

SAC
2018



Tuesday, April 17, 2018

MINNESOTA STATE UNIVERSITY MOORHEAD PRESENTS

20th Annual

ANDREW B. CONTEH

Student Academic Conference

*Student-Centered Education through Mentoring
Student Research and Creative Activities*



Since 1999



MINNESOTA STATE UNIVERSITY
MOORHEAD.

A member of the Minnesota State system



Greetings:

Among all the programs and activities that make Minnesota State University Moorhead a place of transformation where students achieve more than they believed possible, the Student Academic Conference stands out as a particularly special and transformative experience. In many ways, the conference exemplifies the qualities that make MSUM truly unique: our legacy as a university where the faculty-student relationship is at the heart of teaching and learning; our commitment to providing students with opportunities to explore and discover their passions; and the transformation that occurs when students discover their reason for being and feel prepared to pursue their purpose.

The projects being presented today represent countless hours of planning, problem solving, experimentation, investigation, innovation, and preparation. Behind every project there is not only a motivated student but also a dedicated faculty mentor. It is the mentoring relationship—whether in the laboratory, the field, the theatre, the studio, the computer lab, or the classroom—that makes these applied learning opportunities truly transformative.

Congratulations to the students who are presenting at the 2018 conference and the faculty mentors who worked side-by-side with those students to make their presentations possible. And thank you for exemplifying the spirit of exploration and discovery that enriches us all.

Sincerely,

A handwritten signature in black ink that reads "Anne Blackhurst". The signature is fluid and cursive, with a long horizontal line extending from the end.

Anne Blackhurst
President

Conference Participants and Attendees:

Congratulations to everyone participating in the Andrew B. Conteh Student Academic Conference. This event is one of the highlights of the academic year for the MSUM community. The projects being presented today are evidence of student/faculty engagement and MSUM's commitment to providing our students with opportunities for collaboration, experiential learning, and active participation in the learning process.

As I read the titles of the presentations for this year's conference, I am overwhelmed by the nearly 300 scholarly works that our students and faculty have prepared during this academic year. The wide variety of topics is also very impressive—artificial intelligence, social media, cancer research, sleep deprivation, autism spectrum disorder, diversity and inclusion, healthcare, fraud, and the 2017 eclipse—this is only a small sample of the exciting and timely topics being presented at this year's conference. Your works contribute to and are examples of how MSUM addresses its strategic anchors: Student Achievement, Diversity and Inclusion, and Community Development.

Students, I applaud you on your preparation and hard work and I look forward with enthusiasm to listening to your presentations. Your work reflects critical thinking, problem solving, exploration and discovery necessary for engaged learning. Faculty, I thank you for your mentorship and collaboration with your students. Without your contributions this conference would not exist.

The Andrew B. Conteh Student Academic Conference is truly a transformative experience for every participant, including those of us who attend and have the unique privilege of being able to witness our promise to transform lives through exceptional student/faculty engagement.

Again, congratulations and I wish you well.



Marsha Weber
Interim Vice President of Academic Affairs





20th Annual **ANDREW B. CONTEH** **Student Academic Conference**

Tuesday, April 17, 2018

8:30 a.m.	Featured Graduate Student Lecturers Whitney Balmer Ashley Schurr <i>CMU 121</i>
9:00 a.m.	Poster Set-Up—Registration/Information Table <i>CMU Main Lounge</i>
9:40 a.m.	Presentation Session 1 and Poster Session 1 <i>Various CMU Rooms and Poster Display Area</i>
11:00 a.m.	Seating for the Luncheon <i>CMU Ballroom</i>
11:10 a.m.	Luncheon Starts <i>CMU Ballroom</i>
11:50 a.m.	Welcome and Keynote Speaker Marsha Weber, Interim Vice President of Academic Affairs Robert Haas, Vice President in Treasury Quantitative Analytics at US Bancorp
12:40 p.m.	Presentation Session 2 and Poster Session 2 <i>Various CMU Rooms and Poster Display Area</i>
2:00 p.m.	Break
2:10 p.m.	Presentation



Robert Haas

2009 Economics

MSUM alumnus Robert Haas graduated from Minnesota State University Moorhead in 2009 with a degree in economics and a minor in mathematics. He later went on to work at US Bancorp in September of 2012 after graduating from Colorado State University with an MA in economics. In February 2018, he was promoted to his current position as Vice President in Treasury Quantitative Analytics and currently manages a group of five quantitative analysts.

Since the beginning of his career with US Bancorp, he has been tasked to take on large, complex, econometric modeling projects

from the ground up. These projects required a tremendous amount of individual effort on his part and required him to work cross functionally among many different groups inside and outside of US Bancorp.

“No matter what the task, I step up to the challenge and deliver my best on a daily basis,” said Haas. “I take time to consider other points of view knowing everyone I encounter has knowledge I can leverage to make our organization better. I give credit where credit is due, admit past mistakes, and strive to always learn on a daily basis.”

Through his life journey, Haas has learned the importance and every day applications of MSUM’s core values of grit, humility, and heart. In recent years, Haas has even had the opportunity to give back to MSUM students by inviting a group of them to the US Bancorp corporate headquarters in Minneapolis, where he gets to explain what he does and tell the story of how he ended up where he is today.

“To date, that was one of the most rewarding experiences I have had both personally and professionally,” said Haas of speaking with MSUM students.

After his experience in the field and learning what it takes to advance in his career, Haas shares his secret to success.

“Never give up,” he said. “Always keep pushing and striving to be the best you can be. Remember those that helped you along the way, and inspire others to do the same.”



Kiley Fee & McKenzie Zacha

A Dual Process of Decision-Making in Our Choices: The Role of Cognition and Emotion in Everyday Life

> Kiley Fee

Major: Business Administration with an Emphasis in Marketing
Year in School: Junior
Hometown: Norwalk, Iowa



> McKenzie Zacha

Major: Business Administration with a Double Emphasis in Marketing and International Business
Year in School: Junior
Hometown: Mandan, North Dakota

> By Leah Schmitt

Left or right? Soup or salad? Name brand or off brand? MSUM or other?

As humans, we make more than 35,000 decisions a day, but have you ever thought about what influences you to make those decisions? That is exactly what Business Administration students Kiley Fee and McKenzie Zacha wanted to find out.

In their study, Fee and Zacha looked at consumers' behavior in a simple, everyday setting like the grocery store, and compared it to students' decisions to attend Minnesota State University Moorhead.

To conduct their study, they used keyword research to determine which elements of a decision were most important to people. For grocery store decisions, they looked at how price, time and product characteristics affected people's decisions, and for MSUM decisions, they looked at how price, education and campus characteristics affected people's decisions. They then placed the keywords they found on a cognitive and emotional scale to see how the decisions were made.

"We discovered that similar dimensions were present in both types of decision making," said Zacha. "However, how people approached each dimension was vastly different on an emotional and cognitive scale with each type of decision."

In the end, they learned making a decision in the grocery store is more cognitive than emotional, and making the decision to attend MSUM was more emotional than cognitive.

