



ROCKY
MOUNTAIN
COLLEGE

Rocky Mountain College presents

THE
**STUDENT
SYMPOSIUM**

FEATURING SCHOLARLY WORKS FROM STUDENTS ACROSS CAMPUS,
SHOWCASING THEIR WORK AS SHORT LECTURES, POSTERS,
DEMONSTRATIONS, EXHIBITS, PERFORMANCES, AND READINGS

APRIL 15, 2026



POSTERS

*9:00am - 11:00am
Fortin Gym*

TALKS

*12:00pm - 3:20pm
Losekamp Auditorium*

SENIOR ART SHOW

*11:00am - 12:00pm
Ryniker-Morrison Gallery*

PROGRAM

Poster Presentations

9:00am - 11:00am

Fortin Gym

Oral Presentations

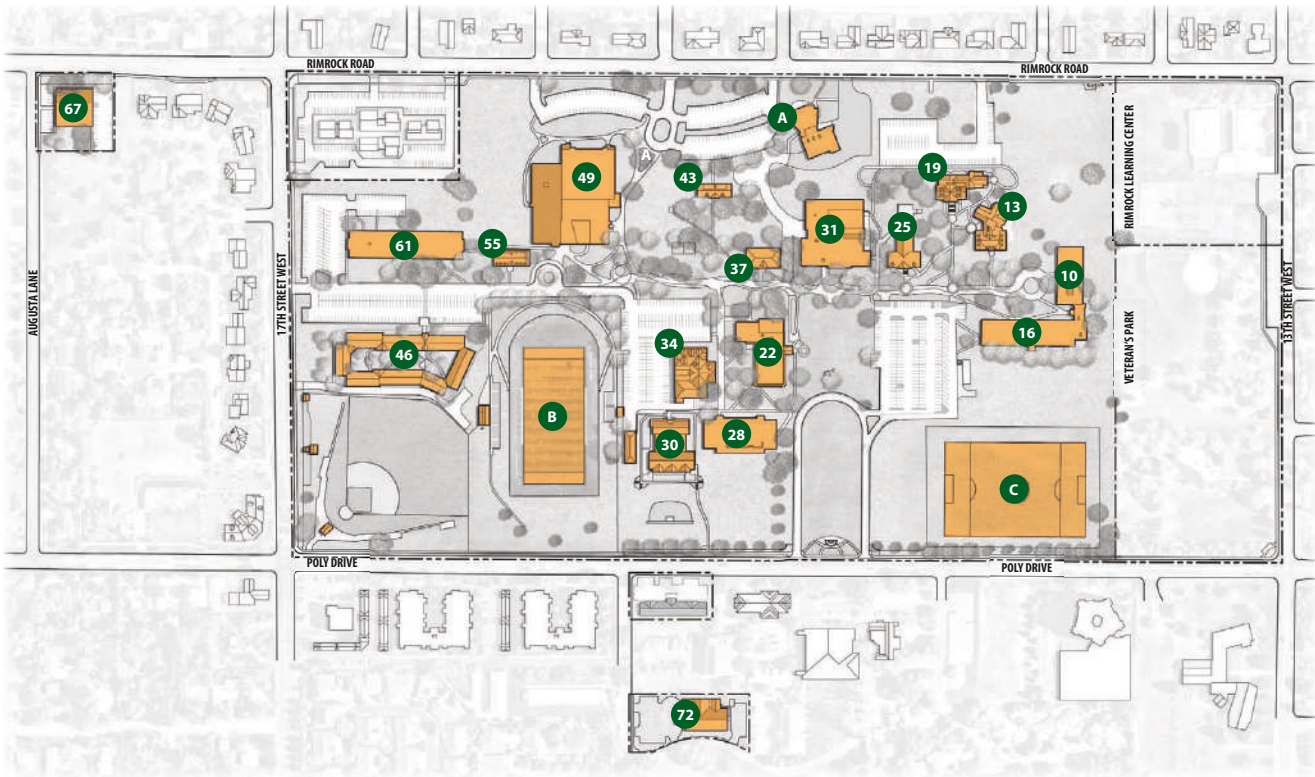
12:00pm - 3:20pm

Losekamp Auditorium

Senior Art Show

11:00am - 12:00pm

Ryniker-Morrison Gallery



BUILDING

- 55 Alden Hall
- 10 Anderson Hall
- 67 Aviation Hall
- 31 Bair Family Student Center
Dining, Student Lounges
- 28 Bair Science Center
- A Billings Studio Theater
- 30 Charles Morledge Science
Laboratory
- 72 Connor Hall, 2411 Village Lane
- 37 Eaton Hall
- 49 Fortin Education Center
- 61 Jorgenson Hall
- 25 Losekamp Hall
Educational Resource Center

