

Seven Rivers
Undegraduate
Research Symposium

QUICK REFERENCE

*Friday, November 10, 2017
Viterbo University*



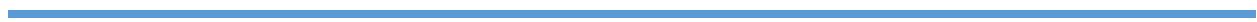
Seven Rivers Undergraduate Research Symposium

*Welcome to the 2017
Seven Rivers Undergraduate Research Symposium!*

This Quick Reference is designed to help you navigate and make the most of today's Symposium. In addition to the materials found here, you can find the complete Seven Rivers Abstract Book, Award Evaluation Criteria, Lists of Student Presenters and much more on our website: www.viterbo.edu/sevenrivers.

If you have questions at any point throughout the day, please come to the Registration Table in the Fine Arts Center Atrium or approach a Student Ambassador (with the green nametags).

Thank you and we hope you enjoy today's Symposium!



Symposium Schedule

- 9:00-10:10am** **Registration** (*Fine Arts Center Atrium*)
- Light refreshments will be provided.
 - Research and creative works posters may be set up at this time.
- 10:10am-11:20am** **Welcome and Keynote Address** (*Fine Arts Center Main Theatre*)
- *Welcome*, Vice President of Student Affairs Rick Trietley
 - *Keynote Welcome*, Michelle Pinzl, Asst Prof: Spanish & Interpreting
 - *Speaker Introduction*, Ariane Lydon, Interpreting Studies '17
 - *Keynote address: Dr. Erik Camayd-Freixas*
 - "Word Wars: Propaganda vs. Critical Thinking"
 - *Closing and Event Reminders*, Colin Burns-Gilbert, Integrated Learning and Programs Coordinator
- 11:20am-12noon** **Break & Distribution of Sack Lunches in the Fine Arts Center (FAC)**
- ** Lunch is provided for registered participants only ****
- Seating is available in the Fine Arts Center Main Theatre Lobby, the Reinhart Center Boardroom, and the Nursing Center First Floor Foyer.
 - Research posters available for viewing in the Reinhart Center Boardroom, Main Theatre Lobby, & Nursing Center Foyer.
- 12noon-2:00pm** **Oral Presentations** (*Reinhart Center and School of Nursing Building*)
- Presentations consist of a 10-12 minute talk followed by 2-3 minutes for questions. There will be a 5-minute break between presentations.
 - Quick References are available in the Fine Arts Atrium; the Alphabetical Listing of Presenters, Abstract Book, and Assessment Criteria are available online at www.viterbo.edu/sevenrivers.
- 2:00-4:00pm** **Poster Sessions** (*Reinhart Center Boardroom, Fine Arts Center Main Theatre Lobby, School of Nursing First Floor Foyer and Room 195*)
- Research and creative works posters will be staffed by student researcher(s).
 - Odd-numbered posters will be staffed for the first hour and even-numbered posters will be staffed for the second hour.
- 4:00-4:30pm** **Awards Reception and Closing** (*Fine Arts Center Main Theatre Lobby*)
- Join us for cake, punch, awards, and some relaxed time for socializing.



Seven Rivers Undergraduate Research Symposium

Lunch Locations

*While you are free to eat your lunch wherever you like,
the following spaces have been set aside for you
(see the campus map on the back page):*

Fine Arts Center Main Theatre Lobby

Reinhart Center Board Room

Nursing Center First Floor Foyer

*Honors Program Lunch with Dr. Erik Camayd-Freixas:
Fine Arts Center Hospitality Suite (RSVP required)*

*You are also encouraged to peruse the research posters set up in the
Reinhart Center Boardroom, the Fine Arts Center Lobby, and the
School of Nursing First Floor Foyer. Please note posters in School of
Nursing Room 195 will be set up during the lunch period.
Please approach a Student Ambassador (with the green nametags)
if you have any questions.*

<u>Presentation Location</u>	<u>Type</u>	<u>Discipline</u>	<u>Institution</u>	<u>First Name</u>	<u>Last Name</u>
1pm in Nursing Center 104	Oral	Psychology	UW-Eau Claire	Chris	Acton
#9 in Reinhart Center Boardroom	Poster	Biology	UW-Platteville	Benjamin	Ambrosini
#49 in Nursing Center 195	Poster	Psychology	University of St Thomas	Mosope	Ani
#12 in Reinhart Center Boardroom	Poster	Biology	Viterbo University	Aubrey	Aspen
12noon in Reinhart Center 130	Oral	Biochemistry	St Mary's University	Elizabeth	Atneosen
#37 in Nursing Center 195	Poster	Nutrition	Viterbo University	Sarah	Aubin
#30 in Main Theater Lobby	Poster	Social Work	Viterbo University	Andi	Baecker
#21 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Brielle	Baliff
1:20pm in Reinhart Center 201	Oral	Biology	Viterbo University	Cassandra	Baranczyk
#59 in Nursing Center Foyer	Poster	Creative Writing	Viterbo University	Matthew	Bartels
#25 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Matt	Basten
#41 in Nursing Center 195	Poster	Psychology	University of St Thomas	Katie	Bednartz
12:20pm in Nursing Center 104	Oral	Psychology	UW-Eau Claire	Jared	Berg
12:40pm in Reinhart Center 127	Oral	Biology	St Mary's University	Regina	Bettag
#41 in Nursing Center 195	Poster	Psychology	University of St Thomas	Caroline	Boris
#33 in Nursing Center 195	Poster	Psychology	University of St Thomas	Sabreena	Boyum
#19 in Main Theater Lobby	Poster	Music	Viterbo University	Cameron	Brock
#35 in Nursing Center 195	Poster	Psychology	University of St Thomas	Holly	Brown
#18 in Reinhart Center Boardroom	Poster	Math	UW-Eau Claire	Alice	Ching
1:40pm in Reinhart Center 130	Oral	Math	UW-Eau Claire	Alice	Ching
#4 in Reinhart Center Boardroom	Poster	Biology	UW-La Crosse	Josh	Christensen
12:20pm in Reinhart Center 130	Oral	Biochemistry	St Mary's University	Haley	Colton
1:20pm in Nursing Center 104	Oral	Psychology	Viterbo University	Hannah	Conroy
#10 in Reinhart Center Boardroom	Poster	Biology	Viterbo University	Ryan	Cook
#26 in Main Theater Lobby	Poster	Social Work	Viterbo University	Elisa	Cornejo
#48 in Nursing Center 195	Poster	Business	Viterbo University	Lauren	Cortez
12noon in Nursing Center 104	Oral	Psychology	St Mary's University	Jessica	Cwik

#23 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Paige	Dalbec
1pm in Nursing Center 104	Oral	Psychology	UW-Eau Claire	Rebekah	Damitz
#5 in Reinhart Center Boardroom	Poster	Biology	UW-Platteville	John	Dank
1:40pm in Nursing Center 101	Oral	Music	Viterbo University	Arianna	Day
#39 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Ashley	DeMaio
1:40pm in Reinhart Center 127	Oral	Env. Chemistry	UW-La Crosse	Marissa	Despins
#61 in Nursing Center Foyer	Poster	Business	Viterbo University	Alex	Douglas
#27 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Kayla	Eggers
1:20pm in Reinhart Center 127	Oral	Biology	Edgewood College	Dominic	Egizi
12:40pm in Reinhart Center 130	Oral	Biochemistry	St Mary's University	Madaline	Eichers
#32 in Main Theater Lobby	Poster	Criminal Justice	Viterbo University	Hannah	Erickson
1:20pm in Reinhart Center 130	Oral	Biochemistry	Viterbo University	Kyle	Ernzen
#17 in Reinhart Center Boardroom	Poster	Nutrition	Viterbo University	Patricia	Esparza
12:40pm in Nursing Center 104	Oral	Political Science	UW-Eau Claire	Mirella	Espino
#2 in Reinhart Center Boardroom	Poster	Biology	St. Mary's University	Katherine	Ethen
#41 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Clarissa	Filetti
#22 in Main Theater Lobby	Poster	Social Work	Viterbo University	Paul	Forrester
#42 in Nursing Center 195	Poster	Pyschology	UW-Eau Claire	Hannah	Frembgen
#24 in Main Theater Lobby	Poster	Social Work	Viterbo University	Katelyn	Gilman
#26 in Main Theater Lobby	Poster	Social Work	Viterbo University	Katelyn	Gilman
#18 in Reinhart Center Boardroom	Poster	Math	UW-Eau Claire	Tyler	Gonzales
1:40pm in Reinhart Center 130	Oral	Math	UW-Eau Claire	Tyler	Gonzalez
#45 in Nursing Center 195	Poster	Psychology	University of St Thomas	Megan	Gossfeld
#47 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Megan	Gossfeld
#36 in Nursing Center 195	Poster	Pyschology	UW-La Crosse	Sam	Gowan
#11 in Reinhart Center Boardroom	Poster	Chemistry	Viterbo University	Alissa	Griswold
#31 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Alisssa	Griswold
#50 in Nursing Center 195	Poster	Psychology	UW-La Crosse	Sergio	Guerrero

1pm in Nursing Center 101	Oral	History	Viterbo University	Abigail	Hall
1pm in Reinhart Center 130	Oral	Biochemistry	St. Mary's University	Jeremy	Heinle
#16 in Reinhart Center Boardroom	Poster	Env. Biology	Viterbo University	Erin	Heiting
#23 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	McKenzie	Hemann
#47 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Grace	Hermer
1pm in Reinhart Center 127	Oral	Biology	St Mary's University	Chelsea	Hiltner
#35 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Allison	Hoggarth
12:20pm in Reinhart Center 127	Oral	Biology	St Mary's University	Alexander	Holm
#63 in Main Theater Lobby	Poster	Biology	Viterbo University	Mariah	Johnson
#39 in Nursing Center 195	Poster	Psychology	University of St Thomas	Anika	Johnson
1:20pm in Nursing Center 101	Oral	Service Learning	Viterbo University	Kaitlyn	Juen
#18 in Reinhart Center Boardroom	Poster	Math	UW-Eau Claire	Grant	Keane
1:40pm in Reinhart Center 130	Oral	Math	UW-Eau Claire	Grant	Keane
#20 in Main Theater Lobby	Poster	Social Work	Viterbo University	Cearah	Kjos
#51 in Nursing Center Foyer	Poster	Community	Viterbo University	Jessie	Knapp
#35 in Nursing Center 195	Poster	Pyschology	University of St Thomas	William	Lamers
#30 in Main Theater Lobby	Poster	Social Work	Viterbo University	Lauren	Lammers
#22 in Main Theater Lobby	Poster	Social Work	Viterbo University	Shelby	Lautz
12noon in Reinhart Center 201	Oral	Sustainability	Viterbo University	Shelby	Lautz
#9 in Reinhart Center Boardroom	Poster	Biology	UW-Platteville	Andrew	Lee
#46 in Nursing Center 195	Poster	Psychology	Winona State University	Samantha	Lee
12:20pm in Nursing Center 101	Oral	Sociology	UW-Eau Claire	Zoya	Lefler
1pm in Reinhart Center 127	Oral	Biology	St Mary's University	Mark	Leonard
#34 in Nursing Center 195	Poster	Psychology	St Mary's University	Mia	Lloyd
#47 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Jayna	Lundgren
#18 in Reinhart Center Boardroom	Poster	Math	UW-Eau Claire	Chris	Magyar
1:40pm in Reinhart Center 130	Oral	Math	UW-Eau Claire	Chris	Magyar
#62 in Nursing Center Foyer	Poster	Marketing	Viterbo University	Audrey	Manning

#30 in Main Theater Lobby	Poster	Social Work	Viterbo University	Taylor	Martin
#25 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Talon	McConnell
#52 in Nursing Center Foyer	Poster	Nutrition	Viterbo University	Samuel	McCormick
#53 in Nursing Center Foyer	Poster	Env. Science	Viterbo University	Amanda	McCray
#49 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Warren	Melton
#64 in Main Theater Lobby	Poster	Nutrition	Winona State University	Alexa	Mertens
#33 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Regan	Miller
#57 in Nursing Center Foyer	Poster	Communications	UW-Eau Claire	Caitlin	Miller
#3 in Reinhart Center Boardroom	Poster	Biology	UW-La Crosse	Christian	Montes
#29 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Alyssa	Nilssen
1pm in Reinhart Center 201	Oral				No Presentation
1:40pm in Nursing Center 104	Oral	--			No Presentation
12:20pm in Nursing Center 101	Oral	Sociology	UW-Eau Claire	Saffron	O'Brien
#33 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Emily	Och
#49 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Courtney	Pelissero
#40 in Nursing Center 195	Poster	Psychology	UW-La Crosse	Felipe	Pincheira-Berthelon
#43 in Nursing Center 195	Poster	Health Admin	Viterbo University	Megan	Plummer
12:40pm in Nursing Center 101	Oral	Psychology	St Mary's University	Hanna	Potter
#2 in Reinhart Center Boardroom	Poster	Biology	St. Mary's University	Abigial	Propsom
#34 in Nursing Center 195	Poster	Psychology	St Mary's University	Shawn	Pruitt
#17 in Reinhart Center Boardroom	Poster	Nutrition	Viterbo University	Hannah	Reedy
#1 in Reinhart Center Boardroom	Poster	Biology	Edgewood College	Ashley	Reeson
12:40pm in Reinhart Center 201	Oral	Math	UW-La Crosse	Hunter	Rehm
12:20pm in Reinhart Center 201	Oral	Env. Ethics	Viterbo University	Kylie	Reising
#55 in Nursing Center Foyer	Poster	Nutrition	Viterbo University	Angela	Riederer
12:20pm in Nursing Center 101	Oral	Sociology	UW-Eau Claire	Ciara	Riley
#51 in Nursing Center Foyer	Poster	Community	Viterbo University	Alyse	Ripp
#26 in Main Theater Lobby	Poster	Social Work	Viterbo University	Angela	Rodriguez

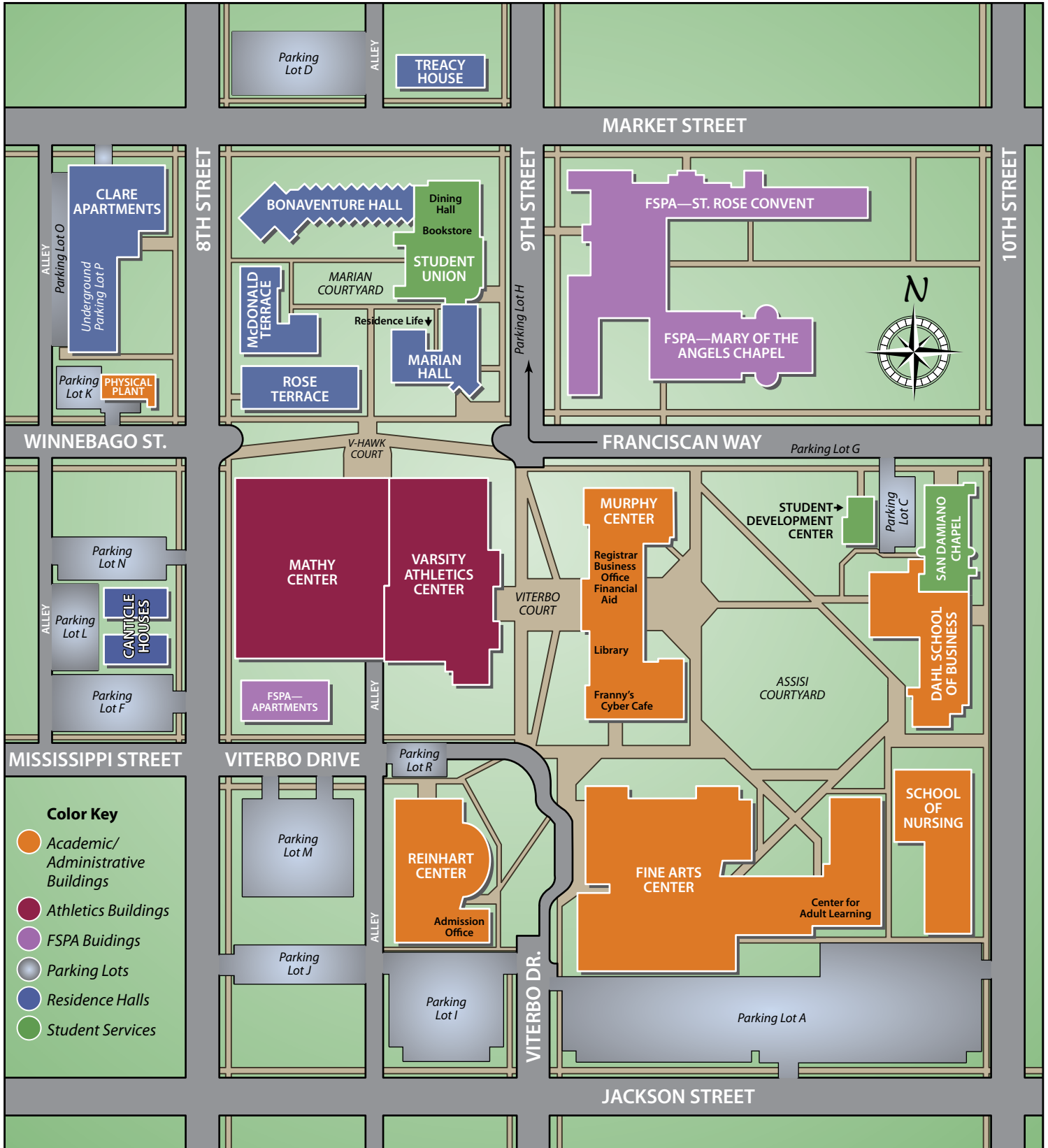
1:40pm in Reinhart Center 127	Oral	Env. Chemistry	UW-La Crosse	Phoenix	Rogers
#44 in Nursing Center 195	Poster	Pyschology	Winona State University	Ethan	Rowan McGlasson
12noon in Nursing Center 101	Oral	Psychology	St Mary's University	Mandy	Sailor
12noon in Reinhart Center 127	Oral	Biochemistry	St Mary's University	Analiese	Schadler
#42 in Nursing Center 195	Poster	Pyschology	UW-Eau Claire	Megan	Schildt
#13 in Reinhart Center Boardroom	Poster	Biology	Viterbo University	Damon	Schmalzriedt
#29 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Nick	Schmidt
#56 in Nursing Center Foyer	Poster	Nutrition	Viterbo University	Kendal	Schmitz
12:20pm in Nursing Center 104	Oral	Psychology	UW-Eau Claire	Jacob	Schuelke
1:40pm in Reinhart Center 201	Oral	Biology	Viterbo University	Desirae	Schuh
1pm in Nursing Center 104	Oral	Psychology	UW-Eau Claire	Emily	Schulz
#64 in Main Theater Lobby	Poster	Nutrition	Winona State University	Heather	Sharkey
12:20pm in Nursing Center 101	Oral	Sociology	UW-Eau Claire	Pian	Shi
#54 in Nursing Center Foyer	Poster	Nutrition	Viterbo University	Tessa	Solberg
#27 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Michelle	Steinfeldt
#31 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Hope	Sternberg
#15 in RCB	Poster	Biology	UW-La Crosse	Gage	Stuttgen
#38 in Nursing Center 195	Poster	Pyschology	UW-La Crosse	Michael	Szeszol
#20 in Main Theater Lobby	Poster	Social Work	Viterbo University	Susan	Taddy
#60 in Nursing Center Foyer	Poster	Business	Viterbo University	William	Thornton-Weyrauch
#5 in Reinhart Center Boardroom	Poster	Biology	UW-Platteville	Carley	Traverse
#64 in Main Theater Lobby	Poster	Nutrition	Winona State University	Jennifer	Tuttle
#14 in Reinhart Center Boardroom	Poster	Biology	Waldorf University	Maria	Valdes
#6 in Reinhart Center Boardroom	Poster	Biology	UW-La Crosse	Corina	Valencia
#18 in Reinhart Center Boardroom	Poster	Math	UW-Eau Claire	Jory	Wagner
1:40pm in Reinhart Center 130	Oral	Math	UW-Eau Claire	Jory	Wagner
#33 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Annika	Wahlquist
#20 in Main Theater Lobby	Poster	Social Work	Viterbo University	Elise	Walleser