Fee and Zacha were intrigued by the idea of learning more about consumer behavior and were excited they had the opportunity to learn more about it in a hands-on setting.

"It's one thing to learn something from a textbook, but being able to apply the knowledge out of the classroom is extremely beneficial," said Fee.

"It's one thing to learn something from a textbook, but being able to apply the knowledge out of the classroom is extremely beneficial."

– Kiley Fee

Stacy Meester

Major: Psychology

Year in School: Graduate Student Hometown: Hillsboro, North Dakota

Using Mindfulness and Yoga with First Graders to Increase Engagement



> By Leah Schmitt

Kids are funny, energetic, brilliant...and they just can't sit still.

Studies show engaging students academically early on has a strong link to students' outcomes later in their schooling and their lives. But how do you get them to sit still long enough to engage them?

Stacy Meester, a graduate student in the School Psychology program, decided to explore ways of increasing students' engagement through mindfulness and yoga. Every day, for 10 weeks, a class of first graders spent five minutes in the morning and the afternoon, doing simple breathing and yoga exercises. Three students were monitored throughout the study to see if the exercises helped increase their engagement in the classroom. Only three students were monitored to ensure effective data was recorded.

"I know it's difficult to find the time right now in the classroom... it's full. There's a lot of learning going on," said Meester. "So taking only five minutes to do some mindfulness and see that engagement increase is a really positive thing."

Meester found for two of the three students, the intervention helped increase their engagement in the classroom. At the end of the day, Meester and her

cooperating teacher recorded on a range from 1 to 10 how well they thought each student was engaged that day; one meaning 10 percent engaged and 10 meaning 100 percent engaged. The goal was to see students' engagement reach an average of 80 percent.

Overall, Meester saw an increase in engagement throughout the entire classroom, not just in her subjects. While the success of the entire class wasn't tracked as a whole, she saw a shift in how students behaved.

"They went from being disruptive and getting up within a couple of minutes, to sitting for 20 to 25 minutes for a story. It was amazing to see. The whole class had a calmness to it," said Meester.

"They went from being disruptive and getting up within a couple of minutes, to sitting for 20 to 25 minutes for a story. It was amazing to see. The whole class had a calmness to it."

– Stacy Meester



Andrea Hanson

Major: Counseling and Student Affairs – Clinical Mental Health
Year in School: Graduate Student Hometown: Fargo, North Dakota

Mental Health Awareness for College Athletics



> By Leah Schmitt

Most students face a dreadful to-do list— tests, papers, group projects and part-time jobs. The list keeps growing, and on top of the list are the personal demands and stressors that come with everyday life.

Student-athletes deal with all of this in addition to a vigorous workout schedule, practice and game days. It's enough to overwhelm anyone and may lead to mental health issues. However, student-athletes face barriers that prevent them from getting the help they need, namely not having a staff member specifically trained to help them navigate these troubling times.

Andrea Hanson, a graduate student in Counseling and Student Affairs, played college tennis for four years and is now an assistant tennis coach at MSUM. Expanding her knowledge of mental illnesses through her schooling has opened her eyes to the struggles student-athletes face every day, such as anxiety and depression.

Hanson created a training manual designed for coaches, athletic trainers and other athletic department personnel. The manual includes information on mental health issues that impact student-athletes and the symptoms and behaviors they may exhibit, such as excessive worry, fatigue or irritability.

The training demonstrates strategies on how to speak with student-athletes about seeking mental health services and provides case examples and role play scenarios to help coaches practice the skills gained through the training.

“After completing a review of current research, I wanted to do more to promote mental health to collegiate student-athletes,” said Hanson of creating the manual. “Through this research, I am better able to understand the stressors they experience and the barriers they face to seeking mental health services.”

Knowing what mental health issues college athletes face, Hanson is better able to talk to her athletes about these issues and find them help when needed.

“My passion for mental health has allowed me to gain a more complete picture of collegiate athletics and the role I play as an assistant coach,” Hanson said.

“Through this research, I am better able to understand the stressors they experience and the barriers they face to seeking mental health services.”

– Andrea Hanson

Jenna Kalthoff

Major: Finance Minor: Mathematics and Statistics
Year in School: Junior Hometown: Richmond, Minnesota

Earnings Restatements and Crisis Communication Patterns



> By Leah Schmitt

In the era of “fake news” and “alternative facts,” effective and accurate communication is key. Companies are learning this the hard way and are trying to find the best method to communicate with their stockholders about earnings restatements.

“An earnings restatement is used to correct errors in past earnings statements,” said Finance student Jenna Kalthoff. “Earnings restatements typically cause a negative market reaction, so firms have started using different communication and release strategies.”

The purpose of this study is to find the optimal technique, or techniques, companies should use when issuing earnings restatements. To do this, multiple earnings restatements will be gathered, and an event-study will be conducted to analyze the impact of the restatement.

While this study is still in the data-collection process, Kalthoff is optimistic about the results it will yield.

“The results will either help company executives minimize the negative market reaction of restatements through communication strategies

or will show that media strategy is minimally effective,” said Kalthoff.

Kalthoff worked with Dr. Thomas Hanson, an MSUM Finance professor, to conduct this study and other studies in the past. She enjoys the personal mentoring she has found at MSUM and the hands-on experience MSUM offers.

“Research has made me more aware of my skills and has improved my communication skills,” said Kalthoff. “I have been very fortunate to work with exceptional people through the research process. They all deserve a million thanks!”

“Research has made me more aware of my skills and has improved my communication skills.”

– Jenna Kalthoff



Joshua Noennig

Major: Economics
Year in School: Junior Hometown: Sabin, Minnesota

Males and Undergraduate Education: The Rest of the Story



> By Leah Schmitt

In the last 50 years, female undergraduate enrollment has increased substantially while enrollment of male students has stayed roughly the same. Females now make up around 60 percent of undergraduates, while men only make up 40 percent. Why?

Joshua Noennig, a junior majoring in Economics, wanted to find the answer. In his study, Noennig looks at the gender enrollment gap in U.S. undergraduate enrollment in four-year institutions from 1962 to the present.

“This study looks at how cost and benefits influence male enrollment, and highlights specifically how post-high school graduation alternatives for males attending college impact their decision,” said Noennig.

To conduct his study, Noennig used data from the National Center for Education Statistics and the U.S. Census Bureau to see how the costs and benefits influence men who are recent high school graduates. He focused on a few key variables, which include college premium (the difference between the salary of someone with a college degree and a high school degree), average marriage age, and a military draft variable. He is also

looking at the affect male-dominated trade professions may have on low male enrollment.

Through his extensive research, Noennig hoped to explain why men have not seen increased undergraduate enrollment during a time when women’s undergraduate enrollment has skyrocketed, and he may have found an answer.

“I found that men have been joining the workforce or military due to the benefits (such as money and freedom) being immediate, compared to the long-term benefits of college,” said Noennig. “It appears that the perceived benefits of attending college for men are decreasing, or that they do not want to invest in education for four years before seeing the payoff down the road.”