USE

- Offices
- Residence Hall
- Aviation program
- Administration, Bookstore,
- Classrooms & Laboratory Space
- Community Theater
- Laboratory, OTD Classrooms &
Administrative Offices
- Physician Assistant Program
- Administration
- Classrooms, Two Gymnasiums,
Service for Academic Success,
Athletic Administration
- 48-Unit Apartment Building
- Classrooms, Auditorium
- Library LEAP

- 13 Morledge-Kimball Hall
- 19 Prescott Hall
- 46 Rimview Hall
- 34 Technology Hall
- 43 Tyler Hall
- 16 Widenhouse Hall

- Faculty Offices and Classrooms
- President, Great Room,
Admissions, Student Records,
and Financial Aid
- Residence Hall
- Classrooms, Facilities Department
- Faculty Offices and Classrooms
- Residence Hall

OFF-CAMPUS PROPERTIES

BUILDING

- 70 1610 Poly Drive
- 74 RMC Hangar, 1801 Aviation Pl
Billings Logan International
Airport
- White Aspen Ranch,
481 56th Street W.

USE

- RMC Flight Operations
- Equestrian Facility

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Barking Up The Right Tree

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Review of Parasite Management and Treatments in the Equine Species

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The Influence of Prey-species Behaviors on the Accuracy and Reliability of Pain Assessment Methods in Horses

Ethical Analysis of Pregnant Mare Urine (PMU) Farms

ABSTRACTS

POSTER PRESENTATIONS

1 Medical Provider's Process for Determining Pediatric Feeding Therapy in Montana

PRESENTER(S): Janelle Grant, Sarah Hopcroft, Makayla Isaacson, Phoebe Gould

MENTOR: Corwin Sutherin

DEPARTMENT: OTD

DESCRIPTION: In the United States, 1 in 37 children under the age of five are affected by a pediatric feeding disorder (Kovacac et al., 2021). The number of feeding disorders increases to 80% to 90% if a child has a developmental disability (Kleinert, 2017). Montana has a population of 1,132,812; therefore, it is estimated that hundreds of children are likely impacted by a pediatric feeding disorder (US Census Bureau, 2023). Due to the broad scope of delivery models across the rural state of Montana, pediatric feeding services provided to children and their families vary. Therefore, the aim of this project is to provide information on the pediatric feeding practices among medical providers in the state of Montana. The objective will be to provide information to providers, families, and clinicians about the process, delivery, knowledge, hardships, and disparities that may exist regarding pediatric feeding services.

2 Investigating Viral Protein Utilization and Antagonization of Cellular Pathways

PRESENTER(S): Harlie Anderson, Dylan Deines, Daniel Dominguez, Ava Giest, Keeton Mollett, Natalie Notbohm

MENTOR: Holly Basta

DEPARTMENT: Biology

DESCRIPTION: As intracellular pathogens, viruses make use of and antagonize the host cell's processes using many different strategies. We show interactions of four viral proteins from viruses ZFERV, EBV, VSV, and EMCV with the host cell. To investigate viral effects on signaling pathways, nucleocytoplasmic trafficking, enzymatic activity, cell transformation, and membrane structure, fluorescent protein tagging and cellular staining were used, allowing visualization of protein expression, localization, and changes in cellular organization. The changes observed to host cells were specific and varied for each viral protein. Altogether, these studies highlight the multifaceted ways viruses proteins alter their host cells. This work helps extend understanding of viral interference with host cell functions and can lay the groundwork for further research into viral processes.

ABSTRACTS

POSTER PRESENTATIONS

3 Outcomes of Therapeutic Interventions on Cerebellar Cerebrovascular Accident

PRESENTER(S): Juliana Davis, Austin Bardash, Matthew McGrane

MENTOR: Hyrum Haroldsen

DEPARTMENT: OTD

DESCRIPTION: Cerebellar cerebrovascular accidents (CVAs) lead to balance, coordination, motor control, and cognitive impairments that significantly affect an individual's ability to perform daily activities. While stroke is a widely researched topic, there is minimal evidence supporting the best therapeutic interventions for cerebellar CVA. Our study seeks to determine the best interventions for cerebellar CVA by analyzing the therapy notes of those who were treated for cerebellar CVA at Billings Clinic. Length of stay, discharge disposition, and location of the CVA will be compared with Activity Measure for Post-Acute Care (AMPAC) results, therapeutic interventions, and types of therapy received to determine the best approaches when working with cerebellar CVA. The results will provide insight into which therapeutic techniques are commonly used and which interventions result in the best outcomes.

4 Diversity of the Modified Barthel Index: A Systematic Review

PRESENTER(S): Anna Cameron, Natalie Day, Rendan Klein

MENTOR: Randi Johnson Hanson

DEPARTMENT: OTD

DESCRIPTION: This Systematic Review aimed to critically examine the different settings and populations where the Modified Barthel Index (MBI) has been used within Occupational Therapy (OT) treatment and other rehabilitation practices to understand its role as a functional outcome measure. The study's goal was to identify the best uses of the MBI—how, where, and with whom—by analyzing its strengths and weaknesses across various contexts, such as diagnostic groups, age groups, and practice settings. Studies were included if occupational therapists used the MBI within a rehabilitation setting. The MBI has demonstrated flexibility as a functional assessment tool, making it applicable to a range of rehabilitation settings and populations. With greater sensitivity than the original BI, the adaptable design enables the MBI to detect subtle functional changes, which are crucial for guiding treatment planning, evaluating progress, and measuring functional independence.

