:00pm
26	Muter, Cheyenne	Design Expo - 300/301/302 - 9:00am – 4:00pm
135	Neil, Rachel	Poster Group 1 - 310 A/B - 9:00am – 10:30am
112	Nelsen, Clara	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
140	Neumann, Kelsey	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
140	Niehaus, Hannah	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
44	Nissen, Edie	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
103	Nwanesi, Lily	Oral Session B – 320 - 10:30am
39	Oberlittner, Joseph	Poster Group 1 - 310 A/B - 9:00am – 10:30am
56	Oudeif, Rida	Poster Group 1 - 310 A/B - 9:00am – 10:30am
44	Pampreen, Andrew	Poster Group 2 - 310 A/B - 11:00-11:45am & 1:30 – 2:15pm
90	Parmelee, Drew	Poster Group 1 - 310 A/B - 9:00am – 10:30am
68	Patel, Nikunj Kumar	Poster Group 1 - 310 A/B - 9:00am – 10:30am
40	Pathammavong, Anna	Poster Group 2 - 310 A/B - 11:00-11:45am & 1:30 – 2:15pm
103	Patterson, Yssis	Oral Session A – 320 - 9:45am
65	Paz, Anthony	Oral Session D – 320 - 3:30pm
78	Pearce, Olivia	Oral Session B – 352 - 11:30am
111	Pejsa-Reitz, Megan	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
69	Pelletier, Zachariah	Oral Session D – 304 - 3:30pm
40	Pendleton, Liam	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
137	Pendleton, Meghan	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
78	Peplinski, Alexys	Oral Session A – 352 - 9:30am
41	Pepper, Konner	Poster Group 1 - 310 A/B - 9:00am – 10:30am
41	Persicone, Verginio	Poster Group 1 - 310 A/B - 9:00am – 10:30am
113	Peterson, Lyndsey	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
56	Platt, Kristine	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
42	Polidori, Sean	Oral Session D – 330 - 3:15pm
26	Powe, Brittany	Design Expo - 300/301/302 - 9:00am – 4:00pm
119	Powell, Kamryn	Oral Session B – 320- 10:45am
130	Prince, Melanie	Oral Session A – 350- 10:00am
65	Proctor, Emily	Oral Session A – 330- 9:45am
26	Purify, Kevin	Design Expo - 300/301/302 - 9:00am – 4:00pm
159	Que, Eveline	Design Expo - 300/301/302 - 9:00am – 4:00pm
113	Quinn, Kylie	Oral Session C – 352- 2:15pm
141	Raap, Brooke	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
104	Rathje, Stephen	Oral Session A - Student Art Gallery - 9:45am
120	Ray, Colton	Oral Session B – 320 - 11:00am
27	Reames, Olivia	Design Expo - 300/301/302 - 9:00am – 4:00pm
104	Redmond, Lindsey	Oral Session B – 330 - 11:30am
66	Reed, Gabrielle	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
94	Rega, David	Oral Session B – Auditorium - 11:00am
42	Rigor, Cassandra	Poster Group 1 - 310 A/B - 9:00am – 10:30am
114	Riley, Jessica	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
159	Riley, Lauren	Design Expo - 300/301/302 - 9:00am – 4:00pm
27	Rinkel, Nicole	Oral Session C – 330- 1:45pm

