

12th Annual
1918

Dickinson
STATE UNIVERSITY

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CELEBRATION OF
SCHOLARSHIP

Achievement in Research,
Humanities, and the Arts

SATURDAY, APRIL 27TH, 2013
8:00 AM - 5:30 PM

MURPHY HALL
DICKINSON STATE UNIVERSITY

**CELEBRATION OF SCHOLARSHIP
ORGANIZING COMMITTEE**

Conference Coordinator:

Dr. Suzanne Russ, Associate Professor of Psychology & Education

Committee Members:

Ms. Renae Ekstrand, Assistant Professor of Teacher Education

Dr. Peter Grimes, Assistant Professor of Language & Literature

Dr. Cheryl Lantz, Associate Professor of Nursing

Ms. Margaret Marcusen, Lecturer of Communications

Dr. Dawn Olson, Interim Dean for the College of Ed., Bus., & App. Sciences

Dr. Chip Poland, Professor of Agriculture & Technical Studies

Dr. Wendy Wilson, Assistant Professor of Psychology

About the Celebration of Scholarship:

Dickinson State University Celebration of Scholarship is a forum in which students in all disciplines present scholarly work to an audience of peers, faculty, and community members. These scholarly endeavors include scientific research, explorations in humanities and the arts, and summations of scholarly accomplishments such as portfolios. Along with student presentations, the conference features a keynote address by a faculty researcher who has engaged in and published research in collaboration with undergraduate students.

2013 Keynote Speaker
Dr. Ann Wilson

Dr. Ann Wilson has spent her career promoting the well-being of infants and young children through education, research, advocacy, public policy and mental health. Undergraduate work at Lewis and Clark College took her to the Merrill Palmer Institute for Child Development where her love of child development began. There she spent time at its historic Laboratory Preschool that led to future work with lab schools at the University of Iowa, Michigan State University and now at South Dakota State University.



Dr. Wilson's career has intersected the worlds of early childhood education, pediatrics, psychiatry, ethics, and public health. Upon completing a post-doctoral fellowship in Infant Mental Health at the University of Michigan, she was recruited to join the new Medical School faculty of the University of South Dakota where for many years she provided developmental follow-up services for the graduates of the neonatal intensive care unit. During this time she also completed a Congressional Science Fellowship with the Society for Research in Child Development in the United States Senate. Subsequently, she began working with tribal communities on projects to prevent fetal alcohol syndrome and infant mortality.

For the past 25 years she has authored an annual publication on the State of South Dakota's Child. This diverse background enriches her current work with undergraduate student research that encourages the ability to interpret observations of infants and recognize infants' self-initiated learning and problem-solving skills.

2013 Celebration of Scholarship SCHEDULE OF EVENTS

8:00 **Opening remarks by Dr. Cynthia Pemberton, VPAA**

8:15 to 9:20 Session I

1A Nursing & Natural Sciences (Thompson Auditorium, Murphy 155)

Moderated by Dr. Cheryl Lantz

- 8:15 "The Comparison of Pharmacological and Mechanical Treatments to Prevent Venous Thromboembolism" by Kelsey Jorgenson, Shannon Ernst, Brittney Kessel, Kristen Senn; DSU
- 8:30 "Influence of Activities on the Level of Depression in Elderly Living in a Nursing Home" by Sara Jane Webster AASPN, Jesika Garrett AASPN, Kaylee Schank AASPN, Courtney Kuelbs AASPN; DSU
- 8:45 "Comparing Hay Waste: Unrolling vs. Bale-Processing" by Kayla Kessler, DSU
- 9:00 "Effect of Pen Design on Time and Effort Required to Sort Beef Cattle" by Matthew Ruland, DSU

1B Literary Excursions (Stroup Auditorium- Murphy 117)

Moderated by Dr. Holly McBee

- 8:15 "A Poem Based on a Paper, Which Was Based on a Poem, That Was Based on an Urn" by Robert Meador, DSU
- 8:30 "Teaching Shakespeare in a Digital Age" by Timothy Rosin, DSU
- 8:45 "Free Will in *East of Eden*" by Joshua Kralicek, DSU
- 9:00 "Mark Twain in the *St. Louis Post-Dispatch*" by Dr. Jim McWilliams, DSU

9:30 to 10:35 Session II

2A Education & Movement Training (Thompson Auditorium, Murphy 155)

Moderated by Ms. Margaret Marcusen

- 9:30 "Factors that Improve Teacher and Student Relationships" by Caleb Burgard & Chris Kovash, DSU
- 9:45 "Maintaining Student Attention During Skill Instruction in Physical Education" by Ashley Jelly, DSU
- 10:00 "A Case Study of Student Experiences in the OpenOrbiter Operating Software Group" by Dayln Limesand, UND
- 10:15 "Validation of 3D Motion System for Automated Training of Human Movement for the Purpose of Rehabilitation, Athletic Training, and Other Human-Performance Goals" by Mr. Pete Leno, DSU

2B Creative/Dramatic (Stroup Auditorium- Murphy 117)

Moderated by Dr. Karen Foster

- 9:30 "Balloons Don't Last Forever, Baby: A Memoir in Poetry and Prose" by Diona Osterman-Api, DSU
- 9:45 "'Long Drive' from *The Letter*, a memoir-in-progress" by Molly Reopelle, DSU
- 10:00 "Game Over" by Timothy Rosin, DSU
- 10:15 "In Care of God" by Tricia Myran, DSU

10:45 to 11:50 Session III

3A Agriculture & Natural Sciences (Thompson Auditorium, Murphy 155)

Moderated by Dr. Sethuram Soman

10:45 "Soil Differences in Grazed versus Non-Grazed Rangeland" by Melissa Szudera, DSU

11:00 "Naturally Occurring Radioactive Material Found in Scoria" by Ashley Schaper, DSU

11:15 "The Effect of Castration Method on Weaning Weights" by Andrew Wasserburger, DSU

11:30 "Feasibility of Downsizing and Specializing an Agriculture Business" by Lee Holliday, DSU

3B Creative/Dramatic (Stroup Auditorium- Murphy 117)

Moderated by Dr. Holly McBee

10:45 "Pantoum" by Diona Osterman-Api & Dr. Peter Grimes, DSU

11:05 "Mists of Arcadia" by Alex Jacobs, DSU

11:25 "Excerpts from *Under the Twisted Cross*" by Ms. Margaret Barnhart, DSU

12:00 to 12:40 Luncheon

12:40 to 1:30 Keynote Address, Dr. Ann Wilson, SDSU

1:45 to 3:00 Session IV

4A Body and Brain (Thompson Auditorium, Murphy 155)

Moderated by Dr. Andrew McGarva

1:45 "Effects of Alzheimer's Disease on Neurogenesis and Associated Proteins in the Hippocampus" by Dr. Wendy Wilson & Justin Schwab, DSU

2:05 "Identification of Salinomycin's Novel Therapeutic Binding Targets in Neuroblastoma" by Shuang Zhou, NDSU

2:20 "The outRAGEs Story of a Protein involved in Diabetes, Cancer and Alzheimer's Disease" by Dr. Stefan Vetter, NDSU

2:40 "Is There a Link Between School Rampage Shootings and Gifted/Talented Adolescents?" by Dr. Meghan Salyers, UND

4B Modern Society (Stroup Auditorium, Murphy 117)