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POSTER PRESENTATIONS

5 Methods for Gunshot Residue Collection with Analysis to Determine Effectiveness

PRESENTER(S): Tiffany Fuhrmann

MENTOR: Ivy Fortmeyer

DEPARTMENT: Chemistry

DESCRIPTION: Forensic science is limited in reliable onsite detection methods for gunshot residue (GSR). Oftentimes, evidence is lost in the collection and transportation stages, as GSR is fragile, easily contaminated, and can quickly deteriorate. New and easily repeated methods can be developed to increase the longevity of evidence and improve the effectiveness of collection and transportation. This project aims to determine the efficacy of three different collection methods: DI water, isopropyl alcohol, and vinegar. Each is an easily obtainable and low-cost solvent that can be used by any lab or police department. Samples collected with each solvent will be analyzed to determine if GSR was obtained and whether there is a difference in the amount and type of particles obtained. As well as the comparison of collection methods, this lab will examine the stability of the reactant sodium rhodizonate, which is commonly used in the process of GSR detection.

6 HealthTECH Challenge II: Using Materials Science to Decrease Concussions in the NFL

PRESENTER(S): Paxton McQuillan, Stefan Radic, Miles Wells

MENTOR: Ivy Fortmeyer

DEPARTMENT: Chemistry

DESCRIPTION: In February 2026, the NFL announced HealthTECH Challenge II, a crowdsourced competition to improve the safety of football helmets with a focus on facemasks. Helmet technology has largely been improved in recent years, leading to an overall decrease in concussions; however, the proportion of in-game concussions related to facemasks has increased. In CHM210: Materials Science, we have used this challenge as a case study to explore how the current design of football helmets and the materials used to construct them improve player safety. Our goal in this case study is to understand how the current facemask construction leads to the possibility of concussions, and to identify possible changes that can reduce the likelihood of concussions based on improved material properties.

ABSTRACTS

POSTER PRESENTATIONS

7 Moldable Mental Health

PRESENTER(S): Noelle Grudzinski

MENTOR: Casey Bevens

DEPARTMENT: Psychology

DESCRIPTION: Due to me being a psychology major, an art intern, and currently taking a clay course wanted to do something that combined the three together. For my symposium poster, I want to talk about art therapy with a special focus on clay specifically.

8 Conscious Discipline's Role in Head Start Classrooms

PRESENTER(S): Cayana Adams

MENTOR: Casey Bevens

DEPARTMENT: Psychology

DESCRIPTION: Early childhood trauma poses a significant threat to a child's development, which can often manifest as challenging behaviors within classroom settings. The Head Start program enhances social and cognitive development for low-income children by providing comprehensive services to children and their families to prepare them for school readiness. Headstart implements trauma-informed care for children in the classrooms through the lens of Conscious Discipline. Conscious Discipline is a comprehensive brain-based social and emotional curriculum that was created by Dr. Becky Bailey, who is an expert in childhood education and a developmental psychologist. This curriculum helps classroom management by fostering self-regulation with adults and children. The key pillars of Conscious Discipline are based on four components: the brain-state model, the seven powers of adults, school family cultivation, and the seven skills of discipline. Conscious Discipline's goal is to foster self-regulation, build secure relationships, and develop emotional intelligence in both adults and children.

9 Building Trust Through Interpersonal Communication in Organizational Leadership

PRESENTER(S): Gabriella Panzetta, Sara Akerstrom

MENTOR: Carsyn Patton

DEPARTMENT: Leadership

DESCRIPTION: This project looks at the role interpersonal communication plays in effective leadership. We argue that strong interpersonal relationships are important for leaders because they help build trust within a team. When leaders communicate openly, listen to others, and build positive relationships with their team members, it can improve motivation, teamwork, and overall success. Our research explores how trust and communication influence leadership in organizations and why these skills are important for leaders to develop. By understanding how interpersonal communication affects leadership, organizations can create stronger teams and more positive work environments. This project highlights how trust, communication, and relationships work together to support effective leadership.

