

# 2nd Annual MSU DENVER RESEARCH SYMPOSIUM

# 20 23



**OCTOBER 13, 2023**

**9AM-5PM**

**SPRINGHILL SUITES**

# SCHEDULE

**8:30 AM**

REGISTRATION AND  
POSTER SETUP BEGINS

**9:00-10:15**

SESSION I

**10:30-11:45**

SESSION II

**11:45-12:15**

POSTER SESSION

**12:15-1:15**

NETWORKING LUNCH

**1:30-2:45**

SESSION III

**3:00-4:30**

FACULTY HAPPY HOUR

# SESSION I | 9:00-10:15

**DR. JAMES DOVE | PHYSICS**

**GERARDO PEREZ-LLAMAS | PHYSICS**

## **Modeling the Structure of Neutron Stars Using Degeneracy Pressure**

Neutron stars are extremely dense stellar remnants. The gravitational force is balanced by pressure gradients in which the pressure is dominated by degeneracy pressure - a pressure due to quantum-mechanical processes combined with the Pauli exclusion principle. We compare models of a neutron star's structure using different equations of state, including both special-relativistic and general-relativistic processes.

**DR. KATE TRUJILLO | SOCIAL WORK**

**AMBEY CLARK | CMEI**

**NEVAEH RAMON | HISTORY**

**CELESTE TERRY | IDP**

## **How Aurarians Define Family: The Child Welfare and Native American/Indigenous Communities on Campus**

This research will show how the Colorado Child Welfare Scholars and Indigenous students on the Auraria campus each define families. These definitions are used to lead talking groups that include Colorado Child Welfare Scholars and Indigenous students to begin conversations with the hopes of providing more culturally sensitive care in the Colorado child welfare system.

**ANNE YONCHA | ART**

## **Re:Peat – A Look and Listen at Post-Extraction Peatland**

I collaborate with Finnish ecologists on an art-science practice investigating peatland – a rare type of ecosystem where Sphagnum moss slowly decomposes and engineers an anaerobic, water-logged desert. I translate soil data into visuals and sound so we can experience differences between conserved and extracted peatland in a sensory way.

**DR. MARIA CATTELL | BIOLOGY**

## **Using Genome Modification for Coral Conservation: A dramatic approach to drastic problem**

During this presentation I will discuss the basic biology of reef building corals, the value of reefs and the environmental challenges they face. Further, I will describe a possible molecular genetic approach to coral conservation and the research that students in my lab are conducting to ultimately test this approach.

## **DR. DANIEL CAPPER | PHILOSOPHY**

### **Buddhists Do Not Want Space Junk to Fall on Your Head**

As described in my recent book, *Buddhist Ecological Protection of Space: A Guide for Sustainable Off-Earth Travel*, Buddhists from the ethnographic field clarify the appropriateness of our actions involving the managing of space debris, the proper mining of our moon, the handling of potential off-Earth microbes, and the overhauling of climates of planets like Mars.

## **TESS CONONELOS | ACADEMIC AFFAIRS**

### **“Towards the end it was my decision”: First-generation Latine students' use of community cultural wealth in the transition to university education**

This study describes how ten, first-generation, Latine students use their Community Cultural Wealth to overcome barriers in transitioning from high school to the university. Social relationships with school personnel and family members provided the navigational and aspirational capital needed to complete the transition while resistant capital drove persistence toward graduation.

## **DR. EMILY RAGAN | CHEMISTRY AND BIOCHEMISTRY**

### **MSU Denver student interviews about course materials: what should faculty know?**

Interviews with 12 MSU Denver students reveal positive and negative student experiences with course materials. Students also shared what they would like faculty to know about student experiences, which offers strategies we can use to further iterate and improve our courses.

## **DR. MEG BERTONI | CRIMINAL JUSTICE & CRIMINOLOGY**

### **Violent Societies and Disinformation**

Are we really as divided a society as we are led to believe we are? An in-depth study about the spread of disinformation and its role in the violentization of the U.S. shows how and why narratives of disinformation are perpetuated and suggests some remedies.