Moderated by Dr. Steven Doherty

1:45 "The Supreme Court on Gender Pay Discrimination and Gender Inequality in the Workforce" by Jennifer Lundemo, DSU

2:05 "Religious Tradition or Religious Television? A Study of the Effects of Religious Communication on Public Opinion" by Dr. Scott Clarke, BHSU

2:25 "Future of Computers: Paying for Computer Games" by Dr. Billy Harris, DSU

2:40 "A Celebration of the Art of Rhetoric for the 21st Century" by Dr. Eric Grabowsky, DSU

3:00 – 5:00 Poster Presentations

5:00 – 5:30 Awards Ceremony

Poster Presentations: Murphy Hall, 3:00 to 5:00

Area 1 - Agriculture

- "Effect of Pen Design on Time and Effort Required to Sort Beef Cattle" Matthew Ruland, DSU
- "Feasibility of Downsizing and Specializing an Agriculture Business" by Lee Holliday, DSU
- "Comparing Hay Waste: Unrolling vs. Bale-Processing" by Kayla Kessler, DSU
- "Soil Differences in Grazed versus Non-Grazed Rangeland" by Melissa Szudera, DSU

Area 2 - Natural Sciences

- "New Records of Small Mammals from Prairie Dog Towns (*Cynomys ludovicianus*) in Southwest North Dakota" by Samantha Pounds, Kayla Miller, & Brandi Herauf, DSU
- "Developing the Instrumentation and Conditions to Study Phototropism and Chloroplast Movement" by Shannon Patterson, Lexi Adolf, & David Stockert, DSU
- "Anthropogenic Impact on Campsite Soils at Strawberry Lake, North Dakota" by Matt Tibor, DSU
- "The Impact of Precipitation on Insectivore and Arthropod Abundance in Prairie Dog (*Cynomys ludovicianus*) Towns in Southwest North Dakota" by Levi Zahn, DSU

Area 3 - Nursing/Health

- "The Effects of Introducing Palliative Care in Early Cancer Diagnosis vs. late Diagnosis" by Leslie Heck, Valerie MacPartland, Amy Guzman, & Stephanie Hanson, DSU
- "Breast Feeding Verses Bottle Feeding in Relation to Maternal-Infant Bonding" by Amber Decker, Kayla Buckman, Jessie Cheff, & Dorothy Rotich, DSU
- "Does Vaccination of Health Care Workers Prevent Influenza Outbreaks In Long-Term Care Facilities?" by Rakesh Raut, Deepa Shrestha, & Yan Ning, DSU
- "Epigenetic Regulation of Apoptosis in Prostate Cancer" by Qunshu Zhang, NDSU

Area 4 - Psychology

- "Psychology of Apocalyptic Dream"s by Ty Thompson, DSU
- "Moral Constructs: An Investigation of Morality Across Cultures" by Brenda Charles, DSU
- "Effects of Social Media Use on Social Behavior" by Levon Forman, Jenna Dukart, & Kristi Blackwood, DSU

Area 5 - Education

- "Play and Creative Dramatics in Early Childhood" by Kayla Huether, Kaylee Zorc, & Bree LeFor, DSU
- "Guided Reading: The Inside Story" by Megan Miller, Megan Canape, Dinah Ridl, Mindi Gunderson, & Dr. Christine McCoy, DSU
- "Northern Plains Indians Knowledge, Attitudes, & Beliefs Toward Stuttering" by Ann Beste-Guldborg, MSU
- "How Physical Activity Affects Math Scores" by Nathan Magstadt & Tyrel Shannon, DSU
- "The Integration of the Arts Contributes to Student Achievement and Success" by Korina Spratta, DSU
- "Theory-Based Transition Practices in the Classroom" by Kelsey Mitchell & Marissa Stanton, DSU
- "Maintaining Student Attention During Skill Instruction in Physical Education" by Ashley Jelly, DSU

Area 6 - Special Education

- "Assignment Completion Intervention: A Single Case Study" by Ms. Natalie Moore, MSU
- "Increasing Participation and Positive Behaviors in Read 180" by Ms. Erin Saarela, MSU
- "The Puzzle of Motivation" by Ms. Stacie Kandra, MSU
- "Breaking Barriers in Handwriting Crossing Midline" by Ms. Kiara Crosby, MSU
- "Peer Support and the Think Social! Curriculum" by Ms. Jennifer Lakoduc, MSU
- "Self Monitoring for On-Task Behavior" by Ms. Nicole Freeman, MSU

ABSTRACTS

Arranged alphabetically by last name of first author

Ms. Margaret Barnhart, DSU Faculty

*Department of Language and Literature, Dickinson State University
Oral presentation; 11:25 in Stroup Auditorium, Murphy 117*

"Excerpts from *Under the Twisted Cross*"

Ms. Margaret Barnhart will read an excerpt from her novel *Under the Twisted Cross*, an historical fiction based on her father's real-life experience as a prisoner of war in World War II.

Dr. Ann Beste-Guldborg, MSU Faculty

*Department of Teacher Education, Minot State University
Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00*

"Northern Plains Indians Knowledge, Attitudes, & Beliefs Toward Stuttering"

Attitudes toward stuttering are generally negative across countries and cultures. There is a recent call to understand these attitudes in indigenous populations of the world. No available studies look at American Indian attitudes toward stuttering. Early reports indicated stuttering did not exist among American Indians but later evidence suggested it existed and was a source of stigma in families. There is conflicting evidence about traditional American Indian views of disability. This study examined Northern Plains Indian attitudes toward stuttering.

Caleb Burgard & Chris Kovash; sponsored by Dr. Christine McCoy

*Department of Teacher Education, Dickinson State University
Oral presentation, 9:30 a.m. in Thompson Auditorium, Murphy 155*

"Factors that Improve Teacher and Student Relationships"

The heart of every classroom is the relationship the teacher has with students. This research investigated studies that identified teacher behaviors that had a positive effect on students. The literature review was also used to obtain a list of behaviors and this was utilized to develop surveys for a teacher and students. The survey was used in a case study of an elementary classroom. First the teacher was asked to self-report how often they engaged in the selected behaviors. Then students were given a survey that asked them to identify their perceived importance of the selected behaviors using a Likert scale. There was a comparison of the survey responses. This presentation will share the research journey and how the information could be applied to the classroom.

Brenda Charles; sponsored by Dr. Andrew McGarva

*Department of Psychology, Dickinson State University
Poster Area 4 in Murphy Circle Hall, 3:00 to 5:00*

"Moral Constructs: An Investigation of Morality Across Cultures"

Moral behavior and development are constructs that have been investigated by psychologists starting with Lawrence Kohlberg and Piaget, but what are some factors that contribute to or affect our moral behavior? Does moral behavior and development vary across cultures? Using the survey method, with a sample of college students from Dickinson State University in the United States, the present investigation addresses the possibility that cultural differences in morality exist. Though still in the process of collecting data, we are observing correlations between morality and gender and morality and GPA. As the investigation continues, there is the possibility of finding correlations between morality and culture, which is the ultimate goal of this study.

