

RESEARCH & CREATIVITY CONFERENCE



Fred Muller

Vessel 2

Ceramic and steel,
22"x6"x6".

Part of the 2017
Juried Student Exhibition.

FRIDAY, APRIL 21, 2017

**Refreshments
can be found
on the 2nd floor
during the
Conference**

**Ice Cream Social
at 3:30**

APRIL 20th

5:00 Reception for Juried Student Exhibition
LA first floor

APRIL 21st

11:00 Participant Registration and Poster Set-Up

12:30 Keynote Speaker in Petro Theater

1:15 Posters Presentations begin – 1st and 2nd floor of the atrium

SUB 134 Presentations

Faculty Moderator: Tami Haaland

1:15 **Readings**
Rick Lindholm, William Segerstrom, Cat Sullivan

1:30 **Poetry Reading**
Julia Anderson, Shelby Huffman, Thomas Mendenhall, Malia Schoenenberger, Matt Winter

2:15 **Catharine Brown**
Rian St. Pierre

SUB 135 Presentations

Faculty Moderator: Bernard Quetchenbach

2:15 **Splitting the Mobius: A Twisted Operation**
Wade Kerner

2:30 **“Transparency”**
L. Ruhiyyih Olsen-Bradley

2:45 **Cli-fi in the 21st Century Panel Discussion**
Desiree Kling, Thomas Mendenhall, Jerimiah Tretin

Music Presentations

3:15 **MSU Billings Jazz Combo**
Patrick LaFountain, Drew McDowell, Noah McCann, Dillon Steiger, Ryan Supola

3:30 **Triohhh**
Danielle Branson, Belle Horman, Mady Johnson

3:30 – ICE CREAM SOCIAL – RIMROCK CAFE

KEYNOTE SPEAKER

Dr. Joe Shaw

Director, Optical Technology Center
Montana State University

Learning to see; seeing to learn

The world around us is rich with lessons for those who learn to observe carefully and critically. In this talk, I will show photographs of rainbows and other beautiful optical phenomena and help the audience learn to see more of the detail that is always there, but often goes unnoticed. The talk will conclude with some thoughts on how the lessons involving optical phenomena in nature can be extended to learning how to see the world in new, creative ways.

Dr. Shaw received his Ph.D. in Optical Sciences from the University of Arizona and, since then, has been an electro-optical engineer at the National Oceanic and Atmospheric Administration and a professor in the Electrical and Computer Engineering Department at MSU.

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THANK YOU

TO ALL FACULTY WITH STUDENT PARTICIPANTS

Dr. James Barron
Dr. Melissa Boehm
Dr. Salem Boumediene
Dr. David Butler
Ms. Reno Charette
Dr. Christopher Craig
Dr. Brent Finger
Dr. Lynn George
Dr. Susan Gilbertz
Ms. Tami Haaland

Dr. Mark Hardt
Dr. Ambrin Masood
Dr. Matt Queen
Dr. Bernard Quetchenbach
Mr. John Roberts
Dr. Alex Shafer
Mr. Andrew Sullivan
Dr. Kurt Toenjes
Dr. Don Gayan Wilathgamuwa
Dr. Cheryl Young-Pelton



PRESENTERS

Anderson, Joey

Title: LEO Body-worn Cameras

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: This sociological study examines the thoughts and feelings of law enforcement officers toward the use of body-worn cameras. This subject that has gained attention as a result of recent reports of police brutality and use of force.

Anderson, Julia

Title: Poetry Reading

Faculty Mentor: Tami Haaland

Major: Public Relations

Project Narrative: Students from the Poetry Writing class will read and discuss their original work.

Baumgartner, Steven

Title: Police Use of Force

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: The police have used force for years when apprehending a suspect, and police departments have many tools, from lethal to non-lethal, to assist with apprehension. This project attempts to answer the question: Is the use of force appropriate or are police tactics too aggressive and needing improvement?

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Bieber, Amy

Title: Big Oil in a Small Town: The Effects of a Large Economic Event on Small Business Sales

Faculty Mentor: Salem Boumediene

Major: Accounting

Project Narrative: The purpose of this research was to determine whether a relationship existed between the sales of small business and the large economic event when it occurred in the area and, in this instance, the sales examined were those of a small auto parts store located within the Bakken Shale formation during the rise and fall of the Bakken Oil Boom. Data from the business's sales along with historical oil price and area production were gathered.

Bighorn, Paula

Title: Qualitative Analysis of the Traditional Native American Healing Practices to Promote Cultural Awareness

Faculty Mentor: Ambrin Masood

Major: Human Services

Project Narrative: This study aims at performing a qualitative analysis of different healing practices within Native American Tribes in Montana.



Boggio, Denise

Title: The Acceptance of Non-traditional Students on College Campuses

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: This research investigates whether traditional students and faculty accept non-traditional students on college campuses. The purpose of this study is to help non-traditional students be able to have the same college experiences as traditional students. As a result of this research, the hope is that all students and faculty will be encouraged to have open minds for change and acceptance.

Bone, Jacob

Title: Cardiac and Perceptual Responses to Performing Tandem Cardiopulmonary Resuscitation

Faculty Mentor: Alex Shafer

Major: Health and Human Performance

Project Narrative: Thirteen healthy male and female students (age 26.5+/-4.3 years) were tested using a repeated measures, counter-balanced experimental design. Participants carried out a solo and a tandem CPR bout with a rest period separating the two. Participants' heart rates and perceived exertion were monitored for comparison.