#8 in Reinhart Center Boardroom	Poster	Biochemistry	UW-Eau Claire	Katelyn	Weeks
#21 in Main Theater Lobby	Poster	VUSM 200	Viterbo University	Andrew	Wegner
#8 in Reinhart Center Boardroom	Poster	Biochemistry	UW-Eau Claire	Murphi	Weinzetl
#7 in Reinhart Center Boardroom	Poster	Biology	UW-Platteville	Bridget	White
#18 in Reinhart Center Boardroom	Poster	Math	UW-Eau Claire	Haotian	Wu
1:40pm in Reinhart Center 130	Oral	Math	UW-Eau Claire	Haotian	Wu
#22 in Main Theater Lobby	Poster	Social Work	Viterbo University	Cassie	Wunnicke
#26 in Main Theater Lobby	Poster	Social Work	Viterbo University	Shoua	Yang
#28 in Main Theater Lobby	Poster	Social Work	Viterbo University	Houa	Yang
#28 in Main Theater Lobby	Poster	Social Work	Viterbo University	Shoua	Yang
#41 in Nursing Center 195	Poster	Pyschology	University of St Thomas	Sarah	Zielinski



VITERBO UNIVERSITY

900 Viterbo Drive • La Crosse, WI 54601 • 608-796-3000 • 1-800-VITERBO • www.viterbo.edu



- Color Key**
- Academic/
Administrative
Buildings
 - Athletics Buildings
 - FSPA Buildings
 - Parking Lots
 - Residence Halls
 - Student Services

Developing a Catalytic Cycle for G-quad Production using Specific DNA Displacement

Dominic Egizi*

*indicates presenting at Seven Rivers

Institution: Edgewood College

Faculty Mentor: Dr. Peter Kuhn

Discipline: *Biology*

Presentation Type: *Oral Presentation*

Presentation Location: *1:20pm in Reinhart Center 127*

Abstract:

G-quadruplexes are defined as 3-dimensional formations resulting from hydrogen bonding between successive groups of guanine base pairs. The successive groups are named G-tracks, with four being required for one G-quadruplex. A process called Hoogsteen base pair bonding facilitates this association. Our goal in this project was to improve upon an established method of G-quadruplex production, as well as the subsequent and associated redox detection reaction. After assembly, the G-quad catalyzes a redox reaction between an oxidizing agent (H₂O₂), hemin, and a marker (ABTS). This luminescence of the activate marker is used as a positive indicator of presence of your target in each environment. Strand displacement reactions are the most common way to assemble a g-quadruplex from a starting structure such as a hairpin formation. The traditional method of g-quadruplex assisted DNA detection relies on a 1:1 ratio of target DNA and pre-G-quadruplex hairpins to function effectively. We have adapted the design of a 4-step DNA displacement catalytic cycle to release a pre-G-quad sequence as the output upon recognition of the DNA target. Once free from other Watson-Crick bonding pairs, the output self-associates into the G-quad. Because the target DNA strand is released after one rotation, multiple iterations of the cycle can be initiated by the same target DNA strand. The cyclic nature of our reaction necessitates the use of multiple DNA strands containing identical domains, particularly the domain that facilitates G-quad formation. Manipulating the position of G-tracks within the overall primary structure assists in solving this issue. Real-life applications of this design involve both qualitative and quantitative field analysis of specimens without accessible identification characteristics. Because of the isothermal and portable nature of this design, it holds a potential advantage over lab-intensive PCR or sequencing given further development.

Demonstrating strand displacement of species specific DNA sequences with gel electrophoresis

Ashley Reeson*

*indicates presenting at Seven Rivers

Institution: Edgewood College

Faculty Mentor: Peter Kuhn

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#1 in Reinhart Center Boardroom*

Abstract:

DNA based molecular devices can be designed as an approach to better distinguish between two nearly identical species. In this study, *Celastrus orbiculatus* is an invasive species that looks very similar to a native species, *Celastrus scandens*. The best way to distinguish between these two species is in the Fall when they are fruiting. Invasive species are a big threat to native ecosystems so by developing a new way of distinguishing between a native and invasive species, we can help to combat these invasive species. A series of DNA sequences were designed to interact with DNA extracted from one of two highly similar species. Output sequences have been designed to have the possibility of forming a G-quadruplex from 2 strands and have peroxidase-like activity. Gel electrophoresis is used to demonstrate that the input sequences seen in previous experiments and demonstrated by a catalytic pathway did in fact allow for the output sequences to be displaced from the sensor sequence and allow for output sequences to form G-quadruplexes.

Glutathione S-Transferase Expression in Embryonic Livers of *Gallus gallus* Exposed to Atrazine in Ovum

Haley Colton*

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Debra Martin

Discipline: *Biochemistry*

Presentation Type: *Oral Presentation*

Presentation Location: *12:20pm in Reinhart Center 130*

Abstract:

Atrazine is one of the most commonly and widely used herbicides in the Midwest, United States. It remains in the soil for long periods of time and contaminates many different water sources. ATR was approved for commercial use in 1958 and could potentially explain some of the developmental effects that some agricultural organisms such as, *Gallus gallus* experience through natural exposure. There are many detrimental effects to the exposure of ATR and studies have been done to analyze those. Few studies have focused on the in ovum effects of ATR. The liver enzymes responsible for the detoxification of ATR of are particular interest: glutathione S-transferases (GST). Previous studies have analyzed and identified that chronic exposure to ATR in fish leads to a decrease in the enzymatic activity for the Mu isotype of GST. In order to determine the relationship between in ovum exposure to ATR and the enzymatic activity of the three isotypes of GST, fertilized Chicken eggs will be injected with three different concentrations of ATR: 0 ppb, 3 ppb, and 30 ppb. The embryonic livers will be harvested and analyzed utilizing enzyme assays for the three difference GST isotypes (Alpha, Mu and Pi).

Expression of Proteins TNF- α , HIF-1 α and VEGF-C Involved in Hepatic Tumor Induction of Fibrosis

Madaline Eichers*

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Debra Martin

Discipline: *Biochemistry*

Presentation Type: *Oral Presentation*

Presentation Location: *12:40pm in Reinhart Center 130*

Abstract:

Background: Atrazine, the most widely utilized triazine herbicide in the United States, can leach into groundwater or enter water systems via runoff. The purpose of this experiment is to see if atrazine leads to upregulation of proteins associated with hypoxia induced tumors (fibrosis) in liver tissue. Tumor necrosis factor (TNF- α) is a major component of the signal pathway which leads to liver fibrosis. IKK β , the major downstream kinase of TNF- α , mediates TNF- α regulation of hypoxia-inducible factor 1-alpha (HIF-1 α). This leads to increased expression of vascular endothelial growth factors (VEGF) protein levels. One member of the VEGF family is VEGF-C. **Methods:** 66 six week old male and female mice (*Mus musculus*) were separated into three treatment groups: 0 ppb+Vehicle (Control), 3 ppb+vehicle (EPA legal limit of atrazine in groundwater), 30 ppb+vehicle (amount found in SE Minnesota watersheds). Mice were given atrazine+vehicle ad libitum for 10 weeks. After 10 weeks, the mice were sacrificed and the liver was extracted. TNF- α , HIF-1 α ELISA kits and immunoblot with a VEGF-C antibody were utilized to measure the respective protein concentration in liver tissue. **Results:** TNF- α protein expression will be correlated with HIF-1 α and VEGF-C protein expression to determine the extent of tumor/fibrotic development in mice liver tissue.

The effects of chronic exposure to Atrazine on GST expression in *Mus musculus*

Analiese Schadler*

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Debra Martin

Discipline: *Biochemistry*

Presentation Type: *Oral Presentation*

Presentation Location: *12noon in Reinhart Center 127*

Abstract:

Atrazine is one of the most heavily used herbicide in North America to control weeds in crops. The Environmental Protection Agency deemed a safe maximum level of atrazine to be 3 ppb under the Safe Drinking Water Act. Many Midwest states in the United States have annual mean concentrations of atrazine far greater than 3 ppb. Numerous studies have concluded that atrazine negatively affects growth, development, immune and endocrine system functions in diverse organisms. Of interest is a family of detoxification enzymes found in hepatic tissues, glutathione S-transferases (GST). GST has three isotypes: μ , π and α . Previous research in fish showed chronic exposure to atrazine decreased the enzymatic activity for the μ isotype of GST. The current study utilized male and female CD-1 mice (*Mus musculus*) (n = 20/group). Mice were chronically exposed to atrazine (0, 3, 30 ppb) via drinking water for 11 weeks. Analysis of GST enzyme activities were performed to determine the relationship between chronic exposure to atrazine and the enzymatic activity of the three GST isotypes.

Inhibition of Mitochondrial NADH DEHYDROGENASE BY THE HERBICIDE ATRAZINE

Alexander Holm*, Jay Heinle, & Michael Cimba

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Debra Martin

Discipline: *Biology*

Presentation Type: *Oral Presentation*

Presentation Location: *12:20pm in Reinhart Center 127*

Abstract:

Atrazine is an herbicide that has been found in ground water where it does not easily break down. The EPA has set the concentration limit at 3 ppb in ground water. In plants, atrazine is known to irreversibly bind to the binding site of plastoquinone. Ubiquinone is an electron carrier in humans and has similar structure to plastoquinone, therefore it is hypothesized that atrazine binds to the same site that ubiquinone binds. Previous research by Lim et al. (2009) suggested that atrazine could inhibit Electron Transport (ETS) in murine hepatic mitochondria, but the location of inhibition was not identified. In this experiment, naïve adult mouse liver mitochondria were studied for inhibition of ETS by atrazine. Atrazine inhibition (~70%) was seen in complex I when ubiquinone was the substrate and Complex I to III when ubiquinone was the substrate (~55%). Preliminary data implies competitive inhibition in Complex I at the ubiquinone binding site ($K_m = 254$ micromole, $V_{max} = 39$ nmole/sec NADH oxidized).

Native Ant Community Preference and Satiation in *Sanguinaria canadensis* and *Dicentra cucullaria*

Regina Bettag* & Erica Ristow

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Moni Berg-Binder

Discipline: *Biology*

Presentation Type: *Oral Presentation*

Presentation Location: *12:40pm in Reinhart Center 127*

Abstract:

Ant-plant interactions are abundant in nature, and ant communities have been shown to influence plant community structure. Myrmecochory, the process of seed dispersal by ants, is a common mutualistic relationship where ants are provided nutrients via a fatty appendage called an elaiosome. Seeds of myrmecochorous plant species, *Sanguinaria canadensis* and *Dicentra cucullaria*, were observed for ant preference and satiation trends. Experiments took place over the course of two summers in two different temperate deciduous forests. Research was conducted during the summers of 2016 and 2017 in temperate deciduous forests in Minnesota and Wisconsin, respectively. Ten seeds of each species were placed in five seed depots approximately 50 meters apart. Every four days the number of seeds gathered by ants was recorded; old seeds were then discarded and replaced with new seeds. Data was analyzed for species preference using a Mann-Whitney test and satiation trends were tested using a Friedman's test. While ants showed no significant preference for seeds of either plant species in the summer of 2016 in Minnesota, there was significant preference for *D. cucullaria* seeds during the summer of 2017 in Wisconsin. No evidence of satiation was found either year. Patterns of high and low ant seed removal differed across the two years and locations. Variability in ant behavior may be a consequence of difference in location, year, and/or other environmental factors. Future research should continue to examine these factors to determine their bearing on ant behavior and thus the greater ecological community.

The Impact the Invasive Shrub Japanese Barberry has on the Deer Tick (*Ixodes scapularis*) Population in Southeastern Minnesota

Chelsea Hiltner* & Mark Leonard*

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Jeanne Minnerath

Discipline: *Biology*

Presentation Type: *Oral Presentation*

Presentation Location: *1pm in Reinhart Center 127*

Abstract:

Japanese barberry, *Berberis thunbergii*, is a thorny perennial shrub that is native to Japan and was brought to the United States to be used as an ornamental shrub. Over time it became dispersed in the wild and now is overpopulating forests across the United States. Studies suggest that forested areas infested with Japanese barberry have increased populations of blacklegged ticks/deer ticks (*Ixodes scapularis*) compared to non-infested forested areas. This is of particular concern as deer ticks are known vectors for a number of microorganisms that cause human diseases. The purpose of this study was to analyze the impact Japanese barberry has on the deer tick population in an ecosystem to which Japanese barberry had only recently become established. To do this, deer ticks were collected from four 100 meter transects (two containing Japanese barberry and two without) in Wabasha County, Minnesota. The ticks located in the leaf litter and vegetation were collected using drag cloths. Small mammals, one of the hosts of deer ticks, were also captured in the transects, and ticks were removed from the mammals. Results indicate that comparable numbers of deer ticks were collected from the vegetation in areas with and without Japanese barberry. However, a greater number of deer ticks were collected off of mammals captured in transects containing Japanese barberry compared to transects without barberry. Collectively these results would suggest that the deer tick population size is greater in areas infested with Japanese barberry relative to comparable areas that lack this invasive species.

T-Cell and Macrophage activation in the splenocytes of *Mus musculus* chronically exposed to atrazine

Elizabeth Atneosen*

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Debra Martin

Discipline: *Biochemistry*

Presentation Type: *Oral Presentation*

Presentation Location: *12noon in Reinhart Center 130*

Abstract:

Atrazine is an herbicide that has been known to have possible adverse health effects. Many different effects on body systems have been studied, including immunity. This experiment focused on the immune effects of a mice (*Mus musculus*) exposed chronically to atrazine for 12-weeks. Splenocytes were stimulated with either concanavalin A or lipopolysaccharide and the amount of either IL-2 by T-cells or TNF alpha by macrophages was determined by ELISA. Data will be analyzed using SPSS.

Health Behaviors Among College Students

Mandy Sailor*

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Dr. Molly O'Connor

Discipline: *Psychology*

Presentation Type: *Oral Presentation*

Presentation Location: *12noon in Nursing Center 101*

Abstract:

There has been decades worth of research including eating, exercise, and alcohol consumption and the consequences and risks associated these behaviors. In particular, health behaviors of college students are of extreme significance because within the United States, there are an estimated amount of 20.5 million students enrolled in American colleges in the fall semester of 2016 (NCES, 2016). The number of college students has steadily increased 5.2 million since 2000. The health behaviors of college students which have been previously researched are alcohol consumption on college campuses, exercise dependence, and eating behaviors. This research differs being an examination of relationship between alcohol use, exercise dependence, and eating behaviors and the health issues or benefits that arise from these relationships. This study was conducted on health behaviors (alcohol, eating, and exercise) on college campuses and the consequential relationships associated with each one. Data was collected via an online survey including demographics, EAT-26, exercise dependence scales, and perceived stress scales with some participants then completing a 14-day health tracking trial. Eating, exercise, and alcohol use behaviors were compared to national averages. The data also showed relationships between these behaviors - for example, participants who reported high levels of disordered eating were also likely to report high levels of exercise dependence ($R = .411, p < .001$). These findings are important to enhance our understanding of the associations between health behaviors in college students.