Dr. Scott Clarke, BHSU Faculty

*Department of Mass Communication, Black Hills State University
Oral Presentation; 2:05 p.m. in Stroup Auditorium, Murphy 117*

"Religious Tradition or Religious Television? A Study of the Effects of Religious Communication on Public Opinion"

George Gerbner (Gerbner 1977, 1980, 1981) theorized that television and organized religion compete for cultural dominance. He believed that television programming acts like religion, subtly teaching its viewers about the nature of social reality. Gerbner's study concluded that television is beginning to "displace, if not replace" (Gerbner et al., 1984, p. 10) the importance of religion in heavy viewers' lives. But surprisingly little research on religion and television has ever been reported, and even less on the effects of religious TV. This study reexamines Gerbner's data, and compares them to General Social Surveys collected over the following 15 years. The results suggest that religion is a much more potent influence on viewers' opinions than television use. Respondents' religious backgrounds and attendance habits each demonstrated main effects on attitudes toward eight of nine controversial social issues studied. The results reported here seem to suggest that television is not that powerful at shaping attitudes, or possibly that TV is only beginning to make cultural inroads against organized religion.

Ms. Kiara Crosby; sponsored by Dr. Johnna Westby

*Department of Special Education, Minot State University
Poster Area 5 in Murphy Circle Hal, 3:00 to 5:00*

"Breaking Barriers in Handwriting Crossing Midline"

A 9-year old student has poor handwriting. This includes reversals, inconsistent letter formations, and few recognizable words. She is cognitively low and unable to consistently cross midline with the body. The goal of this single-subject research was to focus on the abilities of the child and how improve her handwriting. To do this, strategies to break down the midline barrier were introduced and research-based curriculum and interventions were used to increase her knowledge and confidence in letter/number formations, daily. Visual tracking is difficult and she is unaware of her dominate hand and helper hand. The question is then, where to begin? What are the first steps to improving handwriting?

Amber Decker, Kayla Buckman, Jessie Cheff, & Dorothy Rotich; sponsored by Cheryl Lantz, Ph.D., R.N.

*Department of Nursing, Dickinson State University
Poster Area 3 in Murphy Circle Hall, 3:00 to 5:00*

"Breast Feeding Verses Bottle Feeding in Relation to Maternal-Infant Bonding."

The purpose of this research review was to compare breast feeding verses bottle feeding methods in relation to mother-infant bonding in the first 6 months of the post-partum period. The literature findings resulted in 50 studies regarding either exclusively breast feeding or bottle feeding types. Of those articles, five research studies specifically pertaining to breast feeding and bottle feeding methods related to the effects of mother-infant bonding were analyzed. This research is important in assessing mother-infant bonding based on the mother's feeding choice. The literature review displayed shows that there is no difference in mother-infant bonding between breast-fed and bottle-fed infants. The poster will display the previous findings in the literature review and present consistencies as well as gaps or unanswered topics.

Levon Forman, Jenna Dukart, & Kristi Blackwood; sponsored by Dr. Andrew McGarva

*Department of Psychology, Dickinson State University
Poster Area 4 in Murphy Circle Hall, 3:00 to 5:00*

"Effects of Social Media Use on Social Behavior."

The effects of social media are yet to be fully understood. The present study is intended to demonstrate a possible negative impact of using smart phones. Fifty DSU undergraduates volunteering for a study on brain activity using EEG will be asked to wait in small groups (4-6 persons) for 15 minutes while the experimenter purportedly prepares equipment. The use of electronic devices will be prohibited for half the groups. It is expected that the amount of social interaction (number and durations of conversations) and participants' ratings of other group members (attraction toward, positive feelings toward, etc.) will be lower in groups who spend their time using smart phones.

Ms. Nicole Freeman; sponsored by Dr. Johnna Westby

*Department of Special Education, Minot State University
Poster Area 6 in Murphy Circle Hall, 3:00 to 5:00*

"Self Monitoring for On-Task Behavior"

Students with Attention Deficit Hyperactivity Disorder (ADHD) often have a very difficult time staying on task during academic instruction. This difficulty with staying on task can often have detrimental effects on their academic performance (Zentall, 2005). According to Section 504 of the Vocational and Rehabilitation Act of 1973, the Individuals with Disabilities Education Act (IDEA) of 1997, and the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 accommodations for students with ADHD should be provided in order to increase the chances of student success in the classroom ("Special Education and Rehabilitative Services," 2004 & 2005; Brock, 2002). The use of self-monitoring for on-task behavior has been shown to increase students' time on task for not only students with ADHD, but also students who may not have a disability (Graham-Day, Gardner, & Hsin, 2010). In addition to improving time on-task, self-monitoring has also demonstrated positive effects on improving some students' productivity as a result of them being on-task (Amato-Zech, Hoff, & Doepke, 2006). One way in which the use of self-monitoring has been used is through auditory cues. These auditory cues, which signal the student to check their on-task behavior, are given by intermittent tones being played in intervals while the student is working either in the classroom or at home (Axelrod, Zhe, Haugen, & Klein, 2009).

Sara Jane Webster AASPN, Jesika Garrett AASPN, Kaylee Schank AASPN, & Courtney Kuelbs AASPN; sponsored by Cheryl Lantz, Ph.D., R.N.

*Department of Nursing, Dickinson State University
Oral presentation; 8:30 a.m. in Thompson Auditorium, Murphy 155*

"Influence of Activities on the Level of Depression in Elderly Living in a Nursing Home"

Multiple types of activities serve to involve the elderly population in nursing homes. Activities are used for entertainment, social interaction, and to decrease the likelihood of social isolation and depression. Ten journal articles were reviewed and five were selected to study evidence based nursing practice in depth using the PICOT research format. Four of the five studies confirmed that participation in activities decreased the level of depression present in elderly living in nursing homes. Research suggests future studies should be conducted on this topic to utilize larger sample sizes and identify specific types of activities that influence depression.

Dr. Eric Grabowsky, DSU Faculty

*Department of Fine and Performing Arts, Dickinson State University
Oral Presentation; 2:40 p.m. in Stroup Auditorium, Murphy 117*

"A Celebration of the Art of Rhetoric for the 21st Century"

As a discipline from within the legacy of the classical liberal arts, rhetoric remains a significant component within both pedagogical and political contexts because of the ongoing necessity of navigating among reason, inclination, and tradition for human affairs. The thesis of this presentation is that even within the 21st century, the classical liberal art of rhetoric keeps us attentive to those human elements of communication that are essential to our theoretical, practical, and ethical considerations, both inside and outside of the academy. In view of this notion, the presenter looks to the question of civility in American public discourse as an area of applied reflection regarding the theory, practice, and ethics of rhetoric for our time.

Diona Osterman-API & Dr. Peter Grimes, DSU faculty

*Department of Language and Literature, Dickinson State University
Oral Presentation; 10:45 a.m. in Stroup Auditorium, Murphy 117*

"Pantoum"

Ms. Diona Osterman-API and Dr. Peter Grimes will present a poem they have collaboratively written. The poem is a pantoum, a poetic form of Malaysian origin that can be described as follows: a poem of interlocking quatrains (four-line stanzas), in which lines 2 and 4 of one stanza are used as lines 1 and 3 of the next. The lines and poem itself are of indefinite length. The subject matter is often ruminative or reflective, given the repetition with variation that mimics the act of reflecting.