Boumediene, Synda

Title: Behavioral Ecology in the Northern Scorpion, *Paruroctonus boreus*

Faculty Mentor: James Barron

Major: Mathematics, Biology

Project Narrative: In the field, Northern Scorpions are rarely seen sharing cover objects even in areas with high population density, so we wanted to determine if this is due to territoriality and, if so, whether there are any demographic patterns in territorial behavior. We kept pairs of scorpions in experiment boxes with a single shelter item to observe whether they shared the cover or one excluded the other.

Branson, Danielle

Title: Trio hhhh

Faculty Mentor: John Roberts

Major: Music Education & Performance

Project Narrative: Trio hhhh is a student lead chamber ensemble consisting of clarinet, horn, and euphonium. The music played by the trio was adapted by the performers from woodwind and brass trio music for their own musical growth and to share with the community.

Brown, Savannah Janelle

Title: Medical Terminology in *Grey's Anatomy*: A Textual Analysis

Faculty Mentor: Melissa Boehm

Major: Organizational Communication

Project Narrative: This project uses a media representation theory to demonstrate how realistic (or unrealistic) *Grey's Anatomy* is. Through textual analysis, the accuracies and inaccuracies of medical terminology used on the program are examined.



Buksch, Richard

Title: Comparing a House-made Visible Spectrometer to a Commercially Available Ultra-violet Visible Spectrometer

Faculty Mentor: Matt Queen

Major: Biology, Chemistry

Project Narrative: Visible spectrometers are used in many areas of science for a wide variety of measurements. In this project we compared a house-made spectrometer that was made with commercially available components to a commercially available model. We quantified the limit of detection, limit of blank, and limit of quantification of both spectrometers in order to compare the effectiveness of the instruments.

Buksch, Richard

Title: Using Trichostatin A to Rescue TrkA+ Neurons in a Mouse Model of FD

Faculty Mentor: Lynn George

Major: Biology, Chemistry

Project Narrative: Familial Dysautonomia results in a decreased number of nociceptor (pain sensing) neurons in the dorsal root ganglia of both a mouse model and patients with the disease. In order to rescue these neurons, Trichostatin A, a histone deacetylase inhibitor, was tested for efficacy in the mouse model using immunohistochemistry. Familial Dysautonomia model embryos treated with Trichostatin A showed a significant increase in nociceptor neurons over vehicle only injected model embryos

Casey, Mehmet

Title: Advising & Career Services: A Social Media Plan

Faculty Mentor: Melissa Boehm

Program: M.S. Public Relations

Project Narrative: This project worked with Advising and Career Services to create a social media plan that focused on Facebook and Twitter to engage students, alumni, and partner employers using these concepts: how-to videos, inspirational quotes, informative infographics & instructographics, images and videos from events, funny memes & gifs, live streaming, student success stories, polls, surveys, and contests.

Cox, Adam

Title: The Mastery of Course Material vs A High GPA and How it Affects Views of Cheating

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: This research study examines whether there is a correlation between the different focuses on mastery of material or simply trying to get a high GPA and the acceptability or rejection of cheating or plagiarism. This study will measure the extent to which MSUB students accept or reject cheating and what aspects of their education they deem important.

Crowley, Abigail

Title: Body Image Issues and Eating Disorders on Campus

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: This research project examines the prevalence of eating disorders among the students at MSUB's campus. Through a survey, information was gathered on how students use methods to "better" their physical body. This study's main question is: Are eating disorders and body image issues an obstacle for students at MSUB?



Dawson, Nicholas

Title: The Empowerment of Minority Groups by Recording Artist Lady Gage: A Semiotic Analysis

Faculty Mentor: Melissa Boehm

Major: Business Management & Marketing

Project Narrative: It is only in recent years that minority groups such as immigrants and the LGBTQ community have received recognition and praise from prominent artists like Lady Gaga. This project provides a semiotic analysis, drawing from the Media Representation Theory, in order to understand the growing empowerment of minority groups in American pop culture.

Deavila, Kaz

Title: Advising and Career Services: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: This project worked with Advising and Career Services to create a social media plan. In order to reach their desired audience, the project focused on Facebook and Twitter to distribute information on important events and services, provide links to useful resources, and initiate photo competitions.

Dotson, Tyler

Title: Remote Supervision/Observation of Applied Behavior Analysis (ABA) Techniques

Faculty Mentor: Cheryl Young-Pelton

Program: M.S. Special Education Advanced Studies with Applied Behavior Analysis emphasis

Project Narrative: The purpose of Remote Supervision/Observation of Applied Behavior Analysis (ABA) Techniques is to measure if remote supervision of employees at a mental health organization using an iPad and Bluetooth headset leads to an improvement of the implementation of ABA techniques. This study examines a possible method to implement ABA techniques remotely.

Drain, Karson

Title: Constraint Busting, Economic Maximization, and Distillation Optimization

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Maximizing throughput, product quality, and energy efficiency is important to industry so it can remain competitive. Operations of an authentic pilot scale distillation plant in the PPT lab are improved through the systematic application of scientific and mechanical principles.

Dutcher, Michael

Title: *House of Cards* and Gender Representation: A Textual Analysis

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: This project analyzes the first episode of season four of *House of Cards* and the gender representation in the show. The completed textual analysis reveals how the program portrays women, and compares their portrayal to that of men. Feminist theory was used in this analysis.



Dvorak, Jeremy

Title: A Semiotic Analysis of Three of Rihanna's Music Videos

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: This project showcases a semiotic analysis of Rihanna's music videos for "Needed Me," "S&M," and "Bitch Better Have My Money." These visuals provide backing to songs with explicit material, and two out of the three showcase Rihanna killing people. Media representation theory shows how violence and sexuality in these music videos creates a unique representation of Rihanna's brand, distinguishing her from other women in her field.

