

## Mission

The mission of the Lewis-Clark State College Research Symposium is to celebrate academic achievement, enhance professional development, and promote scholarship and research excellence by providing students, faculty, and guests the opportunity to present and share their work.

## Participating Programs

**Business & Computer Science Division**  
*Computer Science*

**Hells Canyon Institute**

**Humanities Division**  
*Communication Arts*  
*English*

**Nursing & Health Sciences Division**  
*Nursing*

**Physical, Life, Movement & Sport Science Division**  
*Biology*  
*Chemistry*  
*Earth Information Science*  
*Exercise Science*  
*Kinesiology*  
*Sport Administration*

**Social Sciences Division**  
*Ecuador Field School*  
*Justice Studies*  
*Psychology*  
*Social Sciences*  
*Social Work*

## 2023 LC State Research Symposium Committee Planning Committee

Chair: *Dr. Rachelle Genthôs*

Chair Support Committee: *Kylee Britzman, Nancy Johnston, LaChelle Rosenbaum, Peter Remien, Janet Thorson-Mador*

Charles Addo-Quaye (Business & Computer Science)  
Kerensa Allison (Social Sciences: Ecuador Field School)  
Kylene Britzman (Social Sciences)  
Lauren Connolly (Humanities: English)  
Rachelle Genthos (Social Sciences: Psychology)  
Marcy Halpin (Humanities: Communications)  
Renee Harris (Hells Canyon Institute)

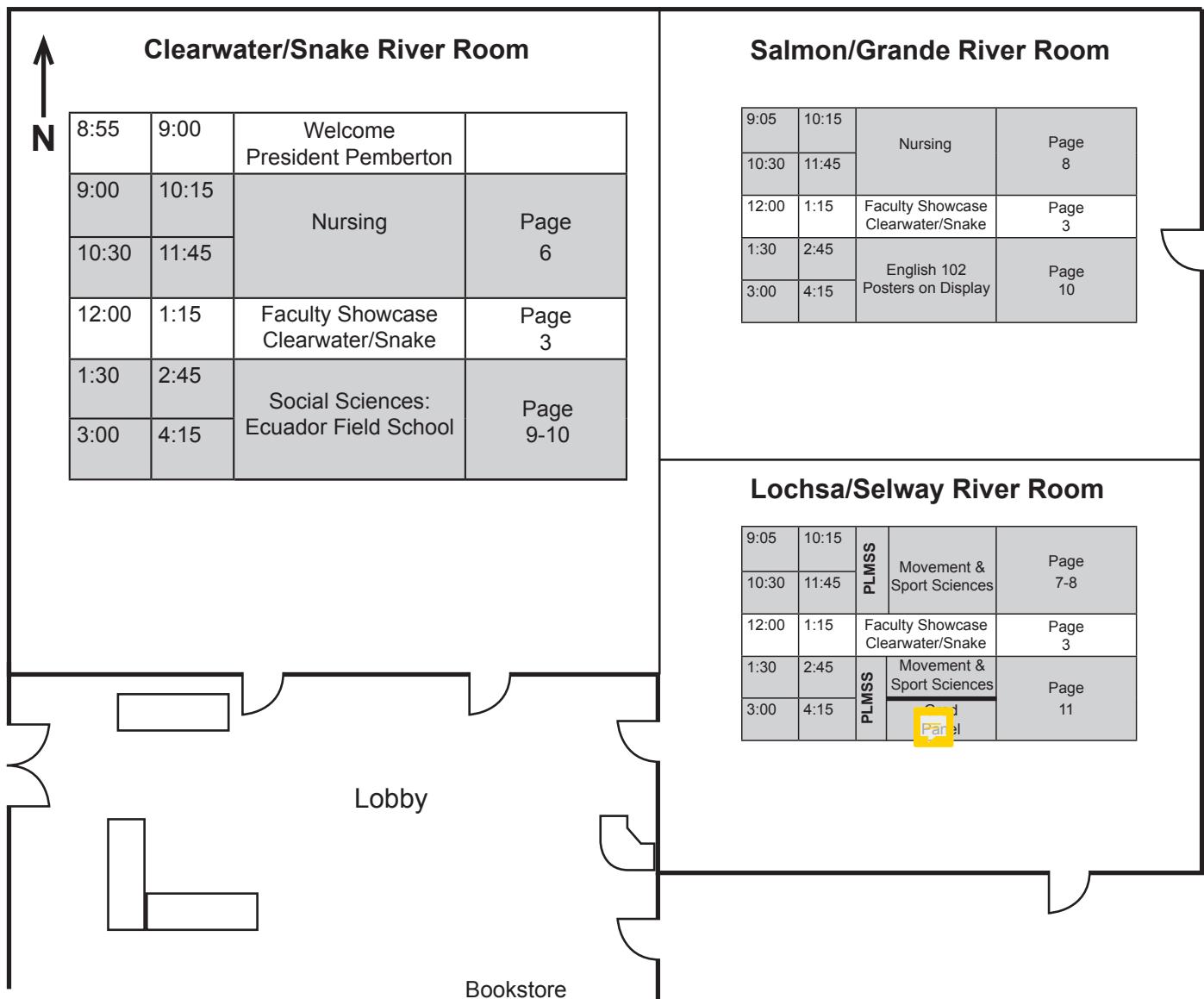
Nancy Johnston (Physical, Life, Movement, and Sport Sciences)  
LaChelle Rosenbaum (Social Work)  
Gene Straughan (Social Sciences: Justice Studies)  
Janet Thorson-Mador (Nursing)  
Peter Remien (Humanities: English)

## *A special thank you is extended to the following people who made the 2023 Research Symposium a reality:*

President Cynthia Pemberton  
Provost Frederick Chilson  
Dean Martin Gibbs  
Dr. Ayodeji Arogundade - Business and Computer Science  
Mr. Kyle Ferguson - Humanities  
Dr. Krista Harwick - Nursing  
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# Williams Conference Center Map & Schedule by Room

## Thursday, May 4th



# FACULTY SHOWCASE SYMPOSIUM:

A symposium session highlighting the scholarly endeavors of LC State faculty.