Dr. Billy Harris, DSU Faculty

Department of Math and Computer Science, Dickinson State University

Oral Presentation; 2:25 p.m. in Stroup Auditorium, Murphy 117

"Future of Computers: Paying for Computer Games"

Over the past few years, multiplayer computer games have embraced the free to play model (F2P). Although new to computer games, this practice is actually an example of a more general phenomenon of price differentiation -- charging business-class passengers substantially more than third-class passengers for the same flight is very similar to "vanity items" for sale for a computer game. In addition to examining revenue models for these "free" games, the presentation will briefly examine the newest trend in game development: crowdsourcing such as Kickstarter. Crowd funding offers the promise that niche computer games can be developed that would otherwise be unprofitable to produce. Successfully funded games includes Double Fine's adventure (\$1,000,000 raised in the first day), and two games from Brian Fargo's company inXile. However, it is too early to be definitive about the results of crowd funding as neither game has been released.

Leslie Heck, Valerie MacPartland, Amy Guzman, & Stephanie Hanson; sponsored by Cheryl Lantz, Ph.D., R.N.

Department of Nursing, Dickinson State University

Poster Area 3 in Murphy Circle Hall, 3:00 to 5:00

"The Effects of Introducing Palliative Care in Early Cancer Diagnosis vs. late Diagnosis"

The purpose of this research review was to compare the effectiveness of pharmacologic pain interventions with holistic pain interventions for the management of cancer-related pain in adults over the age of 18. PICOT format was used to review published, peer-reviewed articles on the topic of cancer pain in adults. During the literature search, 50 articles were reviewed and 5 were chosen for analysis in relation to the PICOT question. The results of the literature review showed that while pharmacological interventions are most effective, they should be used in conjunction with holistic interventions to achieve optimal relief of cancer-related pain in adult patients.

Lee Holliday; sponsored by Dr. Sethuram Soman

Department of Agriculture and Technical Studies, Dickinson State University

Poster Area 1 in Murphy Circle Hall, 3:00 to 5:00

Oral presentation; 11:30 a.m. in Thompson Auditorium, Murphy 155

"Feasibility of Downsizing and Specializing an Agriculture Business"

Today's agriculture industry is very competitive, especially in the sales and service sector. In the sales and service sector, it is important to maintain large inventories of products such as fertilizer and chemicals. Prices for these products fluctuate throughout the year, making it increasingly difficult to determine when to purchase inventory, and to maximize profit margin. This process of finding the proper time to buy is a major form of stress to the owner/operator of these businesses, and the requirement of having such large amounts of inventory on hand is a major financial risk. Larger competitors are able to maximize their profits by focusing on when to purchase their inventory. The main reason for conducting this study is to see if it is possible to reduce the amount of stress and risk to the owner/operator of TerraLogics Inc. The focus of this study is to determine if downsizing TerraLogics to focus on service is a feasible transition to become more profitable. A partial budgets analysis will be used to determine if this transition is the right choice for the owner/operator. The information used in this study was given by the owner of TerraLogics Inc. located in Billings, MT.. The results of the partial budget showed, that eliminating sales will drastically reduce the amount of profit the company will make.

Kayla Huether, Kaylee Zorc, & Bree LeFor; sponsored by Dr. Christine McCoy

Department of Teacher Education, Dickinson State University

Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00

"Play and Creative Dramatics in Early Childhood"

This research investigated what types of play and creative dramatics activities were used in early childhood classrooms. A review of literature found that three types of play were utilized and they include: cognitive, pretend, and socio-dramatic play. Also in the literature it was found that the curriculum goals of play in early childhood were to develop self-understanding, help children to relate to the world, and extend experiences in living. A survey was developed from the literature review and used to collect data from early Head Start, Head Start and Kindergarten classrooms in the local schools. Both quantitative and qualitative data will be reported and the students will share their research journey on this topic.

Alex Jacobs; sponsored by Dr. Peter Grimes

Department of Language and Literature, Dickinson State University

Oral presentation; 11:05 a.m. in Stroup Auditorium, Murphy 117

"Mists of Arcadia"

Alex Jacobs will present his short piece of original fiction, "Mists of Arcadia," which takes a unique approach to the hero's journey and the concept of escapism. A young boy who dreams of adventure gets a chance to take up the helm of hero. However, this dream come true comes with some strings attached.

Ashley Jelly; sponsored by Mr. Kevin Moberg

Department of Teacher Education, Dickinson State University

Oral presentation; 9:45 a.m. in Thompson Auditorium, Murphy 155

Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00

"Maintaining Student Attention During Skill Instruction in Physical Education"

This study examined two teaching strategies that are commonly applied to physical education. The first strategy examined teacher-centered demonstrations in drills with the use of a basketball lesson focused on dribbling. A checklist comprised instructional cues that would be assessed throughout. The checklist helped to document students' ability to stay on task and follow directions. The second strategy focused on student-centered demonstrations and stations in regards to the fundamentals of offense. The same checklist was used to observe students' abilities to meet the instructional goals. The research also indicates the amount of time spent on task and the amount of time spent on instruction. The study concludes that student-centered lessons are more effective in motivating and maintaining the attention of students in physical education.

Kelsey Jorgenson, Shannon Ernst, Brittney Kessel, Kristen Senn; sponsored by Cheryl Lantz, Ph.D., R.N.

Department of Nursing, Dickinson State University

Oral presentation ; 8:15 a.m. in Thompson Auditorium, Murphy 155

"The Comparison of Pharmacological and Mechanical Treatments to Prevent Venous Thromboembolism"

Using evidence-based research, the purpose of this research review was to compare pharmacological and mechanical treatment to prevent post-surgical venous thromboembolism (VTE) of adult patients within 1 week of surgery. The PICOT process was applied. The review involved a literature search of over 35 journal articles on VTE prevention. Five of these journal articles were relevant to the PICOT question. Based on the five articles used, evidence demonstrated the use of both pharmacological and mechanical treatments proved to be more effective than one treatment alone. The presentation will address various forms of VTE prophylaxis, effectiveness of VTE treatments, and consistencies and gaps in the studies.

Ms. Stacie Kandra; sponsored by Dr. Johnna Westby

Department of Special Education, Minot State University

Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00

"The Puzzle of Motivation"

Observations and interviews are very valuable methods of gaining insight into behaviors, strengths, and weaknesses of students of all ages (Waller, 2009). Classroom observations occupy a large part of my early days and weeks in this new school district. One student with a medical diagnosis of Emotional Disturbances and Attention Deficit Hyperactivity Disorder as well as a language-based learning disability quickly rose to

the top of my priority intervention list. His school records described an angry young man with daily outbursts that commonly included unacceptable social interactions. He spent most of his day in the resource room at his previous school. What would his days look like here? How would I motivate him to learn?

Kayla Kessler; sponsored by Dr. Chip Poland

Department of Agriculture and Technical Studies, Dickinson State University

Oral presentation; 8:45 a.m. in Thompson Auditorium, Murphy 155

"Comparing Hay Waste: Unrolling vs. Bale-Processing"

Hay cost is an enormous factor in wintering a herd of cattle. There are many methods of feeding a herd of cattle. However, determining the efficiency of bale-processed hay compared to unrolling hay is one way to minimize the amount of hay wasted. This could also decrease the amount of money spent on hay each winter. This study compares the bale-processed method of feeding cattle to an unrolling method using a pick-n-roll for round hay bales. Throughout four weekends, samples of hay waste were taken with data recorded. A statistical analysis was run and calculated on the collected data to determine which method was more efficient in terms of hay waste. The results of the experiment revealed that feeding hay with the bale processor was more efficient in terms of the amount of hay waste left on the ground compared to unrolling hay with a pick-n-roll.