Felton, Amanda

Title: Columbia River Dams: Utility vs Environment

Faculty Mentor: Susan Gilbertz

Major: Environmental Studies

Project Narrative: The Columbia River Basin is one of the most highly dammed areas in the world. These dams provide hydro power, irrigation and recreational opportunities, but they also cause environmental harm. This project looks at both the utility and the environmental harm of these dams.

Fryett, Alexander

Title: Analysis of BH3I-1 Derivatives Effect on *Candida* Species

Faculty Mentor: Kurt Toenjes

Major: Biology

Project Narrative: The effect of BH3I-1 has been shown to inhibit hyphal growth in multiple *Candida* species. Since BH3I-1 acted as a broad-spectrum hyphae inhibitor, there is a possibility that a derivative of BH3I-1 will work more efficiently with a lower minimum inhibitory concentration than BH3I-1. The goal of this project is to find BH3I-1 derivatives that are broad-spectrum inhibitors of hyphal growth in *Candida* species that work at a lower concentration than BH3I-1.

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Gallant, Tiffini

Title: Dress for Success Billings: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: This project aided Dress for Success Billings by creating a social media plan that focused on growing the existing Facebook and creating Twitter and LinkedIn platforms to reach the organization's clients, volunteers, supporters and donors. Dress for Success targeted audiences using these tools: integrating client testimony, engaging supporters in contests, educating clients with professional tools and information, and soliciting donations and participation in events.

Gallup, Sarah

Title: Behavioral Ecology in the Northern Scorpion, *Paruroctonus boreus*

Faculty Mentor: James Barron

Major: Biology

Project Narrative: In the field, Northern Scorpions are rarely seen sharing cover objects even in areas with high population density, so we wanted to determine if this is due to territoriality and, if so, whether there are any demographic patterns in territorial behavior. We kept pairs of scorpions in experiment boxes with a single shelter item to observe whether they shared the cover or one excluded the other.



Gambill, Kelsi

Title: Alumni Relations: A Social Media Plan

Faculty Mentor: Melissa Boehm

Program: M.S. Public Relations

Project Narrative: This project collaborated with Alumni Relations to create a Social Media Plan that focused on Facebook and Twitter to reach alumni and friends, from 18-to-80 years old. It was recommended that Alumni Relations post using these concepts: Outstanding Alumni spotlights, holiday themed posts, photo contests, and Yellowjacket pride.

Gantz, Jennifer

Title: Breastfeeding on Campus

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: Many people still view breastfeeding as taboo. People still stare at mothers who are just trying to feed their babies in the most natural way possible. How do Montana State University Billings (MSUB) students feel about mothers-breastfeeding babies in public on campus?

Gnerer, Mike

Title: Oil Press Alarm and Shutdown System for Unattended Operation

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: This work supports collaboration with a local boutique safflower oil producer who reports issues with disrupted pressing operations that are consistent with our experiences. The stalled mill will damage itself due to wear and high temperatures if not shutdown promptly, but the operations typically run unattended. Process Plant Technology students are designing and constructing a new alarm and shutdown system for our press and will share the results with our partners.

Gray, Seth

Title: Presidential Election Portrayals in Liberal & Conservative News

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: News stations are one of the main sources used to obtain information regarding the election process. This project compares the political messaging of liberal and conservative stations; the aim of this poster presentation is to present quantitative data on the message that surrounds the 2016 presidential election.

Gray, Zachary

Title: Campus Ministry: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: This project recommended Campus Ministry create a social media plan that focused on Facebook and Instagram to reach students at MSUB using these concepts: goodwill, encouragement and guidance.



Haight, Sarah

Title: Building Support for Clean Energy among Millennials: A Community Resilience Approach

Faculty Mentor: Christopher Craig

Major: Business Administration: Management

Project Narrative: Drawing from the Theory of Planned Behavior and community resilience literatures, we studied relationships that perceptions about health and energy security risks, awareness about local clean energy initiatives, environmental messaging, and new environmental paradigm orientation (NEP) shared with millennial support for federal clean energy policy and taxes as mediated through local support.

Heidari, Mohammadreza

Title: [Cu(PDTC)] Synthesis

Faculty Mentor: Matt Queen

Major: Biology

Project Narrative: We are interested in studying potential CCl₄ environmental remediation technologies. In the interest of creating better performing more soluble coordination compounds, we seek to understand the link between coordination compound electronic structure and reality.

Henderson, Lea

Title: Behavioral Ecology in the Northern Scorpion, *Paruroctonus boreus*

Faculty Mentor: James Barron

Major: Ecology

Project Narrative: In the field, Northern Scorpions are rarely seen sharing cover objects even in areas with high population density, so we wanted to determine if this is due to territoriality and, if so, whether there are any demographic patterns in territorial behavior. We kept pairs of scorpions in experiment boxes with a single shelter item to observe whether they shared the cover or one excluded the other.

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Horman, Belle

Title: Triohhhh

Faculty Mentor: John Roberts

Major: Music Education

Project Narrative: Triohhhh is a student lead chamber ensemble consisting of clarinet, horn, and euphonium. The music played by the trio was adapted by the performers from woodwind and brass trio music for their own musical growth and to share with the community.

Huffman, Shelby

Title: Poetry Reading

Faculty Mentor: Tami Haaland

Major: English

Project Narrative: Students from the Poetry Writing class will read and discuss their original work.

Ivanova, Miglena

Title: Attachment Matter

Faculty Mentor: Brent Finger

Major: Psychiatric Rehabilitation & Psychology

Project Narrative: This research focuses on the different attachment styles. It examines whether or not working mothers, daycare and single parenting influence the attachment styles children develop in early age.