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43	Ritchey, Brynn	Oral Session A – 352- 10:00am
48	Ritchey, Brynn	Poster Group 2 – 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
57	Roberts, Jacquelyn	Oral Session D – 330 - 4:00pm
126	Robinson, Desmine	Oral Session C – 304 - 2:15pm
148	Rue, Anna	Poster Group 1 - 310 A/B - 9:00am – 10:30am
74	Sampson, Ronan	Oral Session D - Student Art Gallery - 3:15pm
74	Sampson, Ronan	Oral Session C- 350 - 2:00pm
28	Sampson, Ronan	Design Expo - 300/301/302 - 9:00am – 4:00pm
43	Sanchez, Erasmo	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
91	Sarker, Sadia	Oral Session D – 352 - 3:00pm
75	Schad, Alyssa	Oral Session D - Student Art Gallery - 3:30pm
57	Schempf, Micaela	Poster Group 1 - 310 A/B - 9:00am – 10:30am
144	Schuster, Pallas	Oral Session C – 352 - 1:45pm
28	Scott, Kyle	Design Expo - 300/301/302 - 9:00am – 4:00pm
120	Scrochi, Daniel	Oral Session B – 350 - 10:45am
75	Seitz, Cinder	Oral Session C – 330- 2:15pm
147	Seltz, Zach	Design Expo - 300/301/302 - 9:00am – 4:00pm
84	Sheibels, Avery	Poster Group 1 - 310 A/B - 9:00am – 10:30am
72	Sheline, Lillia	Oral Session A – 350 - 9:30am
137	Sherwood, Jessica	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
152	Shreve, Alyssa	Design Expo - 300/301/302 - 9:00am – 4:00pm
105	Sigmann, Clayton	Oral Session C - Student Art Gallery - 1:45pm
58	Silvia, Nadia	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
50	Simpson, Tylyn	Poster Group 2 – 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
157	Sitkiewicz, Jillian	Design Expo - 300/301/302 - 9:00am – 4:00pm
28	Sjolander, Rachel	Design Expo - 300/301/302 - 9:00am – 4:00pm
135	Skeans, Casey	Poster Group 1 - 310 A/B - 9:00am – 10:30am
159	Sloan, Larisa	Design Expo - 300/301/302 - 9:00am – 4:00pm
115	Smith, Rylee	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
29	Smith, Sierra	Design Expo - 300/301/302 - 9:00am – 4:00pm
29	Smith, Kaitlyn	Design Expo - 300/301/302 - 9:00am – 4:00pm
43	Snelson, Tamara	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
44	Southwell, Charles	Poster Group 1 - 310 A/B - 9:00am – 10:30am
44	Spalding, Bria	Poster Group 2 – 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
60	Spalding, Bria	Poster Group 1 - 310 A/B - 9:00am – 10:30am
99	Stacey, Adrianna	Oral Session C – 320 - 1:45pm
121	Stachowiak, Andrew	Oral Session D – 350- 3:15pm
84	Stanley, Thomas	Oral Session A – 304 - 9:15am
134	Stark, Rachel	Poster Group 1 - 310 A/B - 9:00am – 10:30am
79	Steckenfinger, Shawn	Oral Session A – 352- 9:15am
69	Stempien, Ronald	Poster Group 2 – 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
58	Stephens, Alexis	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
66	Stiverson, Halle	Design Expo - 300/301/302 - 9:00am – 4:00pm
95	Sturm, Emma	Poster Group 1 - 310 A/B - 9:00am – 10:30am
85	Suleyman, Maryam	Oral Session A – 304 - 9:00am
142	Summers, Joell	Poster Group 1 - 310 A/B - 9:00am – 10:30am
105	Swartzinski, Jack	Oral Session A - Student Art Gallery - 9:30am
85	Takata, Makoto	Oral Session D – 350 - 3:30pm
145	Talbot, Meghan	Poster Group 1 - 310 A/B - 9:00am – 10:30am
59	Taylor, Jaylen	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
138	Tedeschi, Elizabeth	Poster Group 3 – 310 A/B - 2:45 – 4:15pm
141	Tersigni, Emily	Oral Session B – 350 - 10:30am
91	Thai, Selena	Oral Session A – 320 - 9:00am