Joshua Kralicek; sponsored by Dr. Holly McBee

Department of Language and Literature, Dickinson State University

Oral presentation; 8:45 a.m. in Stroup Auditorium, Murphy 117

"Free Will in *East of Eden*"

This project utilizes allegorical interpretation enriched by comparisons with *Paradise Lost* and theological academic work. The theme of free will in *East of Eden* is fairly clear, however some scholars have argued about characters who contradict this theme. This paper is primarily a defense of the theme by emphasizing the novel's Christian allegorical focus.

Ms. Jennifer Lakoduc; sponsored by Dr. Johnna Westby

Department of Special Education, Minot State University

Poster Area 6 in Murphy Circle Hall, 3:00 to 5:00

"Peer Support and the Think Social! Curriculum"

Teachers today constantly face problem behaviors from students in their classrooms. It could be disrupting verbally during a group lesson, out-of-seat behaviors, or a complete meltdown over who stands first in line. Often these behaviors are exhibited from those students who have emotional and behavioral disabilities. Many of these students are in need of social skills training. They struggle with day to day activities in the classroom with their peers. Often these students have a hard time making friends. The Think Social! Curriculum teaches these skills and can be used with students with and without disabilities. The purpose of this research project was to determine if the use of the Think Social! Curriculum in small groups would help in creating friendships between students with disabilities and those without.

Mr. Pete Leno, DSU Faculty

Department of Physical Education, Dickinson State University

Oral presentation; 10:15 a.m. in Thompson Auditorium, Murphy 155

"Validation of 3D Motion System for Automated Training of Human Movement for the Purpose of Rehabilitation, Athletic Training, and Other Human-Performance Goals"

3D Motion Analysis is the most sophisticated and accurate technique currently available to analyze human movement and it incorporates technology used in biomechanical research, video games, and animation. 3D Motion Analysis provides highly detailed pictorial and numerical insights into the mechanics of an athletic movement, the coordination between body parts, and can often be combined with the analyses of forces applied to the ground (as measured by force plates), creating an analytical output that is not possible to achieve in the field. The system has six small cameras that measure human movement with high precision and provides live feedback to the human subject in either graphical (computer screen) or audio

form. The feedback is live, in real-time, and offers measurements to the nearest millimeter, rather than a subjective eye assessment of the performance. The type of feedback, training, and other program design will be consistent with known research. Six to ten “training programs” to be performed in the first year, with a typical training program lasting 4 to 6 weeks. Each group of athletes would make 2 to 4 weekly visits to use the system for about 30-90 minutes. Staff and athletes using the system will provide regular commentary on the system, and requests for new features and bug fixes will be generated.

Dayln Limesand; sponsored by Dr. Scott Kerlin

Department of Computer Sciences, University of North Dakota

Oral presentation; 10:00 a.m. in Thompson Auditorium, Murphy 155

“A Case Study of Student Experiences in the OpenOrbiter Operating Software Group”

This presentation covers the development process in the OpenOrbiter Operating Software Group. Student experiences and learning outcomes are described, along with the incredible opportunity that this program has provided to undergraduate students involved is assessed.

Jennifer Lundemo; sponsored by Dr. Steven Doherty

Department of Social Sciences, Dickinson State University

Oral presentation; 1:45 p.m. in Stroup Auditorium, Murphy 117

“The Supreme Court on Gender Pay Discrimination and Gender Inequality in the Workforce: From Muller v. Oregon, 1908 to Ledbetter v. Goodyear Tire & Rubber Co., 2007 And the Ledbetter Fair Paycheck Act of 2009”

The effect of the landmark 1908 U.S. Supreme Court case Muller v. Oregon on the population was a double-edged sword. It transcended the world of women’s rights and gave women the ability to work a shorter ten hour workday. However it also was the beginning of a battle that even in the twenty-first century, has still not been won. Women in the United States still are fighting for equal pay for equal work. This paper outlines the culminating events within United States history pertaining to gender discrimination in the labor force. The effects of the Muller v. Oregon policies are evident throughout legislation that has been passed regarding women’s rights in the labor force. Unbeknownst to most, it was the beginning of a battle that will still be waged over 100 years after the decision was handed down. Muller v. Oregon carved a niche for women workers that they have yet to pry themselves from. The long term negative effects of the Supreme Court’s decision would not become noticeable until the mid-1960’s and early 1970’s with the introduction of the Equal Pay Act of 1964 and Title VII of the Civil Rights Act of 1964 (Woloch, 1996). This paper is presented in an evolutionary timeline beginning with the precedent established by Muller v. Oregon and ending with the Ledbetter v. Goodyear Tire & Rubber Co., Inc. case from 2007 and the Ledbetter Fair Pay Act of 2009. The evidence and legal precedent that was established over the past one hundred years gives clear understanding as to the difficulties which women have faced in their search for equality in the workplace. It is also understood that the initial purpose of the legislation was warranted during its time. However, the questions remain: Did the Supreme Court act in the best interest of women workers for their right to equality in the workplace? What has been done to rectify any discrepancies in the law?

Nathan Magstadt & Tyrel Shannon; sponsored by Dr. Christine McCoy

Department of Teacher Education, Dickinson State University

Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00

“How Physical Activity Affects Math Scores”

The implementation of NCLB has increased pressure to achieve adequate yearly progress in reading and math scores. In addition there has been a renewed focus on child obesity, physical activity and healthier school lunches under the current administration. These issues have lead teachers and schools to look at alternative interventions that will support learning growth and one intervention is physical activity. This research used the PICOS model to investigate how physical activity can positively affect math scores. A review of literature revealed a limited number of studies on this topic and it was determined that five articles were relevant in the area of math achievement. These researchers will report on their findings and share how this can be applied to their future classrooms.

Dr. Jim McWilliams, DSU Faculty

Department of Language and Literature, Dickinson State University

Oral presentation; 9:00 a.m. in Stroup Auditorium, Murphy 117

"Mark Twain in the St. Louis Post-Dispatch"

My presentation looks at how the *St. Louis Post-Dispatch*, the preeminent newspaper west of the Mississippi in the late 19th century, portrayed Mark Twain from 1872-1910. I will show some examples of the types of stories and editorials published, as well as provide a historical and social context for the material.

Robert Meador; sponsored by Dr. Holly McBee

Department of Language and Literature, Dickinson State University

Oral Presentation ; 8:15 a.m. in Stroup Auditorium, Murphy 117

"A Poem Based on a Paper, Which Was Based on a Poem, That Was Based on an Urn"

Taking my original academic paper regarding the application of deconstruction theory and reader-response theory to John Keats' "Ode on a Grecian Urn," I endeavor to, maintaining the conventions of academic writing, rework the argument into verse; thereby, combining the effectiveness of academic writing's logical basis and poetry's emotional, intuitional basis to achieve a stronger, more well-rounded catharsis.

Megan Miller, Megan Canape, Dinah Ridl, Mindi Gunderson, & Dr. Christine McCoy; sponsored by Dr. Rebecca Pitkin, Dickinson Public Schools

Department of Teacher Education, Dickinson State University

Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00

"Guided Reading: The Inside Story"

The purpose of this study was to investigate how closely a guided reading program aligned with the underlying theory that led to its development. It was also to discover the perceived benefits of this type of reading program. The research took place in a kindergarten-grade 5 elementary school. Data was collected through interviews, observations, and surveys. The results revealed that teachers closely aligned their practices with the high-quality literacy practices developed by the original curriculum writers. The conclusions of this project support and encourage guided reading as a strategy to differentiate reading instruction and increase comprehension and fluency in elementary students.