Johnson, Mady

Title: Triohhh

Faculty Mentor: John Roberts

Major: Music Performance

Project Narrative: Triohhh is a student lead chamber ensemble consisting of clarinet, horn, and euphonium. The music played by the trio was adapted by the performers from woodwind and brass trio music for their own musical growth and to share with the community.

Jones, Amy

Title: Online Relationships: Satisfying Our Needs?

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: This project takes a look at the impact social media sites have had on relationships, comparing them to traditional, face-to-face relationships. From the research, I will assess if the satisfaction and longevity of online relationships are comparable to traditional relationships or if we are entering a new level of intimacy and companionship.

Jones, Andrew

Title: Effects of Qualitative vs Quantitative Exercise on Memory Recall

Faculty Mentor: Alex Shafer

Major: Health & Human Performance

Project Narrative: Studies show that exercise can facilitate greater memory and recall, but does the type of exercise matter? Participants will take a modified memory test after running and after a volleyball game to compare the effects that the two different types of exercise have on recall and memory.

Kellinger, Hannah

Title: Determination of Solubility Limits for PDTC and [Cu(PDTC)Cl]

Faculty Mentor: Matt Queen

Major: Broadfield Science Education

Project Narrative: This study investigates the 2, 6-pyridinedithiocarboxylic (PDTC) and its copper coordination complex [Cu(PDTC)X] as a carbon tetrachloride remediation technique. Using UV-Vis light spectroscopy, iron titration assays, and over saturation studies, the solubility limits of both PDTC and [Cu(PDTC)Cl] have been determined as a baseline for further solubility improvement. In addition, we hope to use this preliminary data to develop a high throughput solubility assay utilizing dynamic light scattering for further confirmation.

Kerner, Wade

Title: Splitting the Mobius: A Twisted Operation

Faculty Mentor: Don Wilathgamuwa

Major: Mathematics Education

Project Narrative: This project explains why cutting Mobius band (one half-twist) along lines parallel to the centerline creates interesting objects (paradromic rings). This also gives a mathematical formula to calculate the properties of the resulting paradromic rings and explain how these paradromic rings interact with each other in the resulting object. Furthermore, these results are generalized to the family of Mobius-like objects with N half-twists when split into M parts.



Kling, Desiree

Title: Cli-Fi in the 21st Century

Faculty Mentor: Bernard Quetchenbach

Major: English

Project Narrative: *Everything Change* is an international anthology of “cli-fi” short stories available as a free download created by Arizona State University’s Imagination and Climate Futures Initiative. The student panel will consider the possibilities and obligations Australian writer Shauna O’Meara encounters when placing her characters in the realistic projected future of her story “On Darwin Tides.”

LaFountain, Patrick

Title: MSU Billings Jazz Combo

Faculty Mentor: John Roberts

Major: Music Performance

Project Narrative: We will perform music from Bebop, Swing, and Fusion styles of small ensemble jazz.

Lane, Abena

Title: What would you do?

Faculty Mentor: Mark Hardt

Major: Sociology

Project Narrative: The Bystander Effect is a social physiological phenomenon that refers to cases in which individuals do not offer ANY means to help a victim when other people are around. Experiments done in the past show that not helping is prevalent in society today. The Bystander Effect has been the social norm.

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Lemelin, Jeanann

Title: Maddie and Tae’s “Girl in a Country Song”: A Semiotic Analysis

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: Feminist theory grounds this semiotic analysis of “Girl in a Country Song” by Maddie and Tae, a music video that pokes fun at how women are portrayed in mainstream country songs.

Lindholm, Rick

Title: Readings

Faculty Mentor: Tami Haaland

Major: Pre-Professional Engineering

Project Narrative: Students will read original work from Fundamentals of Creative Writing class.

Lindquist, Austin

Title: The MSUB Library

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: Social media is one way to reach target audiences and gives them many gateways of communication. This project helped the MSUB library create a social media plan that focused on using Twitter and Facebook to reach students and faculty here at MSUB using these concepts: Buzz and books, faculty insider, tag and hashtag clients.



Lubieniecki, Dana

Title: Effects of Virtual Reality Balance Training on Older Adults

Faculty Mentor: Alex Shafer

Major: Health and Human Performance

Project Narrative: The purpose of this study is to determine the effect of an at-home virtual reality balance program on functional stability in older adults compared to a control group. The experimental group will complete a five-week virtual reality balance-training program with the use of the Google Cardboard virtual reality system.

Lueck, Brooke

Title: Gender, Ethnicity, and Sexual Representations of *Broad City*: A Textual Analysis

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: This project used textual analysis to describe gender, ethnicity, and sexual representations in *Broad City*. The three depictions are not usually explicitly stated, but are in underlying content. This research represents the true “melting pot” that the US strives for.

Lurie, Daniel

Title: Sophistication or Sexualization? A Rhetorical Analysis of *Dead or Alive* through the Male Gaze

Faculty Mentor: Melissa Boehm

Major: Organizational Communication

Project Narrative: Misconceptions of the video game series *Dead or Alive* are analyzed through Male Gaze and Feminist Criticism theories. Additionally, using rhetorical analysis, I will analyze how *Dead or Alive* appeals to audiences through their video game trailers. Through my analyses, I plan to shed light on the target base of the video game series *Dead or Alive*.

Lybeck, Logan

Title: Constraint Busting, Economic Maximization, and Distillation Optimization

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Maximizing throughput, product quality, and energy efficiency is important to industry so it can remain competitive. Operations of an authentic pilot scale distillation plant in the PPT lab are improved through the systematic application of scientific and mechanical principles.