Perception of diabetics and its role in anxiety and depression

Hanna Potter*

*indicates presenting at Seven Rivers

Institution: St Mary's University

Faculty Mentor: Dr. Molly O'Connor

Discipline: *Psychology*

Presentation Type: *Oral Presentation*

Presentation Location: *12:40pm in Nursing Center 101*

Abstract:

With the rate of occurrence of diabetes increasing, it is important to look at the implications this may have on psychological factors. Depression, and anxiety in relation to diabetes have been examined in previous studies (Shahi & Mohmmadyfar, 2017; Strauss, Buchberger, Huppertz, Krabbe, Lux, Mattivi, & Sifarikas, 2016; Groot & Golden, 2016; Katon, Russo, Heckbert, Lin, Ciechanowski, Ludman, Young, & Korff, 2009). With this in mind, the current study is examining not only the diagnosis of the disease, but also how perception of the disease can affect psychological factors of the identified patient. A total of 62 people from an online diabetic forum and Saint Mary's University of Minnesota students participated in the study. A total of 24 people with diabetes and 38 people who are non-diabetic participated. A survey was formulated using the IPQ-R: Diabetes, Self-Efficacy for Managing Chronic Disease 6-item Scale and Stanford Patient Education Research Center - Sample Questionnaire: Chronic Disease, and Beck's Depression Inventory and Anxiety Inventory. Overall, depression was found to be significantly higher among participants with diabetes ($p = 0.014$). Anxiety also approached significance ($p = 0.074$). In terms of perception, depression, and anxiety for those who are not diabetic, overall perception was not a factor in depression and anxiety – which makes sense since non-diabetics would not be experiencing the stereotypes/perceptions surrounding diabetes. Within participants with diabetes, depression and anxiety were both significantly related to perceptions of emotional representations ($p = .004$; $p = .007$) and personal control ($p = .05$; $p = .02$). These results may indicate that a diabetic patient's perceptions of their disease influence whether they experience anxiety or depression in relation to their diagnosis.

Trait Aggression and Perception of Injury as Barriers to Seeking Physical and Mental Help in College Athletes and Nonathletes

Jessica Cwik*

*indicates presenting at Seven Rivers
Institution: St Mary's University

Faculty Mentor: Dr. Molly O'Connor
Discipline: *Psychology*

Presentation Type: *Oral Presentation*
Presentation Location: *12noon in Nursing Center 104*

Abstract:

The issue of mental health and utilizing wellness resources on college campuses among college students for their mental and physical well-being represents a growing concern (Hunt & Eisenberg, 2010; Watson, 2005; Watson, 2006; Gulliver, Griffiths, & Christensen, 2012). Statistically, college student-athletes tend to under utilize, or not utilize, counseling and support services (Watson, 2006). There are many possible barriers to seeking both physical and psychological help for college students and college student-athletes (Gulliver, Griffiths, & Christensen, 2012; Watson, 2006; Watson 2005; Bernard, 2016; Jelalian et al., 1997). The purpose of this study was to examine the relationship between possible barriers to help seeking behaviors for both psychological and physiological concerns for college student-athletes and non-athletes. Fifty-three participants (17 male, 36 female) from a small, liberal arts university were asked to answer a series of questions addressing trends involving seeking medical attention for a physical injury, attitude toward seeking professional psychological health, aggression, coping mechanisms, and sport motivation. Results indicate a significant, positive correlation between athletic status and aggression. Results also show a significant, positive correlation between gender, physical aggression, and anger, specifically non-athletic females showing a significantly higher level of anger than male non-athletes. These findings contradict several hypotheses originally proposed, but provide interesting and meaningful results indicating other possible factors of barriers to seeking help for mental and physical health.

Keywords: athletes, nonathletes, aggression, coping mechanisms, barriers to help seeking, mental health, physical health, physical injury, sport motivation

Alcohol Use and Abuse Among College Athletes and Non-Athletes: An Examination of Contributing Factors

***Shawn Pruitt*, Mia Lloyd*, Jesse Cwik, Aldtontate Guess, Shanna Stencel,
Anthony Alwan, Anya Hafiz & Nyakume Dup***

*indicates presenting at Seven Rivers
Institution: St Mary's University

Faculty Mentor: Dr. Carlson
Discipline: *Psychology*

Presentation Type: *Poster Presentation*
Presentation Location: *#34 in Nursing Center 195*

Abstract:

Previous research has identified personality traits, body consciousness, mental health, and gender as significant variables that provide insight into college students' alcohol use (Barry & Piazza-Gardner, 2012; Berkowitz & Perkins, 1986; Frye, Allen & Drinnon, 2008; Wolanin et al., 2016; Yusko et al., 2008). Athletes have been identified as a particularly vulnerable population in the context of alcohol use and abuse (Frye, Allen & Drinnon, 2008; Schwenk, 2000). This study investigates contributing factors related to alcohol use and abuse in college athletes and non-athletes at a small private Catholic university. The goal of the study is to contribute to the health of students and to better understand the differences in alcohol use and abuse for athletes and nonathletes. 48 participants (34 female, 12 male) answered questions about body consciousness, impulsivity, personality distinctions, mental health predictors--depression, anxiety, and stress--and alcohol use and abuse. Results indicate that there is a significant positive correlation for impulsivity and extraversion for athletes, but not for nonathletes. There was also a significant positive correlation for overall body consciousness, appearance surveillance, body shame, and drinking to ease emotional pain for females, but not males. Males had a significant positive correlation between appearance surveillance and family pain. Additional analyses are being conducted to further investigate these findings. The implications of these findings are critical for understanding and enriching the well-being of all students, particularly those at small private universities.
Keywords: alcohol, athletes, non-athletes, personality traits, body image, mental health, gender, body consciousness, college students

Non-native Species Case Study: Exploring correlations between non-native species and native plant species abundances in a restor

Abigail Propsom* & Katherine Ethen*

*indicates presenting at Seven Rivers

Institution: St. Mary's University

Faculty Mentor: Kathy Kilkus Allen & Moni Berg-Binder

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#2 in Reinhart Center Boardroom*

Abstract:

Multiple invasive plant species are present in the restored prairies at Cascade Meadows Wetland and Environmental Science Center in Rochester, Minnesota; however, the impact of these invasives is poorly understood. This project was done in order to gain a better understanding of the impact invasive species have on native plant life. Percent cover of non-native species, total non-native species richness and total native species richness were examined. It was hypothesised that non-native species abundances (percent cover and richness) would negatively correlate with native species richness. Data was collected at 1m² quadrats (n=19) in the restored prairie at three separate times throughout the summer of 2017 (6/9-6/12, 6/27 and 7/27). There was a strong negative correlation between non-native percent cover and native species richness. In addition, there was a strong negative correlation between non-native percent cover and total species richness. A moderately strong positive correlation was found between invasive species richness and total native species richness. The results for this survey were expected due to the ability of invasive species to often outcompete native prairie plants. These results serve as baseline data for research exploring the effects of future control methods on native prairie plant richness.

Vascular Endothelial Growth Factor-B expression in Muscle of Mice (Mus musculus) Exposed in utero to Atrazine

Jeremy Heinle*

*indicates presenting at Seven Rivers

Institution: St. Mary's University

Faculty Mentor: Debra Martin

Discipline: *Biochemistry*

Presentation Type: *Oral Presentation*

Presentation Location: *1pm in Reinhart Center 130*

Abstract:

Atrazine, an herbicide regularly used across the United States, is found in ground water where it does not easily break down. Ground water concentrations higher than the EPA limit of 3 ppb have been detected, raising concerns about health issues since atrazine is a known endocrine disruptor. One protein of interest is Vascular Endothelial Growth Factor-B (VEGF-B) due to its role in metabolism, specifically with the regulation of fatty acid uptake. A recent study by Jin (2014) showed that mice exposed chronically to atrazine had increased serum-free fatty acid levels. VEGF-B is expressed in skeletal muscles and is involved in endothelial cell physiology. VEGF-B regulation has been examined as a potential therapy for metabolic diseases such as diabetes and obesity. In this experiment, VEGF-B levels were determined by immuno-blot of left bicep muscle samples from 9 week old mice pups that were exposed to 0 ppb (n=16), 3 ppb (n=15), and 30 ppb (n=18) atrazine in utero. Preliminary results show a decreasing trend in muscle VEGF-B levels as exposure to atrazine in utero increased suggesting that VEGF-B expression is negatively affected by exposure to atrazine, possibly affecting the regulation of fatty acid uptake.

A Historical Analysis of Women's Experiences in Mental Health Institutions

Megan Gossfeld*, Jayna Lundgren* & Grace Hermer*

*indicates presenting at Seven Rivers

Institution: University of St Thomas

Faculty Mentor: Dr. Jean Giebenhain

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#47 in Nursing Center 195*

Abstract:

Women have fought for gender equality throughout history. Across time, female voices have been silenced by stereotypes, gender roles, and patriarchal systems, however this phenomenon has especially been prominent in mental health treatment. The purpose of the present study was to investigate the experiences of women in mental health institutions from the 1850s to the 2000s. In order to create a comprehensive study, we investigated primary sources, and autobiographies spanning our time frame. We employed qualitative, content analysis, based on grounded theory to investigate the experiences of women in mental health institutions. We searched archival databases and used search terms such as "women and madness," "women and mental institutions," and "female treatment in mental institutions." From our search we identified relevant autobiographies (e.g., *Girl, Interrupted*), books, (e.g. *Women and Madness*), and scholarly journal articles. After extracting relevant quotes from the data, themes that emerged were reached by consensus. Themes that emerged from the data include: the conditions they were subjected to, their reasons for being institutionalized, and societal gender roles at the time. These themes are discussed in light of historical context. Within the time period in question, we noticed a change in our data as possible result of several influential women. By bravely bringing to light their personal experiences these heroines revolutionized the way in which female patients were treated in mental health institutions. This research is important because it allows mental health professionals to become more aware of the implications of female gender roles and experiences when diagnosing women.

Segregation of Education: A Historical Analysis from Brown vs. Board to Present

Caroline Boris**, *Sarah Zielinski**, *Clarissa Filetti** & *Katie Bednartz*

*indicates presenting at Seven Rivers

Institution: University of St Thomas

Faculty Mentor: Dr. Jean Giebenhain

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#41 in Nursing Center 195*

Abstract:

The Brown vs. Board of Education court case was arguably one of the most important court cases of the Civil Rights era. The Supreme Court case declared segregation in schools to be unethical and detrimental to the children subjected to it. Our current qualitative study based on grounded theory analyzes the historical context and Psychology's involvement before, during, and after Brown vs. Board of Education. The search terms we used to find data included "Brown vs. Board", "desegregation in education", and "psychology and desegregation". This brought us to our primary sources of newspaper articles, interviews, books, scientific articles, and court case dialogues. As we began extracting relevant quotes we saw an emergence of themes. Upon discussing as a group, we came to the common themes of: (1) social scientists contributing research in support of segregation and criticizing segregation, (2) APA being complicit in racist agenda, and (3) a divided psychology over race in the United States. The re-segregation of education in the United States today is leading social scientists to discuss what went wrong with the Brown vs. Board implementation of desegregation. Understanding the historical context of Brown vs. Board is necessary in order to successfully desegregate our society's education systems.

Laws of Attraction: Historical Analysis of Policies and Opinions on Interracial Marriage from 1865-1980

Anika Johnoson*, Ashley DeMaio*, & Carson Kuball

*indicates presenting at Seven Rivers

Institution: University of St Thomas

Faculty Mentor: Dr. Jean Giebenhain

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#39 in Nursing Center 195*

Abstract:

The US has been described as a melting pot of cultures and peoples. However, historically, there have been laws regulating the intermixing of people of different races. Our research investigates the shifts in policies and opinions regarding interracial marriage over a span of 100 years covering the periods of Reconstruction, Jim Crow and the Civil Rights era. In this qualitative, historical, research study, based on grounded theory, we investigated these policies and opinions by searching psychological and historical databases. We used search terms including “interracial marriage”, “race intermixing”, “marriage laws”, “attitudes”, and “miscegenation.” Relevant articles were identified in both the popular press (e.g., New York Times, Washington Post) as well as scholarly professional journals. We extracted quotes until saturation was reached. Our team came to a consensus after separately identifying themes that emerged from the data. The agreed upon themes are inferiority, fear, legality and purity. These themes are discussed in terms of the historical context. This research is important because it offers historical insight into understanding a system of racial oppression, rationalized by laws and supported by public opinion.

Transitional Views of Divorce and the Perceived Impact on Children During the 20th Century

Mosope Ani*, Courtney Pelissero* & Warren Melton*

*indicates presenting at Seven Rivers

Institution: University of St Thomas

Faculty Mentor: Dr. Jean Giebenhain

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#49 in Nursing Center 195*

Abstract:

Today, in the United States, almost 50% of children grow up with divorced parents. Are these children doomed to fail in society? Are family values deteriorating? Is divorce a poison to society? Throughout the 20th Century, societal, as well as, social-scientific views of divorce and its impact on children changed as divorce rates grew. Using a qualitative, archival, research approach based on grounded theory, we gathered and analyzed popular and scholarly literature regarding the evolution of perspectives on divorce from the 1920s through 1980. We explored historical literature including scholarly social science articles and books, popular public journals and magazines, and statistical databases using search terms including: "divorce," "single parent," "family," and "effect." While reading the literature on divorce, we extracted important quotes and individually noted prevalent themes in our research. Group consensus was employed to select the final themes, including child development, public approval of divorce, and parental role. Over time, divorce became normalized and less stigmatized, and the research simultaneously matured to suggest there was less negative impact on children of divorce than previously assumed. These themes, as well as others are discussed in a historical context. This analysis illustrates the importance of 20th century events and policies on the evolution of family systems. Further, our research provides important historical, social, and psychological context to better understand how divorce has come to be a prevalent part of American society.

From WWII to DSM-III: Perspectives on Schizophrenia

Allison Hoggarth**, *Holly Brown** & *William Lamers*

*indicates presenting at Seven Rivers

Institution: University of St Thomas

Faculty Mentor: Dr. Jean Giebenhain

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#35 in Nursing Center 195*

Abstract:

From Emil Kraepelin's diagnosis of dementia praecox to the DSM-5, schizophrenia has evolved to be defined as a disorder characterized by delusions, hallucinations, disorganization, distorted reality and impaired cognition. How has this definition been cultivated throughout history? Our research focused on schizophrenia and those exhibiting schizophrenic symptoms within American society from the 1940s into the 1970s. From the time the disorder was first categorized, the dialogue surrounding virtually all aspects of schizophrenia has shifted along with the viewpoints of both professionals and members of society. Notable movements surrounding the disorder included deinstitutionalization and antipsychiatry. The purpose of the present study was to examine the historical perspectives on schizophrenia. To investigate this, we did an archival study, using qualitative content analysis, based on grounded theory, of relevant historical documents. Sources were found using psychological and psychiatric databases, employing search terms such as "schizophrenia", "treatment", "WWII", "deinstitutionalization", "attitude*", "society", "opinion*", and "evolution". We identified relevant scholarly journal articles, newspaper articles, and books. We then extracted significant quotes and organized them into a theme journal. Themes that emerged from the data were reached via consensus. Themes included shifts in treatment, ideology, and public opinion. Our results provide context for current perspectives on schizophrenia based on historical viewpoints and theories.

A Historical Analysis of Cultural Attitudes and Political Reform in Regards to Drug Use in the United States

Emily Och*, Regan Miller*, Annika Wahlquist* & Sabreena Boyum*

*indicates presenting at Seven Rivers

Institution: University of St Thomas

Faculty Mentor: Dr. Jean Giebenhain

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#33 in Nursing Center 195*

Abstract:

Throughout the past century and a half, drug laws that were implemented reflected biases against different races and social classes. Our research focuses on the cultural attitudes and political reform in regards to drug use in the United States since the mid nineteenth century until the 1980s. We employed qualitative content analysis based on grounded theory to investigate four different classifications of drugs: opioids, marijuana, cocaine, and psychedelics. To gather information, we searched archival databases for relevant information from the 1850's to the 1980's and used search terms such as "war on drugs" and "drug policies." Relevant scholarly journal articles, books, and articles from the popular press of the corresponding eras (e.g. The Washington Post, New York Times) were identified. We extracted significant quotes from our sources that we organized in a theme journal. Themes that emerged from the data were initially suggested by each individual, and eventually reached via consensus. We noted a theme between the four drug classifications and how drug policies followed trends of prejudice towards marginalized populations such as immigrants, women, and people of lower socioeconomic status. These results are discussed in light of historical context. Through our research, we uncovered how the War on Drugs began long before the Nixon era and how drug policies have been used throughout America's history to oppress disenfranchised populations. This research is important because it demonstrates how The United States' drug policies evolve as social and cultural norms change.

Young Children's Exposure to Technology at Home and Peer Interactions

Megan Gossfeld*

*indicates presenting at Seven Rivers

Institution: University of St Thomas

Faculty Mentor: Allison Jessee

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#45 in Nursing Center 195*

Abstract:

Young children are using technology at home more than ever before (Rideout, 2014). Many parents and psychologists fear that this exposure harms their social skills when they spend more time interacting with technological devices than developing interpersonal relationships. This idea aligns with previous research on the social learning theory, which states that children learn by observing their surroundings and attending to behaviors that other people model (Bandura, 1971). The purpose of the present study is to examine how toddlers' and preschoolers' exposure to technology correlates with their peer interactions at day care. It was hypothesized that children who use more technology at home (eg., computers, TVs, tablets, and mobile devices) would demonstrate lower quality social skills (eg., taking turns, sharing, and body language). I collected data on 17 children between one and five years old via surveys and naturalistic observation. As a measure of how much technology is present in the children's home environments, parents and guardians completed questionnaires about the type of technology their children use and how often they use it. I also observed the children's social competence in the day care setting by scoring play skills, group skills, and communication skills. Correlational analysis revealed several significant relationships between children's exposure to media at home and peer interactions at day care suggesting that certain types of technology usage are associated with several poorer social skills. For example, children who more frequently play games on a mobile device are significantly less likely to initiate a conversation with a peer, and children who more frequently watch DVDs at home are significantly less likely to participate in a group activity. This research is important because it highlights how even very young children's peer interactions are strongly connected to their exposure to technology at home.