“I found that men have been joining the workforce or military due to the benefits being immediate, compared to the long-term benefits of college.”

– Joshua Noennig



PRESENTATION LISTINGS

ANTHROPOLOGY AND EARTH SCIENCE

*Drinking on the Red: The Archaeology of
Historic Moorhead Saloons*

Michael Betsinger

Advisor: George Holley

*What are you Deaf? The Portrayal of Deaf
Culture in Cinema*

Carra Strader

Advisor: Erik Gooding

*What We See Under the Ground at Chief
Looking's Village*

Amy Woodruff and Carly DeSanto

Advisor: Rinita Dalan

*Animal Bones and Their Story in the
Prehistory of the Buffalo River Regional
Science Center*

Christine Lidenberg and Maxwell Sojka

Advisor: George Holley

*Understanding Societal Relations Through
Landmark Etymology*

Michael Pittman

Advisor: Erik Gooding

*Experimental Measurements of CoO
Activities in Silicate Melts*

Elias Holte and Elizabeth Dougherty

Advisor: Russell Colson

The People of Fargo-Moorhead

Kassandra Sofferan

Advisor: Bruce Roberts

*A Timeline of Disciplines: The Greek-
Hellenic Period*

Joshua Kes

Advisor: Paul Sando

BIOSCIENCES

*Decreasing Risk Factors of Pancreatic
Cancer by Maintaining a Healthy Gut
Microbiome*

**Rachel Krause, Allison Raddatz, and
Agim Bekteshi**

Advisor: Adam Stocker

*Effect of Exogenous Melatonin and Chronic
Sleep Deprivation on IL-8 Secretion in
Danio rerio*

**Alison Barkhymer and Adedoyinsola
Adepiton**

Advisors: Sumali Pandey and Brian
Wisenden

Edge Effects and Costa Rican Conservation

**Gregory Anderson, Laura Wessberg, and
Jonah Vigilant**

Advisors: Brian Wisenden

Palm Oil Trees of Costa Rica

**Savanna Hohenstein, Molly O'Brien, and
Alex Hendrickson**

Advisors: Brian Wisenden and
Christopher Merkord

*Antlions of Costa Rica: How They Function
& Their Importance to the Surrounding
Ecosystem*

**Allison Raddatz, Casey Coombs, and
Rebecca Volkert**

Advisor: Brian Wisenden

Distribution of Abies religiosa

Laura Wessberg

Advisor: Christopher Merkord

*Cetacean Strandings Along the Gulf of
Mexico from 2002-2009*

Savanna Hohenstein

Advisor: Christopher Merkord

*Occurrence of Green Sea Turtles over 13
years (2005-2017)*

Molly O'Brien

Advisor: Christopher Merkord

*Using Cerebral Blood Volume and Plasma
Volume to Examine Different Variables*

Emily Waletzko

Advisor: Christopher Merkord

*Data on Visual Center Mutations in
Mice brains*

Logan Spooner

Advisor: Christopher Merkord

*Fish Species and Size Preference Between
Seal Breeds*

Emma Gooding

Advisor: Christopher Merkord

*An Investigation of the Bio-chemical
Constituents and Potential Allelopathic
and Insecticidal Efficacy of Wormwood
(Artemisia absinthium) in Aquaponics*

Isaac Heiser

Advisor: Andrew Marry

*Do painted turtles captured at trapping
"hot spots" reflect the population structure
of the larger turtle population?*

Joseph O'Flanagan and Dylan Leach

Advisor: Donna Stockrahm

*Do Trapping "Hotspots" For Western
Painted Turtles Remain The Same From
Year-To-Year In Clay County, MN?*

**Megan Gates, Casey Coombs, and
Cristiano Ricci**

Advisor: Donna Stockrahm



PRESENTATION LISTINGS

Population control in urban Canada geese in Moorhead, Minnesota: what are the findings after eight Years?

Rachel Rusten and Eli Croaker

Advisor: Donna Stockrahm

Impacts of third-year restoration processes on small mammals in a western tallgrass prairie in Clay County, Minnesota

Sarah Sanderson and Miranda Sater

Advisor: Donna Stockrahm

Impacts of third-year restoration processes on small mammals in a western tallgrass prairie in Clay County, Minnesota

Miranda Sater, Sarah Sanderson, Rachel Rusten, Dylan Leach, and Breanna Huynh

Advisor: Donna Stockrahm

The Interplay of Politics and Conservation in Costa Rica

Mark Lueders and Timothy Schmiesing

Advisors: Brian Wisenden and Christopher Merkord

Small mammal occurrences captured by game cameras in fertilized versus unfertilized grassland plots

Breanna Huynh and Tiffany Grieger

Advisors: Alison Wallace and Donna Stockrahm

Pollinators of New Zealand

Ethan Gerbig

Advisor: Christopher Merkord

Behavioral Effects of Neuroanatomical Differences in Mice

Anne Holzgrove

Advisor: Christopher Merkord

Woody Encroachment on Bluestem Prairies in Cass County

Rachel Rusten

Advisor: Christopher Merkord

Influenza Occurrences in the United States Since 1997

Chelsey Ranum

Advisor: Christopher Merkord

The frequency of Lyme disease in Minnesota over-time

Devante Delbrune

Advisor: Christopher Merkord

Multivariate Comparison of Fish in McLeod County Lakes

Mark Lueders

Advisor: Christopher Merkord

West Nile Virus Prevalence in the United States

Hannah Demmer

Advisor: Christopher Merkord

*Cortisol Dependent Learning in Zebrafish, *Danio rerio**

Mikaela Hanson and Joseph Clayton

Advisors: Brian Wisenden, Shawn Garrett, and Christopher Merkord

Change in preterm births in Minnesota

Chimaobi Okakpu

Advisor: Christopher Merkord

Minnesota Child Health Insurance Discrepancies Among Demographics

Hayden Swartz

Advisor: Christopher Merkord

*Analysis of *Eidolon helvum* data for Patterns in Virus Seropositivity*

Alison Barkhymer

Advisor: Christopher Merkord

*Population Distribution for the Western Meadowlark (*Sturnella neglecta*) in the Fargo-Moorhead area*

Casey Coombs

Advisor: Christopher Merkord

*Population distribution patterns of Song Sparrow (*Melospiza melodia*) in Minnesota*

Erhiga Ekhamu

Advisor: Christopher Merkord

The Role of Gut Microbiota in the Progression of Pancreatic Cancer

Jenna Wegscheid, Brianna Conner, and Whitney Welder

Advisor: Adam Stocker

Field Verification of Chondroitin Sulfate

Mikaela Hanson and Whitney Shegrud

Advisor: Brian Wisenden

Shoaling Decreases the Risk of Parasitism

Mikaela Hanson and Whitney Shegrud

Advisor: Brian Wisenden

Use of game cameras to document urban and rural animal species in the Fargo (ND)-Moorhead (MN) area

Eberardo Barragan and Evan Carlson

Advisor: Donna Stockrahm

Marine Lab!