**Welcome: Opening Remarks: Dr. Fredrick M. Chilson**

**Thursday, May 4th, 12:00-1:20**  
**Clearwater & Snake River Rooms**



**Nancy Johnston**

*Physical, Life, Movement, and Sport Science*

**Title:** Air Pollution Study of the LC Valley



**Sam Coulter**

*Business Technology and Service*

**Title:** The Past and Present of Print



**Peter Remien**

*Humanities*

**Title:** Bestial Liberty: Freedom and Animality  
in the Seventeenth Century



**Kylee Britzman**

*Social Sciences*

**Title:** Understanding the Messaging Strategies  
of Social Movements



**Christina Brando-Subis and Teresa A. Carmack**

*Teacher Education and Mathematics*

**Title:** The Online Elementary Education Program Does More



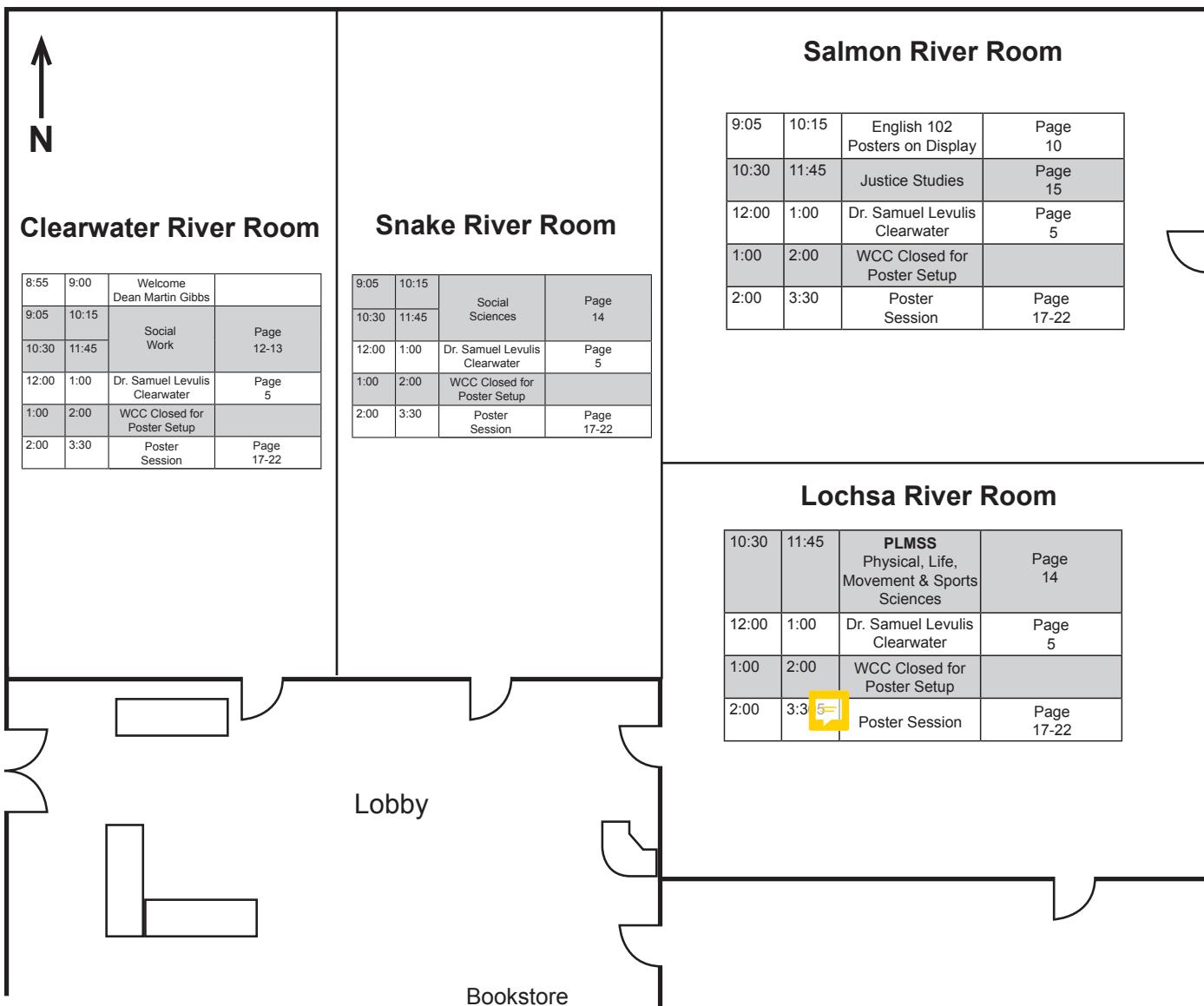
**Charles A. Addo-Quaye**

*Business and Computer Science*

**Title:** Volvox\_scan: A DNA mutation clustering algorithm for  
population-scale genetics studies

# Williams Conference Center Map

## Friday, May 5th Schedule by Room



### Center for Arts & History located at 415 Main Street

8:30-9:30      Communication Arts      Page 15  
9:30-11:30      English      Page 16

# Keynote Address 2023

Dr. Sam Levulis

## Welcome: Opening Remarks: Vice President Andrew Hanson

### Human Factors Psychologist

Friday, May 5th 12:00-1:00

Clearwater Room



**Biography:** Dr. Levulis received his PhD in Experimental Psychology with an emphasis in Human Factors from Texas Tech University in 2018. During graduate school, Dr. Levulis conducted research on applied human perception, such as how humans perceive depth and make judgments about movement and collisions, with applications to domains such as driver performance and pedestrian safety. Dr. Levulis has coauthored twelve peer-reviewed journal articles, conference proceedings, and book chapters. He has professional industry experience interning at General Electric Software during graduate school, and working for the past five years at Microsoft Mixed Reality.

**Abstract:** The many faces of human factors research: My journey from academia to industry (GE & Microsoft) In this talk, Dr. Levulis will describe his experience conducting research across both academic and industry settings, and the similarities and differences in applying an experimental research skillset across these various domains. Sam will provide an overview of the user centered design process that his team at Microsoft used to build and ship the first version of a mixed reality headset, and how the form and apparent “rigor” of research varied across the product life cycle while maintaining key elements throughout the process. This talk will highlight the many ways in which day-to-day research in the industry setting can look much different from the typical experiments conducted in the academic lab setting, yet how the underlying principles and fundamental approach to problem-solving remain consistent. Dr. Levulis’ wants audience members to leave this session with a broader understanding of the many forms the application of experimental research training can take and with inspiration towards the many potential career paths this discipline can take.

\*\*\*Welcome: Opening Remarks - President Cynthia Pemberton\*\*\*  
 Clearwater River Room • 8:55-9:00