Mack, Tyler

Title: Furnace Efficiency Improvements for Lower CO₂ Emissions and Improved Economics

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Furnace efficiency is an important consideration in industrial and residential furnaces to minimize fuel costs and greenhouse gas emissions. Energy recovery from stack gasses is explored on a highly instrumented furnace to quantify credits and determine payout time.



Marquez, Amelia

Title: Women's and Gender Studies Center: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: This project worked with the Women's and Gender Studies Center to create a social media plan that focused on Facebook and Twitter to reach current students using these concepts: events that MSU Billings and the city of Billings are holding that are important to gender studies, images and quotes of gender equality advocates from MSUB, and political action memos which encourage the target audience to take direct action.

Maxwell, Stephanie

Title: Effectiveness of Small Molecule Inhibitors against Budded to Filamentous Growth in *Aspergillus fumigatus*

Faculty Mentor: Kurt Toenjes

Major: Biology

Project Narrative: Mortality associated with systemic candidiasis and invasive pulmonary aspergillosis (IPA) is greater than 90% and the number of cases is increasing as medical advances expand the spectrum of susceptible patients. The goal of this research is to expand upon our discovery of small molecules that inhibit the yeast from budded to filamentous growth transition in *C. albicans* and determine if they inhibit conidia germination and morphogenesis in *A. fumigatus*. New anti-fungal therapeutics are more desirable if they have efficacy against *Candida* and *Aspergillus* species.

Mazurkiewicz, Patti

Title: The Relationship between Culture-Specific Education/Ethnic Identity and Resiliency among Native American Youth

Faculty Mentor: Ambrin Masood

Program: Master of Clinical Rehabilitation and Mental Health Counseling

Project Narrative: This concept paper discusses the importance of retaining and reinstating culture-specific education in Native American youth. Native Americans have historically struggled with adversity, and this pilot study will gather evidence to support the importance of including culture-specific education to the Native American youth in hopes of positively changing their outlook.

McCann, Noah

Title: MSU Billings Jazz Combo

Faculty Mentor: John Roberts

Major: Organizational Communication

Project Narrative: We will perform music from Bebop, Swing, and Fusion styles of small ensemble jazz.

McDowell, Drew

Title: MSU Billings Jazz Combo

Faculty Mentor: John Roberts

Major: Music Business

Project Narrative: We will perform music from Bebop, Swing, and Fusion styles of small ensemble jazz.



McKay, Liam

Title: NIR RAMAN Spectroscopy of Natural and Synthetic Pigments in Paintings

Faculty Mentor: Matt Queen

Major: Chemistry

Project Narrative: We performed an NIR RAMAN spectroscopy to identify pigments in paintings prepared by artists in the art department.

Mendenhall, Thomas

Title: Cli-Fi in the 21st Century

Faculty Mentor: Bernard Quetchenbach

Major: English

Project Narrative: *Everything Change* is an international anthology of “cli-fi” short stories available as a free download created by Arizona State University’s Imagination and Climate Futures Initiative. The student panel will consider the possibilities and obligations Australian writer Shauna O’Meara encounters when placing her characters in the realistic projected future of her story “On Darwin Tides.”

Mendenhall, Thomas

Title: Poetry Reading

Faculty Mentor: Tami Haaland

Major: English

Project Narrative: Students from the Poetry Writing class will read and discuss their original work.

Morast, Daisy

Title: Soap Making as a Value-Added Product from Montana Oil Seed Production

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Soap making is an opportunity to develop industry and agriculture in Montana by creating a value-added product from Montana’s agricultural crops such as camelina, canola, and safflower. Soap making is also potential high value and environmentally responsible outlet for biodiesel residue glycerin which is otherwise a waste stream.

Nickle, Emmet

Title: Why Fear Death?

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: This project studies the fear of death, its causes and concepts, through a survey of the students of Montana State University Billings.

Nielsen, Jared

Title: Poetry Reading

Faculty Mentor: Tami Haaland

Major: English

Project Narrative: Students from the Poetry Writing class will read and discuss their original work.



Oexmann, Sabine

Title: Northcutt Steele Gallery: A Social Media Plan

Faculty Mentor: Melissa Boehm

Program: M.S. Public Relations

Project Narrative: The Northcutt Steele Gallery would like to benefit from the great and free-of-charge opportunities that social media platforms offer to reach their target audience. This project worked with the gallery to create a social media plan that focused on Facebook, Twitter and Instagram to reach students and an audience in the community of Billings using these concepts: promote upcoming events by providing dates and high quality images of the art work that is to be seen, post education “how to...” videos about how to create your own art work, engage the audience by conducting photo and art contests.

Oldham, Kaydee

Title: Dress for Success: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: This project worked with Dress for Success to create a social media plan that focused on Facebook, Twitter, and Instagram to reach potential donors, volunteers, and women in the Billings community in need of a job. Dress for Success posted to the above stated social media platforms using these concepts: #MotivationalMonday (emotional appeal quotes), links to donation sites, client success stories, and links to women’s styling/fashion blogs.

Olsen-Bradley, L. Rúhíyyih

Title: “Transparency”

Faculty Mentor: Bernard Quetchenbach

Major: Liberal Studies

Project Narrative: “Transparency” is a lyric essay, developed as a result of study of creative non-fiction. It explores physical and mental elements relating to the theme of transparency. It is a segmented piece, using theme and imagery to work together.

Olson, Rebecca

Title: Women in Special Forces

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: Research on the perceptions of women entering the Special Forces field held by students of MSUB. Research will explore positive and negative ideas of women entering these fields that were once exclusive to men.