ABSTRACTS

POSTER PRESENTATIONS

10 Geologic Evidence for Archean Crustal Growth and Plate Tectonics in the Beartooth Highway Rocks

PRESENTER(S): Jordan Legg, WestLee McLeod, Haley Sannes

MENTOR: Jacob Thacker

DEPARTMENT: Geology

DESCRIPTION: We have examined a suite of Archean-age basement rocks collected from the Beartooth Highway south of Red Lodge, Montana. This suite of rocks records a history of early crustal formation, magmatic intrusion, and metamorphism. Rocks were classified and characterized using modal composition, trace elements, and major oxide geochemistry. The oldest unit, amphibolite, is interpreted as the earliest mafic element and occurs as inclusions in felsic rocks. This is followed by tonalitic gneiss and amphibolitic gneiss, demonstrating high-grade metamorphism. Felsic monzogranite and tonalite dikes cut older gneiss and propose a period of felsic magmatism. The youngest rock, a basaltic dike, crosscuts all previous units. The progression from early mafic rocks to primarily felsic (and some mafic) intrusions may suggest partial melting and magmatic differentiation. These rocks could represent convergent margin tectonism during the Archean. These basement units give insight into Archean crustal growth and the history of ancient plate tectonic processes.

11 Advancing Equine Identification: Ocular Biometrics

PRESENTER(S): Marin McKee

MENTOR: Amy Neuman

DEPARTMENT: Equestrian Studies

DESCRIPTION: Ownership verification, breed management, competition fairness, and security information rely on precise equine identification. Traditional equine identification modalities include microchipping, branding, tattooing, paperwork, and genetic testing, but limitations include invasiveness, human error, and potential for falsification. Human facial recognition systems, such as those in smartphones, use periocular identification to analyze external features of the eye region. Government security systems implement iris scanning using ocular identification to analyze unique features of the iris for secure identification. Iris scanning is currently being explored for equine identification due to the contact-free, secure, and accurate characteristics of the practice. Close-up images of the horse's eye are captured and isolated to extract iris feature coordinates using a digital or infrared camera. Feature coordinates are converted into a digital identification code for database comparison. Despite limitations of consistent high-resolution images due to horse movement, iris scanning shows strong potential for reliable equine identification.

ABSTRACTS

POSTER PRESENTATIONS

12 The Effects of Motor Imagery on 400-Meter Run Performance

PRESENTER(S): Rylie Schoenfeld

MENTOR: Patrick Hughes

DEPARTMENT: Health and Human Performance

DESCRIPTION: This study investigates the effect of a single, guided motor imagery session on subsequent 400-meter running performance in collegiate athletes. Motor imagery, the mental rehearsal of a physical movement without actual physical execution, has been studied under the scope of skill acquisition and performance across various sports, though mainly with discrete motor tasks. However, its application to distance or middle-distance running has hardly been explored. 12 collegiate athletes from Rocky Mountain College, from various sports programs, completed two separate timed 400-meter trials on an outdoor track. Prior to one of the trials, participants engaged in a 10-minute visualization session read by the researcher. The visualization script was developed using the PETTLEP protocol, an evidence-based visualization protocol. The script walked participants through imagining a 400-meter race execution, pacing, mindset, and finishing effort. The control trial simply included running a 400-meter time trial without a deliberate visualization session.

13 The Effect of Bilateral Transfer on Throwing Accuracy on College Football Players

PRESENTER(S): Sylas Christie

MENTOR: Patrick Hughes

DEPARTMENT: Health and Human Performance

DESCRIPTION: This study examined the acute effects of bilateral transfer in (non-throwing) college football athletes. The concept of bilateral transfer is the process of transferring a specific motor skill(s) through the trained limb to the untrained contralateral limb. Current research examining bilateral transfer within specific sports applications is limited, especially with regard to gross motor skills. Eighteen (N=18) college football athletes performed twenty throws across five total sessions in a pre-test, post-test format that included 3 treatment sessions at a throwing net. Both the pre and post test were done with the non-dominant arm (NDA) while the treatment sessions were done with the dominant arm. Results showed no significant difference from pre and post test scores with the NDA both at 10 yards ($p > 0.05$) and 15 yards ($p > 0.05$). This suggests that gross motor skill complexity may affect the performance outcome of bilateral transfer.

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POSTER PRESENTATIONS

14 Acute Effects of Beetroot Powder Supplementation on Anaerobic Performance

PRESENTER(S): Brooke Wirkkala

MENTOR: Chris Irvine

DEPARTMENT: Health and Human Performance

DESCRIPTION: Dietary nitrate has become increasingly popular due to its potential to improve aerobic performance. Research suggests possible benefits on anaerobic performance, although results remain inconclusive. The purpose of this study was to assess the effects of acute beetroot powder supplementation on peak power, mean power, and fatigue index during the Wingate Anaerobic Test (WAnT). Participants (n=12), ages 18-40, were recruited, excluding those with musculoskeletal or cardiovascular diseases. A series of paired samples t-tests were conducted, revealing no significant differences between the beetroot and control trials for peak power (11.06 ± 2.23 W/kg vs. 10.99 ± 2.58 W/kg, $p = .839$), mean power (6.72 ± 1.06 W/kg vs. 6.88 ± 1.36 W/kg, $p = .301$), or fatigue index ($p = .068$). The findings of this study suggest that acute beetroot powder supplementation does not elicit ergogenic benefits during the WAnT.