## **DR. KATHRYN YOUNG | SECONDARY EDUCATION**

## **DR. NELS GREVSTAD | MATHEMATICS AND COMPUTER SCIENCE**

### **Trauma-Informed Supports for new teachers - Updates and new learnings**

This proposal highlights the quantitative second year findings of a longitudinal study about secondary traumatic stress experienced by new teachers and what trauma-informed interventions might mitigate some secondary traumatic stress. It also looks into what might have changed for new teachers from year 1 to year 2.

# SESSION II | 10:30-11:45

**DR. SMITA SINGH | SCHOOL OF HOSPITALITY**

## **Relevance of Message Framing in Gamified Smart Applications**

This current research bridges the gap in interlinking gamified tasks with sustainability initiatives through an experimental design. By integrating utilitarian and social tasks using e-vouchers and leaderboards, event managers can motivate their attendees to practice sustainable initiatives and gain a competitive advantage to prefer green events over non-green ones.

**DR. DENNIS L. RUDNICK | ELEMENTARY EDUCATION AND LITERACY, SCHOOL OF EDUCATION**

## **Resisting Divide and Conquer in Schools and Society**

In education, strategic and well-funded campaigns continue to stoke fear, othering, villainization, and dehumanization of minoritized groups, pushing problematic narratives and stymieing progress. *Resisting Divide and Conquer in Schools and Society*, a forthcoming book, seeks to contextualize such divide and conquer efforts and efforts to resist them, with a lens toward intersectional educational and social justice.

**DR. CAITLIN FINE | ELEMENTARY EDUCATION, SCHOOL OF EDUCATION**

## **Customizing Science Curriculum for Multilingual Learners: Teachers' Beliefs about Language and their Customization Decisions**

We investigated how science teacher beliefs about language and their language policy contexts related to their customizations to OER curricula for multilingual learners. Our analysis included descriptions of survey results and qualitative coding of teachers' interviews. This work highlighted tensions between teachers' beliefs about language and school-based expectations about customizations.

**ALYSSA RIDDER | THEATRE**

## **Patterns for success: Training the next generation of costume technicians in digital garment simulation and pattern drafting software**

Drafting patterns for costumes has not changed much since Shakespeare's times and neither has the way we teach it. In this presentation I offer an alternative to the paper, pencil, and ruler method of pattern drafting with a case study that integrates a digital garment simulation and pattern drafting software called CLO3D into the classroom.

## **DR. DANIEL MOORE | EDUCATION**

### **Responding to stigmas of addiction: Self-authorship as critical literacy**

This presentation explores data gathered in a literacy group with seven youth in recovery from addictions. I demonstrate how the youth authored their physical appearance in particular ways at particular times to meet their personal goals and argue that the youth's self-authorship is an important form of critical literacy.

## **RACHAEL LUEDERS | HEALTH PROFESSIONS**

### **Telehealth in the Treatment Adherence of Patients with Schizophrenia and Bipolar Disorder; A Provider Perspective**

People with Schizophrenia and bipolar disorders can be hard to keep compliant with their treatment regimen. This study explores if behavioral health providers believe telehealth has helped this population of patients to maintain compliance, and if behavioral health providers feel as if adding telehealth aides their practice.

## **DR. CYNTHIA G. DORMER | NUTRITION**

### **GABRIELLE MALLOZZI**

#### **MSU Denver student interviews about course materials: what should faculty know?**

Increasing students' use of existing University resources may advance student success and the University's mission. We tested with some success and some failure a brief intervention aimed at increasing students' use of University resources. We will share findings about what Nutrition students (mainly juniors) say they need and discuss ideas for increasing students' use of resources.