Owen, Curry

Title: Contagious Shooting

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: This study examined findings for contagious shootings in Michigan, New York, and Pennsylvania to see if law enforcement have an actual problem. The purpose of this study is to see how many cases of contagious shootings officers have been in compared to the total amount of shootings from these states. By doing this, we can see if there is a problem of contagious shooting.



Pawlowski, Kyler

Title: Developing a Yeast Model of Amyotrophic Lateral Sclerosis Involving the SOD1 Gene

Faculty Mentor: David Butler

Major: Biology

Project Narrative: Amyotrophic lateral sclerosis (ALS), one of the most common neuromuscular diseases in the world, is an unremittingly progressive disease that degenerates motor neurons in the brain and spinal cord. The most common mutations in familial ALS occur in the SOD1 gene. We are developing a yeast model of ALS based on the expression of mutant human SOD1 proteins which will permit high throughput genetic screens to identify genes that enhance or suppress the toxic phenotypes associated with mutant SOD1 expression, as well as chemical screens to identify compounds that inhibit mutant SOD1 toxicity.

Preeshl, Katie

Title: The Department of Communication and Theatre: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: This project worked with the Department of Communication and Theatre to create a social media plan to increase its target audience. The plan focused on Facebook, Twitter, and Instagram to reach current and potential communication students by showcasing both faculty and students.

Rachunok, Joshua

Title: How MSUB Sees Blue

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: There are many different opinions on police, and these opinions vary by age, race, and sex. College campuses provide a very diverse group of individuals who present a multitude of different ideas. Through the use of surveys I aim to understand the variation of ideas given the factors of age, race, and sex.

Raj, Aidan

Title: Gender Representation in *Game of Thrones*: The Semiotic Analysis

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: A semiotic analysis of gender representation in the television series *Game of Thrones*. I will document signifiers and the signifieds within the series to draw inferences to what role each gender plays within the show and what they might mean to the viewer.

Reinschmidt, Luke

Title: Assessment of Benzophenone as Internal Standard in RP HPLC Monitoring of Caffeine during Coffee Brewing

Faculty Mentor: Matt Queen

Major: Chemistry

Project Narrative: This study tests the accuracy of Benzophenone as an internal standard for the monitoring of caffeine concentrations during coffee brewing.



Richardson, Davontae

Title: Discrimination between Race and Gender

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: This study focused on discrimination to see why we as a people discriminate and present scenarios (if any) where it is right to discriminate. The purpose is to see how big of a percentage see that they discriminate or at least admit it. This project will analyze data from students at MSUB using the availability method.

Ryan, Jesse

Title: Furnace Efficiency Improvements for Lower CO2 Emissions and Improved Economics

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Furnace efficiency is an important consideration in industrial and residential furnaces to minimize fuel costs and greenhouse gas emissions. Energy recovery from stack gasses is explored on a highly instrumented furnace to quantify credits and determine payout time.

Sailors, Sam

Title: Fuel and Feed Pellet Production from Montana's Agricultural Crops

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Bio-based fuels offer an opportunity to increase manufacturing jobs and agriculture in Montana. A processing plant has been commissioned at City College capable of producing 150 lbs/hr of fuel pellets from agricultural and yard residues. Testing of the fuels in multi-fuel furnaces is underway.

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Schoenenberger, Malia

Title: Poetry Reading

Faculty Mentor: Tami Haaland

Major: English

Project Narrative: Students from the Poetry Writing class will read and discuss their original work.

Scoles, Crystal

Title: Soap Making as a Value-Added Product from Montana Oil Seed Production

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Soap making is an opportunity to develop industry and agriculture in Montana by creating a value-added product from Montana's agricultural crops such as camelina, canola, and safflower. Soap making is also potential high value and environmentally responsible outlet for biodiesel residue glycerin which is otherwise a waste stream.

Sedgwick, Ryan

Title: Gun Free College Campus: The Student and Faculty Opinions

Faculty Mentor: Mark Hardt

Major: Criminal Justice

Project Narrative: The project examines student and faculty opinions on gun free college campuses. The project used surveys to collect the data and SPSS software database to analyze the data.



Segerstrom, William

Title: Readings – Edwin’s Charity

Faculty Mentor: Tami Haaland

Major: Public Relations

Project Narrative: Students will read original work from Fundamentals of Creative Writing class.

Shanley, Tyler

Title: Fuel and Feed Pellet Production from Montana’s Agricultural Crops

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Bio-based fuels offer an opportunity to increase manufacturing jobs and agriculture in Montana. A processing plant has been commissioned at City College capable of producing 150 lbs/hr of fuel pellets from agricultural and yard residues. Testing of the fuels in multi-fuel furnaces is underway.

Shelton, Luke

Title: A Social Media Plan for the Yellowjacket Emergency Pantry

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: Working with Shayla Fox, this project devised a strategic social media plan that focuses on utilizing both Facebook and Twitter to promote and broadcast the YEP’s services using these concepts: providing information about food insecurity in America, providing encouragement for students facing food insecurity to visit the YEP and providing suggestions (low cost recipes, budget tips) for students facing any type of financial strain.

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Shelton, Luke

Title: The Duality of Racial Representation in Mass Media: How Agenda Setting Theory Condemns and Perpetuates Racial Stereotyping, a Local Example

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: In a post to the Kat Country station’s website, Billings Kat Country host Paul Mushaben suggested that Native American high schools within the MHSAA (Montana High School Athletic Association) should host their own tournaments, essentially arguing for voluntary segregation. His short-lived remarks (his post was removed that same day) quickly received intense local and national press coverage, from the *Billings Gazette* to the *Washington Post*. This coverage spurred a great amount of public backlash and eventually led to Mushaben being suspended. This study will use agenda setting theory and textual analysis to explore how other media organizations reacted to Mushaben’s statements.