Labor Movement and Its Impact on Democracy: Confederation of Mexican Workers

Mirella Espino*

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Professor A. Abootalebi and Professor G. Licon

Discipline: *Political Science*

Presentation Type: *Oral Presentation*

Presentation Location: *12:40pm in Nursing Center 104*

Abstract:

The research idea to investigate labor movement in Mexico and its connection with prosperity for political democracy in the course of the research, it has become increasingly apparent what ails Mexico's prospect for socioeconomic and political development—severe institutional corruption. Despite improvements in socioeconomic dynamics of Mexico and apparent liberalization of politics, institutional corruption continues to undermine Mexico's prospects for political democracy through undermining the fabrics of state society relations, labor movement, in particular, has suffered from institutional corruption emanating from the state and within its own institutional and organizational set up. Institutional corruption remains the most pervasive factor undermining Mexican political economy

Investigating Catalytically Important Residues in *Escherichia coli* Prolyl-tRNA Synthetase Using Site Directed Mutagenesis

Katelyn Weeks**, *Murphi Weinzetl** & *Louis Losbanos

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Dr. Sanchita Hati

Discipline: *Biochemistry*

Presentation Type: *Poster Presentation*

Presentation Location: *#8 in Reinhart Center Boardroom*

Abstract:

This research project is a continuing effort focused on the molecular-level understanding of the relationship between protein structure, dynamics, and function in aminoacyl-tRNA synthetases (AARSs). Recent computational studies have identified four charged amino acid residues at the active site [three positively charged arginine (R) and one negatively charged glutamic acid (E)] that are directly involved in catalysis in *Escherichia coli* Prolyl-tRNA Synthetase (Ec ProRS). Our current objective is to experimentally confirm these computational findings by mutating these residues to a neutral amino acid, alanine, as well as two of the amino acids (E111 and R450) to aspartic acid, a shorter negatively charged amino acid. By studying the kinetics and catalytic rate of these mutations, we can determine the importance of these specific active site residues, indicated to be directly involved in the enzymatic ProRS reaction. This knowledge can potentially be used to develop selective drug against pathogenic AARSs. AARSs are potential drug targets as they play a key role in protein synthesis in all living organisms. Herein, we will present the preliminary result of our work.

The Moduli Space of 3 | 2-dimensional \mathbb{Z}_2 -graded Complex Associative Algebras

Tyler Gonzales**, *Grant Keane**, *Chris Magyar**, *Alice Ching**, *Haotian Wu** & *Jory Wagner*

*indicates presenting at Seven Rivers
Institution: UW-Eau Claire

Faculty Mentor: Dr. Michael Penkava
Discipline: *Math*

Presentation Type: *Poster Presentation*
Presentation Location: *#18 in Reinhart Center Boardroom*

Abstract:

This poster will analyze the moduli space of 3 | 2-dimensional \mathbb{Z}_2 -graded complex associative algebras and their deformations. It will briefly cover the theory behind the construction of these algebras by introducing the concept of building the algebras by utilizing algebras of lower dimensions. It will also cover the deformations of the algebras. A deformation is a small perturbation to the multiplication rules of an algebra, which results in it being isomorphic to an existing algebra in the moduli space. To analyze the deformations of an algebra, we construct a special type of deformation called a versal deformation, which encodes information about all of the deformations.

Left Neglected? Spatial Attention with Hand and Eye Dominance

Rebekah Damitz*, Chris Acton* & Emily Schulz*

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Blaine Peden

Discipline: *Psychology*

Presentation Type: *Oral Presentation*

Presentation Location: *1pm in Nursing Center 104*

Abstract:

One experiment tested participants for pseudoneglect, a left spatial bias. Pseudoneglect is a normal bias to overestimate the aspects of your left visual field as revealed by difficulties with bisecting a line, judging distance, and determining brightness. It is uncommon among those with musical training or fluency in a language reading from right to left. Previous research used traditional pen and paper experiments for this bias; our current study, however, was conducted online and asked the participants to bisect 10 horizontal lines. Our study's design [a 2 (eye dominance) x 2 (hand dominance) BS] consisted of 27 questions to determine hand and eye lateralization and 13 tests in the experimental condition. Participant age ranged from 9 to 71 ($M = 24$). All participants were asked the same line bisection tasks (half reversed), and then were randomly assigned to either greyscale (darker section on left vs. right) task. Results found a significant relationship between participants and spatial bias on the line bisection task ($t = -6.67, p < .001$), comparable to previous research on left spatial biases. The study found a significant relationship between hand dominance and pseudoneglect in the greyscale measurement ($F(25, 165) = 1.59, p = .045$), indicating that those who were left-handed were more likely to think that the greyscale with the darker section on the left was overall darker, though they were mirrored images. Results found a significant relationship between eye dominance and pseudoneglect in the greyscale measurement ($F(1, 189) = 3.94, p = .049$), indicating that those who were left eye dominant were more likely to have a left spatial bias. Our conclusions for this study suggest that bias tests should be expanded using the digital line bisection tasks with handedness and pseudoneglect.

How Do College Students Carry Their IDs?

Jared Berg* & Jacob Schuelke*

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Dr. Blane Peden

Discipline: *Psychology*

Presentation Type: *Oral Presentation*

Presentation Location: *12:20pm in Nursing Center 104*

Abstract:

College students are administered identification documents (IDs) from their respective universities to increase security accessibility of campus resources. Students attending the University of Wisconsin Eau-Claire (UWEC) need to show their campus IDs to access their meal plans, use laundry machines, and enter residence halls. To facilitate the constant possession of IDs, UWEC distributes ID card holders that attach to the back of students' cell phones. Casual observation revealed that distribution of card holders to incoming students at UWEC is inconsistent and results in students having to resort to other methods of carrying their school ID. Researchers also conducted a pilot study and observed card holders being more popular among female students than males. Researchers conducted an unobtrusive naturalistic observational study in which 121 UWEC students were observed using their school IDs to enter one of three pre-selected residence halls. Researchers recorded variables such as participant gender, carrying method of ID, whether participants paused at the door, and outfit style. Researchers confirmed that there was a statistically significant relationship between ID carrying method and gender. The researchers found that there is a larger proportion of females using university card holders in comparison to males. The research findings suggest that card holder distribution should be emphasized towards the female student population and that universities ought to continue distribution. Findings from this study will help the university determine specific distribution figures that would eliminate any future inconsistencies in distribution and production. The university would also be able to determine the optimal beneficiaries of the card holders to increase efficiency in funding predisposed to incoming students.

Working on Your Fitness, Who's Your Witness?: Variables Influencing Fitness Center Selection

Megan Schildt* & Hannah Frembgen*

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Blaine Peden

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#42 in Nursing Center 195*

Abstract:

We naturalistically observed people coming and going from fitness center as a function of three variables: (a) time of day, (b) location of fitness center, and (c) sex. Two observers made independent observations at the same time for four sets of 30 minute intervals totaling two hours at two locations, an on-campus fitness center and off-campus fitness center. Patterns of behavior were similar at two locations, so the data were combined for further analysis. There was a significant relationship between sex and entering/exiting. That is, the proportion of females exiting the fitness center was higher than the proportion of males and the proportion of males entering was higher than that of females. There was a nonsignificant relationship between sex and time of day. There was a nonsignificant relationship between sex and location of fitness center. Our results suggest that the durations of workouts may be different for the two sexes, but it is also possible that the times selected happened to have a higher proportion of females exiting. Further research would need to be done to discover whether or not the lengths of time are different.

Chinese Elderly: Psychological Well-Being and Social Supporting Resources

Ciara Riley**, *Saffron O'Brien**, *Zoya Lefler** & *Pian Shi*

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Jianjun Ji

Discipline: *Sociology*

Presentation Type: *Oral Presentation*

Presentation Location: *12:20pm in Nursing Center 101*

Abstract:

Using a national survey data conducted by China Research Center on Aging (CRCA) in 2006, this study examines the relationship between the psychological wellbeing of the Chinese elderly and their social supporting resources. Inspired by the theoretical perspectives of Social Resources Theory and the Framework of Psychological Wellbeing, this study tests the hypothesis that the psychological wellbeing which is measured by four indicators of perception on health status, filial piety of children, feeling lonely, and happiness, of the Chinese elderly, is associated with their social supporting resources in terms of state resource, family resource, self resource, and other resource. Holding constant of four controlling variables of age, children, marital status and family harmony, and by utilizing statistical methods of correlation, cross-tabulation, Chi-square significant test, as well as measures of strength such as Kendal's Tau-B, Tau-C, Cramer's V, and Contingency Coefficient C, the results are largely support the theretical grounds as well as the underlying hypothesis. Implications of policy are also addressed.

The Moduli Space of 3 | 2-dimensional \mathbb{Z}_2 -graded Complex Associative Algebras

Grant Keane**, *Tyler Gonzalez**, *Jory Wagner**, *Chris Magyar**, *Haotian Wu** & *Alice Ching*

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Michael Penkava

Discipline: *Math*

Presentation Type: *Oral Presentation*

Presentation Location: *1:40pm in Reinhart Center 130*

Abstract:

In this presentation, we will talk about the moduli space of 3 | 2-dimensional \mathbb{Z}_2 -graded complex associative algebras. We will first give a general introduction to the topic and how we construct the algebras in the moduli space by utilizing algebras of lower dimensions. We will also talk about the various families that appear in the moduli space and we will analyze them in detail. We will then talk about how to study the deformations of these algebras. A deformation is a small perturbation to the multiplication rules of an algebra, which results in the algebra to be isomorphic to an existing algebra in the moduli space. To analyze the deformations of an algebra, we construct a special type of deformation called a versal deformation, which encodes information about all the deformations.

Boys Can Cry: The Influence of Perceived Parenting Style on Role Congruity and Emotional Intelligence

Caitlin Miller*

*indicates presenting at Seven Rivers

Institution: UW-Eau Claire

Faculty Mentor: Dr. Kristine Knutson

Discipline: *Communications*

Presentation Type: *Poster Presentation*

Presentation Location: *#57 in Nursing Center Foyer*

Abstract:

When examining emotion and gender roles, anger is usually discussed as one of the only socially acceptable emotions for men to display (Wood, 1995). Knowing this, the current study aimed to understand how perceived parenting style received (i.e., emotion coaching (EC), or emotion dismissing (ED)) mediated the relationship between sex and conformity to role congruity in a sample of undergraduate students from a small Midwestern University. This study utilized Emotion Regulation Theory (Cupach & Olson, 2006), Role Congruity Theory (Motro & Ellis, 2017) and Emotional Intelligence (EI; Williams, Daley, Burnside, & Hammond-Rowley, 2009). Results indicated that there was no difference in the amount of EC parenting that those who identify as male and female reported receiving. Additionally, parenting style did not explain the relationship between sex and gender role congruity. There was a relationship between perceived parental EC and self-assessment of EI such that individuals who perceived more EC parenting reported higher levels of EI. There was no relationship between ED parenting and EI.

This study adds to the understanding of the importance of emotion coaching (EC) parenting for emotional development. The results suggest an avenue for refining the investigation.

Methylmercury Contamination in the Food Webs of At-Risk Minnesota Rivers

Phoenix Rogers**, *Marissa Despins** & *Khadel Akindolire-King

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Kristofer Rolffhus

Discipline: *Environmental Chemistry*

Presentation Type: *Oral Presentation*

Presentation Location: *1:40pm in Reinhart Center 127*

Abstract:

Methylmercury (MeHg) is a potent and bioaccumulating neurotoxin for both humans and wildlife, with most exposure through the consumption of fish. Five Minnesota Rivers (Kettle, St. Louis, Roseau, Thief, and Vermillion) were recently identified to exhibit exceptionally high fish mercury levels. We are investigating the lower food webs of these "High-5" rivers relative to a low fish-Hg control (Mustinka River), to test the hypothesis that aqueous MeHg concentrations are controlling bioaccumulation into higher trophic positions (benthic invertebrates, small fish, and predatory fish). Here we report our findings for filtered water, seston (suspended particles), benthic invertebrates, and small preyfish for the High-5 Rivers and Mustinka River compared to regional Midwestern literature values. Rivers were sampled between May 2015-June 2016. River-averaged MeHg levels in filtered water ranged between 0.13-0.65 ng/L (mean \pm SE: 0.34 \pm 0.06 ng/L) for the High-5 rivers, compared to the Mustinka control (0.076 ng/L) and the regional average (0.065 ng/L). Each of the High-5 rivers were indeed statistically higher in MeHg concentration than the regional and Mustinka averages (ANOVA, $p < 0.05$), while the Mustinka control did not differ from the regional average. Methylmercury in seston ranged between 1.2-3.3 ng/g (mean 2.2 \pm 0.3 ng/g) in the High-5 rivers, compared to the Mustinka River (0.6 ng/g) and the regional average (1.2 ng/g). The High-5 Rivers were not statistically different in MeHg content compared to the regional values for seston. Our results suggest that elevated aqueous MeHg levels (and the factors that produce MeHg) exhibit bottom-up control on bioaccumulation in riverine systems where high fish-Hg is observed.

Feeling like a Different Person in a Different Language: Preliminary Results from a Multi-Stage Project on Language and Stress

Felipe Pincheira-Berthelon*

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Elizabeth Peacock

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#40 in Nursing Center 195*

Abstract:

This research project aims to further explore how the ability to speak multiple languages affects people's lifestyles and mindset towards stress. Previous research has shown how emotions can be expressed and explained differently between languages and cultures (Pavlenko, 2006). While other research has been done on what may cause stress for multilingual speakers, there is a lack of research in viewing language as de-stressing factor on its own. Furthermore, there is a common trend in linguistic research that demonstrates a dual/split personality that is representative of specific languages they speak (Pavlenko, 2006). An online qualitative survey on language experience was completed by 90 multilingual participants in order to gain further insight on how multilingual speakers view their own language. Survey results show that more than half of the participants have felt like a different person when speaking another language, which is congruent with past research. Further research to be done includes interviews that will investigate how languages are used in different contexts that involve stress and anxiety, and to look for associations with feelings of different personalities. It is expected that participants with a stronger emotional connection to a language will opt to use it in more stressful contexts.

Rainbows in Graphs

Hunter Rehm*

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Nathan Warnberg

Discipline: *Math*

Presentation Type: *Oral Presentation*

Presentation Location: *12:40pm in Reinhart Center 201*

Abstract:

Ramsey Theory is a branch of mathematics whose main questions are of the form: If a system is chaotic or random and we partition the system into smaller pieces, can we guarantee that the smaller pieces are no longer chaotic or have some nice structure? Anti-Ramsey Theory type problems ask the opposite questions: If a system is structured and we partition the system into smaller pieces can we guarantee that the smaller pieces break the structure? The open question that we focused on looked at was an anti-Ramsey type question. We wanted to find out exactly how much structure we could give a system before we could guarantee that a smaller piece of our system must break the structure. Our structure breaking pieces are called rainbow 3-term arithmetic progression. We developed tools (theorems) to study the system of graphs called grid graphs (think of an array or a well-planned city with a Google maps view). We eventually answered the open question for any m by n grid graph and more!

Structural and Functional Effects of Altering the Beta-helix Structure of Hemolysin A

Gage Stuttgen*

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Todd Weaver & Dan Griiley

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#15 in Reinhart Center Boardroom*

Abstract:

Hemolysin A (HpmA), a protein found in *Proteus mirabilis*, functions as a hemolysin and targets the destruction of red blood cells. HpmA is a member of the two-partner secretion pathway (TPS), which is commonly used by Gram-negative bacteria to export virulent proteins into the host cell. This research project aims to identify parts of the HpmA protein that are important to hemolysis and to map the structure and function of each subdomain found within HpmA. Specifically, locations within HpmA's non-polar subdomain have been selectively targeted and modified based on the potential to recapture stability of the non-polar core when paired with a destabilizing mutation at the 197th position. The effects of these mutations on HpmA have been ascertained both structurally and functionally. The structural effects on HpmA were measured via circular dichroism, a technique that quantifies protein stability. The functional effects of the alterations on HpmA have been measured via Template Assisted Hemolytic Assays (TAHA), a hemolysis experimental procedure that measures red blood cell lysis over time. The results of this research are important because they will help further identify regions of the HpmA critical for hemolytic function. This new knowledge could be used to expand the current understanding of how TPS pathways are used to invade host cells, and on how template assisted folding works between proteins.

First example of “green” synthesis of curcumin and its derivatives

Josh Christensen*

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Dr. Valeria Stepanova

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#4 in Reinhart Center Boardroom*

Abstract:

Curcumin is a natural colorant used in food and pharmaceutical industries. There are two approaches towards this compound: Isolation from the rhizomes of the *Curcuma longa* Linn plant, or organic synthesis. The first industrial synthesis was introduced in 1937 by Pavolini, this was later improved upon in 1964 with the addition of a base and a water scavenger by a Pabon. The later procedure has been the most used to obtain curcuminoids despite low yields of target compounds. Considering the demand for such compounds, there is a need for an effective and green synthetic method.

In our project, we study the conventional approach to curcumin and improve it. Our focus is to make the synthesis more environmentally-friendly and increase product yields. To achieve our goals, at first, the reactions are conducted solvent-free, either neat or using an inert media. Second, the procedures are modified to decrease the number of unnecessary reagents, and reduce solvent use during isolation of product. Third, the general procedure is expanded to include a variety of starting materials to assess the effectiveness of the developed synthesis. All reactions are monitored using thin layer chromatography. Reaction mixtures and isolated products are analyzed using nuclear magnetic resonance spectroscopy.

Seeing the best for the trees: Using Gestalt Grouping to Identify Color-Grapheme Synesthesia

Michael Szeszol* & Joshua Barbara

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Dr. Alexander O'Brien

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#38 in Nursing Center 195*

Abstract:

Synesthesia is a phenomenon marked by the experience of multiple sensations deriving from a single external stimulus. Color-grapheme Synesthesia, therefore, is the experience of perceiving the “extra” sensation of colors overlaying graphemes (i.e. text, letters, numbers, etc.).

Gestalt laws of perceptual grouping are principles that govern the way in which visual arrays of items are perceived to be arranged. We have a tendency to break down images into groups of stimuli rather than interpreting the stimuli individually. These grouping factors include color, shape, proximity, or any identifiable characteristic common to multiple stimuli in an array.