Kelsey Mitchell & Marissa Stanton; sponsored by Dr. Christine McCoy

Department of Teacher Education, Dickinson State University

Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00

"Theory-Based Transition Practices in the Classroom"

The purpose of our research was to look at theoretical based transition practices and create a survey to identify optimal transitional practices inside the primary classroom. Our research looked at verbal, musical, visual, and kinesthetic transitions. A survey was created based on qualitative, quantitative research conducted about best practices regarding transitions in the classroom. Our survey was conducted at both public and private elementary schools in Dickinson, North Dakota. The survey results and our interpretations will be shared to promote better effectiveness and efficiency in the classroom.

Ms. Natalie Moore; sponsored by Dr. Johnna Westby

Department of Special Education, Minot State University

Poster Area 6 in Murphy Circle Hall, 3:00 to 5:00

"Assignment Completion Intervention: A Single Case Study"

Homework is a common part of educational curriculum in the United States. Students with learning disabilities struggle with the skills that are essential for homework completion. Essential skills needed to be successful with homework include attention, memory, and organization. Difficulties with such skills may adversely affect assignment completion. This is a single subject A-B design study assessing the effectiveness of using an assignment completion intervention with a middle school student classified as having Learning

Disabilities. The experimental conditions consisted of baseline and a seven-week intervention phase. The assignment intervention included an assignment binder, daily assignment planner, positive reinforcement, and teacher and parent involvement. The percentage of assignments the student completed during baseline averaged 38%. The percentage of assignments the student completed during the intervention phase averaged 70%. Overall, the student experienced a 32% increase in assignment completion during the intervention phase when compared to the baseline measurements. This study shows the effectiveness of an assignment completion intervention for a student with Learning Disabilities utilizing an assignment binder, assignment planner, positive reinforcement, and teacher and parent involvement to improve assignment completion.

Tricia Myran; sponsored by Dr. Peter Grimes

*Department of Language and Literature, Dickinson State University
Oral presentation; 10:15 a.m. in Stroup Auditorium, Murphy 117*

"In Care of God"

My creative writing project examines the role of faith in God at various time in my life. The portion I will read today points to the beginning of my realization of a higher power working for me.

Diona Osterman-API; sponsored by

*Department of Language and Literature, Dickinson State University
Oral Presentation 9:30 a.m. in Stroup Auditorium, Murphy 117*

"Balloons Don't Last Forever, Baby: A Memoir in Poetry and Prose"

Shannon Patterson, Lexi Adolf, & David Stockert; sponsored by Dr. Craig Whippo

*Department of Natural Sciences, Dickinson State University
Poster Area 2 in Murphy Circle Hall, 3:00 to 5:00*

"Developing the Instrumentation and Conditions to Study Phototropism and Chloroplast Movement"

Plants respond to changing light conditions by altering their orientation through phototropism and by moving their chloroplasts within the cell. Both of these responses are induced by blue light. In this study we developed the equipment and techniques for studying blue-light induced phototropism and chloroplast movement. To study phototropism, we used an infrared-light sensitive webcam for time-lapse photography and a microcontroller to alter light conditions. To study chloroplast movement, we developed a photometric approach using a set of microcontrolled LEDs and light sensors. We discovered differences in chloroplast movement between dicotyledonous and monocotyledonous plants.

Samantha Pounds, Kayla Miller, & Brandi Herauf; sponsored by Dr. Michael Shaughnessy

*Department of Natural Sciences, Dickinson State University
Poster Area 2 in Murphy Circle Hall, 3:00 to 5:00*

"New Records of Small Mammals from Prairie Dog Towns (*Cynomys ludovicianus*) in Southwest North Dakota"

We surveyed small mammals in 2011 and 2012 at prairie dog towns (*Cynomys ludovicianus*) in southwest North Dakota. Small mammals were sampled using Y-shaped pitfall arrays with drift fencing. Pitfalls were operated for five consecutive nights over four sampling periods during July 2011 and July 2012. Thirty-four small mammals were collected over four trapping periods between 2011 and 2012. These included 22 rodents and 12 insectivores. There were no significant associations between capture rates of small mammals and rainfall over the two-year sampling period. Eight species (14 specimens) serve as new county records in four counties in southwest North Dakota. In addition, two specimens of Merriam's shrew (*Sorex merriami*) were captured. Merriam's shrew was previously known from North Dakota by only a single specimen collected in 1913 near Medora, North Dakota. These new records highlight the importance of periodic sampling towards our understanding of small mammal ecology and natural history.

Rakesh Raut, Deepa Shrestha, & Yan Ning; sponsored by Cheryl Lantz, Ph.D., R.N.

Department of Nursing, Dickinson State University

Poster Area 3 in Murphy Circle Hall, 3:00 to 5:00

“Does Vaccination of Health Care Workers Prevent Influenza Outbreaks In Long-Term Care Facilities?”

Influenza is serious public health problem that causes severe illness and deaths for the elderly populations. The purpose of this literature review was to study the effects of employee vaccinations to prevent influenza outbreaks in residents in long-term care facilities. To conduct this literature review, seventy five journal articles regarding this topic were reviewed; among them, five were analyzed for the PICOT question. The literature reviewed supported that influenza vaccination among health care workers can reduce influenza outbreaks as well as influenza-related illness in long-term care facilities. The poster will explain the various ways these research studies were conducted, findings and the limitations.

Molly Reopelle; sponsored by Dr. Peter Grimes

Department of Language and Literature, Dickinson State University

Oral presentation; 9:45 a.m. in Stroup Auditorium, Murphy 117

““Long Drive” from *The Letter*, a Memoir-in-Progress”

Molly Reopelle will present the first chapter, “Long Drive” of *The Letter*, a memoir-in-progress. The memoir begins with a phone call Molly receives from her brother Paul, informing her that their father had committed suicide. As Paul and Molly drive across the state of North Dakota, from Fargo to Dickinson, we learn more about their father and connections Molly makes with music, a trait learned from her father. This long drive home sets motion in Molly’s longer journey toward death and new life, risks and comforts, love and loss. Ultimately Molly must learn to forgive both her father and herself and, in the process, accept and love the ways he lives on through her.

Timothy Rosin; sponsored by Mr. Jarvis Jahner

Department of Fine and Performing Arts, Dickinson State University

Oral presentation; 8:30 a.m. in Stroup Auditorium, Murphy 117

“Teaching Shakespeare in a Digital Age”

Hamlet, Macbeth, and Romeo and Juliet were written almost 500 years ago. How do we make these plays relevant in a digital age to students who would rather text than talk on the phone?

Timothy Rosin; sponsored by Dr. Peter Grimes

Department of Language and Literature, Dickinson State University

Oral presentation; 10:00 a.m. in Stroup Auditorium, Murphy 117

“Game Over”

Three people on a roof top struggle with their impending doom, and just what has brought them there. Was it truly free will, or are there other forces acting upon them?