THURSDAY MORNING SESSION

<p><b>WCC: Clearwater/Snake Room • 9:05 – 10:00</b>  <b>NURSING</b></p>	<p><b>Presenters:</b> Tess Helms, Kelsey Henry, Hannah Platts, Bella Tieken, &amp; Nelly Wangari  <b>Title:</b> Improving the Mental Health of Registered Nurses: An Evidence-Based Wellness Program  <b>Abstract:</b> Registered nurses (RNs) have long been recognized as the most trusted profession, but that does not come without its own challenges. Given the nature of the job and the intense work environment, mental health is an increasing concern. Nurses are four times more likely to commit suicide than other professions outside of healthcare, along with reports of high levels of post-traumatic stress disorder (47%), depression (41%), anxiety (38%), and severe emotional exhaustion (60%). The implementation of the evidence-based MINDBODYSTRONG program can significantly improve the mental health and well-being of RNs.</p> <p><b>Presenters:</b> Shawna Burke, Alexandrea Kyes, Elaina Penney, Jessilynn Sivertsen, &amp; Tessa Steele  <b>Title:</b> Improving Pediatric Sepsis Bundle Initiation and Education: Implementing an Evidence-Based Plan of Action  <b>Abstract:</b> Sepsis is a severe systemic reaction to an infection. In pediatrics (children aged 0-18 years), sepsis bears a high rate of morbidity and mortality. This evidence-based project's purpose was to evaluate literature regarding pediatric sepsis screening and protocols for potential areas of improvement. No notable intervention outside of current pediatric sepsis guidelines were found that lead to improvement in diagnosis, treatment, recognition, or prognosis. The group recommends guidelines defined by the Surviving Sepsis Campaign. A revised focus on guideline compliance through education to ensure one-hour initiation of pediatric sepsis bundles may decrease morbidity and mortality.</p>
<p><b>WCC: Clearwater/Snake Room 10:05 – 11:00</b>  <b>NURSING</b></p>	<p><b>Presenters:</b> Rachel Giroux, Ibrahim Kumenda, Sydney Merrifield, Daniel Schaff, &amp; Erin Vanhoose  <b>Title:</b> Comparing Systemic Thrombolysis and Catheter-Directed Thrombolysis: A Treatment for Adult Patients with Pulmonary Embolism  <b>Abstract:</b> A pulmonary embolism (PE) is a life-threatening condition that ranks as the third-highest cause of cardiovascular-related mortality. Current practice for treating PE is systemic thrombolysis. However, a potentially safer treatment option is now available—catheter-directed thrombolysis (CDT). This project aimed to ascertain information on systemic thrombolysis compared to CDT affecting mortality rates. Current literature was appraised to identify reliable evidence related to both interventions. These findings showed CDT reduces mortality rates, decreases bleeding risk, and increases right ventricular recovery rates. Deliverables were developed, aiming to increase knowledge regarding CDT. The goal is that heightened awareness will change practice in the future.</p> <p><b>Presenters:</b> Zachary Fletcher, Andrea Hernandez-Nunez, Ann Mwai, &amp; Tyler Thomas  <b>Title:</b> Mental Well-being in Undergraduate Nursing Students: An Evidence-Based Peer Mentoring Program  <b>Abstract:</b> Peer mentorship is an effective way to promote personal and professional development among student nurses. Group interest for this topic developed after uncovering mental well-being concerns among fellow nursing students. Literature for a strong mentorship program highlights methods that can improve mental well-being among nursing students. Best practice evidence is used to strengthen the current nurse mentor program by implementing a formal peer mentoring program, to the end of improving student well-being.</p>

## THURSDAY MORNING SESSION

### WCC: Lochsa River Room • 9:00 – 10:15 PHYSICAL, LIFE, MOVEMENT, AND SPORT SCIENCES

**Authors:** Grace Hebert, Jennifer Wirtz, Cynthia Smith, Jeffrey Bundy

**Title:** Functional Movement Systems Testing Between Sport and Gender

**Abstract:** The purpose of this study was to evaluate the stability, flexibility, and mobility of 89 male and female student-athletes (ages 17-24) from nine different sports teams at a small Northwestern college. Scores were determined using seven Functional Movement Systems (FMS) tests. ANOVA, t-tests, and correlations were performed to determine if there were any difference in FMS scores by sport and gender. The results will be shared at the senior research symposium.

**Authors:** Rachael Lyon, Brooklyn Shell, Nikki Halbert, Abigail Peightal

**Title:** Does Body Composition and Calcium Intake Positively Affect Bone Density?

**Abstract:** Osteoporosis affects 44 million adults, 80% being women. The purpose of this research was to determine whether calcium intake, total mass, lean mass, or fat mass had a greater impact on a female athlete's bone mineral density. Height, weight, a calcium intake survey from the International Osteoporosis Foundation, and DXA were used to determine results. The targeted population group included twenty-five female athletes from cross country, track & field, tennis, basketball, and golf. ANOVA, correlations, and descriptive statistics were performed to determine which variable had the greatest effect on bone density, which will be shared at the senior research symposium.

**Authors:** Grant Ellison & Blane Badger

**Title:** Functional Movement Screening and Injury Prevention

**Abstract:** The purpose of this research was to determine through an analysis of data if a correlation existed between functional movement screening scores and injuries. Male and female student-athletes at Lewis-Clark State College were screened at the beginning of the 2022-2023 athletic season. Injury data was collected from the athletes' athletic trainers throughout their seasons. The athletes' injury data was run through multiple tests and correlations to see if their functional movement screening scores predicted the likelihood of injuries. Results will be shared at the symposium.

### WCC: Lochsa River Room • 10:00 – 11:45 PHYSICAL, LIFE, MOVEMENT, AND SPORT SCIENCES

**Authors:** Adyson Clabby and Hannah Broyles

**Title:** Correlation Between Iron Levels and Aerobic Performance in Female Athletes

**Abstract:** An evaluation of the relationship between aerobic performance and transferrin levels in collegiate female basketball players was determined by measuring quantitative values from a bike ergometer assessment and blood draw. Results indicated both a positive and negative correlation between transferrin levels and aerobic performance. A variability in results exists due to uncontrollable variables; birth control and position of player. Previous studies, including "Iron Supplementation Improves Energetic Efficiency in Iron-Depleted Female Rowers" published by Diane DellaValle and Jere Haas, indicates a strong relationship exists between healthy transferrin levels and improved maximum aerobic performance. Interpretation of results conclude that iron supplementation or regulation of transferrin levels may result in improved aerobic performance.

**Authors:** Ashlee Tipton and Justin Stuart

**Title:** Single leg hop evaluation for knee injury recovery.

**Abstract:** Knee injuries are one of the most frequently occurring debilitating injuries that affect high school through college-aged athletes and hop testing is commonly used to determine the readiness of an athlete to return to sport after a knee surgery. PURPOSE: To compare the biomechanics of lower body joint (knee, hip, and ankle) angles during single leg hop landings between participants with recent knee surgery (n = 8) who have been cleared for single leg hop tasks and participants with no lower body injuries (n = 8) using 3D motion capture technology.

**METHODS:** Participants were asked a series of questions to verify eligibility to participate in the study. Once cleared, they completed a warm-up, followed by placement of reflective markers on the lower body anatomical landmarks. Participants then completed three single leg hops on each leg. Data were analyzed to determine statistical significance of hip and knee flexion, knee valgus, and ankle dorsiflexion angles between groups. RESULTS AND CONCLUSION will be shared during symposium.