In this experiment, a group of control participants and two color-grapheme synesthetes made judgments about the perceived spatial arrangements of arrays of graphemes. Graphemes were arranged such that gestalt principles of proximity produced the perception of either rows or columns of graphemes. Control participants made judgments about the arrangement of the graphemes as the spacing between the items slowly expanded; such that the arrangement appeared to change from rows to columns, or vice versa. On half of the trials, color was added to some items in the display to produce a grouping principle that conflicted with the proximity grouping, thus altering perceptions of how the items in the display were arranged. These data were then compared to judgments made by synesthetes (who viewed only the non-colored displays), to determine whether the synesthetic representation of the grapheme’s colors exerted the same gestalt grouping conflicts as the presence of the actual color in the displays. Early results suggest that, although not actually present in the displays, the grapheme colors experienced by the synesthetes alter their perceptions of perceptual grouping, relative to controls.

The proposed experiment can therefore be used as a possible test for determining whether an individual is a color-grapheme synesthete.

Improved taxonomic and geographic circumscription for three agaric species proposed for IUCN Red List inclusion

Christian Montes*

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Todd Osmundson

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#3 in Reinhart Center Boardroom*

Abstract:

In order to assess the conservation status of a species, reasonable estimates of that species' rarity, geographic range, and ecology are necessary. Taxonomic ambiguity, incomplete knowledge of occurrence and geographic range, and other sources of uncertainty result in a lack of the information necessary to assess conservation threat level. The objective of this project is to gather necessary data on three mushroom species proposed as candidates for the IUCN Red List but classified as Data Deficient due to taxonomic or geographic uncertainty. *Laccaria pseudomontana* is known from only three alpine sites in the Colorado Rockies; however, additional specimens could potentially be found in herbarium collections labeled as the widespread, morphologically similar *Laccaria montana*. *Lepiota luteophylla* is known from a threatened California cypress grove and mixed forests in Michigan, raising the question of conspecificity between these widely disjunct populations. *Amanita zayantensis* nom. prov. appears to be restricted to a rare coastal California sand hill habitat, but morphologically resembles the more broadly distributed sand-inhabiting *Amanita baccata*. Micromorphological examinations and nrDNA-ITS sequencing of herbarium specimens of the three target species and aforementioned lookalikes were performed to clarify taxonomic uncertainties and circumscribe geographic distributions. Results and implications for conservation assessment will be discussed.

The Trauma of Latinxs in the iGeneration

Sergio Guerrero*

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Alessandro Quartiroli

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#50 in Nursing Center 195*

Abstract:

The purpose of this study is to evaluate the impact that the elections had on this population. Specifically, my research focus on investigating how iGen Latinx college students were affected by this event in order to potentially categorize this event as a collective social trauma. Ten to twelve Latinx college student will be interviewed using a thematic qualitative approach (Braun & Clarke, 2006) that will seek for patterns of emotion and reaction that will help to understand the extent of the impact of the election. The questions will give the participants the liberty to express their emotions, thoughts, and ideas in a non-restrictive and yet guided manner. The collected information will provide data to potentially consider the election as a collective social trauma. It is predicted that the information obtain from this study will reveal that this population has been affected and that the election has to be seen as a source of distress for some groups. This study will contribute to not only the existing trauma research and its understanding but will also be useful to higher education and student support services to be prepared for similar events to better assess how to minimize the impact on vulnerable communities.

Self Monitoring in the Workplace: Generational Differences

Sam Gowan*

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Dr. Grace Deason

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#36 in Nursing Center 195*

Abstract:

As humans, we all care about how we are perceived through the eyes of others, as we are social creatures who desire to fit into society. This is especially true in the work environment, where people of very different ages must work productively together. Self-monitoring is one's ability to regulate one's actions based on the environment. The self-monitoring scale (SMS) is a 25 item scale used to monitor to what extent we regulate our self-presentation style and nonverbal behaviors in a social situation (Snyder, 1974). A high self-monitor is one who changes their behavior to match the situation, whereas a low self-monitor will stay consistent with their self-presentation strategies. The present research examined the extent to which people of different generations self-monitor using Qualtrics survey software. The SMS was administered to millennials (born 1980-2000) and non-millennials (born before 1980), along with 20 supplemental questions regarding the respondent's technology use and workplace preferences. I hypothesized and found that millennials scored higher in self-monitoring, possibly due to the pressure the younger generation feels to promote a positive self-image. Other results indicated that that only a small percentage of respondents believe that there is a generational divide in the workplace. However, I did identify some fundamental differences in generational workplace preferences with the potential to produce conflict.

Impact of bottleneck size on the replicative capacity of influenza viruses

Corina Valencia*, Keaton Read, Daniel Bradley, & Michael Mamerow

*indicates presenting at Seven Rivers

Institution: UW-La Crosse

Faculty Mentor: Dr. Peter Wilker

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: #6 in Reinhart Center Boardroom

Abstract:

Influenza viruses are global pathogens that infect millions of people each year and cause significant morbidity and mortality. Influenza viruses exist in infected hosts as a population of genetically distinct but related variants as a result of error-prone genome replication. Influenza genetic diversity facilitates viral adaptation, accounts for year-to-year changes in circulating influenza viruses, and contributes to the emergence of pandemic viruses from animal reservoirs.

Transmission of influenza to a new host involves a reduction in the size and genetic diversity of the viral population through stochastic and/or selective processes. These transmission-associated genetic bottlenecks may strongly influence the evolutionary trajectory of influenza viruses over time. The purpose of this research is to evaluate the impact of genetic bottlenecks of varied sizes on influenza viral populations using an in vitro system of serial viral passage.

A/Victoria/361/2011 (H3N2) influenza virus is being serially passaged in Madin-Darby canine kidney (MDCK) cells using defined population sizes of 1, 100, 1,000, or 10,000 viral particles to initiate each sequential round of infection. After 30 passages, growth kinetics and genomic sequences of resultant viral populations will be measured and compared to the parental virus. We hypothesize that there is a bottleneck threshold required for the viral population to maintain or improve replicative fitness. Viruses accumulated mutations and showed deficient growth kinetics relative to the parental virus after 20 plaque-to-plaque transfers (corresponding to a bottleneck size of 1 viral particle), demonstrating that severe bottlenecks rapidly lead to compromised replicative capacity. Serial passage experiments using other bottleneck sizes are ongoing. This work will add to our understanding of how transmission-associated genetic bottlenecks may affect influenza virus evolution.

Digital System for Measuring Raman Emission Spectra of Human Colorectal Cells

Benjamin Ambrosini* & Andrew Lee*

*indicates presenting at Seven Rivers

Institution: UW-Platteville

Faculty Mentor: Dr. Miranda Bader and Dr. Jorge Camacho

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#9 in Reinhart Center Boardroom*

Abstract:

This work is part of a multidisciplinary project combining Raman spectroscopy with microfluidic technology to assess the biochemical response of human colorectal cancer and control cells to treatment with a cesium compound. Here, we describe the precision alignment of a Raman spectroscope assembly with a microfluidic device mounted on an optical microscope. Ongoing development is outlined for a digital system which processes incident light output from the aligned Raman spectrometer on a linear CCD array using a microcontroller unit and communicates and analyzes the emission spectra data with a Raspberry Pi.

Design and Fabrication of Microfluidic Device to Entrap Single Human Cells and Measure Extracellular pH

Bridget White*

*indicates presenting at Seven Rivers

Institution: UW-Platteville

Faculty Mentor: Dr. Jorge Camacho

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#7 in Reinhart Center Boardroom*

Abstract:

Our research demonstrates the design and fabrication of a bio-compatible microfluidic device capable of entrapping single cells and measuring its extracellular pH. The fabrication process involves a specific sequence of photolithography, chemical etching, metal and chemical deposition and chloridation to create a device with multiple picoliter-size traps to isolate the cells and dual working and reference thin-film electrodes to measure pH in the surrounding media. This technology will be used to facilitate quantitative, real-time assessment of the biochemical output of the single human colorectal carcinoma and control cells in response to drug treatment.

In vitro suppression of human colorectal carcinoma cell growth with cesium

Carley Traverse* & John Dank*

*indicates presenting at Seven Rivers

Institution: UW-Platteville

Faculty Mentor: Dr. Miranda Bader and Dr. Jorge Camacho

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#5 in Reinhart Center Boardroom*

Abstract:

Previous research at UW-Platteville demonstrated that cesium treatment eliminated colorectal tumors in mice without noticeable adverse effects¹. Our project investigates cesium's suppressive effect human colorectal carcinoma cells in vitro. Preliminary dose-response curves were generated by trypan blue exclusion assay and will be refined by luminescent and fluorescent assays to determine optimal dose(s), presence/extent of apoptosis, and mitochondrial changes. Noncancerous colorectal cells were also assayed to detect any adverse effects at the cellular level. Our results provide valuable insight into cesium's effect on human cells and underlie a multidisciplinary project employing microfluidics and Raman spectroscopy to assess the real-time biochemical output of these cells in response to cesium.

Transportation Gaps to Mental Health Treatment Access in Vernon County

Angela Rodriguez*, Shoua Yang*, Elisa Cornejo* & Katelyn Gilman*

***indicates presenting at Seven Rivers**

Institution: Viterbo University

Faculty Mentor: Keith Lease

Discipline: *Social Work*

Presentation Type: *Poster Presentation*

Presentation Location: *#26 in Main Theater Lobby*

Abstract:

Transportation is a large barrier to mental health treatment in rural communities. Those suffering from mental illness are a vulnerable population. To obtain our results, the researchers looked at previous literature on transportation gaps in rural communities. Furthermore, the researchers interviewed two key informants in the community. The researchers then compared the data and found several barriers. These barriers included, distance to treatment, lack of resources, the cost of maintaining a vehicle, the weather, poverty, and scheduling treatment in relation to public transportation hours. This challenge impacts many rural communities and the solution to the challenge is hard to find. Lack of transportation to mental health treatment is a substantial concern in the Vernon County area. The researchers hope this project will bring awareness to mental health professionals who have the ability to inform others about the existing challenge.

The effects of organic fertilizer on the growth of Bull's Blood beets in heavy clay soil

Erin Heiting*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Sister Lucy Slinger

Discipline: *Environmental Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#16 in Reinhart Center Boardroom*

Abstract:

This study was performed to determine which organic fertilizer would most greatly enhance the growth of a single variety of beets grown in heavy clay soil. Six different types of fertilizers were tested. Of those six, four were fish-based, one was compost based, and one was a compost tea that was created at the garden. My hypothesis was that the compost tea would enhance the growth of the beets to a greater extent than the other fertilizers. The fertilizers were applied according to directions found on either the company's website or on the packaging itself. In order to compare the effects of the different fertilizers, a raised bed was divided into 21 plots. This meant that there were three trial plots for each fertilizer, including controls. Once the beets were harvested, each individual plot was counted and weighed. The data was analyzed, and the results show that the compost tea was the most effective organic fertilizer. Beets grown with the addition of compost tea were the largest by weight, and the compost tea plots produced the greatest percentage of beets defined as 'large' compared to the other treatments.

XXIII Olympiad: Los Angeles - Risks Pay Off

Kayla Eggers* & Michelle Steinfeldt*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: David Waters

Discipline: *VUSM 200*

Presentation Type: *Poster Presentation*

Presentation Location: *#27 in Main Theater Lobby*

Abstract:

The 1984 Olympic Games were held in Los Angeles, California. There were controversies surrounding the Games due to Soviet boycott following the US boycott in the 1980 Moscow Games. There were also security concerns with China attending the Games due to strong Anti-Communism stance. The Games introduced new sports for women including synchronized swimming, marathon, and 400-meter hurdles. This Olympic Games was the 1st corporately-funded Games rather than use of government funding. Which lead to an overall profit of more than \$200 million. 140 countries were in attendance and 221 events were held.

Self-Care Among Social Workers

Katelyn Gilman*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Janet Holter

Discipline: *Social Work*

Presentation Type: *Poster Presentation*

Presentation Location: *#24 in Main Theater Lobby*

Abstract:

Burnout and compassion fatigue occur in high rates among social workers, thus creating an even bigger shortage in the field. This research surveyed 31 members of Viterbo University's social work program alumni. The results showed that social workers are participating in self-care practices that are similar to what their perceptions of best practices of self-care are. This study also showed that agencies are working to promote self-care practices among the participants in the study. Although social workers report that they are participating in self-care, burnout and compassion fatigue are still occurring at high rates. Thus more research needs to be done to find out why burnout and compassion fatigue is still occurring in high rates.

X, Los Angeles, 1932: The Depression Games

Paige Dalbec* & McKenzie Hemann*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: David Waters

Discipline: *VUSM 200*

Presentation Type: *Poster Presentation*

Presentation Location: *#23 in Main Theater Lobby*

Abstract:

The X, Los Angeles Games in 1932. This was the most intense competition breaking nearly ever track and field record. These games took place during the Great Depression and was the first games to introduce the Olympic Village to house male athletes. These games also were the first to earn a profit of \$150,000 and introduce the three-tiered podium.

Homelessness in La Crosse County

Shelby Lautz*, Cassie Wunnicke* & Paul Forrester*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Keith Lease

Discipline: *Social Work*

Presentation Type: *Poster Presentation*

Presentation Location: *#22 in Main Theater Lobby*

Abstract:

The purpose of this research is to bring attention to the homeless population in La Crosse to empower the La Crosse residents to become a part of possible solutions to the chronic problem of homelessness. Data was collected via local and library database searches. A walk through the areas impacted by homelessness was documented via photographs. Prominent causes for homelessness in the La Crosse community include: lack of affordable housing, consistent poverty, mental health issues, substance abuse issues, traumatic experiences, and other various barriers which prevent people from changing their present homeless circumstances. When researching various solutions implemented in La Crosse to reduce the number homeless individuals, approaches varied from immediate need to sustainable change. To address immediate need for shelter, various organizations offer space to be utilized as a warming shelter for homeless individuals during the winter months in La Crosse. These organizations include Catholic Charities, Franciscan Hospitality House, Place of Grace, and the New Horizons Shelter. To address the immediate need of food, various organizations collaborate to serve meals throughout the week to individuals in need. These places include Our Savior's Lutheran Church, Place of Grace, Salvation Army, CouleeCap, The Hunger Task Force, Catholic Charities, Wesley United Methodist Church, Franciscan Hospitality House, La Crosse Community Foundation, and St. Rose convent. To address and maintain more sustainable change, organizations in La Crosse work with homeless individuals to seek employment and obtain housing, furnishing, and utility bills at a relatively reduced cost. Two prominent organizations in La Crosse include the La Crosse Collaborative to End Homelessness and the La Crosse Housing Authority.

The XXIX Olympiad: Beijing, 2008 The Games of Social Injustice

Brielle Baliff* & Andrew Wegner*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: David Waters

Discipline: *VUSM 200*

Presentation Type: *Poster Presentation*

Presentation Location: *#21 in Main Theater Lobby*

Abstract:

The Beijing Olympics had the most countries attend the games, a total of 204. They were the second host city to be Communist. They had people put in applications for protests, but all were denied to them. The country believed in swift executions without appeal. In years before the government attacked 3,000 civilians for protesting in Tiananmen Square. Micheal Phelps made his appearance and swept the games with 8 gold medals. Usain Bolt also made an appearance as the fastest man in the world. China took home 51 gold medals.

1980 Moscow Games Boycotting the Soviet Union

Talon McConnell* & Matt Basten*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: David Waters

Discipline: *VUSM 200*

Presentation Type: *Poster Presentation*

Presentation Location: *#25 in Main Theater Lobby*

Abstract:

This was the first games to have a large boycott for America. Put in place by President Jimmy Carter. This large scale boycott was a response to the Soviet invasion of Afghanistan. A total of 65 countries joined in the Boycott, where as 80 countries sent athletes. Athletes were used as political pawns. There were controversies at the games as well. Twenty percent of the athletes that were unofficially drug tested came up positive for doping, 16 Gold Medalists were among those. East Germany was known as being the worst at doping.

Effects of Substandard Housing in the Powell-Pogue-Hamilton Neighborhood

Elise Walleser*, Susan Taddy* & Cearah Kjos*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Keith Lease

Discipline: *Social Work*

Presentation Type: *Poster Presentation*

Presentation Location: *#20 in Main Theater Lobby*

Abstract:

This project examined the effects of substandard housing on the Powell-Pogue-Hamilton (PPH) neighborhood. Housing is considered substandard when it is not only in disrepair, but the disrepair poses a health risk to the residents. It is becoming increasingly hard for low-income individuals and families to find safe, quality living spaces they can afford. As a result, these individuals and families are forced to live in unsafe, substandard houses. According to the American Communities Census, in 2013, 230 La Crosse families in La Crosse live in substandard housing (Gregerson, 2016). Some health risks faced by families in this neighborhood are exposure to lead paint dust which can cause developmental disorders in children or breathing problems due to mold in their apartments or homes. This project uses pictures of actual homes in the PPH neighborhood to highlight that there is still a need for more quality housing and promote further revitalization of the neighborhood. The project also explored efforts already being taken by the city of La Crosse to improve housing such as the city's Housing Rehabilitation program that offers loans to home owners to make necessary repair to their homes and the La Crosse Promise Program which offers educational scholarships to families who remodel, build, or buy a new home in the PPH neighborhood.

The Music of Business: Exploring Independent Record Label Artists Entrepreneurial Intentions

Cameron Brock*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Jose Iglesias

Discipline: *Music*

Presentation Type: *Poster Presentation*

Presentation Location: *#19 in Main Theater Lobby*

Abstract:

The purpose of this study is to explore whether or not there is a correlation between the entrepreneurial intentions of independent musicians and the outcomes, such as number of sales, number of releases, and years of experience, and perceived success of their actions and endeavors, all in accordance with the theory of planned behavior. We hypothesized that there is a relationship between artists and their intentions. They must be aware of their perceptions and of their influences in order to have these intentions and they would not be in the industry without knowing these intentions. The three hypotheses are as follows:

H1: The intensity of entrepreneurial intentions is directly proportionate to professional performance levels.