15 Validity of Apple Watch Energy Expenditure Compared With Indirect Calorimetry at Different Walking Intensities

PRESENTER(S): Lauryn Frideres

MENTOR: Chris Irvine

DEPARTMENT: Health and Human Performance

DESCRIPTION: This study assessed the accuracy of the Apple Watch caloric expenditure compared to indirect calorimetry. Participants walked on a treadmill for thirty minutes on a flat surface, then came back for a second session and walked at an incline of six for thirty minutes. During both sessions, participants wore an Apple Watch and were also connected to an indirect calorimeter. The Apple Watch was significantly different at estimating caloric expenditure at a zero incline ($p < .001$) and at an incline of six ($p = .013$). At a zero incline, the Apple Watch significantly overestimated calories expended ($179.29\text{kcal} \pm 49.74\text{kcal}$ vs $136.71\text{kcal} \pm 26.15\text{kcal}$). The same applies to the data produced at an incline of six ($235.00\text{kcal} \pm 66.76\text{kcal}$ vs $203.43\text{kcal} \pm 41.83\text{kcal}$). It was concluded that the Apple Watch was found to be significantly different from the indirect calorimeter when measuring caloric expenditure.

ABSTRACTS

POSTER PRESENTATIONS

16 The Hell Creek Geologic Formation: Climate and Evolution of Early Mammals

PRESENTER(S): Haley Sannes

MENTOR: Derek Sjoström

DEPARTMENT: Geology

DESCRIPTION: The Hell Creek Geologic Formation records how environmental changes during the Late Cretaceous shaped ecosystems and influenced mammalian evolution. Focusing on the Hell Creek Formation in eastern Montana and adjacent regions, this analysis incorporates stratigraphic, climactic, and paleontological evidence to reconstruct environmental conditions leading up to and following the Cretaceous to Paleogene (K-Pg) boundary impact event. Throughout the Hell Creek Formation, essential evidence is found in the relationship between climate change and evolutionary biodiversity. The formation preserves diverse fossil assemblages including dinosaurs, marine organisms, plant types, and early mammals, and provides a crucial record of impact-related ecosystem transformation. This geologic formation represents how Earth's systems can influence living organisms and lead to the variety of life we see today.

17 The Influence of Caffeine Source on Resting Metabolic Rate

PRESENTER(S): Mya Maack, Lauryn Frideres, Charlize Davis, Brooke Wirkkala

MENTOR: Chris Irvine

DEPARTMENT: Health and Human Performance

DESCRIPTION: Resting metabolic rate (RMR) is the amount of energy required for the body to perform basic physiological functions. Previous literature has shown that caffeine may impact RMR. This study aimed to examine the influence of caffeine source on RMR following the consumption of three separate beverages: water, energy drink (Ghost Beverages LLC), and coffee (Kirkland Signature Coldbrew Coffee). RMR was measured using indirect calorimetry. Each participant completed the three conditions on three separate days. Participants' beverage order was randomized to control order effects. A one-way repeated measures ANOVA was conducted to compare RMR across the three beverage conditions. Results indicated no statistically significant main effect of beverage on RMR, $F(17,34) = 2.5092$, $p = 0.119$. Therefore, caffeinated beverages did not significantly increase RMR.

ABSTRACTS

POSTER PRESENTATIONS

18 Assessing the Validity of the InBody 270 on Resting Metabolic Rate

PRESENTER(S): Charlize Davis, Brooke Wirkkala, Lauryn Frideres, Mya Maack

MENTOR: Chris Irvine

DEPARTMENT: Health and Human Performance

DESCRIPTION: Resting metabolic rate (RMR) is the amount of energy required for the body to perform basic physiological functions. The indirect calorimeter (IC) is considered the gold standard for assessing RMR. The InBody 270 is a device that measures body composition through an electrical current. Using body composition data, the InBody 270 can estimate RMR. The purpose of this study was to assess the validity of the InBody 270 compared with the IC. Eighteen participants were recruited for this study. Each participant completed three trials; at each trial, RMR was measured using the InBody 270 and the IC. A paired samples t-test was conducted to compare RMR between the InBody 270 and an IC. There was no significant difference in RMR between InBody 270 (1653 ± 307 calories) and IC (1654 ± 284 calories); $p = .963$. These findings suggest that the InBody270 can be used to accurately measure RMR.

19 The Effects of Biological Sex and External Load on Rate of Perceived Exertion

PRESENTER(S): Cameron Royalty

MENTOR: Chris Irvine

DEPARTMENT: Health and Human Performance

DESCRIPTION: This study evaluated the acute effect of an external load, in the form of a weighted backpack, and biological sex on the rate of perceived exertion (RPE) during moderate-intensity aerobic exercise. There were twenty participants (ten male & ten female) who participated in this study. Participants completed two trials, the first one without a weighted backpack and the second one with a weighted backpack. The backpack was loaded with ten percent of their body weight, rounded to the nearest five-pound increment. The study found that the addition of an external load significantly increased the participants' RPE ($p = <.001$). The study also found that biological sex had no significant effect on RPE change across the trial conditions ($p = .723$).