Savanna Hohenstein, Stephanie Mongulla, Mikaela Hanson, Gregory Anderson, Philip Larson, and Elias Holte

Advisor: Brian Wisenden

Ecotourism Effects on the Economy, Ecology, and Local Populace of Costa Rica

Nicholas Miller, Breanna Huynh, and Yaa Pokua Osei Sarpong

Advisor: Brian Wisenden

Population patterns of small mammals at varied altitudes in three mountains in southwestern China

Breanna Huynh

Advisor: Christopher Merkord

Analysis of Geese Population and Egg Count at American Crystal Sugar

Brittney Kakac

Advisor: Christopher Merkord

Are The Number of CDC Reported Lyme Disease Cases Increasing in Minnesota?

Christian Shoger

Advisor: Christopher Merkord

Effects of Aspergillus fumigatus exposure on Whole genome DNA methylation in human bronchial epithelium: interpretation of data

Nellie Campbell

Advisor: Sumali Pandey

Environmental factors relating to fossil occurrences of pleistocene mammals

Connor Juelfs

Advisor: Christopher Merkord

Non-invasive Methods of Heart Rate Monitoring of Small Fish

Brittney Kakac

Advisors: Ananda Shastri and Brian Wisenden

Insulin and Physical Activity's Effects on the Brain: The Possible Underlying Mechanism on Alzheimer's Disease

Josie Ova, Korey Lee, Asma Mohammed, and Babylon Alrobaei

Advisor: Adam Stocker

Functional Characteristics and Genomic Sequencing of Antarctic Environmental Isolates

Amanda Kemper

Advisor: Michelle Tigges

Predation of Granular Poison Frogs

Jeffery Stith

Advisor: Christopher Merkord

Markers for Aspergillus fumigatus in Murine in vivo Respiratory Infections

Nicholas Miller

Advisor: Sumali Pandey

Proteomic changes of Sulfolobus islandicus during SIRV2 infection

Daniel Skoglund

Advisor: Christopher Merkord

Identification of Emx2 targets using Shotgun Proteomics: A comparative analysis

Josette Velazquez

Advisors: Adam Stocker and Michelle Tigges

Effect of Nutrient Additions on Vegetation on Prairie Plants

Amina Kovacevic

Advisor: Christopher Merkord

The Effect of Costa Rican Invasive Species on their Environment

Paul Ofstedal and Amina Kovacevic

Advisor: Brian Wisenden

Elucidating the Complimentary Action of Transcription Factors in Brain Area Patterning

Kervens Accilien, Najma Abdullahi, and Caitlyn Schaffer

Advisor: Adam Stocker

Effect of Deoxynivalenol on DNA methylation in human epithelial cells

Whitney Shegrud and Matthew Lindquist

Advisor: Sumali Pandey

AMPK Fluctuations Disrupt TGF- β pathway in Hypoplastic Left Heart Syndrome

Kervens Accilien, Whitney Shegrud, Hannah Demmer, and Josette Velazquez

Advisor: Adam Stocker

The Role of Lactobacillus Strain as a Probiotic and Helicobacter Pylori as a Risk Factor in Pancreatic Cancer

Puja Hamal, Zhila Ghafour, and Lucas Wynne

Advisor: Adam Stocker

Investigating the mycobiome present in the lower respiratory tract of mice

Whitney Welder and Jacob Tesch

Advisor: Sumali Pandey

Parental Germ-Cell DNA Mutation from Environmental Toxicity in Causation of Hypoplastic Left Heart Syndrome

Nikolas Newville and Kiana Ruch

Advisor: Adam Stocker

The Effect of EMX2 Deletion on Area patterning with new Foxg1-IRES-Cre Technology

Puja Hamal and Josette Velazquez

Advisor: Adam Stocker



PRESENTATION LISTINGS

The Biological Effect of Endocrine Disrupting Chemicals (EDCs) on Aquatic Vertebrates

Casey Johnshoy, Akira Shastri, Levi Tiemann, Spencer Haag, Alhaji Njai, and Garrett Hennen

Advisors: Patricia Wisenden and Ellen Brisch

The Biological Effect of Endocrine Disrupting Chemicals (EDCs) on Aquatic Vertebrates

Casey Johnshoy and Levi Tiemann

Advisor: Patricia Wisenden

Plant Tissue Cultures

Laura Wessberg

Advisor: Chris Chastain

Organ Systems: A 5E Model Science Lesson

Gregory Anderson

Advisor: Alison Wallace

Thalamic and Behavioural Repercussions Following Cortex-Specific Deletion of Emx2

Stefanie Akhidenor, Akira Shastri, Eberardo Barragan, Devante Delbrune, and Lychen Ben

Advisor: Adam Stocker

Sensory Map Transfer to the Neocortex Relies on Pre-targeted Ordering of Thalamic Axons

Stefanie Akhidenor and Akira Shastri

Advisor: Adam Stocker

Using functional genomics for exploring the role of the PPK regulatory protein in C4 photosynthesis

Chaney Jambor and Alexandra Macgregor

Advisor: Chris Chastain

Assessing activation state of PPK, a C4 photosynthesis enzyme, in maize leaf bundle-sheath cell chloroplasts

Alexandra Macgregor, Chaney Jambor, and Ashley Rezachek

Advisor: Chris Chastain

Antibiotic-Producing Bacteria Found In Soil

Katarina Domitrovich

Advisor: Sumali Pandey

A literature review of cross-sectional surveys assessing the Knowledge, Attitudes and Practices related to antibiotic resistance amongst people

Michael Reeves and Oluwatumininu Anwoju

Advisor: Sumali Pandey

Analysis of A. fumigatus induced methylation using the RnBeads software in R

Jesse Nelson

Advisor: Christopher Merkord

Deoxynivalenol (DON) Induced Change in IgA Concentration Through Intranasal Exposure

Jesse Nelson

Advisor: Sumali Pandey

Biology: A 5E Model Science Lesson

Emmelyn King

Advisor: Alison Wallace

Proinflammatory response in human epithelial cells exposed to Deoxynivalenol

Matthew Vene and Mandi Markwardt

Advisor: Sumali Pandey

BUSINESS

Olympus Corporation Fraud

Laura Benson

Advisor: Sheri Erickson

Bernard Madoff's Ponzi Scheme

Kristi Engquist

Advisor: Sheri Erickson

ZZZZ Best

Heather Strese

Advisor: Sheri Erickson

Lehman Brothers Fraud

Tina Scheidecker

Advisor: Sheri Erickson

GAAP violation of Dollar General and IBM

Naimanjin Erdenebileg

Advisor: Sheri Erickson

HealthSouth: Inside Corporate Fraud

Kevin Laluyan

Advisor: Sheri Erickson

Earnings Restatements and Crisis Communication Patterns

Jenna Kalthoff

Advisor: Thomas Hanson

Fraud at Waste Management

Joshua Young

Advisor: Sheri Erickson

Risk Parity Portfolio Strategies

Cameron DuBore

Advisor: Thomas Hanson

U.S. Tax Reform and The Economic Growth

Mona Barhouma

Advisor: Kim Mollberg

CHEMISTRY

Synthesis of C₄-Chlorination Analogs of Antipyrine

Bishnu Chhantyal

Advisor: Craig Jasperse

Evaluating dissolved organic matter profiles of the Red River between winter and spring