Matthew Ruland; sponsored by Dr. Chip Poland

Department of Agriculture and Technical Studies, Dickinson State University

Oral presentation; 9:00 a.m. in Thompson Auditorium, Murphy 155

Poster Area 1 in Murphy Circle Hall, 3:00 to 5:00

“Effect of Pen Design on Time and Effort Required to Sort Beef Cattle”

All cattle managers will have to sort their cattle at one point. The reasons for sorting cattle vary, but most of the time it is for two main reasons. These reasons are to work cattle or to sort cattle into a smaller group for transport. This study looked at some of the popular ways cattle producers go about sorting cattle and found a way to create a study from this information. The objective of this study was to find out when linear feet of panel space is predetermined, what is the best geometric pen shape to use when sorting beef cattle. The data collected was analyzed to determine which geometric pen type was the best fit for sorting cattle. The three pen type’s chosen where a square pen, a circle pen, and an alley way pen. By using approved low stress cattle handling and sorting methods the study looked at the time and movement (steps) needed by

the sorter in each of the three pen types. It was found that the circle pen was the most efficient and consistent with the amount of time and steps taken for each type sort conducted. The square pen was the next most efficient and consistent pen type. While the alley way pen system was the least efficient and least consistent of the pen types studied within the parameters used to collect the data. The study concluded that the pen type that presents the optimal fit for the cattle operation was the circle pen, and if the circle pen is unavailable to be established the square pen would be the second choice and the alley way pen would be the third choice.

Ms. Erin Saarela; sponsored by Dr. Johnna Westby

Department of Special Education, Minot State University

Poster Area 6 in Murphy Circle Hall, 3:00 to 5:00

"Increasing Participation and Positive Behaviors in Read 180"

Students in Read 180 were struggling with participation during whole group and small group times. The program is designed for discussion and student participation to increase comprehension. The class also had difficulty with transitioning from one activity to the next. The class implemented an incentive chart along with specific classroom rules to improve participation and behaviors. The incentives were called "participation points" which were tracked every day for every student. Participation points, along with specific praise increased participation and positive behavior in the class and is currently still being used.

Dr. Meghan Salyers, UND Faculty

Department of Teaching & Learning, University of North Dakota

Oral Presentation; 2:40 p.m. in Thompson Auditorium, Murphy 155

"Is There a Link Between School Rampage Shootings and Gifted/Talented Adolescents?"

Gifted students have unique emotional characteristics that are distinctive to this difficult-to-define population. Creativity, excitabilities and oversensitivities, and depth of thought combine to create an interesting perspective that is impacted uniquely by environment. Historically, rampage shootings in schools are not common; however, in the late 1990s there was a wave of them committed by adolescents in schools, with a resurgence of them in recent past. In studies following the late 1990s wave, investigators discovered commonalities among the communities and academic environments where the shootings occurred and among the shooters' grievances, labeling them as and ill-defined; yet they were unable to solidify a common profile for the shooters. A few of these studies gave minor mention to their academic and intellectual strengths, yet none gave emphasis to their cognitive capabilities. Conversely, in other scholarly writings in the field of gifted/talented education, pleas stated the need for providing services for the unique emotional design of gifted students, especially those with nontraditional talents and gifts. This presentation and discussion will focus on a historiographical study that illuminated potential links between the ill-defined worlds of rampage shootings and twice exceptional Gifted/Talented students.

Ashley Schaper; sponsored by Dr. Sethuram Soman

Department of Agriculture and Technical Studies, Dickinson State University

Oral presentation; 11:00 a.m. in Thompson Auditorium, Murphy 155

Poster Area 1 in Murphy Circle Hall, 3:00 to 5:00

"Naturally Occurring Radioactive Material Found in Scoria"

Naturally occurring radioactive material (NORM) is found everywhere it may even be in some of the food we consume. NORM in low concentrations isn't harmful to the body but in high concentrations it can be. I wanted to see what NORM level was by testing different scoria pits in Dunn County which is located in western North Dakota. I did this by using a NORM meter which doesn't give the concentration of the NORM found in scoria but gives a reading of what is being emitted from scoria. I then compared the different readings.

Dr. Wendy Wilson & Justin Schwab; sponsored by Dr. Wendy Wilson

Department of Psychology, Dickinson State University

Oral presentation; 1:45 p.m. in Thompson Auditorium, Murphy 155

"Effects of Alzheimer's Disease on Neurogenesis and Associated Proteins in the Hippocampus"

The hippocampus is a major component of the limbic system, and is related to learning, memory, and spatial navigation. It is one of the few areas in the brain that has been shown to continue to produce new neurons, a process known as neurogenesis in adults. It is also one of the first regions of the brain to be damaged by Alzheimer's disease, a neurodegenerative disorder that is characterized by the formation of amyloid plaques and neurofibrillary tangles. Using a model of Alzheimer's in rats, we are investigating changes in protein levels and neurogenesis patterns in the hippocampus of Alzheimer's disease rats and comparing them to control rats. This is accomplished by using labeled antibodies that bind to proteins associated with new neurons. We expect to see some neurogenesis-related irregularities in AD rats, most likely related to position or quantity of new neurons.

Korina Spratta; sponsored by Dr. Christine McCoy

*Department of Teacher Education, Dickinson State University
Poster Area 5 in Murphy Circle Hall, 3:00 to 5:00*

"The Integration of the Arts Contributes to Student Achievement and Success"

In recent years there has been a reduction in school budgets with schools sometimes responding with a reduction or elimination of Art or Arts Education from their curriculum. This researcher believes that Art and the Arts education is vital to achievement and success for students in all academic areas. A review of literature uncovered over one hundred studies on this topic. The researcher selected five studies that have reported quantitative and qualitative data to include in the PICOS model regarding the significance of art integration and the promoting of art education in school. The research supported the need for Art integration and education to increase students attitudes, achievement, and creative thinking abilities. It was also found to reinforce math concepts, assist with the steps of engineering design processes and increase language skills in reading.

Melissa Szudera; sponsored by Dr. Eric Brevik

*Department of Agriculture and Technical Studies, Dickinson State University
Oral presentation; 10:45 a.m. in Thompson Auditorium, Murphy 155*

"Soil Differences in Grazed versus Non-Grazed Rangeland"

The Schnell Ranch is located north of Richardton, North Dakota. The ranch consists of 2,000 acres which were once used strictly for cattle grazing. Since 1993, the ranch has been named public property and used for such things as camping, hiking, mountain biking, horseback riding, cross-country skiing, and other activities. A section of the Schnell Ranch has also been available to the North Dakota State University (NDSU) Research Center, being utilized by the extension office in Dickinson, ND. The Section of Schnell Ranch being utilized by the NDSU Research Center is broken up into four fenced pastures. Each pasture contains a small, additional fenced in area. Over the past 12 years, cattle are grazed on each of these four pastures using a twice over grazing system. The smaller fenced in areas have not been grazed. Over the years the NDSU Research Center has done several different grass clippings in each field to determine the effect grazing has on vegetative growth and species. Until 2011, no soil samples had been taken from these pastures. This project was conducted to give a literature review of the effects grazing has on rangeland and to analyze soil samples from both grazed and non-grazed areas in the same pasture and compare the differences in soil aggregate stability, bulk density, and organic matter content. Soil samples were collected with a soil core cylinder 3 inches in diameter. The samples were analyzed at the DSU soil lab in Murphy Hall by Melissa Szudera and Dr. Eric Brevik. Three different tests were conducted to determine the effect grazing had on the soils. The results of this experiment brought up an unknown negative correlation between soil bulk density and organic matter. This relationship as well as the results of this experiment further the knowledge of soil quality in rangeland and can benefit ranchers, allowing them to maximize on soil health.