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ORAL PRESENTATIONS

Schedule:

Session 1 (12:00-1:10pm)

Opening Remarks

Motherhood: A Short Story

Barking Up The Right Tree

The Influence of Prey-species Behaviors on the Accuracy and Reliability of Pain Assessment Methods in Horses

The Effects of Music on Test Taking

Understanding Trigeminal-Mediated Headshaking in Horses: Etiological Factors and Management Options

Break

Session 2 (1:10-2:15pm)

“Ghanaia” for Solo Marimba

Ethical Analysis of Pregnant Mare Urine (PMU) Farms

The Hamburglar: A Short Story

Review of Parasite Management and Treatments in the Equine Species

Who Talks the Most? Analyzing Trash Talk in College Football

Break

Session 3 (2:15-3:20pm)

Sense of Belonging and Confidence in Goal Achievement Among College Students

Welfare Standards and Practices in Equine-Derived Serotherapy: A Review

Social Media Use and Its Relationship to Hedonic Motivation, Narcissistic Traits, and Self-Control in Emerging Adults

Airborne Particulate Matter within Equine Facilities: How Daily Management Tasks Influence PM2.5 and PM10 Levels

The Impact of Staff - Resident Relationships and Recovery Outcomes in Women’s Re-entry and Substance Abuses Treatment Programs

Intersectional Analysis of Indigenous Students in Western Institutions

Closing

ABSTRACTS

ORAL PRESENTATIONS

1 Intersectional Analysis of Indigenous Students in Western Institutions

PRESENTER(S): Cayana Adams

MENTOR: KC Cunningham

DEPARTMENT: Sociology

DESCRIPTION: This presentation reviews an intersectional analysis of socioeconomic and racial systemic challenges that Native students face when transitioning to Western institutions of higher education. Applying Lareau's (2011) framework of "natural growth" and "concerted cultivation", this project compares experiences of Native students who come from reservations and Native students who come from urban cities.

2 "Ghanaia" for Solo Marimba

PRESENTER(S): Drifter Skillicorn

MENTOR: Cara Schreffler

DEPARTMENT: Music

DESCRIPTION: Ghanaia, for solo marimba, was composed by Mathias Schmitt and influenced by rhythms that structure much of the music in Ghana, Africa. Schmitt studied music in Ghana after being introduced to the unique rhythms that the people of that country play. He was enthralled by the lack of fatigue he had experienced after daily three hour sessions of playing and dancing, and became inspired to write this solo. He wrote the marimba solo to connect to African culture, as the instrument's roots are from there, while also incorporating his knowledge of western music. The work will be performed by Drifter Skillicorn, a percussion performance major.

ABSTRACTS

ORAL PRESENTATIONS

3 The Impact of Staff - Resident Relationships and Recovery Outcomes in Women's Re-entry and Substance Abuses Treatment Programs

PRESENTER(S): Madison Barthelette

MENTOR: Casey Bevens

DEPARTMENT: Psychology

DESCRIPTION: Staff-resident relationships play a major role in shaping the experiences and outcomes of women in re-entry and substance abuse treatment programs. Drawing from personal experience working in a women's pre-release and drug/alcohol treatment center, the focus is on how everyday interactions with staff influence women's recovery. Many participants enter these programs coping with trauma, addiction, and damaged relationships, making trust and safety essential to successful treatment. Using the psychological frameworks of trauma-informed care and social learning theory, consistent, respectful, and empathetic communication from staff can encourage trust, healthy interactions, and positive behavioral change. In contrast, dismissive or negative interactions may reinforce mistrust and create barriers to recovery. While rules and structure remain necessary in correctional settings, the way they are communicated significantly affects residents' sense of stability and safety. Ultimately, small staff actions can greatly improve outcomes in women's re-entry and treatment programs.

4 The Hamburglar: A Short Story

PRESENTER(S): Hunter Nixdorf

MENTOR: Ashley Kunsa

DEPARTMENT: English, Creative Writing

DESCRIPTION: This flash story relates a teenage boy's first-person account of coming face to face with an unexpected visitor during his late-night shift at a fast food joint. Burnt out, the narrator has to decide how to interact with a visitor who has more significant motives than satisfying his munchies. By the story's end, the narrator has come to empathize with the visitor, and begins to question his own view of humanity.

5 Motherhood: A Short Story

PRESENTER(S): Kenzie Barkac

MENTOR: Ashley Kunsa

DEPARTMENT: English, Creative Writing

DESCRIPTION: In this short story, a woman journeys through motherhood, experiencing moments of joy and pain: she brings her daughter into the world, endures postpartum depression, sees her child walk down the aisle, and eventually watches her daughter go into the world on her own. Balancing scene and summary, the story highlights both the challenges and rewards that come with motherhood and explores themes including mother-daughter relationships, family dynamics, and mother nature.