## THURSDAY MORNING SESSION

<p><b>WCC: Lochsa River Room</b> <b>10:00 – 11:45 cont.</b> <b>PLMSS</b></p>	<p><b>Author:</b> Cole Susee  <b>Title:</b> A meta-analysis on the reported health benefits of intermittent fasting.  <b>Abstract:</b> The purpose of this research was to determine what if any health benefits other than weight loss resulted from participating in intermittent fasting. The meta-analysis will compose of data gathered from studies where participants eat only within a eight hour window per day. A case study results will also be reported in this research presentation. Studies will be examined that were at least eight weeks to track body fat percentage change, weight loss, cholesterol levels, blood pressure, blood glucose, and resting heart rate. Results will be shared at the symposium.</p>
<p><b>WCC: Salmon/Grande Ronde Room • 9:05 – 10:30</b> <b>NURSING</b></p>	<p><b>Presenters:</b> Savanah De la Combe, Isabel Moulds, Elle Rogers, Mackenzie Schneider, &amp; Emily Scott  <b>Title:</b> Improving Patient Care Through Health Literacy Awareness: An Educational Initiative  <b>Abstract:</b> Health literacy is an important aspect of healthcare that continues to be overlooked, resulting in inequities and gaps in patient care. Based on a review of the scholarly literature and consultations with content experts, the need for wider implementation of an existing health literacy assessment tool in the Lewis Clark Valley was determined. In collaboration with a hospital educator, the health literacy tool was disseminated to hospital staff at St. Joseph Regional Medical Center via a live presentation, with future implementation planned, along with an informational pamphlet, at a local free clinic.</p> <p><b>Presenters:</b> Eli Dregelid, Mayra Perez, Bryan Rubin, McKenzie Morris, &amp; Ashley Britt  <b>Title:</b> Lack of STI Testing in College-aged People: An Evidence-Based Campus Awareness Initiative  <b>Abstract:</b> Sexually transmitted infections (STIs) are prevalent among US college students. Left undiagnosed and untreated, STIs may lead to adverse health consequences and reduced quality of life. The focus of this evidence-based project was to promote awareness of STIs and screening, and reduce barriers to treatment, on one college campus. Review of the scholarly literature, and consultation with a population-specific advanced practice nurse, guided development of the initiative. The resulting deliverable was a succinct, eye-catching flyer including information on STIs and campus-based resources, to be disseminated to several strategic locations on the campus to ensure widespread visibility.</p> <p><b>Presenters:</b> Rylee Adams, Marryn Clark, Mikaelyn Davis &amp; Taylor Hall  <b>Title:</b> Substance Abuse Among Adolescents: An Evidence-Based Educational Project  <b>Abstract:</b> Substance abuse among adolescents ages 12-19 is a growing public health concern, exacerbated by peer pressure and social media marketing. Substance abuse contributes to poor health outcomes and adverse social consequences that may last a lifetime. A lack of knowledge about the risks of substance abuse in this population was the central problem addressed in this evidence-based educational project, supported by relevant scholarly literature. With mentorship from a high-school-based health teacher, educational flyers were developed and delivered to students at Lewiston and Tammany High Schools and the Salvation Army youth group and made available to district officials.</p>

\*\*\*Thursday, May 4th Featured Symp<sup>sym</sup>\*\*\*

12:00-1:20, Clearwater/Snake Room

**Opening Remarks: Provost Fredrick Chilson**

**FACULTY SHOWCASE SYMPOSIUM:**

**A symposium session highlighting the scholarly ende<sup>ours</sup> of LC State faculty. See page 3**

**THURSDAY AFTERNOON SESSION****Author:** Kylie C. Wilson**Title:** Volcanic Relationships in Ecuadorian Art and Stories**Abstract:** Through the lens of kinship and gender, this descriptive research will explore five indigenous stories involving some of the many Ecuadorian volcanoes. This will provide insights into the role of volcanoes shaping Ecuadorian culture. The presence or absence of public displays and a qualitative description of representations provide one meaningful lens to better understand the current discourse on the Ecuadorian volcanoes.**Author:** Ines Steeman**Title:** The Economic Independence of Ecuadorian Women Nowadays**Abstract:** This presentation explores Ecuadorian women's economic independence today based on the influences of cultural structures like traditional gender roles, religion, and especially participation in informal markets. Half of the women's population is employed in informal labor markets, for instance as street vendors. Preliminary research suggests women are maintaining their domestic roles in the home and in informal economic systems. This reflects the fact that overtime women's full economic independence is staying consistent.**Author:** Allyse H. Waggener**Title:** Women's Reproductive Healthcare Access within Ecuador in the Presence of Restrictive Political Policy and Cultural Taboos**Abstract:** Restrictive sex education policy approaches within the Ecuadorian government, stemming from long held ideological standings on teenage pregnancy and abstinence, have created a space for exponential discrimination and inequality of access to women's reproductive healthcare. Observing the distribution of reproductive literature and pharmaceuticals within medical and educational spaces provides insight into solutions to gaps within Ecuadorian populations, namely marginalized women, with regulated access to healthcare. Examining the availability of birth control pills, condoms, IUDs, and alternate methods of family planning within pharmacies and student health clinics of Cuenca, Ecuador guides the main methodology of this thesis investigation.**Author:** LaDawn Spencer Witham**Title:** Addressing Homelessness: Quality of Life for Women in Ecuador.**Abstract:** The purpose of this study is to describe the risk factors which have contributed to Ecuadorian women's experiences of homelessness before and after the COVID 19 epidemic. Based on preliminary research, homelessness for women is currently increasing and the quality-of-life outlook for women as they get older is decreasing. Future research will include a descriptive account of current homelessness in Cuenca, Ecuador.**Author:** Kyle McNamara**Title:** The Impact of Smartphones on the Culture of Ecuador**Abstract:** Smartphones are continuing to become increasingly popular and predominant in Ecuador. They provide users with instant communication and many other tools that make life more convenient, but increased convenience does not always equal increased quality of life. Widespread smartphone dependency can come with many drawbacks. Preliminary research examined rates of phone addiction in Ecuador, and found on average, Ecuadorians are using their smartphone technology responsibly. The purpose of this study is to use unobtrusive research to investigate the patterns of daily smartphone use in Cuenca, Ecuador.**Author:** Ben Birdsell**Title:** Exploring Patterns of Sedentism and Technology in Ecuador**Abstract:** In Ecuador, there has been a noticeable increase in rates of sedentism and declines in health. Preliminary research suggests that as access to technology increases, sedentism also rises. Is this shift in mobility correlated to increases in cell phone use? How has frequency of technology use and rates of mobility been influenced by Covid? This descriptive research in Cuenca, Ecuador will explore technology use in relation to mobility. Increased use of technology and declines in mobility and health supports the need for more information on this topic.

WCC: Clearwater/Snake Room

1:30 – 4:00

SOCIAL SCIENCES: ECUADOR  
FIELD SCHOOL *cont'd*

## THURSDAY AFTERNOON SESSION

**Author:** Roland Weaskus**Title:** Indigeneity Within Performance in Ecuador**Abstract:** This research explores the indigenous identities of Ecuador through traditions used in various forms of performance. The expression of indigenous ways of life are necessary to provide authentic experiences and often more profitable performances, though identifying as indigenous has largely been considered as a stigmatized condition in the Andes. Exploring patterns of indigenous expressions in performance provides important insights into contemporary social and economic structures.**Authors:** Kerensa Allison and LaChelle Rosenbaum**Title:** International Field Schools: You Can Do It Too!**Abstract:** This is a question-and-answer session based on the history and fundamentals of running international cultural field schools for over a decade. The Lewis-Clark State College Cultural Field School in Ecuador and Social Work Program Service Learning Abroad in Costa Rica connect students to the cultural and biological diversity through homestays, guided field visits, service learning, and independent research. Many students name these programs as the most meaningful event in their college career. Come learn more about these unique programs.***English 102 research presentations will be displayed on display in the Salmon River Room***ENGLISH 102  
RESEARCH WRITING POSTER

English 102 Research Writing students develop their skills learning how to complete academic research and write about their findings. This poster presentation session highlights a sample of the projects completed in a variety of sections.