## **TEAGUE MCDANIEL (THEY/THEM) | ART**

### **Creativity and Transgender Resiliency**

Join Professor, Teague McDaniel (they/them) to find out how they engage people in creative expression to increase resiliency of the transgender community. Transgender people in America are encountering increasing barriers to equitable access to healthcare. McDaniel's research and practice provides creative intervention to increase public awareness and trans wellbeing.

## **DR. KRIS ATKINSON | SOCIAL WORK**

### **KIMBERLYN BENNETT | SOCIAL WORK**

#### **Student's Educational Experiences during Times of Collective Trauma**

This presentation will share findings from a participatory, phenomenological study exploring how collective trauma impacts social work students' educational experience. It will highlight how collective trauma shapes students' expectations, emotional experiences, and sense of belonging. It will also report on pedagogical practices both appreciated and desired by students.

# POSTER SESSION | 11:45-12:15

## **DR. STEVEN GEINITZ | COMPUTER SCIENCES**

### **Exploring the Use of Generative AI for Teaching and Student Engagement**

This poster presentation highlights the efforts of our faculty learning community (FLC) at MSU in using Generative AI for enhanced teaching and student engagement. We will review current educator uses, showcase our FLC's proposed use cases, and discuss the benefits of using GenAI for the students of MSU.

## **DR. ARIJANA BARUN | BIOLOGY**

## **DR. CYNTHIA ERICKSON | PSYCHOLOGY**

## **KATHERINE A. GRUIDEL | PSYCHOLOGY**

### **Active Learning in Introductory Biology Course**

This study examined students' perception of their motivation and self-regulation in an Introductory Biology class. Based on the survey results, there was no significant relationship between the students' motivation and self-regulation and their eventual grades. It may be that students lack a general understanding of study techniques, or they lack metacognition.

## **DR. LINA M. MARTIN-CORREDOR | SCHOOL OF EDUCATION**

## **DR. CAITLIN FINE | ELEMENTARY EDUCATION, SCHOOL OF EDUCATION**

### **Exploring translanguaging possibilities in MSU Denver courses**

In this presentation, we will share our experience as facilitator-participants in a Faculty Learning Community focused on identifying ways to support linguistically and culturally minoritized students at MSU Denver through learning about and beginning to implement translanguaging pedagogies. Using qualitative data, we will present preliminary takeaways and personal reflections.

## **DR. SHALINI SRINIVASAN | CHEMISTRY AND BIOCHEMISTRY**

### **Using a writing assignment to promote civic engagement in a chemistry course for non-majors**

This project aspires to inform culturally responsive instruction and civic engagement in a chemistry course via a writing assignment that targets multiple learning outcomes and builds bridges of relevance between home, community, and classroom experiences. It also gives students the space and freedom to produce an evidence-based deliverable that uniquely represents their connections to their communities.

**DR. SARAH SCHLIEMANN | EARTH AND ATMOSPHERIC SCIENCE**  
**DR. SARA JACKSON SHUMATE | CENTER FOR INDIVIDUALIZED LEARNING**  
**Teaching Climate Change With Hope and Optimism**

How do you teach students about a serious subject without leaving them feeling overwhelmed and hopeless? In this class, we focused nearly the entire class on solutions to climate change, rather than the consequences. This approach resulted in a positive learning experience for our students and an enjoyable teaching experience for us.

**DR. INGRID CARTER | ELEMENTARY EDUCATION AND LITERACY**  
**DR. TINA HERRING | EARLY CHILDHOOD EDUCATION**  
**DR. MICHELE TRUJILLO | SPECIAL EDUCATION**  
**PARIS PRESTRIDGE | HEALTH PROFESSIONS**  
**DR. LETITIA PLEIS | ACCOUNTING**

**Explorations of Multimodal Pedagogies in Online, In-person, and Hybrid Courses through Self-Study**

This poster presentation will provide an overview of our Faculty Learning Community, which focuses on Scholarship of Teaching and Learning (SoTL) through self-study and multimodal pedagogies. We seek to improve our practice, collaborate through self-study research, and disseminate our results.