ABSTRACTS

ORAL PRESENTATIONS

6 Sense of Belonging and Confidence in Goal Achievement Among College Students

PRESENTER(S): Quincee Sturgill

MENTOR: Jenny Reichert

DEPARTMENT: Psychology

DESCRIPTION: This study examined whether a stronger sense of belonging predicted higher self-efficacy among students at Rocky Mountain College who completed an anonymous online survey. Results indicated a positive correlation between sense of belonging and self-efficacy, suggesting that students who reported stronger feelings of belonging also tended to report greater confidence in their ability to achieve goals. Additional analyses explored whether factors such as campus involvement, residency, major, and academic division were associated with a sense of community. These findings highlight the potential role of belonging in supporting students' motivation and confidence in pursuing personal and academic goals.

7 The Effects of Music on Test Taking

PRESENTER(S): Kayla Brennan

MENTOR: Jenny Reichert

DEPARTMENT: Psychology

DESCRIPTION: This study examined whether listening to music affected a student's test score on an aptitude test among Rocky Mountain College students. Participants completed the same test consisting of 20 questions, while being exposed to one of three conditions: instrumental music, music with lyrics, and no music at all. Results from this study could give students an understanding of whether or not listening to music while taking a test will improve their concentration and performance, or it will distract them and they will perform worse.

8 Social Media Use and Its Relationship to Hedonic Motivation, Narcissistic Traits, and Self-Control in Emerging Adults

PRESENTER(S): Brock Ping

MENTOR: Jenny Reichert

DEPARTMENT: Psychology

DESCRIPTION: This study examined the relationships between the use of social media (e.g. Snapchat, Instagram, Facebook, etc.), narcissistic traits, hedonic motivation, and self-control among Rocky Mountain College students. Participants completed an anonymous online survey that measured passive and active social media behaviors, motivational tendencies, personality, and the ability to self-regulate. Results will inform research investigating motivations behind social media use, and could inform young peoples' use of social media as it impacts their self-control.

ABSTRACTS

ORAL PRESENTATIONS

9 Who Talks the Most? Analyzing Trash Talk in College Football

PRESENTER(S): Hannah Usher, Kaycee Kern, Jae'Sean Pete

MENTOR: Jenny Reichert

DEPARTMENT: Psychology

DESCRIPTION: Previous research on the use of 'trash talk' in competitive sports is limited, and there is currently no consensus on the definition of trash talk. This study examined trash talk among football players at a small college in the Mountain West. Among other information, players provided their position and class standing, a definition of trash talk, motivations behind why they use it, and observations that they have of who utilizes trash talk. Results from the study revealed that players' primary motivation for trash talk was to frustrate their opponent, and offensive and defensive players are equally likely to utilize trash talk. Further research in this area would allow psychologists, referees, coaches, and athletes to understand the effect that trash talk has on individual and team performance.

10 Barking Up The Right Tree

PRESENTER(S): Tiann Lubkeman

MENTOR: Jenny Reichert

DEPARTMENT: Psychology

DESCRIPTION: This study investigated the relationship between dog ownership and mental well-being among Rocky Mountain College students. Research shows that dog ownership and companionship buffers the effects of stress, which students may face due to academic and extracurricular demands. Mental well-being was compared between students with dogs and students without dogs. Findings can inform mental health professionals who focus on holistic-based interventions to enhance well-being in patients.

11 Airborne Particulate Matter within Equine Facilities: How Daily Management Tasks Influence PM_{2.5} and PM₁₀ Levels

PRESENTER(S): Peyton Bourke

MENTOR: Amy Neuman

DEPARTMENT: Equestrian Studies

DESCRIPTION: Airborne particulate matter (PM) in equine stable environments influences respiratory exposure for both horses and personnel. This study examined how routine stable management activities influence short-term fluctuations in PM of 2.5 and 10 ug/m³ (PM_{2.5} and PM₁₀). Data collection for each activity occurred over three separate days. The data was averaged to derive the percent of increase from baseline indoor air measurements. Activities tested were: stall cleaning (PM_{2.5}: 62.8%; PM₁₀: 71%), hay feeding (PM_{2.5}: 62.7%; PM₁₀: 74.4%), sweeping (PM_{2.5}: 1,042.8%; PM₁₀: 1,047%), and indoor riding (3 riders: PM_{2.5}: 292.9%; PM₁₀: 293.9%)(6 Riders: PM_{2.5}: 386.6%; PM₁₀: 376%). Results support the hypothesis that routine management activities generate short-term PM spikes. Identifying real-time PM fluctuations during daily activities informs improved stable management practices potentially reducing respiratory risk for horses and humans.