## THURSDAY AFTERNOON SESSION

WCC: Lochsa River Room • 1:30 – 2:45

## PHYSICAL, LIFE, MOVEMENT, AND SPORT SCIENCES

**Author:** Austin Backman**Title:** Comparing the Values Between High School Soccer Athletes and the Important Adults in their Life.**Abstract:** A survey-based evaluation tool was used to collected opinions of the values high school soccer athletes have in selection of a quality soccer coach compared that to the decision-making adults in their life such as their parents, coaches, and administration. The survey was used to determine if student athletes' values align or where different from the adults surveyed. Surveys were emailed to schools in the Pacific Northwest and Utah. Early results indicate that the values between all participants are very similar especially when it came to positive qualities that make a good coach. Results will be shared at the symposium.**Author:** Ione Skye Chimburas**Title:** Variables that may increase risk of Type II Diabetes in Native Americans**Abstract:** The purpose of this research was to determine which variables had the greatest significant correlation to developing Type II Diabetes in Native Americans. A questionnaire was administered to gather information of variables, such as, physical activity, occupation, nutrition, genetics, exercise, and body composition. A hand held bioimpedance device was used to measure body composition. Participants were recruited from the Nez Perce Indian Reservation. Participants were Native American, diabetic or non-diabetic, and at least 18 years of age. All data collected was analyzed to determine which variables had significant correlation to Type II Diabetes among Native Americans. The results will be shared at the senior research symposium.**Authors:** Ashlee Bachman, Dale Takalo, and Joshua Chapman**Title:** The Benefits of Vitamin D Consumption on Mental Health**Abstract:** The purpose of this research was to determine the effect, if any, that vitamin D had on mental health. There were 15 participants both male and female LCSC athletes of varying sports. Eleven athletes were given vitamin D supplements and the other four were given a sugar placebo. We surveyed all 15 participants each week, for five-week intervention and each week a survey using a Likert scale was administered. The survey assessed participants' mental health and provided us with quantitative data for each question. The results of our study are pending upon statistical analysis and will be shared at the upcoming symposium.WCC: Lochsa River Room • 3:00 – 4:15  
PHYSICAL, LIFE, MOVEMENT, AND SPORT SCIENCES GRADUATE PANEL**Description:** PLMSS alumni speak to current and graduating students about their personal journeys after LC and pathways to success in their fields.**Panelists:**

Dr. Travis Bartschi	Owner, CEO and Dentist at LC Smiles
Dr. Austin Brown	Emergency Medicine Physician at St. Joseph's Regional Medical Center
Brooke Chase	Water Rights Specialist with the Nez Perce Tribe Water Resources Division
Dr. Osasere Evbuumwan	Associate Dean of Sciences and Engineering/ Associate Professor of Chemistry at University of San Francisco
Gabrielle Dickinson	Laboratory Analyst at Procter and Gamble
Brian Grimm	Asotin County PUD Wastewater Treatment Plant Operator
Dr. Kyle Knigge	Doctor of Physical Therapy at SPORT Physical Therapy in Lewiston

## \*\*\*Welcome: Opening Remarks - Dean Martin Gibbs\*\*\*

Clearwater River Room • 8:55-9:00

## FRIDAY MORNING SESSION

**Author:** Emily Adamson via Zoom**Title:** Animal-Assisted Therapy and Other Animal-Assisted Interventions in the Geriatric Population**Abstract:** The objective of this study is to record and analyze the relationship between animal-assisted therapies and grief and loss in the elderly population. This study utilizes a comparative quantitative design to explore if there is a difference between pet owners and non-pet owners in their physical, psychological and social reactions to grief and loss. The hypothesis states that there is a difference between pet owners and non-pet owners in their psychological reaction to loss but no difference in their physical or social reactions.**Author:** Rosanna Cooper**Title:** Stigma of Mental Health in the U.S. Military**Abstract:** The purpose of this research is to find out if there is stigma about mental health in the U.S. military. It is also to hear what veterans think about what can be done about normalizing the treatment of mental health illnesses. The investigation utilized a mixed methods research design. The researcher evaluated the levels of perceived stigma at different point in the participants life and career in the U.S. military using a Likert scale evaluation. Results are pending and will be shared at the student symposium.**Author:** Ashley Ross via Zoom**Title:** Homelessness in Idaho: More Than What Meets the Eye**Abstract:** Although housing insecurity has been recognized as a pertinent social issue, homelessness is still a phenomenon that is increasingly difficult to measure. The purpose of this study is to examine the most frequent causes and types of homelessness as experienced by individuals and families in a north Idaho city. Through extensive research and careful consideration, a survey was created and will be distributed to those experiencing housing insecurity. By continuing to analyze the data related to homelessness, this research could provide further insight toward the implementation of preventative measures. Results are pending and will be shared at the research symposium.**Author:** Sari Thorpe**Title:** Self-Compassion and the Relationship with Motivation, Resilience, and Academic Engagement in Social Work Students at a Pacific Northwest College**Abstract:** Self-compassion is one way for the individual to move past mistakes while creating room for growth and future success by showing oneself kindness. This study utilized a survey comprised of four scales, the Self-Compassion Short Scale Form (SCS-SF), the Academic Motivation Scale (AMS-C28), the Brief Resilience Scale (BRS), and the Utrecht Work Engagement for Students (UWES-S), to run inferential correlational statistics to determine if there is a connection between self-compassion and motivation, resilience, and engagement in an academic setting.**Authors:** Gracie Boardman, Megan Howell, & Jessie Tibbits**Title:** Homelessness in Families with School Aged Children**Abstract:** Homelessness can cause many difficulties for families. Research shows that children living in unstable or inadequate housing are more likely to struggle academically, with attendance adherence, face social problems, and have mental health concerns. This research utilized an anonymous, self-reporting survey. Using descriptive statistics, the aim was to discover an accurate and current count of children who may be experiencing homelessness and determine the most frequent type of homelessness experienced by families. This knowledge is intended to inform community stakeholders, support new programs, and resources that may benefit this population to decrease the risk factors that accompany homelessness.

## FRIDAY MORNING SESSION

**Author:** LaAnnabria Wapsheli

**Title:** COVID 19's Impact on WIC Funding, Participation, Education, & Outreach in Rural Areas

**Abstract:** This quantitative study examines COVID 19's impact on funding, participation, education, and outreach in a WIC service area in Washington. Existing United States Department of Agriculture: Food and Nutrition Service data will be utilized to examine frequencies and percentages to determine impact.

**Author:** Jessica R. Kelley

**Title:** The Effects of Screen Time on Preschool Children's Development

**Abstract:** This correlational study examines preschool-aged children's behaviors and the amount of daily screen time activities. More families and children are connecting through technology, and preschool-age children's screen time is rising. Development is vulnerable during childhood; social interactions are declining and impairing development and emotional regulation. Therefore, surveys were administered to preschool-aged parents to provide data for analysis.