H2: Age is directly correlated to the intensity of entrepreneurial intentions with higher intensities being related to older artists.

H3: Levels of social interactions and number of social connections is directly correlated to the intensity of entrepreneurial intentions with more social interactions being related to higher intensities of intentions.

Our target demographic was musical artists who have released music through independent record labels. The contact information of the artists was found through searches on the online distribution provider Bandcamp. Independent record labels were identified and then the artists contact information was collected and organized. Once the survey was complete and questions refined, the artists were sent emails including an introduction as well as information including why they were selected, contacted, how their information was collected, and the general purpose of the study and expected results. The survey link was also included in that initial email as well as contact information if they had any questions. The surveys were anonymous and the collection from responses was stored and organized in Qualtrics, the website that the survey was made and distributed through.

Hmong Community Needs Assessment

Houa Yang* & Shoua Yang*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Jennifer Anderson-Meger

Discipline: *Social Work*

Presentation Type: *Poster Presentation*

Presentation Location: *#28 in Main Theater Lobby*

Abstract:

La Crosse has one of the highest Hmong populations in the Midwest. Although the area is filled with an abundance of resources available to the Hmong community, many of these resources are not utilized to their fullest potential. To obtain the results, the researchers reviewed previous literature on needs assessments and barriers in Hmong communities. The researchers also surveyed and interviewed people living and working in La Crosse County. Furthermore, the researchers surveyed and interviewed several agencies in the La Crosse area that serves the Hmong community. As a result, the researchers learned several key components regarding needs in the Hmong community. This includes a need to understand and blend Western culture with Hmong traditions. It also included the need to explore more opportunities to advocate and for people to learn about the culture and traditions. In the end, the researchers hope to bring awareness regarding the needs and gaps of the Hmong community in the greater La Crosse area.

8-Week Dietary Intervention of the DASH Diet on Cardiometabolic Factors

Hannah Reedy* & Patricia Esparza*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Maria Morgan-Bathke

Discipline: *Nutrition*

Presentation Type: *Poster Presentation*

Presentation Location: *#17 in Reinhart Center Boardroom*

Abstract:

The purpose of our study was to determine if the DASH diet improved cardio-metabolic parameters and decrease visceral fat in overweight and obese individuals. Cardiovascular disease is currently the number one cause of death in Americans. Some of the most common conditions include high blood pressure and atherosclerosis. High cholesterol, specifically low-density lipoproteins (LDLs), have been shown to lead to atherosclerosis. Dietary Approaches to Stop Hypertension (DASH diet) has been shown to be effective in lowering blood pressure. Currently, research is limited on the effects of the DASH diet in lowering visceral fat in obese individuals. Visceral fat is associated with an increased for chronic diseases such as type II diabetes mellitus (T2DM) and atherosclerosis. This study examined the DASH diets effectiveness on improving lipid profile, energy expenditure, body composition decreasing the amount of visceral fat, in overweight and obese individuals before and after the 8-week dietary intervention. Study participants included adults ages 18-65, with a BMI of 25-40 kg/m². Participants were tested for blood lipids, waist to hip ratio, height, weight, body mass index (BMI), and visceral body fat obtained by the Maltron. Participants complete the VioCare food frequency questionnaire to determine average dietary intake. After the eight weeks of counseling and intervention, the participant came back to re-measure to obtain the end results. Baseline experimental parameters were measured, participants were counseled on MyPlate and the DASH diet guidelines. Study parameters were completed once again following the eight-week dietary intervention and compared with baseline results. The results from the study indicated the DASH diet decreases visceral fat, LDL, body fat percentage, and waist-to-hip ratio in the participants.

Got Fish? The Zebrafish Study

Mariah Johnson*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: R Charles Lawrence

Discipline: Biology

Presentation Type: *Poster Presentation*

Presentation Location: *#63 in Main Theater Lobby*

Abstract:

Exposure to light has been used to treat everything from acne to cancer and psychiatric conditions. Specifically, near infrared light (~720nm) has been shown to facilitate wound healing in humans. Further, Dr. Bauer has previously demonstrated increased life span in *D. Melanogaster* (fruit flies) following chronic exposure to near infrared light. The mechanism of this affect is not known but may be related to its action on electron transport during cellular respiration. Cytochrome c oxidase is a photoactive component of the electron transport chain necessary for transferring electrons to oxygen in cellular respiration. Interestingly, Teratogenic affects of ethanol exposure may be through interactions with cytochrome c oxidase. Thus, in this experiment we investigated the affect of light exposure on survivability following ethanol exposure in larval *Danio rerio* (zebrafish). Zebrafish have been extensively utilized in developmental ethanol exposure and are transparent allowing for increased light penetration. Zebrafish larva arrived at 4 days post fertilization (dpf) and housed in shallow tanks. Fish were either exposed to 1% ethanol in tank or control. Fish were then exposed to near infrared light at one of three different intensities for 10 minutes per day for 30 days. The results were unexpected as the tanks that did have ethanol seemed better than the tanks without ethanol in them. As for the light it seemed that the high light tanks had better survivability than those in the low and no light treatment groups.

Intestinal IL-23 expression in a mouse model of inflammatory bowel disease

Damon Schmalzriedt*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. Christopher Mayne

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#13 in Reinhart Center Boardroom*

Abstract:

Inflammatory Bowel Diseases (IBD), such as Crohn's Disease and ulcerative colitis, are conditions that affect the gastrointestinal tract of millions of people around the world. Common symptoms of these conditions include abdominal pain, cramping, and diarrhea. One of the causes associated with IBD is the imbalance of cytokines, specifically elevated expression of pro-inflammatory cytokines. When pro-inflammatory cytokines are overexpressed in the gut, they can drive the inflammatory responses that cause IBD. The purpose of this research was to quantify the expression of IL-23, one of the pro-inflammatory cytokines associated with IBD. In this novel mouse model, one group, termed "bigenic," possessed both intestinal antigen (mHEL) and its corresponding receptor (3A9), and three other groups were negative controls. In a related study, intestinal inflammation in bigenic mice was elevated 2-4-fold compared to the negative control mice. Since the bigenic group was more IBD-prone than the controls, the hypothesized result of this research was that IL-23 expression would be elevated in both the distal small intestine (dSI) and colon samples of from bigenic mice prior to disease development. Results from qPCR analysis of these intestinal samples suggested there is no significant correlation between presence of antigen/receptor and IL-23 expression in either pre-disease dSI or colon tissue. Since the sample size of this work was small (n=4), this project may be continued or shift focus to another pro-inflammatory cytokine that is known to be associated with IBD.

Productivity of Saved Seed versus New 2017 Ace Peppers

Aubrey Aspen*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Sister Lucy Slinger

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#12 in Reinhart Center Boardroom*

Abstract:

The objective of this study was to see if saved seeds or new 2017 ace pepper seeds would have higher productivity. The hypothesis was that the new 2017 would produce more, and higher quality peppers than the saved seeds. The quality was determined by a 3 tier system, with 1st ranked peppers having no blemishes, 2nd rank peppers with some spots/discolorations, and reject peppers that were discolored or misshapen. The new 2017 peppers produced 8300.74g of peppers with a total of 117 peppers produced to result in an average of 70.9g per pepper. The saved seeds produced 5488.468g of peppers with a total of 86 peppers produced to result in an average of 63.82g per pepper. The new 2017 had the highest proportion of 1st rank peppers, and produced no reject peppers. The saved seed had a lower proportion of 1st rank peppers, higher proportion of 2nd rank peppers than the new 2017 seeds. They also produced a small proportion of reject peppers. This confirmed the hypotheses that the new 2017 seeds would produce more, and higher quality peppers than the saved seeds.

Comparing cucumber growth and production between F1 and P1 generations

Alissa Griswold*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Sister Lucy Slinger

Discipline: *Chemistry*

Presentation Type: *Poster Presentation*

Presentation Location: *#11 in Reinhart Center Boardroom*

Abstract:

In today's society, it is becoming more prevalent that the environment is facing major challenges. The U.S. alone has the second largest carbon footprint in the world. This does not just include greenhouse gases found in the atmosphere but also pollution found in the soil which can runoff to water. Organic gardening eliminates the dangerous chemicals in the soil and provides a sustainable food source. The FSPA garden is self-sustainable and utilizes many different organic practices, which include companion planting, local compost tea, organic fertilizers, and crop rotation. Given the stresses on agricultural production, it is crucial to maximize sustainable gardening practices. This study was performed to compare the cucumber growth and production between F1 and P1 generations in heavy clay soil. The initial hypothesis was that the P1 generation would be more productive due to lack of pathogens that could have developed in the past years season. The methods I utilized for my research was obtaining a 100 foot raised bed which was split into two sections. 50 P1 and 50 F1 generation seeds were planted in each section. The cucumbers were monitored and treated equally. The total number of P1 generation cucumbers were 149 while the F1 generation was 108 cucumbers. However, the F1 weight per cucumber was 404 grams while the P1 generation was only 272 grams per cucumber. The P1 generation produced average size cucumbers (about 5 inches), however, the F1 generation produced a very odd morphology. Some F1 generation cucumbers would range from 7 inches to well over a foot in length. In conclusion, the findings have major tradeoffs. The tradeoff to this data is having more cucumbers in quantity or to have larger, uncommon morphology of cucumbers. Future studies would involve taste, thickness of skin, and seed amount in each cucumber.

Shifts in antimicrobial gene expression in mouse model of self-antigen driven inflammatory bowel disease

Ryan Cook*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. Christopher Mayne

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#10 in Reinhart Center Boardroom*

Abstract:

Inflammatory bowel diseases (IBD), such as Crohn's disease and ulcerative colitis, are inflammatory conditions affecting the gastrointestinal tract. One cause of IBD is the failure to tolerate intestinal antigens. In this study, we investigated whether self-directed autoimmune responses lead to changes in the expression of antimicrobial genes in the small intestine. Such changes could lead to alterations in the host-microbe interaction, worsening disease. Sections of distal small intestine from a mouse model of IBD were provided from the Medical College of Wisconsin. These biopsies were homogenized and RNA was purified and quantitated prior to reverse transcription of these RNA samples to cDNA. Gene expression from these samples was quantified through RT-qPCR using a Realplex instrument and expression was compared between mice with and without IBD. So far, our results show no statistically significant differences between genotypes for the expression of the antimicrobial gene Cryptdin1. This research is currently continuing with analysis of expression of additional antimicrobial genes pLysozyme and mLysozyme.

The winner and loser effect and its' effect on female mate choice

Cassandra Baranczyk*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. Michael Alfieri; Dr. Jennifer Sadowski

Discipline: *Biology*

Presentation Type: *Oral Presentation*

Presentation Location: *1:20pm in Reinhart Center 201*

Abstract:

In many social animals, past encounters with conspecifics can have profound effects on subsequent interactions, e.g., the “winner and loser” effect, and this could consequentially have an effect on female mate preferences. The “winner” effect is defined as an increased probability that an individual will win a future contest because they have recently won a past contest while the “loser” effect, is the increased likelihood that an individual will lose a future contest because they have recently lost a contest. The winner-loser effect has been studied in diverse animal taxa including mammals, birds, fish, and insects with some groups showing either winner or loser, both, or neither effects. In this study, the Madagascar Hissing Cockroach, *Gromphadorhina portentosa*, was examined to determine if one or both effects exist in this species through a series of behavioral observations. Sixty focal males were paired with winning opponents and sixty focal males with losing opponents. In all sixty trials when a focal male was paired with a “winning” opponent, the focal male lost. Additionally, in all sixty trials when a focal male was paired with a “losing” male, the focal male won the contest. After the focal individual was determined to be either a “winner” or a “loser,” a female was placed in a choice preference arena and the behaviors between, and the choice, exhibited between the female and the “winning” and “losing” individuals were measured and observed. Females preferred the “winning” males over the “losing” individuals. This research demonstrates that the predictability of the outcome of contests can be fixed based on past interactions and that both a winner and loser effect exists in male *G. portentosa* and how this consequence of past interactions influences the female mate preference of *G. portentosa*.

Targeting RAGE for Prostate Cancer Treatment

Kyle Erzen* & Subramanyam Dasari

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. Gnanasekar Munirathinam

Discipline: *Biochemistry*

Presentation Type: *Oral Presentation*

Presentation Location: *1:20pm in Reinhart Center 130*

Abstract:

Prostate cancer (PCa) is the second most common cancer among men and is the third leading cause of cancer-related death in the United States. In 2017 alone, an estimated 161,360 men will be diagnosed with PCa and approximately 26,730 deaths will result from this disease in the United States. The most common methods for PCa treatment include surgery, radiotherapy, and hormone therapy. These treatment options unfortunately have serious drawbacks such as the possibility of organ damage, adverse side effects, and eventual PCa resistance to treatment. Due to the severe threat that PCa poses across the male population, it is vital that more effective and safe treatment options are utilized. Previous research has indicated that the receptor for advanced glycation end products (RAGE) plays a vital role in the survival of prostate cancer cells, indicating that RAGE could be a potential therapeutic target. In the present study, we focused on targeting RAGE using two different antagonists, RAGE aptamer and azeliragon as potential alternative therapies for PCa. Confocal microscopy assays initially confirmed that RAGE aptamer expression successfully binds to VCaP cells while azeliragon treatment decreased the expression of RAGE in these cells. MTT cell viability assays indicated that RAGE aptamer and azeliragon decrease PCa cell proliferation in a dose-dependent manner for VCaP and DU-145 cell lines respectively. Cell cycle analysis displayed RAGE aptamer and azeliragon-treated DU-145 cells enforced cellular G0/G1 phase arrest in a dose-dependent manner. Annexin V apoptosis and ROS assays showed that RAGE aptamer and azeliragon induce apoptosis through increased cellular ROS activation. Apoptosis activation in RAGE aptamer and azeliragon-treated VCaP cells was confirmed through western blotting of the PARP-1 antibody. These findings suggest that RAGE aptamer and azeliragon may serve as successful alternative forms of therapy for PCa patients.

Patient Satisfaction Across Health Care Systems

Megan Plummer*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Annette Roter

Discipline: *Health Admin*

Presentation Type: *Poster Presentation*

Presentation Location: *#43 in Nursing Center 195*

Abstract:

This research examines patient satisfaction in five different health care systems including Mayo, Gunderson, Fairview, Allina, and North Memorial. All of these systems are within the La Crosse-Minneapolis midwest area. This research is based off scholarly literature and a qualtrics survey administered in June and July of 2017. In order to assess the level of patient satisfaction, questions regarding levels of communication, cleanliness of environment, empathy of staff, and quality of procedure were used.

Stock Price Correlation Between Related Companies

William Thornton-Weyrauch*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: John Robinson

Discipline: *Business*

Presentation Type: *Poster Presentation*

Presentation Location: *#60 in Nursing Center Foyer*

Abstract:

This project examines historical stock prices in order to discover correlations between stock prices in related companies. Two years of historical stock price data was used from S&P 500 Information Technology group (S5INFT) of companies. The analysis of this historical data indicates that changes in stock prices for certain companies strongly correlation other specific companies. It should be possible to use these correlation to predict future stock changes in related companies.

8 Week Dietary Intervention of Pecans Effect on Cardio-Metabolic Parameters: Lipid Panel and Fasting Blood Glucose

Kendal Schmitz*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Karen Gibson & Maria Morgan-Bathke

Discipline: *Nutrition*

Presentation Type: *Poster Presentation*

Presentation Location: *#56 in Nursing Center Foyer*

Abstract:

The prevalence of obesity and overweight individuals has increased in the recent years. This leads not only to co-morbidities such as type 2 diabetes, cardiovascular disease and hypertension, but could also result in more severe and potentially life-threatening complications. This then raises the imperative question, what can we do to stop this epidemic in America? To help answer this question, we conducted research using an intervention of pecans due to their high content of monounsaturated fatty acids. Monounsaturated fatty acids have been shown to improve lipid profile and lower low-density lipoproteins. The aim of this study is to determine if a diet supplemented with 1.5 ounces of pecans daily for 8 weeks could improve blood glucose, lipid panel, inflammatory markers, resting energy expenditure and body composition of overweight and obese individuals. This was an 8-week intervention in which participants were randomly assigned to either the control or experimental group. The experimental group was provided with 1.5-ounce portioned packs of pecans and were instructed to consume one pack per day for 8 weeks. Both groups were instructed to maintain their normal dietary intake and lifestyle. 26 participants completed the study and 13 were in the control group, while 13 were in the experimental group. The Cholestech LDX was the machine used to get a full lipid panel reading, which includes HDL, LDL, VLDL, triglycerides and total cholesterol. The machine also calculates fasting blood glucose levels. Upon analyzing the data, there was no significant difference in either the lipid panel or the fasting blood glucose levels between the two groups at baseline or endpoint screenings. This indicates that the data fails to support the proposition that the hypothesis is true. Limitations, such as sample size and duration of intervention, to this study warrant more studies investigating the effects of MUFAs in the diet.

8 Week Dietary Intervention of Pecans on Cardio-Metabolic Parameters: Body Composition Emphasis

Angela Riederer*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Karen Gibson & Maria Morgan-Bathke

Discipline: *Nutrition*

Presentation Type: *Poster Presentation*

Presentation Location: *#55 in Nursing Center Foyer*

Abstract:

The number of individuals with insulin resistance and obesity has been rising at an alarming rate in the United States. The consumption of monounsaturated fatty acids (MUFAs) has benefits like reducing inflammatory biomarkers and improving insulin sensitivity. The purpose of this study was to investigate if MUFAs from pecans influence body composition. The study included 26 obese individuals ages 26-29. The dietary intervention was a consumption of 1.5 oz. of pecans per day for 8 weeks. The body composition measurements taken were height, weight, BMI, waist hip ratio, visceral fat, and belly button circumference. A Maltron 920 II was used to measure visceral fat and total body fat percentage. Besides body composition, each participant received nutrition counseling, a lipid profile reading, fasting blood glucose measurements, and a food frequency questionnaire. All measurements were taken at baseline and endpoint screenings. No significant changes in body composition were observed between baseline and endpoint screenings. Further research needs to be done on a larger sample size and a longer dietary intervention span to find more informative results.