Andrea Reynolds

Advisor: Michelle Tigges

Adaptations of non-pigmented Antarctic bacteria subjected to UV radiation

Andrea Reynolds and Shine Erdene Davaakhuu

Advisor: Michelle Tigges

Synthesis of N₄-Amide-Substituted Analogs

Ansumana Sanyang

Advisor: Craig Jasperse

Analysis of Membrane Lipid and Protein Composition of Antarctic Bacteria CG9_1 Grown at Different Temperatures

Kervens Accilien, Ansumana Sanyang, and Sara Gebre

Advisor: Michelle Tigges

Melting and Dissolving: A 5E Model Science Lesson

Christian Larson

Advisor: Alison Wallace

Chemical Detection of Endocrine Disrupting Compounds in Red River Water 2018

Casey Johnshoy, Nikolas Newville, Sara Gebre, Arsema Merid Mekonnen, and Jenna Wegscheid

Advisor: Shawn Garrett

Inhibition of pigmentation in antractic bacteria isolate cg 9_6 cells via mutagenesis

Chimaobi Okakpu, Matthew Lindquist, and Stefanie Akhidenor

Advisor: Michelle Tigges

Biofilm production in Antarctic bacteria under different stressors

Victoria Gilbert and Nellie Campbell

Advisor: Michelle Tigges

COMMUNICATION AND JOURNALISM

The Correlation Between Sports and Drug Use

Miguel Ybarra, Saad Janjua, Nickolas Kuzas, Alexander Swanson, and John Miller

Advisor: Jason Anderson

Swipe Right: The Role of Sexes and Motivational Differences in Tinder Participation

Ellie Krupich, Rachel Barrett, Caitlin Fisher, Rachel LaForce, and Justin Duinck

Advisor: Jason Anderson

Perception of coaching style: A self report study of positively vs. negatively framed feedback

Thomas Mulvaney and Demetrius Carr

Advisor: Jason Anderson

Relational Framing Theory and President Donald Trump's Tweets

Chelsie Beyl, Kaitlyn Nolte, Spencer Imsande, Mindi Baker, and Christina Overmoe

Advisor: Jason Anderson

Social Media and Anxiety

Trevor Larson

Advisor: Jason Anderson

COMPUTER SCIENCE AND INFORMATION SYSTEMS

Content Management Systems: Data Security

Mariah Kinneberg and Annika Greaney

Advisor: Yurii Boreisha

Object Detection Using TensorFlow

Suman Koirala and Manish Dhakal

Advisor: Yurii Boreisha

Artificial Intelligence in Gaming

Mark Arinaitwe, Nitesh Shankat, and Oluwadamilola Ajayi

Advisor: Yurii Boreisha

Adopting SCAN Methodology to Rearrange Images for More Efficient Lossless Compression

Charles Crandall

Advisor: Yurii Boreisha

Machine Learning: Comparison, Evaluation, Implementation and testing of facial recognition system Techniques

Melat Tekie and Dawit Tekie

Advisor: Yurii Boreisha



PRESENTATION LISTINGS

Building Artificial Intelligence(AI) Assistant using Python

Priyanka Aryal, Suman Pradhan, and Ritesh K.C.

Advisor: Yurii Boreisha

Cryptocurrency Performance Prediction Using Convolutional Neural Networks

Michael Hajostek

Advisor: Yurii Boreisha

Analyzing the Benefits of RESTful Architecture over WS- in Utilizing a Web API for a Mobile Application*

HouPha Vang, Michael Drawz, and Theodore Altobel

Advisor: Yurii Boreisha

Digitalization of Hendrix Clinic

Fuki Musa, Chidubem Enebechi, and Kelsie Bork

Advisor: Yurii Boreisha

Development of an Agricultural Decision Aid Incorporating Geographic Information Systems and Web Mapping

Dustin Ernst

Advisor: Yurii Boreisha

Python Blockchain Analysis

Edomias Kassa and Tochi Opara

Advisor: Yurii Boreisha

Video Game QA Testing

Christopher Leonard

Advisor: Yurii Boreisha

Internet of Things @ Home Automation

Ashutosh Sigdel, Prerak Silwal, and Saurav GC

Advisor: Yurii Boreisha

Steganography with JavaScript

Dakota Parks, Zakaria Lambert, and Dakota Larson

Advisor: Yurii Boreisha

COUNSELING AND STUDENT AFFAIRS

Mental Health Awareness for College Athletics

Andrea Hanson

Advisor: Ken Messina

Worry Warriors: A School-Based Counseling Small Group for Elementary-Aged Children with Anxiety

Emily Ojanen

Advisor: Taryn Akgul

DIVERSITY AND INCLUSION

Diversity and Inclusion: An Exclusive Model?

Katelyn Weber and Kari Barnick

Advisor: Olivia Matthews

The Impact of Diversity and Inclusion

Brianna Bradley, Emily King, and Araceli Spottedthunder

Advisor: Olivia Matthews

PID: What they didn't cover

Hannah Andrusko-Starks, Kiana Kent, and Katherine Krotzer

Advisor: Olivia Matthews

Diversity in Organizations

Annika Sidhu

Advisor: Olivia Matthews

The Importance of Intersectionality at Academic Conferences

William Lewandowski, Kari Barnick, Dylin Van Elsberg, and Jayce Branden

Advisor: Olivia Matthews

EDUCATION

The Importance of Reading Aloud to Young Children

Shelby Mack

Advisor: Sung Ok Park

Reading Development: Cultures Perspective

McKayla Schindler and Khadija Awes

Advisor: Sung Ok Park

How Teachers Effectivly Monitor Childrens Play

Crystal Allen and Eleanor Biederman

Advisor: Sung Ok Park

Why Messy Play is Important

Tessa Halvorson

Advisor: Sung Ok Park

Emergent Writing Progression in a Three-Year-Old Child

Madison Radel

Advisor: Marci Glessner

Policy Analysis of Wisconsin's Nondiscrimination Guidelines for Athletics

Emily Block

Advisor: Abigail Bremer

The Impact of Title I Schools Today

Chelby Ward

Advisor: Keri DeSutter

Technology and Multimedia in Early Childhood Education C

Sydney Dahlgren, Alyssa Fredrick, and Jena Bellefeuille

Advisor: Sung Ok Park

Sexual Education in Minnesota: A Policy Analysis of MN State Statute 121A.23

Emmelyn King

Advisor: Abigail Bremer

Special Education Curriculum

Haley Bradford and Kayleigh Knutson

Advisor: Sung Ok Park

Creating A Caring Community of Learners

Rachel Buttweiler and Faith Mergen

Advisor: Sung Ok Park

The Importance of Play

Kassandra Scherping and Madison Abar

Advisor: Sung Ok Park

Properties of Matter: A 5E Model Science Lesson

Tyler Eidsness

Advisor: Alison Wallace

Assistive Technology in Special Education

Breanna Sittig, Josie Kubiak, and Katelyn Stall

Advisor: Sung Ok Park

Burnout Rates in Special Education

Olivia Smith and Marisa Kittleson

Advisor: Sung Ok Park

Brain Development in Early Childhood

Stacy Opp

Advisor: Sung Ok Park

Wave properties

Joel Myhre

Advisor: Alison Wallace

ECONOMICS, LAW AND POLITICS

Disentangling the motivation for consuming self-improvement products: An analysis of guilt