**Author:** Jovita M. Boatner

**Title:** The Feelings and Emotions of Children in Open Adoptions/Kinship Adoption

**Abstract:** This research aims to determine the emotions and feelings of those who have experienced kinship/open adoption. Based on the research, there is a gap in available information that addresses the outcome of kinship and open adoptions from the perspective of the adopted children. The goal is to produce the missing information that is difficult to access today and use it to determine if certain adoptions are positive for everyone involved. In addition, the study will examine the biological, social, mental, and identity impact kinship and open adoption have had on them. The sample size will consist of two female young adults who have both endured kinship and open adoptions.

**Author:** Mackenzie Lorton

**Title:** Evolving Impact of Parental ACEs on Children ACEs Related to Later Attachment, Drug/Alcohol Use, and Academic Performance/Career

**Abstract:** Adverse Childhood Experiences (ACEs) have been depicted to affect the likes of those afflicted; both through immediate response as a child and expelled in differing ways through adulthood. There have been many studies conducted on the effect of ACEs, but very few define the origin point of cyclical trauma. The purpose of this study is to determine a correlation between parent/guardian high and low ACE scores; and their children's ACE scores, later attachment, drug/alcohol use, and academic performance/career.

**Authors:** Maria Jimenez, Kenneth Kelley, & Larry Warren

**Title:** Effects of Social Media Use in Young Adults

**Abstract:** This research study aims to explore the relationship between social media use and perceived truth, physical health, and mental health in young adults ages 18-25. The study employs correlational research design and utilizes Pearson's correlation coefficient to analyze the data collected. The sample size is approximately 120 participants. The study hypothesizes that there are no significant differences in perceived truth levels across various social media platforms and that social media use does not have negative effects on mental or physical health. The study may use ANOVA to examine differences between social media groups.

**Author:** Brandy Allen

**Title:** Is Safety a Concern for Rural Idaho Social Workers?

**Abstract:** The purpose of this study is to explore the different safety protocols that are already in place for area social workers across the different agencies: hospice, child welfare, and school social worker. Additionally, the study will seek to understand the personal feelings of safety, and number of incidents of violent acts, through a survey. The number of incidents will also be categorized. This study seeks to determine if current safety measures are appropriate or if some adjustments should be made to ensure the safety of area social workers.

## FRIDAY MORNING SESSION

WCC: Snake Room  
9:00 – 11:45  
SOCIAL SCIENCES

**Abstract:** The SS 499 research symposium session will feature brief presentations by the students listed below. We will then have a roundtable discussion with the social science program faculty about the research process, key takeaways from the class, and connections to their future careers.

Each semester the class focuses on a broad societal issue and examines it from different social science lenses including anthropology, history, political science, and sociology. This year the topic is polarization. Each student chose a topic they are interested in and examined how polarization relates to the topic.

## Students

Benjamin Birdsell  
Katelyn Dougherty  
Bekah Elder

Meghan Garrison  
Paytan Hansen  
Gwen Mample  
Zachary Murphree

Daniel Parker  
Cameron Smith  
Jeffrey Wing

WCC: Lochsa/Selway River Room • 10:30 – 11:45  
PHYSICAL, LIFE, MOVEMENT, AND SPORT SCIENCES

**Authors:** Dalynn Kenerson, Nancy A. C. Johnston

**Title:** Thermal Inversions in the Lewis-Clark Valley

**Abstract:** The Lewis-Clark Valley sits at a depth of 2,000 feet. A common phenomenon that occurs within this valley are thermal inversions. Inversions trap the air within the valley due to a temperature gradient. Inversions may cause the pollutants within the valley to become more concentrated. The focus of this project was to determine what factors might be an indicator of these inversions and to look at the effects these inversions play on pollutant concentrations.

**Authors:** Kylie C. Wilson, Nancy A. C. Johnston

**Title:** Aerosols, Fine Particulate Matter, and Sulfur Species Analyzed in Lewis-Clark Valley during 2019-2022

**Abstract:** Air pollution kills millions of people each year, indicating pollutant monitoring is important. This study focuses on concentrations of aerosols, fine particulate matter, and sulfur species in the Lewis-Clark Valley. A NASA AERONET Sun-sky radiometer, an Idaho Department of Environmental Quality beta attenuation monitoring (BAM) PM<sub>2.5</sub>, and a Teledyne T102 ultraviolet-fluorescence sulfur analyzer were used to obtain ground-based data. Continuous monitoring of these air pollutants will discern long term trends in the area.

**Author:** Brayden Graves

**Title:** Deficiency of Blm DNA helicase during early embryonic cell cycles establishes detrimental outcomes in surviving progeny

**Abstract:** Blm DNA helicase is essential for genome integrity during early Drosophila development. Embryos from Blm mothers lack functional Blm, accumulate DNA damage, and nearly all die. We hypothesized that the small proportion of progeny that survive this Blm-deficient development would experience sub-lethal DNA damage that affects measures of lifespan and healthspan. We found that Blm-deficient development led to a reduction in lifespan and defects in metabolic function.

**Author:** Kenedi Freeman

**Title:** Lack of Blm DNA helicase during early embryogenesis in Drosophila leads to advanced-age phenotypes in adult

**Abstract:** Blm DNA helicase is essential for genome integrity during early Drosophila development. Embryos from Blm mothers lack functional Blm, accumulate DNA damage, and nearly all die. We hypothesized that the small proportion of progeny that survive this Blm-deficient development would experience sub-lethal DNA damage that affects measures of lifespan and healthspan. We found that Blm-deficient development led to increased neurodegeneration and changes to circadian patterns.

**Authors:** Rosario Morales, Shastine Huddleston, Nancy A. C. Johnston

**Title:** Analysis of Gas Emissions from Compost

**Abstract:** Compost is an eco-friendly way to dispose of waste; however, greenhouse gases and volatile organic compounds (VOCs) are emitted during the process. Compost samples were collected at Washington State Compost facility through a water trap followed by a sorbent tube collecting the gases. Air samples were analyzed via thermal desorption-gas chromatography-mass spectrometry (TD-GC-MS), while water samples were analyzed using headspace-gas chromatography (HS-GC). VOCs such as alcohols and terpenes were the most abundant.

## FRIDAY MORNING SESSION

WCC: Salmon Room • 10:30 – 11:45

### JUSTICE STUDIES

**Author:** Lila Babb  
**Title:** Reducing Recidivism Rates for Ex-offenders through Effective Reentry Programs.

**Author:** Gregory Blackman III  
**Title:** The Government Misuse of Cell-Site Location Information and Evasion of the Fourth Amendment.

**Author:** Emily Catt  
**Title:** Balancing Freedom of the Press Against the Right to a Fair Trial by an Impartial Jury.

**Author:** Dakota Hall  
**Title:** “Culpability, Deterrence, and Irreversibility Concerns with the Administration of the Death Penalty.

**Author:** Jack Hardee  
**Title:** The Relationship between Race, Wrongful Convictions, and Plea Bargains.

**Author:** Leah Hill  
**Title:** Irreparable Consequences of Wrongful Convictions, Reintegration Experiences of Exonerees, and Public Policy Solutions.