Small, Zale

Title: Materialism and Philogyny in Migos’ “Bad and Boujee”: A Semiotic Analysis

Faculty Mentor: Melissa Boehm

Major: Liberal Studies

Project Narrative: Migos is an American rap and hip hop group based in Atlanta. The video for Migos’ recent release of “Bad and Boujee” will be the basis for this semiotic analysis. Marxism and feminism will be the theories that will be applied to this text because of the many underlying connotative signs portrayed by the performers. This video may be interpreted as a representation of materialism and misogyny.



Smiedala, Josey

Title: Jackets and Company: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: Social media is one of the most useful tools utilized by businesses today. I worked with Jackets and Company to create a social media plan that focused on Facebook, Twitter, and YouTube to reach the students and alumni of the university. I recommend that Jackets and Company post at least once a week on Facebook using these concepts: interactive sweepstakes, daily buzz, and how-to videos.

Smiedala, Josey

Title: *Orange is the New Black*: Media Representations of Female Incarceration

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: The provocative Netflix series *Orange is the New Black* leaves nothing unsaid when it comes to the media's representation of women in prison. Even though the imperfections of the prison system and women in the show seem ghastly, the series humanizes these "animals" (as described by the theme song) confined within. The portrayal of different types of race, gender, and sexuality could represent a microcosm of our society today.

Songstad, Alex

Title: Constraint Busting, Economic Maximization, and Distillation Optimization

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Maximizing throughput, product quality, and energy efficiency is important to industry so it can remain competitive. Operations of an authentic pilot scale distillation plant in the PPT lab are improved through the systematic application of scientific and mechanical principles.

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Soucy, Tim

Title: Social Networking Sites and Suicide Ideation

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: This study will conduct randomized survey research among MSU Billings students to investigate a correlation exists between the frequent use of social media and suicide ideation.

Stalker, Richard

Title: Constraint Busting, Economic Maximization, and Distillation Optimization

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Maximizing throughput, product quality, and energy efficiency is important to industry so it can remain competitive. Operations of an authentic pilot scale distillation plant in the PPT lab are improved through the systematic application of scientific and mechanical principles.

Steiger, Dillon

Title: MSU Billings Jazz Combo

Faculty Mentor: John Roberts

Major: Music Performance

Project Narrative: We will perform music from Bebop, Swing, and Fusion styles of small ensemble jazz.



St. Pierre, Rian

Title: Does Case Management Work for Domestic Violence Victims?

Faculty Mentor: Mark Hardt

Major: Sociology

Project Narrative: This research will determine if the case management is effective in transitioning domestic violence victims out of shelter successfully. By successful we mean that the victim has a safe place either of her own or place to go after her said time with the shelter facility.

St. Pierre, Rian

Title: Catharine Brown

Faculty Mentor: Reno Charette

Major: Sociology

Project Narrative: Catharine Brown was the first Native American woman to convert to Christianity. Despite what little education she had, Catharine became the epitome of Christian values instilled among Native people. She lived a short life but also reached a spirituality that only few dreamed of.

Sullivan, Cate

Title: Readings

Faculty Mentor: Tami Haaland

Major: English

Project Narrative: Students will read original work from the Fundamentals of Creative Writing class.

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Supola, Ryan

Title: MSU Billings Jazz Combo

Faculty Mentor: John Roberts

Major: Music Education

Project Narrative: We will perform music from Bebop, Swing, and Fusion styles of small ensemble jazz.

Talksabout, Michaela

Title: Reinforcement Theory in Harry Potter films: A Proppian Analysis

Faculty Mentor: Melissa Boehm

Major: Public Relations

Project Narrative: This project uses a Proppian analysis of the *Harry Potter* film franchise to document the traditional hero and villain themes. Reinforcement theory states that individuals seek media that avoids cognitive dissonance, and I argue that *Harry Potter* fans step into a work where their morals and ideas of good and evil are reinforced.

Tellez, Taylor

Title: Yellowstone Public Radio: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Mass Communication

Project Narrative: This project worked with Yellowstone Public Radio to create a social media plan that focused on Facebook and Twitter to reach and unite listeners throughout Montana and Northern Wyoming. It was recommended that Yellowstone Public Radio post using these concepts: promotional or fundraising content, original niche new stories, and technical information about YPR.



Tombrink, LeAnne

Title: Perceptions of Oil and Gas Development in the Bakken of Montana

Faculty Mentor: Susan Gilbertz

Major: Environmental Studies

Project Narrative: This project investigates public perceptions of risks associated with oil and gas development. A random survey of households in the 6 Montana counties impacted by Bakken activities was designed and sent out by mail. Returned surveys are entered into an SPSS software database and numerous statistical analyses were conducted.

Tretin, Jerimiah

Title: Cli-Fi in the 21st Century

Faculty Mentor: Bernard Quetchenbach

Major: English Education

Project Narrative: *Everything Change* is an international anthology of “cli-fi” short stories available as a free download created by Arizona State University’s Imagination and Climate Futures Initiative. The student panel will consider the possibilities and obligations Australian writer Shauna O’Meara encounters when placing her characters in the realistic projected future of her story “On Darwin Tides.”

Trogden, Tyler

Title: Furnace Efficiency Improvements for Lower CO2 Emissions and Improved Economics

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: Furnace efficiency is an important consideration in industrial and residential furnaces to minimize fuel costs and greenhouse gas emissions. Energy recovery from stack gasses is explored on a highly instrumented furnace to quantify credits and determine payout time.