**DR. BECKY COTTRELL | SOCIAL WORK**  
**DR. ANN OBERMANN | SOCIAL WORK**  
**SHAWN RAGLIN | SOCIAL WORK**

**Student Voice in Course Design**

The main consumers of our courses are students, and yet we rarely include them in the course design process beyond student evaluations. Our poster shares initial results from research exploring student perspectives of course design collaborations and creative ways to incorporate student voice into your design processes.

**DR. RANJIDHA RAJAN | COMPUTER SCIENCES**

**Generative AI-enhanced inquiry-based learning in Computer Science classes**

Inquiry-based learning is a crucial skill for any discipline that requires identifying assumptions, using critical and logical thinking, problem-solving, and considering alternative explanations. This study uses generative AI -enhanced inquiry-based learning, aligned with SoTL attributes like critical inquiry process, engagement in action, and shared publicity, in CS undergraduate classes.



**DR. CHRISTINA FOUST | COMMUNICATION STUDIES**  
**NICOLE PREDKI | DANCE**  
**BARBARA DECKER | SOCIAL WORK**  
**DR. BRIAN O'HARA | SOCIOLOGY**  
**DR. RICH WAGNER | EARTH AND ATMOSPHERIC SCIENCE**

**Laying the groundwork for growing Community-Engaged and Service Learning (CESL) at MSU Denver**

Summarizing findings from the Community-Engaged, Service Learning (CESL) Faculty Learning Community during the 2022-23 academic year, this poster will cover foundational concepts central to CESL work, taken from evidenced-based research and the experience of MSU Denver professors engaged in CESL work.

**DR. PHILIP E. BERNHARDT | SECONDARY EDUCATION**  
**DR. BRIDGET AREND | CENTER FOR TEACHING, LEARNING, AND DESIGN**  
**KAREN JARAMILLO | CHICANA/CHICANO STUDIES**  
**DR. MARK KOESTER | MATHEMATICS AND STATISTICS**  
**DR. DENNIS RUDNICK | ELEMENTARY EDUCATION**

**Equity-Based Assessment Methods**

This cross-disciplinary FLC is exploring a variety of equity-based alternative assessment methods with the intent of outlining the benefits and challenges of using these methods with MSU Denver students. This poster presentation will share our explorations and discussions to date and gather feedback from additional MSU faculty.

**DR. CYNTHIA HEISS | NUTRITION**  
**DR. RACHEL SINLEY | NUTRITION**

**A DEI Scholars Program Using Storytelling to Increase Diversity and Develop Leaders and Role Models in Dietetics**

This project aims to provide support/training to underrepresented dietetics students to develop leaders, mentors, and role models who will be successful dietitians. Nutrition and Social work faculty are developing a DEI Scholars program for dietetics students using storytelling as the vehicle to increase cultural humility, civic-engagement, and leadership/mentoring skills.

**ZACH CLARK | CENTER FOR TEACHING, LEARNING, AND DESIGN**  
**KATHRYN WILLIAMS | CENTER FOR TEACHING, LEARNING, AND DESIGN**

**What is accessibility and why does it matter?**

Accessibility is working to facilitate life experiences for people of all disabilities and abilities. This poster will explore how accessibility work in higher education can apply principles such as Universal Design for Learning (UDL) to build accessible courses that minimize the need for remediation or accommodation exceptions.

# SESSION III | 1:30-2:45

## **DAVID FARRELL | MUSIC**

### **Creating Music with Interactive Electronics**

This presentation focuses on creating digital musical instruments. Learn the basics of how computers process sound and how we can program devices and sensors to create instruments with powerful technical and expressive capabilities.

## **DR. LUNDEN MACDONALD | MODERN LANGUAGES**

### **DR. DEVIKA BANERJI | MARKETING**

#### **Student AND Academic Affairs: Classroom Collaboration for Improved Outcomes**

Faculty at MSU Denver are bridging the gap between Student and Academic Affairs by integrating student support measures as credit-bearing elements into their course design. This session details preliminary outcomes of research into the positive impact this practice is having on retention at MSU Denver and explains how this program is being integrated into our General Studies program.