8 Week Dietary Intervention of Pecans Effect on Cardio-Metabolic Parameters: Effects of Dietary Intake

Tessa Solberg*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Karen Gibson & Maria Morgan-Bathke

Discipline: *Nutrition*

Presentation Type: *Poster Presentation*

Presentation Location: *#54 in Nursing Center Foyer*

Abstract:

The relationship between the average dietary intake of vitamin A, vitamin C, vitamin D, dietary fiber and sodium and levels of LDL, VLDL, HDL, blood glucose, total cholesterol and BMI was investigated in this section of a larger research project. Participants, ages 18-65 with a BMI of 25.0 kg/m² – 40.0kg/m², were included in this study. They were asked to take a food frequency questionnaire and we screened for the metabolic parameters listed above. A correlational test was done between the two factors. It was found that four out of the thirty comparisons were correlations of statistical significance. These correlations were found between vitamin D and BMI, vitamin A and VLDL, vitamin C and VLDL, and dietary fiber and VLDL.

Compost Method Comparison and Enactus, BGC, and Hillview Urban Agriculture Service Learning

Amanda McCray*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Pam Dixon

Discipline: *Environmental Science*

Presentation Type: *Poster Presentation*

Presentation Location: *#53 in Nursing Center Foyer*

Abstract:

We have a broken food system; 18 percent of children in the La Crosse area are food insecure. While appreciating and benefiting from an organic garden, we used this project as a guideline for the Enactus-Boys and Girls Club garden's future success. Composting adds nutrients and organic matter back to soil, benefits agriculture, reduces reliance on synthetic agriculture, reduces reliance on synthetic fertilizers, diverts methane-producing organic materials from landfills, and improves soil water retention capacity. Our central research question was; what are the effects of four composting techniques on yield, water retention, and overall vitality of cherry tomato plants as compared to the control. Our primary research method is in weekly compost application and observation. Using two different composting methods (vermicompost and composted manure), we applied vermicompost tea, composted manure tea, as well as directly applying vermicompost and composted manure to the plants. Hillview Urban Agriculture is a small organization with a commendable vision to prevent and combat food insecurity. The goal for this summer service-learning project was to establish community partnerships that are mutually beneficial. The goal of the compost experiment is to promote the importance of composting as a sustainable practice while aiding the Enactus-BGC garden in determining the most effective methods of compost to apply. Through this project's service learning component we were able to strengthen Enactus's relationship with the Boys and Girls Club and Hillview Urban Agriculture. We found that the tomato plant with composted manure applied directly had a larger yield and stronger root system as compared to the other applications and control. Through this project's service learning component we were able to strengthen Enactus's relationship with the Boys and Girls Club and Hillview Urban Agriculture.

Select Micronutrients Relationship to Fasting Blood Glucose and LDL Cholesterol in Individuals That Are Overweight/Obese

Samuel McCormick*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Karen Gibson & Maria Morgan-Bathke

Discipline: *Nutrition*

Presentation Type: *Poster Presentation*

Presentation Location: *#52 in Nursing Center Foyer*

Abstract:

Background: Research has indicated that there may be a positive association between increased proportions of dietary monounsaturated fatty acids (MUFAs) and improved blood glucose levels. Additionally, increased dietary MUFAs are associated with improved levels of low density lipoprotein (LDL) cholesterol, an important biomarker of cardiovascular health. There has also been literature indicating there may be a link between intake of micronutrients such as iron, selenium, magnesium, vitamin E, and zinc and blood glucose levels. Micronutrient relationship to LDL cholesterol is not well established. Using the validated Vioscreen food frequency questionnaire (FFQ), the current study aims to outline the relationship between various micronutrients and fasting blood glucose (FBG) levels as a marker of insulin resistance and LDL cholesterol in individuals that are overweight/obese.

Objective: To outline the effect of dietary micronutrients on FBG and LDL cholesterol in individuals that are overweight/obese using the Vioscreen FFQ.

Methods: All participants completed the Vioscreen FFQ. Participants were required to be fasting for at least 8 hours before blood glucose test was performed. FBG and LDL cholesterol were compared with dietary intake of iron, selenium, magnesium, vitamin E, zinc, MUFAs, polyunsaturated fatty acids (PUFAs), and saturated fatty acids (SFAs), and dietary cholesterol.

Results: A univariate regression analysis of FBG compared with intake of different micronutrients gathered via Vioscreen FFQ showed a number of correlations.

There was a statically significant negative correlation between fasting blood glucose (FBG) and dietary intake of magnesium ($r=-0.20$, $p=0.01$), MUFAs ($r=-0.16$, $p=0.05$), and saturated fatty acids (SFAs) ($r=-0.20$, $p=0.03$).

There was a positive correlation present between FBG and dietary cholesterol ($r=0.12$, $p=0.57$), and negative correlations were present between FBG and iron ($r=-0.23$, $p=0.75$), selenium ($r=-0.09$, $p=0.51$), vitamin E ($r=-0.07$, $p=0.89$), zinc ($r=-0.12$, $p=0.6$), and polyunsaturated fatty acids (PUFAs) ($r=-0.03$, $p=0.89$), however these findings did not reach statistical significance.

A univariate regression analysis of LDL cholesterol compared with intake of different micronutrients gathered via Vioscreen FFQ showed a number of correlations.

There was a statically significant positive correlation between LDL Cholesterol and dietary intake of magnesium ($r=0.04$, $p=0.01$). Statistically significant negative correlations were present between

LDL cholesterol and dietary intake of iron ($r=-0.13$, $p=0.01$), selenium ($r=-0.25$, $p=0.004$), zinc ($r=-0.21$, $p=0.004$), MUFAs ($r=-0.18$, $p=0.007$), PUFAs ($r=-0.34$, $p=0.0001$), SFAs ($r=-0.06$, $p=0.03$), and dietary cholesterol ($r=-0.34$, $p=0.02$).

There was a positive correlation present between LDL cholesterol and Vitamin E ($r=0.07$, $p=0.77$) however this finding did not reach statistical significance.

Conclusions: Data gathered from the Vioscreen FFQ suggests that there are significant correlations present between certain micronutrients and FBG levels for individuals that are overweight/obese. Additionally, there are significant correlations between certain micronutrients tested and LDL cholesterol. These results indicate that increasing the amount of dietary magnesium, MUFAs, and SFAs may be a valid dietary intervention for lowering blood sugar levels. A noteworthy finding of this study was the negative relationship between MUFAs ($r=-0.61$, $p=0.01$), and SFAs ($r=-0.58$, $p=0.01$). This finding supports the theory of a high fat, low carbohydrate diet as an intervention for the maintenance of blood glucose levels in those with insulin resistance. It is particularly interesting that increased proportions of dietary SFA were associated with lower FBG levels, considering current 2015 U.S. Dietary Guidelines suggest limiting saturated fat in the diet. Additional findings indicate that increasing dietary intake of iron, selenium, magnesium, zinc, MUFAs, and PUFAs was shown to significantly reduce levels of LDL cholesterol. Increased SFAs and dietary cholesterol were also significantly associated with reduced LDL cholesterol, however this is counterintuitive based on the present understanding of lipoprotein metabolism. It must be noted however, that the sample size used was fairly small with 22 participants. This limitation indicates more research must be done to clarify the validity of using FFQ data to explore relationships between metabolic parameters, and the mechanisms by which these micronutrients may have an impact.

Resiliency and Revitalization: Toward Regenerative Relationships between Anchor Institutions and Neighborhoods in South La Cross

Jessie Knapp* & Alyse Ripp*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Matthew Bersagel Braley

Discipline: *Community Research*

Presentation Type: *Poster Presentation*

Presentation Location: *#51 in Nursing Center Foyer*

Abstract:

This research aimed to address the question, “how does Gundersen Health System function as an anchor institution in South La Crosse?” In order to engage this question, we worked with Global Partner’s Mentor Program and interviewed 8-10 participants. Our primary goal throughout this research was to interact with at least 8 mentors and determine common themes and a relative conclusion to our research questions from their interviews.

This research used semi-structured interviews to collect qualitative data about the experiences of participants in the Gundersen Global Partner Mentor Program. The following general process was used to guide the collection of data:

1. Members of the research team will use purposive sampling in choosing their candidates. Contact interview candidates via email and / or phone to solicit participation in the study. Interested candidates will be provided with the informed consent and interview protocol. A signed informed consent will be obtained.
2. A member of the research team will schedule an interview time and location at Gundersen Health System, La Crosse Campus, or another agreed upon public location. Interviews will last approximately 45 – 60 minutes. Individual interviews will be conducted by 1-2 members of the research team.
3. Interviews will be digitally recorded for accuracy, and members of the research team will transcribe interviews they conducted. Transcripts will be sent to the participants via email. Participants will have the opportunity to review the full transcripts and clarify or add to their responses.

As a result of this research we discovered that this mentor program is benefiting both the Hamilton youth and the Gundersen employees in a positive way. Mentors are discovering that their mentored youth have high resiliency levels and tend to perceive negative situations with uncommon coping means. Mentors also noted the difficulty of navigating the meaning of who a mentor is supposed to be in this type of relationship. Another common theme was the conversation about the community support and assistance Gundersen, as a large health system, can participate in, so that they may work with and for their community. These results do engage our question in asking how Gundersen, as an anchor institution, can play a larger community role.

An Analysis of Marketing Effectiveness in the Sustaining of Local Music Bands

Alex Douglas*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Derek Cortez

Discipline: *Business*

Presentation Type: *Poster Presentation*

Presentation Location: *#61 in Nursing Center Foyer*

Abstract:

The purpose behind this qualitative study was to analyze different marketing strategies that local bands utilize, and determine which strategy was most effective. This study built off of existing research on marketing for bands, and used case studies to look more closely at marketing for bands on the local level.

This qualitative study used both convenience and snowball sampling of local bands in southeastern Minnesota as well as western Wisconsin. Data was collected through interviews with members of 5 different bands which consisted of 10 open ended questions. Comparative analysis was then used to find common themes.

The results showed 4 common themes in factors for drawing in new fans, as well as 3 themes for bringing back existing fans. The major factors for drawing in new crowds were print advertising, word of mouth advertising, a unique draw, and social media, which accounted for 12%, 21%, 25%, and 43% of all new fans, respectively. The 3 major factors in bringing back fans were effective marketing, having a high quality product, and building relationships which account for 21%, 30%, and 50% of returning listeners.

From these results, multiple conclusions can be drawn. First, it verifies the idea that social media is the biggest factor in attracting new audiences, at least on the local level. But even more significantly, it shows that when trying to keep listeners interested, bands should worry more about building relationships than actively trying to market. Ideally, a band would do both, but this makes it easier to break down what is most effective.

Increasing Alumni Engagement at Viterbo University

Audrey Manning*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Rochelle Brooks

Discipline: *Marketing*

Presentation Type: *Poster Presentation*

Presentation Location: *#62 in Nursing Center Foyer*

Abstract:

Alumni engagement is an important aspect of any university. Private universities, like Viterbo, rely heavily on alumni contributions to fund various elements such as scholarships. Due to low alumni engagement at Viterbo University, determining why alumni were not engaged was needed. This study aimed to uncover reasons for low alumni engagement at Viterbo University and ways to increase this engagement. The methods for uncovering these findings were primary and secondary research, which were accomplished through use of a survey and content analysis. Through secondary research, many themes were revealed. The first theme was that donating within the first three years of graduating leads to more consistent donors. The second theme was that forming relationships with current students will make them more likely to stay engaged with the university once they graduate. The third and final theme was that finding ways to engage alumni that is not monetary will lead to their support once they are able to financially support the institution. Through the survey aspect of the research, it was found that about 78% of participants are not involved with the Alumni Association at Viterbo. Viterbo alumni do not feel connected to campus once they graduate. Furthermore, many alumni are interested in the success and accomplishments of current students. Finally, distance, cost, or conflicting schedules are the main reasons why alumni do not attend Alumni Association events. The recommendations based on these findings are as follows: Host more networking events for alumni to attend. These events could be digital/web-based to allow alumni from anywhere to participate. Get students involved and exposed to the alumni association while still on campus to increase the connection they feel to Viterbo after graduation. Offer more opportunities for alumni to return and share their work experiences with current students to increase alumni engagement as well as current student engagement. Utilize the Alumni Association's LinkedIn page to help current students, alumni, and faculty connect. Career Services could also join forces with this opportunity and use it to bring employers to current students and alumni. Finally, hold more events in different cities and states to accommodate the alumni who live elsewhere. If this research was continued, the next phase would be to implement these recommendations and monitor alumni engagement to see if it increases.

XXVII Sydney Olympiad: "Fighting Hate with Love"

Alissa Griswold* & Hope Sternberg*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: David Waters

Discipline: *VUSM 200*

Presentation Type: *Poster Presentation*

Presentation Location: *#31 in Main Theater Lobby*

Abstract:

The start of a new millennium and the shifting of the Olympics from Europe to Sydney, Australia featured impact of Aboriginal Australian Kathy Freeman who lit the Olympic Flame and also won gold in the women's 400-meters. The Sydney organizers had to face nuclear terrorism threats and doping. 200 National Olympic Committees entered athletes in a total of 300 sporting events. Over 10,651 athletes competed. The Sydney Olympic Games were also committed to showing diversity with women rights and race relations.

Intergenerational Service Learning

Kaitlyn Juen*

***indicates presenting at Seven Rivers**

Institution: Viterbo University

Faculty Mentor: Melanie Johnson

Discipline: *Service Learning*

Presentation Type: *Oral Presentation*

Presentation Location: *1:20pm in Nursing Center 101*

Abstract:

The goal for Intergenerational Service Learning was to discover the needs of the older adult population living in La Crosse and Vernon counties. A needs assessment was used as the method for obtaining data. The assessment included fifteen questions with three possible responses: yes, no, or maybe. Questions covered a variety of topics derived from challenges facing the older adult, such as nutritional needs, social isolation, and a desire to learn more about the aging process. I also spoke informally with the participants to gain a more in-depth understanding of the information than the assessments alone could provide. I administered the survey at four meal sites in La Crosse County and three meal sites in Vernon County. This yielded me with 87 survey responses. The questions that yielded the most interest were related to learning more about fall prevention, playing games, and cooking meals on a budget. The large interest in the question regarding interest in playing games suggested an unmet need regarding social isolation. Increased understanding of the needs of older adults in the area allows for better utilization of volunteer time and community resources.

XXVth Olympiad Anniversary: The Greatest Games Ever?

Alyssa Nilssen* & Nick Schmidt*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: David Waters

Discipline: *VUSM 200*

Presentation Type: *Poster Presentation*

Presentation Location: *#29 in Main Theater Lobby*

Abstract:

“Until I came to Barcelona, I thought I knew what a sporting city was.” - Baron de Coubertin. A total of 169 countries were represented with 25 Sports. It was the debut of Baseball and Judo along with the abolishing of Communism. Also, Barcelona was the hometown of IOC president, Juan Antonio Samaranch and was the first "smoke free" Olympiad.

Cumbersome Cucumbers and Sustainable Methods of Agriculture

Shelby Lautz*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Sister Lucille Slinger

Discipline: *Sustainability*

Presentation Type: *Oral Presentation*

Presentation Location: *12noon in Reinhart Center 201*

Abstract:

The purpose of this research was to determine what type of cucumber seed would grow best in heavy clay soil at the organic FSPA garden on St. Joseph's Ridge while also implementing organic and sustainable methods of agriculture. 5 types of cucumbers were selected and planted in a raised bed in the garden. Data was collected and pictures were documented on the germination and production rates of each cucumber variety. Methods and use of companion planting, mycorrhizal, and compost tea were implemented to aid in germination and production rate, water retention, and pest reduction. Findings concluded that (1) companion planting is the best natural form of pest reduction, (2) mycorrhizal significantly increases the water retention of a plant's root system, (3) organic compost tea is a promising method of natural fertilizer and pest reducer, and (4) the cucumber variety, Japanese Long, was the most successful in heavy clay soil with vast amounts of shade. These findings have provided pertinent information to the staff at the FSPA garden to select crops that will have promising germination and production rates in combination with their organic and sustainable methods of agriculture.

Try Me Good King: A Musical and Contextual Analysis of the Wives of King Henry VIII

Arianna Day*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Ann Schoenecker

Discipline: *Music*

Presentation Type: *Oral Presentation*

Presentation Location: *1:40pm in Nursing Center 101*

Abstract:

“Try Me Good King: A Musical and Contextual Analysis of the Wives of King Henry VIII” explores the lives the wives of King Henry VIII of England through Libby Larsen’s song cycle: “Try Me Good King: The Last Words of the Wives of King Henry VIII.” Each wife was an integral part of history and the kingdom of England during the 16th century. Larsen’s music uniquely and truthfully depicts the emotions of each queen, using a setting of each queens’ own words to explore their individual demeanor and influence. Music is one of the most intimate and natural expressions of emotion. Often, music is a reflection of how the composer feels about an experience or emotion. However, Larsen’s setting strives to not tell how she feels about the women featured, but how each queen felt.

To research this topic, I started at the beginning, with researching each queen in depth. I used autobiographical texts from several libraries, as well as viewed different documentaries of each queen to develop an understanding of how others portrayed the queens versus what I was reading. Once this research was concluded, I found a dissertation on the topic that had direct quotes from Larsen, speaking on behalf of the work. Then I analyzed the music in a way that would tell me more about emotion than an academic analysis would, figuring out how each note, dynamic, and descriptive word in the score were to directly correlate to what each queen was feeling, or represent what was going on in their lives at that time.