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Urlacher, Dillon

Title: Game of Life: A Randomized Version

Faculty Mentor: Don Wilathgamuwa

Major: Mathematics

Project Narrative: A cellular automaton, named Game of Life, evolves through a series of predefined rules that depend only on the initial state. We utilize Markov Random Fields to generalize this game and use computer simulations to calculate the random evolution of states.

Van Tassel, Brandon

Title: Characteristics of the Effect of Exogenous cAMP on *C. albicans* Morphogenesis in Strains Lacking Nrg1p, Rfg1p, or Tup1p

Faculty Mentor: Kurt Toenjes

Major: Biology

Project Narrative: The opportunistic human pathogen *Candida albicans* causes both superficial and life-threatening systemic infections and is a leading cause of fungal disease in immunocompromised individuals. *C. albicans* can grow in different cell shapes or morphologies, including yeast-like cells and a variety of filamentous forms, such as true hyphae and pseudohyphae. The goal of this project is to characterize whether the addition of exogenous cAMP, as well as the small molecule BG3I, will increase the expression of HWP1 in the absence of each of the negative regulators.



Walters, Joseph

Title: Elongator Function in the Anterior Pituitary and its Relevance to Familial Dysautonomia

Faculty Mentor: Lynn George

Major: Biology, Psychology

Project Narrative: Familial Dysautonomia is a devastating neurodegenerative disease caused by insufficient levels of Elongator, a complex needed for normal translation of codon-biased genes. FD patients exhibit a reduced number of autonomic neurons, and suffer from a multitude of autonomic symptoms including cardiovascular instability, gastrointestinal incoordination, and respiratory dysfunction, in addition to poor growth and weight gain. Here, we show expression of Elongator protein 1 (*Elp1* or *IKBKAP*) in the anterior pituitary and investigate the possibility that many FD symptoms may result from aberrant pituitary regulation of the autonomic nervous system due to altered translation of codon-biased, pituitary specific genes.

Weaver, Isabel

Title: Rehabilitation vs Incarceration

Faculty Mentor: Mark Hardt

Major: Criminal Justice, Sociology

Project Narrative: This project was done to see how students in the Law Enforcement and Criminal Justice programs view rehabilitation vs prison time. The data would show whether rehabilitation could be a possible solution to help take the pressure off of prison and help rehabilitate prisoners.

Wester, Hunter

Title: Oil Press Alarm and Shutdown System for Unattended Operation

Faculty Mentor: Andy Sullivan

Major: Process Plant Technology

Project Narrative: This work supports collaboration with a local boutique safflower oil producer who reports issues with disrupted pressing operations that are consistent with our experiences. The stalled mill will damage itself due to wear and high temperatures if not shutdown promptly, but the operations typically run unattended. Process Plant Technology students are designing and constructing a new alarm and shutdown system for our press and will share the results with our partners.

White Plume, Talitha

Title: Student Union Activities: A Social Media Plan

Faculty Mentor: Melissa Boehm

Major: Liberal Studies

Project Narrative: Student Union Activities was advised to create a social media plan that focused on Facebook and Twitter to reach traditional students, non-traditional age students, and community members. Through these recommendations, Student Union Activities posted using these concepts: history or events and future events that promote school activities, a collage of students to show diversity at MSU Billings, and landmarks of Billings that incorporate the school campus.

Winter, Matt

Title: Poetry Reading

Faculty Mentor: Tami Haaland

Major: Liberal Studies

Project Narrative: Students from the Poetry Writing class will read and discuss their original work.



NORTHCUTT STEELE GALLERY

2017 Juried Student Show

John Allenbaugh

Chaos and Rhythm

charcoal, henna paste, pencil, ink, colored
plasticine, guitar string

Lauren Baum

After Life

acrylic painting

Meliah Bell

Isolated Together

oil on paper

Katelynn Burg

Dream Apparatus

photography (series of 3)

Lindsey Carrell

Place Study

acrylic and graphite on panel

Shayla Fiscus

Not Your Grandmothers Doily

ceramic - majolica glaze slab built bow

Hannah Harsha

Misty Mountains

charcoal

Zachary Hinkle

Feds Shreds

money and starch

Madalyn Johnson

Life of the Party

gouache

Michael Jones

Peep Show

mixed media

Michael Jones

Table Saw

mixed media

Glenn Kamamura

Pamela's Portrait

artists oils and acrylics

Ellen Kuntz

You Are The Blood. Self-Portrait

photography

Brenna Lacy

Holy Hand

oil on canvas

Rebecca Lee

Isolated In Open Spaces

acrylic on paper

Vince Long

Equality #3 – Perimeter

colored pencil and ink on paper

Amy Mason

Foundations

ceramics, found objects, plexiglas (series of 3)

Elizabeth May

Ordinary Dream

Collage

Laura Meintjes

Fence

photography (series of 3)

Meagan Milton

Strong Bodies

ceramic and leather



Fred Muller
Vessel 2
ceramic and steel

Dacia Racine
States of Me (Triptych)
oil on paper

Tabetha Rindahl
Now You See Me, Now You Don't
India ink and white pen on watercolor paper

Tabetha Rindahl
Just Another Pretty Face
mixed media

Angel Shandy
Untitled
charcoal

Stephanie Slavin
My Roots The Monster in Me
photography

Marsha Stewart
"Unbreakable" – She Series
paper collage

Marsha Stewart
"Lovely" – She Series
paper collage

Morgan Syring
Bitfrost
chainmail and aluminum

Michelle Williams
The Singer and Her Stage
oil on paper



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