Melat Assefa

Advisor: Tonya Hansen

Contraceptive use by young American women: The untold story

Samantha Carlson

Advisors: Tonya Hansen and Oscar Flores-Ibarra

Child Abuse and Religion

Kira Dodson

Advisor: Barbara Headrick

Metadata Collection Under the USA PATRIOT ACT and USA FREEDOM ACT

Marie Ziegelski

Advisor: Barbara Headrick

The Affordable Care Act Examined

Madeline Stoker

Advisor: Barbara Headrick

Prisoner Access to Educational Opportunities in Minnesota Penal System

Kalen Day

Advisor: Barbara Headrick

Are current healthcare systems working? A comparison of alternative solutions to a common problem

Antonia Hylton

Advisor: Tonya Hansen

Border wall

Jason Peterson

Advisor: Barbara Headrick

The Indian Caste System: Modernization and Significance in Contemporary Indian Politics

Rahil Pereira

Advisor: Paul Kramer

Clean Power Plan

Grant Geffre

Advisor: Barbara Headrick

Deferred Action for Childhood Arrivals

Khalid Nakelly

Advisor: Barbara Headrick

How valuable is higher education? The impact of an educated population on economic indicators

Trent Tucker

Advisor: Tonya Hansen

The opioid epidemic: The correlation between opioid prescription rates and drug overdose deaths

Caio Tiosso

Advisor: Tonya Hansen

Deferred Action for Childhood Arrivals

Carly Syverson

Advisor: Barbara Headrick

Evaluating impacts of public transit on employment levels in urban areas

Zachary Lund

Advisor: Tonya Hansen

An Examination of a Travel Ban

Conner Enlow

Advisor: Barbara Headrick



PRESENTATION LISTINGS

The Mexico-USA Border Wall

Ahmed Issa

Advisor: Barbara Headrick

Wage and Employment Impacts of Immigration on Native-Born Americans

Michael Aaron

Advisor: Tonya Hansen

Males and undergraduate education: The rest of the story

Joshua Noennig

Advisors: Tonya Hansen and Oscar Flores-Ibarra

Airbnb in a new economy: Insights from Minneapolis

Paul Tharalson

Advisor: Tonya Hansen

Travel Ban Policy

Ojochugbo Agamah

Advisor: Barbara Headrick

H.R.2494 - Eliminate, Neutralize, and Disrupt Wildlife Trafficking Act of 2016

Michael Richard

Advisor: Barbara Headrick

H.R. 4474: Public Transportation Security

Adam Schick

Advisor: Barbara Headrick

The Dickey Amendment

Zoe Roelfsema-Hummel

Advisor: Barbara Headrick

Policy Research of Marijuana

Mohamed Gardi

Advisor: Barbara Headrick

An economic analysis of the college "premium"

Derek Christianson

Advisor: Tonya Hansen

DACA

Alaura Williams

Advisor: Barbara Headrick

Drawing the Lines

Adrian Tabares

Advisor: Barbara Headrick

Every Student Succeeds Act

William Hagen

Advisor: Barbara Headrick

Interdict Act

Austin Southers

Advisor: Barbara Headrick

Female Contraceptives in the Affordable Care Act

Elle Jorgenson

Advisor: Barbara Headrick

Border Wall Policy

Thomas Manninen

Advisor: Barbara Headrick

Origins of DACA

Faisal Suleiman

Advisor: Barbara Headrick

Federal Education Policy in the United States

Emily Hintz

Advisor: Barbara Headrick

Buffer-zones Law

Paul Wicht

Advisor: Barbara Headrick

U.S foreign policy toward China

Deeq Awnur

Advisor: Barbara Headrick

Concealed Carry in Fargo-Moorhead

Daniel Andersen

Advisor: Barbara Headrick

Economic health by state: Does politics matter?

Michael Dorso

Advisor: Tonya Hansen

Background Checks for Purchasing Firearms

John Thoemke

Advisor: Barbara Headrick

Population Growth and Labor Supply. The Nigerian Economy towards 2050

Arnold Ikpat

Advisor: Tonya Hansen

ENGLISH

Opportunities and Obstacles: A Phenomenological Examination of Attitudes Towards Multilingualism

Linnea Bader

Advisor: Elizabeth Kirchoff

Tata Mola

Mbella Nganje

Advisor: Brian Smith

GRADUATE STUDIES

Using Mindfulness and Yoga with First Graders to Increase Engagement

Stacy Meester

Advisors: Lisa Stewart and Peg Potter

Bilingual early intervention: Are speech-language pathologists prepared?

Leslie Ugoretz

Advisor: Nancy Paul

The 2017 Tax Revision

Emma Swenson

Advisor: Mohamed Elbannan

HEALTH AND PHYSICAL EDUCATION

A Literature Review: Non-Contact Anterior Cruciate Ligament Injury

Patrick Dilly

Advisors: Jay Albrecht and Dawn Hammerschmidt

A Literature Review: Youth Head Trauma Involving Concussions

Cody Freng

Advisors: Jay Albrecht and Dawn Hammerschmidt

A Literature Review: Shoulder Impingement Syndrome

Serena Roehl

Advisors: Jay Albrecht and Dawn Hammerschmidt

A Literature Review: Single Sport Specialization

Jae Borgen

Advisors: Jay Albrecht and Dawn Hammerschmidt

A Literature Review: Neck Strength in Athletes

Zachery Stene

Advisors: Jay Albrecht and Dawn Hammerschmidt

A Literature Review: The Effectiveness of RICE

Ricquel Ramsbottom

Advisors: Jay Albrecht and Dawn Hammerschmidt

Bacterial, Viral and Fungal Infections in the Athlete: A Literature Review

Sydney Joos

Advisors: Jay Albrecht and Dawn Hammerschmidt

Musculoskeletal Disorders: A Closer Look at Spinal Deformities, Bursitis, & Tendonitis

Ashley Breitzman

Advisor: Wendy Frappier

MARKETING AND COMMUNICATIONS

Picture Perfect: The effects of social media on self-esteem and body image

Ashlee Hilzendeger, Grace Schuler, Jon Lehman, and Sophie Wood

Advisor: Jason Anderson

Relationship satisfaction and partner similarity: A Comparison Between The Big Five and The Myers Briggs Theory