**Author:** Joseph Jones  
**Title:** The Relationship between Neurodivergent Disorders, Use of Force, and Police Brutality.

**Author:** Kade Kilgore  
**Title:** The Rationales, Concerns, and Impact of Body-Worn Cameras for Law Enforcement.

**Author:** Michael Korakis  
**Title:** The Impact of Law Enforcement Work on the Mental Health of Police Officers.

**Author:** Matthew LaMothe  
**Title:** Overloaded Probation Officers, Overlooked Probationers, and Intensive Probation Supervision.

**Author:** Zachary Reuter  
**Title:** The Problems with Eyewitness Error and Ways to Improve the Reliability of Eyewitness Identification.

Center for Arts & History • 8:30 – 9:30

### COMMUNICATION ARTS

**Presenter:** Joe Ball  
**Title:** *MeatEater* and the Language of Conservation: A Content Analysis  
**Abstract:** This project examines the program *MeatEater* and the ways in which the show conveys messages of conservation, preservation, and sustainable hunting practices. The project explores how host Steve Rinella educates his viewers on the impacts of regulated and unregulated hunting on the environment. Using content analysis, the paper looks at the program's segments on wildlife conservation as well as its approach to 'living off the land' and food preparation.

**Presenter:** Natori Harrington  
**Title:** Reality TV and Society: Poor Communication Behaviors and *The Bachelor*  
**Abstract:** Having recently concluded its 27<sup>th</sup> season, *The Bachelor* is a well-known TV franchise that also includes programs such as *The Bachelorette* and *Bachelor in Paradise*, among others. Representing the reality TV genre, these programs display a pool of contestants/participants seeking love and a lifelong companion, with the end goal of each season being a marriage proposal. During a season, TV cameras show a number of interpersonal interactions, ranging from the intimate to the argumentative. Using content analysis, this project examines poor communication behaviors exhibited by the participants.

**Presenter:** Robert Petrie  
**Title:** How Podcasting has Affected Sports Media  
**Abstract:** The growth of podcasting in recent years calls forth questions about its relationship to and impact on other forms of media. While academic research about podcasting has also grown, research on sports podcasting and/or podcasting's relationship to sports media is limited. The purpose of this project is to explore how podcasting has influenced sports media. The project examines reported viewership of both podcasts and traditional sports media and surveys sports viewers/listeners for their opinions about traditional sports media and newer podcasting formats.

## FRIDAY MORNING SESSION

FRIDAY, MAY 5

Center for Arts & History • 9:30 – 10:30

ENGLISH

**Presenter:** Conley Ovnicek  
**Title:** Coaching Communication

**Abstract:** Communication is one of the most important and overlooked aspects of coaching success in track and field. In addition to drawing upon my personal experience with coaches from highly successful programs, I have interview testimony from several successful high school and college coaches about the importance and impact of communication on the success of their programs. Good coaching communication conveys how much you care, shares knowledge, and ultimately inspires athletes to work hard and aspire to succeed. Your ability to communicate with your athletes will set you apart from other coaches, so don't miss out on this invaluable presentation.

**Presenter:** Kaelynn Ashby  
**Title:** Paranoia, Guilt, and Rationalization: A Study of Poe's Protagonists

**Abstract:** Edgar Allan Poe is renowned for his Gothic-style literature, and the characters he has written often warrant close analysis. They convey resonant human flaws, especially paranoia, guilt, and rationalizing. Within a similar field of protagonist composition are a duo of Poe's prose pieces: "The Tell-Tale Heart" and "The Black Cat." The primary emphasis is on how both narrators attempt to defend their heinous actions, but my analysis will point out their differences as well.

**Presenter:** Ensley Keith  
**Title:** POH-TAY-TO, POH-TAH-TO: The Shire as Pastoral Paradise

**Abstract:** J.R.R. Tolkien's Shire, home of the hobbit race, is an amazing example of the pastoral literary genre. This pastoral paradise is arguably the most important place within Middle-Earth, the literary ouroboros of *The Hobbit* and *The Lord of the Rings* trilogy, where it begins and ends. The Shire is important, not only in regard to these stories, but to those that have read them and covet this idealized, simple life. Every adventure needs a home to which to return.

**Presenter:** Cassandra Arc  
**Title:** Metamorphoses: A TRANSformation of our Perception of Gender in Ovid's Epic

**Abstract:** Transgender identities are ancient. They existed at least as far back as the first century Rome as evidenced by the genderqueer identities that become evident in the stories "Iphis and Ianthe," "Meleager and the Calydonian Boar," and "Tiresias" from Ovid's *Metamorphoses*, a text that influenced many future writers like John Llyl and William Shakespeare. These identities become clear through applying the queer theory lenses of Judith Butler and Michel Foucault to gender identity as they have done to sexuality.

**Presenter:** Tabitha Boller  
**Title:** Writing to Heal

**Abstract:** A critical turning point of my life was when my father died of cancer. In my project, I go over how writing helped me heal, and how it is a genuine therapy others shouldn't turn away from. There is value to personal writing, and it can help people realize that there are others who may be dealing with similar difficulties. *Educated* by Tara Westover and "The Yellow Wallpaper" by Charlotte Perkins Gilman are used to support my thesis, since they are about mental health and both narrators use writing to help cope with their life struggles.

**Presenter:** Tiara Yount  
**Title:** Power of Poetry: Multilingual and Multicultural Student Expression

**Abstract:** Language is identity and a roadmap to culture. That is why multicultural and multilingual expression in the modern American English classroom is paramount to inclusive teaching strategy. Ample statistics point toward a more diversified nation with each passing year which necessitates a reevaluation of traditional classroom strategies. Poetry, which is already taught in the ELA state standard curriculum, is such a vehicle: pliant, quickly personalized, and powerful. There's no need to reinvent the proverbial wheel when everything a student needs to boost their belonging is accessible now.

\*\*\*Friday, May 5th Keynote Address:  2:00 – 1:00, Clearwater Room\*\*\*

Dr. Samuel Levulis

Human Factors Psychologist

Welcome and Opening Remarks Vice President Andrew Hanson

## FRIDAY AFTERNOON POSTER SESSION 2:00 – 3:30 WCC

**Authors:** Beknazar Tursyngazy and Charles Addo-Quaye

**Title:** *In silico* detection of EMS-induced mutations in an *Arabis alpina* population

**Abstract:** *Arabis alpina* (Alpine rock-cress weed) is a flowering plant, native to mountainous environments of the northern hemisphere. We analyzed 1,454,931,853 next-generation sequencing (NGS) reads from 38 sequenced *Arabis alpina* mutant individuals that were mutagenized using the chemical mutagen, ethyl methanesulfonate (EMS). Using the BWA short reads mapper, 95% (1,387,167,658) of the NGS reads mapped to *Arabis alpina* reference genome version 4. Using the SAMtools variant-detection algorithm, we detected a total of 1,457,917 mutations, with an average of 38,366 mutations per sample. Overall, the predicted mutations include 971,252 high-quality single nucleotide polymorphisms (SNPs) and 168,783 high-quality insertions and deletions (INDELs).