## **DR. DANIEL PITTMAN | COMPUTER SCIENCES**

### **Sustainability Hub - A Community Data Hub For Sustainable Regional Systems Research In Colorado**

The Sustainability Hub project seeks to consolidate sustainability and well-being data throughout Colorado into a single platform with an intuitive conversational interface. By fostering collaboration and evidence-based decision-making, it serves as a vital tool for enhancing well-being, economic prosperity, and inclusive environmental sustainability.

## **DR. MEG FILBIN | CHEMISTRY & BIOCHEMISTRY**

### **Effects of Undergraduate Research Course Design and Near-peer Mentoring on Student Self-Perception as Scientists and Career Aspirations**

Persistence gaps stemming from institutional and social barriers result in fewer women and underrepresented minorities in the STEM workforce. However, educational support that builds STEM identity and self-efficacy help to close that gap. We are implementing and measuring the effects of these support structures in a new research course.

## **DR. JULIAN FRIEDLAND | MARKETING**

### **Beyond the Brave New Nudge: Activating Ethical Reflection Over Behavioral Reaction**

So-called nudging techniques leveraging reactive responses have gained popularity as tools for promoting ethical behavior. We argue, however, that heavy reliance on reactive behavioral interventions can undermine longer-term development of ethical competence. We explain why ethical boosting presents a more edifying and durable social and organizational policy alternative.

**YISHI LEE | ENGINEERING AND ENGINEERING TECHNOLOGY**

**PARKER SORLEY**

**JACOB FIFIELD**

**STEVEN STAUBACH**

**VICTOR GOMEZ**

**TELLUS Robotic Swarm Control Techniques for Lunar Resource Discovery**

MSU Denver's IEEE Robotics Club aims to demonstrate the feasibility and efficiency of cooperative information gathering strategies via swarm robotic demonstrations. Through the use of three homogenous rovers equipped with ground penetrating radar and utilizing a novel autonomous information gathering protocol (TELLUS), given areas can be mapped while simultaneously locating potential resources within that newly mapped region.

**DR. ROBERTO FORNS-BROGGI | WORLD LANGUAGES**

**The Videographic Essay: A Multifaceted Pedagogical Tool for a Bilingual Latin American Environmental New Media Guide**

Dive into the unexplored realm of video essays and their fusion with comprehensive bibliographical and audio-visual guides dedicated to Latin American environmental art, literature, and cinema. This pioneering project shows how video essays revolutionize research compilation, offering transformative ways to synthesize arguments across disciplines while fostering resonance and profound impact.

**DR. GODWIN-CHARLES OGBEIDE | SCHOOL OF HOSPITALITY**

**Designing Delightful Service Experience Via Inspirational Training and Interaction**

Technology is changing basic principles of service delivery. Some significant changes include the lack of/reduction in direct interaction with customers and the inability to effectively enhance the guests' emotions due to the use of technology for customer service. These changes have negative impacts on creating a delightful service experience.

**DR. SUNG HEE JOO | ENGINEERING AND ENGINEERING TECHNOLOGY**

**Novel approaches for the treatment of antibiotic-resistant bacteria in water**

The treatment of two model antibiotic-resistant bacteria using newly developed ZnO nanoparticle-encapsulated alginate beads along with inactivation mechanisms of nanohybrids.

**This event was organized by: the Undergraduate Research and Creative Scholarship Program, the Honors Program, the Center for Teaching, Learning and Design, and the Center for Individualized Learning. It is our hope that this event will become an annual tradition that showcases the breadth and depth of research activities happening on our campus and connects aspiring undergraduate and graduate researchers with MSU Denver faculty researchers.**

**We would like to thank the following sponsors:**

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