Theodora Amuah

Advisor: Jason Anderson

Marketing Plan for the Nonprofit Organization

Brandin Haaland

Advisor: Ruth Lumb

A Dual Process of Decision-making in Our Choices: The Role of Cognition and Emotion in Everyday Life

McKenzie Zacha and Kiley Fee

Advisor: Wooyang Kim

Business Plan

Ephrata Haile

Advisors: Peter Geib and Jane Pettinger

AWP Conference Conclusions

Laura Grimm, Anna Landsverk, Cameron Schulz, and Mikaila Norman

Advisor: Nathan Rundquist

MATHEMATICS

Predictive Policing: Using Math to Predict and Prevent Crimes

Jacob Pawlowski

Advisor: Ashok Aryal

Positivity and Slope Limiters for Lax-Wendroff Discontinuous Galerkin Methods

Stefan Nelson

Advisors: Adam Goyt and Justin James

Freize Patterns and Translation Symmetry in Euclidean Geometry

Alicia Swenson, Samantha Swenson, and Zachery Stene

Advisor: Justin James

MEDIA ARTS AND DESIGN

Godzilla: The Tragic Terror

Vincent Dorazio

Advisor: Anthony Adah

Architecture Throughout Japanese History Displayed Through Cinema

Kali Shaw

Advisor: Anthony Adah



PRESENTATION LISTINGS

Sami Representation in Cinema

Alexander Wiezorek

Advisor: Anthony Adah

Nollywood Cinema's Representation of Women

Luke Steichen

Advisor: Anthony Adah

Graphic Design Trends in History and Its Impact on Website Layouts

Tara Kennedy

Advisor: Alexandria Fogarty

The Brazilian Jeitinho as a Form to Represent the National Culture in Movies

Rodrigo Costa

Advisor: Anthony Adah

Values in the Wuxia Films of Tsui Hark

Dominique Trowbridge

Advisor: Anthony Adah

Maiden or the Motherhood: Female Independence in Mexican Cinema

Regan Meyer

Advisor: Anthony Adah

I'll Have What She's Having

Brianna Overstreet, Vincent Dorazio, Alexander Wiezorek, Sierra Moeykens, and Karli Ring

Advisor: Anthony Adah

My Girlfriend's Führer

Sierra Obioha, Zoe Esser, Madeline Malone, Laura Alexander, and Finn Harrison

Advisor: Anthony Adah

Test Face

Kali Shaw, Ryan Green, Cody Greff, Alex Samek, Chancey Plagman, and Luke Steichen

Advisor: Anthony Adah

Buddies and Bad Guys: Ideologically Resolving 1980's Problems with Action

Aaron Beck

Advisor: Anthony Adah

Cinema Novo and its Influence from French New Wave Cinema

Chancey Plagman

Advisor: Anthony Adah

Lost Identity in American Indian Cinema

Malia Bantz

Advisor: Anthony Adah

A Study into Women's Role in South Korean Cinema

Benjamin Ledinsky

Advisor: Anthony Adah

Gorillaz and the Liberation of Meaning

Zachary Howatt

Advisor: Anthony Adah

GODZILLA! The Topicality of the Godzilla Franchise From 1954 to Today

Samuel Lacasse

Advisor: Anthony Adah

Portrayal of Communication Disorders and the Motion Picture Industry?

Sarah Hagler

Advisor: Anthony Adah

Christopher Doyle - Chinese Cinema

Justus Carlson

Advisor: Anthony Adah

Getting Lucky: a Gangster/Romantic Comedy Hybrid

Sewon Hwang, Dillan Schmiedt, Avery Thaler, Samantha Smoley, and Peyton Krump

Advisor: Anthony Adah

Understanding Genre: Applying Gangster Narrative in 'Treadface'

Ryan Moorman, Aaron Beck, Jordan Kilian, Tyler Donnay, and Robin Gerke

Advisor: Anthony Adah

NURSING AND HEALTHCARE LEADERSHIP

Aging In Correctional Custody: Policies and Ethical Issues

Auna Lee, Diane Poppenga, Caitlin McArthur, and Lindsay Brower

Advisor: Jitendra Singh

Health Information Technology And Efforts To Improve Quality Of Care

Matida Manneh, Ngyma Sherpa, Abigail Yeboah, and Laura Kjolhaug

Advisor: Jitendra Singh

Evaluating Readiness of Clinical and Health Administration Students towards Interprofessional Education

Tony Santos and Justin Boldt

Advisor: Jitendra Singh

Quality Improvements

Justin Boldt and Tony Santos

Advisor: Jitendra Singh

PHILOSOPHY

Dr. Yancy's Life and Death Decision: A Case Study

Jessica Dallman

Advisor: Marilea Bramer

PHYSICS AND ASTRONOMY

Examining the 2017 Eclipse

Andrew Louwagie Gordon

Advisor: Juan Cabanela

*Examining Two Methods of Recording
Electrocardiograms*

**Andrew Louwagie Gordon, Luke
Himmelspach, and Samuel Holen**

Advisors: Ananda Shastri and Linda
Winkler

*Determining the Heart's Electric Dipole
Moment*

Jane Glanzer and Laura Maixner

Advisors: Ananda Shastri and Linda
Winkler

*Calculating Galactic Distances Through
Supernovae Light Curve Analysis*

Jane Glanzer

Advisor: Matthew Craig

Sharing the Universe

Boston Heaford and Melissa Foley

Advisor: Sara Schultz

NMR

Sakurako Tani and Salim Abdou Thomas

Advisor: Ananda Shastri

*The Yarkovsky Effect: Modeling the Effect
of Solar Radiation on Asteroid Orbits*

Andrew Block

Advisor: Matthew Craig

*Asteroid Detection and Photometry in
Python*

Andrew Block

Advisor: Juan Cabanela

Zebrafish ECG Signal Amplification

Paige Meyer

Advisor: Ananda Shastri

Sodium NMR

Salim Abdou Thomas and Sakurako Tani

Advisor: Ananda Shastri

Variable Stars in the Field of TrES-3b

Erin Aadland

Advisor: Matthew Craig

*VERITAS Observatory's Ring Artifacts at
Low Elevations*

Erin Aadland

Advisor: Juan Cabanela

*BinCat: a Catalog of Nearby Binary Stars
with Tools for Calculating Light-Leakage
for Direct Imaging Missions*

Elias Holte

Advisor: Matthew Craig

*Reaching Wider Audiences through
Planetariums*

Elizabeth Dougherty

Advisor: Sara Schultz

PSYCHOLOGY

*Reducing Anxiety in a 12-Year-Old Boy
Using Coping Cat Cognitive-Behavioral
Strategies*

Whitney Balmer

Advisors: Lisa Stewart and Peg Potter

*Increasing Hand-Raising In The
Classroom Using Good Behavior Game
With Mystery Motivator*