Ty Thompson; sponsored by Ms. Dorothy Renner

*Department of Psychology, Dickinson State University
Poster Area 4 in Murphy Circle Hall, 3:00 to 5:00*

"Psychology of Apocalyptic Dreams"

A survey of literature on apocalyptic dreams is presented. This review gives insight into the strength of dreams through various interpretations of several examples, as well as ways in which these interpretations can be applied to daily life.

Matt Tibor; sponsored by Dr. Eric Brevik

*Department of Natural Sciences, Dickinson State University
Poster Area 2 in Murphy Circle Hall, 3:00 to 5:00*

"Anthropogenic Impact on Campsite Soils at Strawberry Lake, North Dakota"

Recreational activity at campsites can cause anthropogenic compaction of soils, which can potentially increase soil bulk densities, hinder root penetration, and reduce organic matter content in the soils as well. Recreational activities can also lead to metal contamination of the soils. This study compared the bulk densities, penetration resistance values, organic matter contents, and metal contents (Zn, Fe, Mn, Cu) of soils sampled from zones of varying recreational activity within the campsites of Strawberry Lake, North Dakota to see whether any negative effects on soil health could be observed. The results of this study showed that there were indeed statistically significant increases in the soil bulk densities and soil penetration resistance values compared to the controls. Although statistically significant soil compactions did occur at these campsites, the low recreational intensity has not compacted the soils to the point of hindering the root growth of the surrounding forests. There were also statistically significant differences between the soil organic matter contents of some of the activity zones, but not enough to have negative effects on the soil health. Of the four metals tested for, Zn was the only one significant enough in concentration difference to warrant future investigation.

Dr. Stefan Vetter, NDSU Faculty

*Department of Pharmaceutical Sciences, North Dakota State University
Oral presentation; 2:20 p.m. in Thompson Auditorium, Murphy 155*

"The outRAGEs Story of a Protein Involved in Diabetes, Cancer and Alzheimer's Disease"

Diabetes, cancer, vascular disease and Alzheimer's Disease are apparently unrelated and obviously very different in their symptoms. However, there might be common molecular mechanisms that contribute to these diseases. The presentation will discuss the role of the recently discovered receptor for advanced glycation endproducts (RAGE) in these diseases and the initiation of inflammation. Interestingly, some researcher have argued that the consumption of processed foods, which contain compounds that activate RAGE, may promote inflammation and the development of diabetes, cancer and Alzheimer's disease via activation of RAGE. We will take a critical look at such claims and discuss possible consequences for our eating habits.

Andrew Wasserburger; sponsored by Dr. Douglas Landblom

*Department of Agriculture and Technical Studies, Dickinson State University
Oral presentation; 11:15 a.m. in Thompson Auditorium, Murphy 155*

"The Effect of Castration Method on Weaning Weights"

Most people eat beef, but do they ever wonder what goes into raising that beef? This study looks into the process of raising cattle including, castration, growth implantation and cost of feeding in a feed lot compared to natural or grass finished beef. From internet research and on hand experience on a livestock ranch, information was gained to determine the best way to raise cattle. Upon reviewing the information, it was found that there is not right or wrong way to castrate or feed cattle. Some of the research showed that implanted steers tended to gain more weight than non-implanted steers. After taking all the research into consideration, there is no scientific difference in weights of calves which have been knife cut, or castrated with an emasculator band. Finally, the consumer demand in a certain areas reflects the rancher's choice to implant or not to implant his cattle. Most common type of finishing is in a feedlot where rations are mixed and fed to the cattle for maximum daily gain, natural finished beef is when the animals are not given any growth hormones, while grass fed beef is available it is not as feasible as feeding cattle in a feedlot. Research shows that feedlot beef is the most profitable way to go.

Levi Zahn; sponsored by Dr. Michael Shaughnessy

Department of Natural Sciences, Dickinson State University

Poster Area 2 in Murphy Circle Hall, 3:00 to 5:00

*"The Impact of Precipitation on Insectivore and Arthropod Abundance in Prairie Dog (*Cynomys ludovicianus*) Towns in Southwest North Dakota"*

It has been shown that a positive correlation exists between precipitation and arthropod abundance. Arthropods numbers increase with increasing precipitation. Consequently, an increase in arthropod may lead to an increase in insectivores. Arthropods were sampled at 20 prairie dog (*Cynomys ludovicianus*) towns in 2011 and 2012. Samples were obtained using a Y-shaped pitfall array with drift fences. Pitfall arrays were operated for five consecutive nights during four sampling periods. Arthropods representing six terrestrial orders were collected. All orders showed a significant increase in abundance from 2011 to 2012. This growth is strongly correlated with a change in yearly precipitation from 2011 to 2012. Insectivore abundance may also display a secondary response to precipitation by responding to an increase in arthropod abundance. While current results are inconclusive, more work is needed.

Qunshu Zhang; sponsored by Dr. Bin Guo

Department of Nursing/Health, North Dakota State University

Poster Area 3 in Murphy Circle Hall, 3:00 to 5:00

"Epigenetic regulation of apoptosis in prostate cancer"

Evasion of apoptosis is an important mechanism of drug resistance in advanced prostate cancer. Recently, epigenetic mechanisms have been indicated in the regulation of cancer cell apoptosis. MicroRNAs are highly conserved, non-protein-coding RNAs that can function as epigenetic regulators to alter gene expression in many cellular processes, including apoptosis. In a previous study (Cell Death and Disease, 1, e105; doi:10.1038/cddis.2010.85, 2010), we found that miR-31 and miR-205 were downregulated in advanced prostate cancer. In addition, anti-apoptotic gene E2F6 was identified as the target of miR-31 and contributed to cancer resistance to chemotherapy-induced apoptosis. While we demonstrated that miR-205 is silenced by gene promoter hypermethylation, the mechanism of downregulation of miR-31 remained undefined. Here we report that EZH2 (Enhancer of Zeste 2), a histone methyltransferase and component of the polycomb repressive complex, suppresses miR-31 expression in prostate cancer cells. siRNA knockdown of EZH2 and DZNep (3-deazaneplanocin) treatment (an EZH2 inhibitor) increased miR-31 expression. Furthermore, we found that EZH2 was responsible for histone methylation at the promoter of the miR-31 gene. In addition, siRNA knockdown of EZH2 or DZNep treatment sensitized prostate cancer cells to chemotherapy-induced apoptosis. In contrast, EZH2 overexpression resulted in resistance to chemotherapy-induced apoptosis. As a result of miR-31 suppression, EZH2 subsequently increased the expression of anti-apoptotic protein E2F6, which suppressed apoptosis. These results illustrate a novel mechanism of drug resistance in prostate cancer. EZH2 and miR-31 can serve as targets to increase drug-induced apoptosis and improve cancer response to chemotherapy.

Shuang Zhou; sponsored by Dr. Erxi Wu

Department of Pharmaceutical Sciences, North Dakota State University

Oral presentation; 2:05 p.m. in Thompson Auditorium, Murphy 155

"Identification of Salinomycin's Novel Therapeutic Binding Targets in Neuroblastoma"

Neuroblastoma (NB) is the most common extracranial solid tumor in children. We demonstrated that salinomycin, an antibiotic deemed as a cancer stem cell specific killer, is able to inhibit cell proliferation, induce apoptosis, and cause cell cycle arrest in NB cells. Furthermore, we have identified two novel binding target proteins for salinomycin in NB.

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Music: Dr. Stacie Varnson, Piano and Ms. Priscilla Keogh, Cello

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