I found that all my questions were answered in this research process. Every single note, rhythm, dynamic, and direction in Larsen’s setting was intellectual and deliberate to tell the story truthfully, while also engaging emotions within the listeners.

The Problem With De-extinction

Kylie Reising*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. Jason Howard

Discipline: *Environmental Ethics*

Presentation Type: *Oral Presentation*

Presentation Location: *12:20pm in Reinhart Center 201*

Abstract:

There was a time when the storyline of Jurassic park was merely science fiction, but those days could soon be over as scientist work to resurrect extinct species. Scientists met in 2015 to discuss which species are viable options for “de-extinction”, which included the dodo bird, Tasmanian tiger, woolly mammoth, and the saber-toothed cat (Welsh, 2015). This presentation will discuss where these species will be introduced, reasoning behind these resurrections, and what this will do to human’s connection to species conservation. These will be answered through exploring two positions in environmental ethics- ecocentrism and preservationism. It will conclude by recommending a cease and desist of the interfering actions of humans, including the actions causing extinction and the act of de-extinction.

Challenge of Change: A Menu of Option

Sarah Aubin*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Debra Murray

Discipline: *Nutrition*

Presentation Type: *Poster Presentation*

Presentation Location: *#37 in Nursing Center 195*

Abstract:

The United States is experiencing an obesity epidemic. In order to address this issue it is important to identify best practice for facilitating nutritional behavior change. This research examined three change interventions with graduate-level students. The results of this project indicate that all three interventions have merit, and that self-selection may be important when working with populations.

Addictiveness of Natural Sugar Versus Artificial Sweetener

Desirae Schuh

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. R. Charles Lawrence

Discipline: *Biology*

Presentation Type: *Oral Presentation*

Presentation Location: *1:40pm in Reinhart Center 201*

Abstract:

Consumption of sugar results in an increase in dopamine receptor binding which shares a similar process to the consumption of alcohol and other drugs (Avena, n.d., 2008 and Fortuna, 2010). Increased dopamine release triggers the reward pathway and contributes to the addictiveness of a substance. Rat and human brains are structurally very similar and share the same neurotransmitters and receptors (University of Utah, n.d). Humans and rats also share similar genes in their reward pathways (University of Utah, n.d) which are activated by sugar and other addictive substances (Avena, 2008 & Fortuna, 2010) making rats a common model for addiction studies. In this study, two-bottle choice preference tests were used to test the preference of aspartame versus sucrose in 10 male Long-Evans rats. Motivation for sucrose was then tested using an elevated plus maze. Rats chose a 2% sucrose solution over plain tap water and over a 0.2% aspartame solution, both with a $p < 0.001$. There was not increased motivation for sucrose when rats were placed in an elevated plus maze. One rat per housing pair was determined to be a high sucrose drinker while the other was determined to be a low sucrose drinker, suggesting a social hierarchy.

An Examination of Intrinsic and Extrinsic Motivations for Women Entrepreneurs

Lauren Cortez*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Pam Dixon

Discipline: *Business*

Presentation Type: *Poster Presentation*

Presentation Location: *#48 in Nursing Center 195*

Abstract:

The purpose of this qualitative study was to examine women entrepreneurs' motivations to start and sustain their businesses. Expanding upon research that analyzes motivation of entrepreneurs, this research developed case studies that illuminated themes of motivation for women entrepreneurs.

This was a qualitative study, which used a convenience sample of women in Western Wisconsin. The data was collected through interviewing ten female entrepreneurs who started or bought and are currently sustaining a business. The interviews consisted of ten open-ended questions. The data underwent a constant comparative analysis to uncover common themes.

The results show that the extrinsic motivators were of a smaller impact than the intrinsic motivators. Out of all the data, three factors were most common for all interviewees. First, only one extrinsic motivator was most commonly found, which was the external motivation from family, friends, or other businesses who supported the start up or maintenance of the business. Second, the majority also expressed the desire to grow the business as a main motivator. Finally, 90% of the interviewees expressed a "just do it" type of motivation. These women had the motivation that they could not avoid the inevitable and weren't going to find a way around or out of difficulties, thus the "just do it" attitude. Additionally, 80% also expressed intrinsic motivator of passion for the work that they do.

These results exemplify the importance of a strong support network for both the startup and maintenance of a business, how important growth is to sustain the business, and that passion is extremely important to an entrepreneur's ability to sustain the business. These women feel satisfied and successful by simply finding what they love, doing what they love, and loving what they do.

Eyewitness Memory and the Role of Gestures

Hannah Conroy*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. Stephanie Thorson-Olesen

Discipline: *Psychology*

Presentation Type: *Oral Presentation*

Presentation Location: *1:20pm in Nursing Center 104*

Abstract:

This study investigates the effect of accurate gestures in comparison to inaccurate gestures on accurate eyewitness memory recall. Twenty-nine students from the general psychology class at Viterbo University were asked to watch a mildly violent, mock crime scene, followed by a video of an interviewer asking a series of questions pertaining to the crime scene video while demonstrating accurate or inaccurate gestures. The participants' answers were recorded into a blank document. Results determined that the group shown accurate gestures in their interview video provided more accurate answers in their document. Results also yielded a significant difference between questions that were accompanied by a gesture versus questions that were not accompanied by a gesture. Implications of this study could lead to more effective nonverbal communication.

The Amateur Arbologist's Field Guide

Matthew Bartels*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Dr. Elizabeth Marzoni

Discipline: *Creative Writing*

Presentation Type: *Poster Presentation*

Presentation Location: *#59 in Nursing Center Foyer*

Abstract:

"The Amateur Arbologist's Field Guide" is a creative poetry project that explores how the eco-poetic tradition can help to elucidate the beauty of the natural world and even alter people's practices and beliefs towards being more sustainable. With a basis in science as well as literary tradition, my work has an emphasis on attempting to both dignify the natural world as well as show much of its beauty and ways in which that beauty has been altered or destroyed. Specifically, my work is centered around trees and plant-life. I "recycle" other poets' work in some found poems and I create and outline the beauty and disasters of nature within lyric poems that have an emphasis on sound and image. This presentation will focus on my writing from the perspective of a person who is self-aware of all of the damage and disrespect that has been done towards the natural world in the past and present and who appreciates the beauty that it still contains. In addition to sharing some of the poems I have written, I will talk about the various research I have done in order to create the poems themselves. This includes my scientific research into plant intelligence as well as my research into the craft and literary tradition of eco-poetry. The goal of this presentation is not only to share all of the work that I have done, but also to bring the work itself to its fruition. Poetry is a medium that is meant to be read and heard and can't have the intended affect on others unless it is experienced in one of these ways. Through my presentation, I will complete my research by seeing the reactions and gauging potential attitude changes that may occur when people hear and read the poetry itself.

Cultural Competence in Law Enforcement

Hannah Erickson*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Ryan Anderson

Discipline: *Criminal Justice*

Presentation Type: *Poster Presentation*

Presentation Location: *#32 in Main Theater Lobby*

Abstract:

The purpose of this research is to identify whether Wisconsin's Law Enforcement Basic Training (LEBT) 720-Hour Curriculum is generating improved results between a pre-test and post-test survey. Two sections of cultural competence are covered throughout the curriculum, combining to a slim eight hours spent on the topic. These eight hours are simply classroom lectures, and are not included in the 40 hours of simulation training at the end of the course. The two surveys were given at Western Technical College's Police Academy in Sparta, Wisconsin, before the first section of cultural competence was covered in the classroom, and after the second section. The questions on the survey were designed to gradually extract the biases one might have against any particular race or ethnic group. What was found, was that between the two surveys, there was little to no change in the averages of scores per question. The majority of trainees were Caucasian males; only one female, one Hispanic American individual, and one African American Individual were in the class, which is not representative to the county in which it serves. It is made obvious by these surveys that the cultural competence curriculum in Wisconsin's LEBT is not sufficient. More hours in and out of class should be required for this curriculum, and a greater emphasis of the importance of cultural competence is crucial for the improvement of this area of weakness in Wisconsin's criminal justice system.

Washburn Neighborhood Food Desert

Lauren Lammers*, Andi Baecker* & Taylor Martin*

*indicates presenting at Seven Rivers

Institution: Viterbo University

Faculty Mentor: Keith Lease

Discipline: *Social Work*

Presentation Type: *Poster Presentation*

Presentation Location: *#30 in Main Theater Lobby*

Abstract:

According to the Centers for Disease Control (CDC) “only 21.8% of La Crosse County adults meet the federal government’s guidelines for fruit and vegetable consumption” (para. 2). A community needs assessment was done throughout Viterbo University neighborhood. Specifically, the Washburn Neighborhood was examined for both its strengths and weaknesses. After conducting a community needs assessment for both strengths and weaknesses, methods can be identified to better serve the community and meet basic food needs that are not being met especially for those living in the Washburn Neighborhood. It was found that residents living in the Washburn Neighborhood live in a food desert. This means that these residents have limited access to food that is fresh, healthy, and affordable (Wright, Donley, Gualiteri, & Strickhouser, 2016). Therefore, having to travel at least one or more miles to shop where individuals believed that healthy and affordable options were available. The question then becomes, do stores offer low fruit and vegetable costs similar to the cost of junk food that is expensive enough to buy in bulk? (Beckman, Cohen, Dubowitz, Gosh-Dastidar, Huang, Hunger, & Zenk, 2014). Other factors that contribute to food deserts include race, socioeconomic status, and quality of education. Education to kids and parents on nutrition in these areas is severely lacking because many do not know what makes a food product healthy or unhealthy. Many families living in a food desert shop for the most amount of food at the lowest price, no matter if the food is healthy or not (Wright, Donley, Gualtieri, & Strickhouser, 2016). There are many steps that need to be made to help stop food deserts and one big one is to acknowledge that they do exist and there is a problem (Wright, Donley, Gualtieri, & Strickhouser, 2016, pg. 180).

BRIDGING GENERATIONS: A Collection of Oral Histories in Wabasha County, Minnesota

Abigail Hall*

*indicates presenting at Seven Rivers
Institution: Viterbo University

Faculty Mentor: Dr. Andrew Hamilton
Discipline: *History*

Presentation Type: *Oral Presentation*
Presentation Location: *1pm in Nursing Center 101*

Abstract:

This project was conducted in concert with the Wabasha County Historical Society to examine the current disconnect between generations and to preserve local history. The goals were to highlight the significance of history in rural areas and to bring generations together through oral history. In the field of Midwestern history there is a lack of research, especially about more recent history. Perhaps because the twentieth century is not the distant past it has been somewhat neglected by historians. Yet, the stories of the twentieth century are living history and need to be heard and preserved. An exhaustive survey of primary and secondary research was conducted to establish the context of rural culture and the history of Wabasha County. Seven interviews were conducted with older members of the community. All of the interviewees grew up in Wabasha County in the early and mid-twentieth century. They shared their experiences with living in or near independent small towns full of businesses, which became the quiet retirement communities they are today. Then, local students had the chance to hear the interviews and were inspired to do interviews of their own. There is a disconnect between what the older generations have experienced and the experience of youth today. Technology has greatly changed life in rural communities. To better understand this transformation the lives of everyday people need to be examined. The interviews are archived for current and future generations by the Wabasha County Historical Society at the Reads Landing Schoolhouse Museum in Minnesota.

KRAS Driven Silencing of DKK Genes is Mediated by miR-29b

Maria Valdes*

*indicates presenting at Seven Rivers

Institution: Waldorf University

Faculty Mentor: Gary Combs

Discipline: *Biology*

Presentation Type: *Poster Presentation*

Presentation Location: *#14 in Reinhart Center Boardroom*

Abstract:

KRAS is an oncogene that is frequently activated in human malignancies. In part, KRAS establishes a malignant program by driving promoter DNA methylation and silencing tumor suppressor genes (TSGs). This is accomplished, partially by reducing TET1 transcription. TET enzymes depress DNA methylation by converting 5-methylcytosine (5mC) bases to 5-hydroxymethylcytosine (5hmC). Presence of 5hmC on the promoter region promotes active demethylation and thereby prevents silencing of TSGs. Dramatic reduction in 5-hmC and TET mRNA levels in association with hypermethylation-mediated silencing of TSGs have been reported in solid tumors. Thus, TET proteins are considered as tumor suppressors in regard to the role in maintaining other tumor suppressor genes in their unmethylated state. A recent study as well as our lab identified targeting of TET1 enzyme by microRNA-29b that downregulates its expression downstream of KRAS. In a colon cancer study, TET1 knockdown epigenetically silences WNT pathway inhibitors (Dickkopf-related proteins, DKKs) by DNA hypermethylation on their promoter region. Here we hypothesized that miR-29b mediated downregulation of TET1 promotes WNT pathway upon KRAS transformation. In this study, we analyzed gene expression of miR-29b, TET1 and DKKs in two different lung cell line models by quantitative RT-qPCR. Introduction of KRAS in HBEC3 cells induced miR-29b level accompanied with decreased TET1 and DKK 3, 4 expression. On the other hand, inhibition of KRAS pathway in HBEC3 and H1299 cells by a MEK inhibitor or antagomir-29b led to increase TET1 and DKK gene expression. This suggests KRAS mediated TET1 suppression might lead to hypermethylation of WNT pathway inhibitors and hence their decreased expression. Here, we propose that hyperactive KRAS signaling promotes WNT pathway and hence cellular proliferation via miR-29b mediated TET1 suppression.

Design of an undergraduate student-initiated interdisciplinary nutrition education and promotion program at Pine Ridge Indian Reservation elementary school

Heather Sharkey*, Alexa Mertens* & Jennifer Tuttle*

*indicates presenting at Seven Rivers

Institution: Winona State University

Faculty Mentor: Janet Macon

Discipline: *Nutrition*

Presentation Type: *Poster Presentation*

Presentation Location: *#64 in Main Theater Lobby*

Abstract:

Background: 40,000 Oglala Lakota who live on Pine Ridge Indian Reservation in southwestern South Dakota experience high rates of poverty and food insecurity (1,2). Allen, the poorest Pine Ridge community, reports a per capita income less than \$2,600 (3,4). Students at American Horse Elementary School (AHS) in Allen participated in the U.S.D.A. grant-funded Fresh Fruit and Vegetable Program (FFVP) during the 2016-17 academic year. **Purpose:** The purpose of this interdisciplinary service learning project was to provide Winona State University (WSU) undergraduate students majoring in three different health-related programs with experience researching, fundraising, promoting, planning and writing curriculum for elementary-aged students in an at-risk population. **Methods:** WSU students initiated and proposed a project to AHS administration and faculty to design curriculum to complement the FFVP and build classroom support for healthy eating behaviors. The project, titled FUN Fridays, included 12 lesson plans – six healthy eating lesson and six mental and emotional health lessons - that satisfied National Health Education Standards (NHES). **Results:** Reflective quantitative and qualitative data was collected from the WSU students. They reported increases in knowledge and experience with the Lakota culture following the project. They rated the most valuable service learning experiences from this project: fundraising, research, grant writing, literature review writing, curriculum development, and training with an at-risk population. **Discussion:** The structure and results of this project may be used to help the development of future programs designed to build knowledge and cultural support for health eating behaviors in American Indian reservation elementary classrooms with FFVP grants.

Stigmatization and Discrimination of Obesity and Anorexia Nervosa: Are They the Same?

Samantha Lee*

*indicates presenting at Seven Rivers
Institution: Winona State University

Faculty Mentor: Dr. Amanda Brouwer
Discipline: *Psychology*

Presentation Type: *Poster Presentation*
Presentation Location: *#46 in Nursing Center 195*

Abstract:

Weight-related stigma and discrimination occurs for both extremely underweight and obese individuals and has negative consequences such as social isolation, poorer self-esteem, and psychological distress. However, the degree to which seeing a person with Anorexia Nervosa (AN) or obesity might affect one's stigmatization of that individual and how the gender of the individual affects stigmatization is understudied. Therefore, the effect of seeing individuals with AN or obesity and gender on stigmatization and discrimination was explored.

Participants, (N=237) ages 18-57 (M=22.54, SD=6.79), were randomized to one of six groups and asked to review a job portfolio (including photos) of a candidate who was either male or female and had AN, obesity, or weight-status was not mentioned. Participants then answered questions assessing job-related attitudes, stigma, and discrimination. Two, 2 (gender) x 3 (weight-status) between subjects ANCOVAs were conducted to assess whether gender and weight status of the applicant would affect stigmatization and discrimination.

When controlling for knowing individuals with AN and obesity, there was a significant difference in stigmatizing attitudes between the job applicant's gender, $F(1, 189) = 3.72, p = .05$. Females were significantly less stigmatized than were males. No other significant differences in attitudes or discriminatory behaviors were found.

Across weight-status, individuals were viewed similarly, but males received higher stigmatization than did females. Perhaps including photos humanized women in a way that led to less stigmatization, but this effect was not present for men. Findings differ from previous literature; further experimentation could be conducted to explore the impact photos would have in relation to attitudes and discriminatory behaviors on each condition.

Performance in Delayed Matching-to-Position Task Affected by Triadimefon Administration

Ethan Hemmelman* & Rowan McGlasson

*indicates presenting at Seven Rivers

Institution: Winona State University

Faculty Mentor: Dr. John Holden

Discipline: *Psychology*

Presentation Type: *Poster Presentation*

Presentation Location: *#44 in Nursing Center 195*

Abstract:

Triadimefon is a legal, widely available fungicide that has effects and abuse potential similar to other triple reuptake inhibitor psychostimulants, such as cocaine and amphetamine. As part of a series of studies examining triadimefon's cognitive and behavioral effects, we investigated whether acute triadimefon administration would produce deficits in working memory similar to those caused by other psychostimulants. Rats were first trained to criterion on a matching to position task with delay times ranging from 1-20 seconds. Subjects were then administered 50 mg/kg triadimefon in corn oil vehicle or vehicle alone. It was found that subjects showed significantly poorer performance at 5 and 10 seconds delay under triadimefon relative to vehicle. Triadimefon seems to produce working memory deficits similar to those seen with other drugs of abuse.