Andrea Mayer

Advisors: Peg Potter and Mary Dosch

*Motivational Self-Graphing to Increase
Oral Reading Fluency*

Bailey Hansen

Advisors: Mary Dosch and Peg Potter

*Using a PRESS Repeated Reading
Intervention to Increase the Oral Reading
Fluency of Three Fifth Grade Students*

Jenna Jacobson

Advisor: Lisa Stewart

*The Effects of Male Fitness Related Media
on the Body Dissatisfaction of Females*

Britni Joubert

Advisor: Gary Nickell

Personality Types and Attractiveness

Katelyn Weber

Advisor: Christine Malone

*The Relationship between Helping
Attitudes and Personality Factors*

Emily Pekas and Marissa Hudoba

Advisor: Gary Nickell

*Performance on Stereotypical Male and
Female Video Games as a Function of
Gender and Gender Role Identification*

Ivana Arrington

Advisor: Rochelle Bergstrom

*Grade Retention: Exploring the Prevalence
of the Topic in Course Content and the
Attitudes of Preservice Teachers and
Teacher Educators*

Jenny Pearson

Advisor: Peg Potter

*Changes in High Frequency Spelling
Vocabulary*

Grant Fodness

Advisor: Peg Potter



PRESENTATION LISTINGS

Availability and Desire for Platonic Touch in Men

Emily Gault and Monica Vega

Advisor: Sarah Edwards

The Moderating Influence of Openness to Experience on Support for Political Candidates

Kory Engelstad

Advisor: Rochelle Bergstrom

How PTSD symptoms Impact Post-Partum Functioning

Shundiin Green

Advisor: Sarah Edwards

Personality and Task Completion

Brianna Nelson

Advisor: Christine Malone

Perceived Intelligence of Persons Who Stutter: Does Gender Matter?

Madison Lynch

Advisor: Rochelle Bergstrom

Perceived Intelligence of Persons Who Stutter: Do Different Modes of Presentation Impact State Anxiety?

Madison Lynch

Advisor: Elizabeth Nawrot

Double Take: Creativity as Predictors of Convergent and Divergent Thinking and Figural Reversal Ability Rates

Josie Ova

Advisor: Rochelle Bergstrom

SOCIOLOGY AND CRIMINAL JUSTICE

Rape Culture throughout the World

Katelyn Weber

Advisor: Karen Branden

SPEECH LANGUAGE AND HEARING SCIENCES

Experiences of College Students with Hearing Loss: Qualitative Interviews

Alexandra Heisler, Rebecca Paul, and Anna Koepp

Advisors: Nancy Paul and Mary Drake

Theory of Mind Interventions with Children Who are Deaf or Hard of Hearing

Jenna Frink

Advisor: Elaine Pyle

Clinical Fellowship Year in the Field of Speech-Language Pathology

Ann Siemon

Advisor: Kris Vossler

Evidence Based Interventions for Managing Challenging Behaviors for Children with Autism Spectrum Disorder

Hannah Hogenson

Advisor: Elaine Pyle

Connection Between Radiation Treatment For Head and Neck Cancer and Dysphagia

Kara Morrow

Advisor: Nancy Paul

Ankyloglossia: Potential Feeding Challenges for Infants with Ankyloglossia

Tessa Rasmussen

Advisor: Elaine Pyle

The Use of Animal Assisted Therapy for Children with Autism Spectrum Disorder

Brooke Mickelson

Advisor: Kris Vossler

Effectiveness of Literacy Intervention Provided by School-Based SLPs: Roles and Impressions on Literacy Teams

Ashley Alvarado

Advisor: Kris Vossler

The Importance and Role of Advocacy for Early Intervention Services

Emiko Smith

Advisor: Elaine Pyle

Assessment Procedures and Instrumentation in Pediatric Dysphagia

Angela Bowman

Advisor: Nancy Paul

Implementation of AAC in Educational Settings

Paige Schiller

Advisor: Kris Vossler

AAC within Early Intervention Services: Future Considerations

Audra Lea

Advisor: Kris Vossler

Retention and Regression of Cognitive-Communicative Abilities in Dementia

Kelsey Giesbrecht

Advisor: Nancy Paul

A Comparison of Three Swallowing Screening Tools for Adults with Neurological Disorders

Courtney Erickson

Advisor: Nancy Paul

Normative Variables of Speech Sound Acquisition

Dena Mekalson

Advisor: Elaine Pyle

Selective Mutism A Review of the Literature

Darriean Stokke

Advisor: Kris Vossler

Aquatic Therapy for Individuals with Autism

Erin Ulmer

Advisor: Rachel Stotts

Parents Low Socioeconomic Status Affects Interactions with Their Children

Marissa Philips, Annika Stotts, Kylie MacDonald, and Abby Randall

Advisor: Sung Ok Park

Speech-Language Pathology Interventions in Promoting Success in Post-Secondary Education Following Traumatic Brain Injury

Zoe Weltzin

Advisor: Nancy Paul

Factors related to successful implementation of an AAC device for an individual with autism

Michaela Worms

Advisor: Kris Vossler

The Role of the Speech-Language Pathologist in the Neonatal Intensive Care Unit

Hannah Anderson

Advisor: Nancy Paul

Intervention strategies and psychosocial factors for a client with Broca's aphasia and apraxia of speech: A case study

Erin Olson

Advisor: Nancy Paul

Personality type and Speech-Language Pathologists' Employment Setting: Is There a Pattern?

Ashley Schurr

Advisor: Kris Vossler

Assistive Listening Devices for Students With Hearing Loss in Primary and Secondary Educational Settings: A Systematic Review

Paige Skinner

Advisors: Nancy Paul, Mary Drake, Travis Dolence, and MariBeth Plankers

A Review of Formal Approaches to Communication Partner Training During Rehabilitation for Individuals with Aphasia

Teresa Parker-Stenzel

Advisor: Elaine Pyle

The Psychosocial Effects of Specific Language Impairment in Childhood, Adolescence, and Early Adulthood

Rebecca Holden

Advisor: Kris Vossler

STUDY ABROAD

A Confluence of Quality: Academic, Cultural, and Personal Growth through Study Abroad

Hunter Ahrens, Emily Dunaisky, and Yvette Ishimwe

Advisor: Janet Brandau

VISUAL ARTS

The Ethical Book: The Impact of Book Making on the Environment

Tabitha Rivera

Advisor: Anna Arnar

Binding Books: In the Post-Gutenberg Age

Bryanna Ferguson

Advisor: Anna Arnar

Book Design and Cultural Values of the Book

Megan VanderMeulen

Advisor: Anna Arnar

Eggs, Flour, Cereal: The Ethics of Marginalia

Mackenzie Landry

Advisor: Anna Arnar

Brazilian Cinema and Poverty, the Tie that Binds

Benjamin Downing

Advisor: Anthony Adah

WOMEN'S STUDIES

A new way to see the world

Bahati Muhiya Numbi

Advisor: Dana Bisignani



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