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21	Thomas, Kimberly	Oral Session C – Auditorium - 2:30pm
94	Thorburn, Robert	Oral Session B – Auditorium - 11:00am
86	Throne, Liza	Oral Session A – 304 - 9:45am
45	Tigani, Dominic	Poster Group 1 - 310 A/B - 9:00am – 10:30am
86	Torok, Shelbie	Oral Session C – 304 - 1:45pm
69	Torrella, Christopher	Poster Group 1 - 310 A/B - 9:00am – 10:30am
122	Turner, Emily	Oral Session B – 304 - 10:30am
45	Vael, Jace	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
48	Vael, Jace	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
46	Vael, Lilly	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
59	Van Buskirk, Chelsea	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
134	Van Camp, Cailyn	Poster Group 1 - 310 A/B - 9:00am – 10:30am
105	van Geloven, Josefina	Oral Session C – 304 - 2:30pm
86	Vanderwal, Isaac	Oral Session D – 304 - 3:15pm
79	VanLandingham, Leah	Oral Session B – 352 - 10:30am
60	Vaughan, Hope	Poster Group 1 - 310 A/B - 9:00am – 10:30am
115	Vaughn, Ethan	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
46	Vo, Victoria	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
60	Wadas, Alyssa	Poster Group 1 - 310 A/B - 9:00am – 10:30am
160	Wash, Olivia	Design Expo - 300/301/302 - 9:00am – 4:00pm
39	Wasserman, Beth	Poster Group 1 - 310 A/B - 9:00am – 10:30am
87	Watts, Christian	Oral Session C – 304 - 2:00pm
87	Weigel, Heather	Oral Session B – 304 - 11:15am
106	Weigel, Heather	Oral Session A – 320 - 9:30am
88	Weiss, Sarah	Poster Group 1 - 310 A/B - 9:00am – 10:30am
124	West, Evelyn	Oral Session – 330 - 9:00am
67	West, Sequoia	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
47	White, Janae	Oral Session A – 352 - 9:45am
154	Wilbur, Megan	Design Expo - 300/301/302 - 9:00am – 4:00pm
145	Wilkerson, John	Oral Session C – 320 - 2:30pm
47	Willette, Caleb	Oral Session B – 352 - 10:45am
61	Williams, Asana	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
22	Williams, Jai Lynne	Poster Group 1 - 310 A/B - 9:00am – 10:30am
160	Wilson, Asia	Design Expo - 300/301/302 - 9:00am – 4:00pm
87	Wisely, Joanne	Oral Session B – 304 - 11:00am
96	Woolnough, Victoria	Oral Session A – Auditorium - 9:00am
147	Wu, Albert	Design Expo - 300/301/302 - 9:00am – 4:00pm
70	Yaw, Sarah	Poster Group 2 - 310 A/B - 11:00 – 11:45am & 1:30 – 2:15pm
148	Yaw, Madeleine	Poster Group 1 - 310 A/B - 9:00am-10:30am
88	Young, Leigh	Oral Session C – 304 - 1:30pm
80	Zaharias, Anastasios	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
115	Zalt, Ahmad	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
25	Zapata, Francesca	Design Expo - 300/301/302 - 9:00am – 4:00pm
29	Zapata, Francesca	Design Expo - 300/301/302 - 9:00am – 4:00pm
121	Zielinski, Reece	Oral Session C – Student Art Gallery - 2:00pm
66	Ziemelis, Olivia	Design Expo - 300/301/302 - 9:00am – 4:00pm
61	Zoerman, Jenna	Poster Group 3 - 310 A/B - 2:45 – 4:15pm
75	Zoltowski, Alissa	Poster Group 1 - 310 A/B - 9:00am – 10:30am
106	Zwolensky, Hannah	Oral Session B – Student Art Gallery - 10:45am

NOTES



Brenda Alten

We are proud to welcome Brenda Alten as our keynote speaker for the 40th Undergraduate Symposium. Alten graduated with honors from EMU in 1988 with a bachelor's degree in communications. During her time at the University, she was a four-time national champion in Forensics winning for informative speaking in 1985. She won the same category again, as well as the title for persuasive speaking and the pentathlon award for top speaker overall in 1988. She is also a two-time Undergraduate Symposium presenter under the faculty mentorship of Professor Tracy Anderson.

Upon earning her master's degree in communications from Miami University of Ohio in 1989, Alten began working with The J.M. Smucker Company and has served in a wide variety of roles over her 30+ year career. While early roles offered amazing experiences in recruiting, sales and marketing, Alten's passion has always been in communications, and she considers herself incredibly fortunate to have had so many different opportunities to learn and grow in her profession while staying with the same company. In her career, Alten has served as company spokesperson; led acquisition and divestiture communication efforts; managed public relations, corporate sponsorships and the consumer call center; and helped establish the company's innovation center, consumer recipe test kitchen and Culinary College program.

More recently, she was responsible for providing communications support to the company's executive leadership team - including the President and Chief Executive Officer - and developing compelling communications to support strategy and Human Resources initiatives.

Currently, Alten is laser-focused on serving the unique needs of Smucker employees as Director of Human Resources Communications. She partners closely with company leaders to advise and manage communication strategy, planning and execution, to ensure employees have the right information at the right time to make the best benefits choices, feel inspired and engaged, develop in their careers and thrive.

Alten is Director Emeritus of the EMU Foundation Board of Trustees, having served in roles of Vice Chairperson and Chairperson of the Trusteeship Committee. In 2006, Alten was inducted into the Forensics Hall of Fame and has been a loyal supporter of EMU Forensics as they continue to pursue their championship goals. In 2015, EMU and the EMU Alumni Association honored her with the Distinguished Alumni Award.

Alten notes that participating in the Undergraduate Symposium was a highlight of her college career. She will share her admiration for the Symposium with participants, faculty and supporters during her keynote speech and discuss how her experiences at Eastern - including as part of the Symposium - have made an indelible impact on her professional success. Her engagement instills the value of undergraduate research opportunities at EMU.



40
UNDERGRAD
SYMPOSIUM
40TH

A 3D isometric graphic set against a green background with a white grid pattern. The graphic consists of a dark blue cube with a white '40' on top. To the left, the words 'UNDERGRAD' and 'SYMPOSIUM' are stacked vertically in white, 3D block letters. To the right, the words '40TH' are stacked vertically in white, 3D block letters. The entire graphic is rendered with perspective, giving it a three-dimensional appearance.