ABSTRACTS

ORAL PRESENTATIONS

12 Review of Parasite Management and Treatments in the Equine Species

PRESENTER(S): Alexandra Cassidy

MENTOR: Amy Neuman

DEPARTMENT: Equestrian Studies

DESCRIPTION: This thesis examines current management practices in the equine industry for internal parasites and the development of the anthelmintic resistant (AR) within the population of parasites. The paper explores current parasite management techniques, classes of common anthelmintics, and describes the most common parasite in adult horses, cyathostomins (small strongyles). Small strongyles are becoming increasingly resistant to current drug treatments. Environmental and genetic factors may affect the potential parasite load of any given horse. Exploring new research for parasite management and considering homeopathic remedies as opposed to overuse of available dewormers may be the future of parasite management in horses.

13 Understanding Trigeminal-Mediated Headshaking in Horses: Etiological Factors and Management Options

PRESENTER(S): Ella Jacobs

MENTOR: Amy Neuman

DEPARTMENT: Equestrian Studies

DESCRIPTION: Characterized by sudden, repetitive head movements, trigeminal-mediated headshaking (TMHS) is a neurological syndrome in horses with significant impact on welfare and performance. Etiological factors potentially contributing to TMHS alongside diverse management strategies development may reduce clinical signs of this disease. TMHS is most commonly associated with trigeminal nerve hypersensitivity resulting in neuropathic pain and is commonly compared to the human condition trigeminal neuralgia. Current treatments include medical therapies, surgical procedures, adaptive tack, and nutraceuticals. Each treatment has varying success rates and primarily focuses on management rather than resolving the underlying condition. Further research to gain understanding of the pathogenesis of TMHS is needed to better understand potential diagnostics, treatment modalities, and elevated welfare outcomes of affected equine.

ABSTRACTS

ORAL PRESENTATIONS

14 Welfare Standards and Practices in Equine-Derived Serotherapy: A Review

PRESENTER(S): Marin McKee

MENTOR: Amy Neuman

DEPARTMENT: Equestrian Studies

DESCRIPTION: Hyperimmune serotherapy is critical in treating envenomations and toxin-mediated infections worldwide by significantly reducing mortality. Animal welfare concerns arise through repeated immunizations and large volume industrial bleeding from equine, ovine, or human donors. Equine-derived sera provide scalable, cost effective treatment capable of near-complete antigen neutralization. Ovine- or human-derived immunoglobulins neutralize antigens faster but are less accessible and more expensive. Production requires a repetitive process, strict cold-chain storage, regulatory documentation, and strategic stockpiling for timely access. Sera production raises animal welfare concerns as equine donors have documented acute effects and potential for chronic inflammatory impacts; research on both active and retired populations remains limited. Implementation of adequate nutrition, veterinary supervision, and preventative care in facilities do not combat the invasiveness of production protocols that challenge freedoms from pain, injury, and distress. Advancing serotherapy requires transparency, standardized regulations, greater studies, and innovation to balance lifesaving human treatment with responsible animal care.

15 The Influence of Prey-species Behaviors on the Accuracy and Reliability of Pain Assessment Methods in Horses

PRESENTER(S): Ava Bergstrom

MENTOR: Amy Neuman

DEPARTMENT: Equestrian Studies

DESCRIPTION: Accurate pain assessment is essential for equine welfare and veterinary decision-making, yet horses present unique challenges as prey animals that evolved to minimize visible signs of vulnerability. Prey species' behavior influences the accuracy and reliability of common equine pain assessment methods. Assessment approaches include unidimensional and composite pain scales, physiological indicators, behavioral observation, facial expression scales, stress responses, and evolutionary pain-masking behaviors. Findings indicate many tools assume pain will be consistently visible and proportional to injury, conflicting with prey-species biology and stress-modulated pain expression. As a result, clinically significant pain may be underestimated. Equine pain assessment cannot be fully objective, but it can be improved through prey-aware, multimethod approaches integrating physiological, behavioral, and contextual indicators to better protect equine welfare.

ABSTRACTS

ORAL PRESENTATIONS

16 Ethical Analysis of Pregnant Mare Urine (PMU) Farms

PRESENTER(S): Hannah Rowe

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DEPARTMENT: Equestrian Studies

DESCRIPTION: Pregnant Mare Urine (PMU) farming is controversial due to concerns regarding mare welfare and the use of animals for pharmaceutical production. PMU farms collect urine from pregnant mares who live in structured confinement for up to 6 months in order to optimize the extraction of estrogens to be used in hormone replacement therapy for humans. These estrogens are manufactured into medications used to treat common menopausal symptoms and are not replaceable by synthetic compounds. Analysis of industry codes of practice, medical literature, and arguments from animal welfare advocates provide insight into weighing the medical benefits to humans against the potential welfare concerns for the animals. Regulatory standards and veterinary oversight reduce perceived harm to the horses, making PMU production ethically acceptable.



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