**Authors:** Riley Ziegler and Charles Addo-Quaye

**Title:** Analysis of Natural Variation in 30 Sorghum Landraces

**Abstract:** Sorghum is a next generation crop species for food grain, feedstock, beverage and biofuel production. To discover highly desirable agronomic traits in sorghum, we analyzed 3.42 billion DNA sequences derived from 30 sequenced sorghum landraces using next-generation sequencing (NGS) technology. Using the BWA short reads aligner, 97% of the sequenced reads mapped successfully to the sorghum reference genome. Using the SAMtools variant-calling algorithm, we detected 68.14 million mutations, including 61.32 million DNA base substitutions or single nucleotide polymorphisms (SNPs) and 6.81 million insertions and deletions (INDELs). In our preliminary analysis using the snpEff variant annotation tool, we predicted a total of 107,042 high-impact mutations and 1,335,570 moderate-impact mutations in the 30 sequenced sorghum landraces.

**Author:** Ami Abe

**Title:** How we can protect our planet

**Abstract:** Environmental problems are serious global issues. Some such as plastic pollution, have known causes like usage of plastic products and single use items. This study observes students' environmental awareness after exposure to wilderness in Hells Canyon. The hypothesis was that students would change their attitudes toward nature/wilderness through their experiences on the Hells Canyon field trip. A survey after the field trip consisted of several questions and the will results will be shared.

**Author:** Layton Ahlers

**Title:** The Comeback of Bighorn Sheep Population

**Abstract:** Bighorn sheep are native to Hells Canyon and according to the Nez Perce Tribe, they were abundant in the canyons of Oregon and Idaho prior to European settlement. However, the bighorn sheep population has significantly decreased due to the introduction of domestic sheep and pneumonia. My research will explore how the Idaho Fish and Game and other agencies test and use trials to come up with solutions for bighorn sheep populations.

**Authors:** Miriam Ames, Anika Busz

**Title:** Light pollution in Hells Canyon Area

**Abstract:** Light pollution is a result of industrialization, causing artificial light that negatively impacts wildlife and astronomical viewing. This phenomenon was measured by naked-eye observation using the Bortle's Scale. Research was conducted in Lewiston and the Hells Canyon national recreation area. Solutions to this issue were provided by the Dark Sky Association.

FRIDAY AFTERNOON POSTER SESSION 2:00 – 3:30  
WCC

**Authors:** Kseniia Koroleva, Anna Kupriyanova

**Title:** Use of Idaho herbs

**Abstract:** Our research describes plants in the Hells Canyon area and how local tribes use them. The main goal is to raise awareness about indigenous grasses and plants and their use in nutrition and medicinal ways. The methodology includes the conduct of interviews, a literature review, description, and observation. The main outcome of our project is the dissemination of knowledge about herbs and their properties and, as a result, healthier and more balanced diets for people.

**Author:** Shelby Lawrence

**Title:** Monarch Butterflies in Hells Canyon

**Abstract:** Monarch butterfly and milkweed populations have declined severely over the last two decades. This project explores the connection between monarch butterfly and milkweed populations in Idaho, using evidence sourced from Idaho Fish and Game. Visitors will learn gardening tips about how to plant and grow milkweed themselves to rescue these populations.

**Author:** Kristine Riggers

**Title:** You are what you eat, not what you don't eat

**Abstract:** In this study, I examine the nutritional and cultural value of Pacific Lamprey and Salmon, two staple foods of the Pacific Northwest Native American diet over time immemorial. I examine the important roles of carbohydrates, proteins, and lipids in the fish for how they contribute to overall health. My hypothesis is that increased diseases like diabetes and cardiovascular diseases positively correlate with decreased access to these traditional foods.

**Author:** Angela Ross

**Title:** Hells Creation

**Abstract:** The Hells Canyon was slowly created over time from a number of natural events such as volcanoes and earthquakes. My research will go over the erosion in the canyon from the river's flow, how the river came to be in the first place, how it was shaped by lava flows, how the canyon was named, and plate tectonic motions. Other main geologic events that occurred within the canyon will also be discussed.

**Author:** Cornelius Sia

**Title:** Stories of the Chinese Miners in Lewiston and Hells Canyon

**Abstract:** The 1887 Chinese Massacre marks an important period in the history of Hells Canyon, including the anti-Chinese sentiment as well as introduction of new customs in the Pacific Northwest. Lewiston was just a tent city that served as a staging area for nearby mining operations at the time. In this study, I review literature that discusses the legacies of Chinese settlement in the area, including their cultural traditions, religious practices and daily occupations.

**Authors:** Anika Busz, Jacobie Kelly, KC Wahl

**Title:** Nature's Sunscreen: Curcumin UV Light Shielding Effects on Capsaicin

**Abstract:** Capsaicin and curcumin were isolated from cayenne powder and turmeric, respectively. After isolation and characterization, curcumin, capsaicin, and a mixture of the two molecules were exposed to UV light then analyzed by spectrophotometer. A significant decrease in isolated capsaicin absorbance (-54%) was observed as well as a moderate decrease in isolated curcumin absorbance (-11%) after exposure to UV light. The observed impact on capsaicin was reduced in the mixture (+10%). We concluded that curcumin absorbed UV light and thus protected capsaicin from UV damage.

FRIDAY AFTERNOON POSTER SESSION 2:00 – 3:30  
WCC

**Author:** Anika Busz, Nancy A. C. Johnston

**Title:** Volatile Organic Compound Emissions from Local Soils and those Exposed to Fire

**Abstract:** The volatile organic compounds (VOCs) emitted from soils may change based on a variety of factors, including composition and exposure to fire or smoke. Soil samples were collected and the headspace VOCs were captured using solid phase extraction. Analysis of VOCs by thermal desorption-gas chromatography-mass spectrometry (TD-GC-MS), adapted from EPA Method-5021, determined the VOC concentrations in soils, including terpenes and halocarbons.

**Authors:** Brayden Graves, Kyra Lockett, Kenedi Freeman, Abygail Marler, Sara Hathaway, Eric Stoffregen

**Title:** Deficiency of Blm DNA helicase during early embryonic cell cycles establishes detrimental outcomes in surviving progeny

**Abstract:** Blm DNA helicase is essential for genome integrity during early Drosophila development. Embryos from Blm mothers lack functional Blm, accumulate DNA damage, and nearly all die. We hypothesized that the small proportion of progeny that survive this Blm-deficient development would experience sub-lethal DNA damage that affects measures of lifespan and healthspan. We found that Blm-deficient development led to a reduction in lifespan, increased neurodegeneration, defects in metabolic function, and changes to circadian patterns.

**Authors:** Gus Hagestad, Grace McCormick, Alex Sol

**Title:** Isolation of Curcumin and Gingerol and their Antibiotic Bioassay

**Abstract:** Gingerol and curcumin have both been shown to have antibiotic properties. To test whether or not this is true, curcumin was isolated from turmeric, and gingerol was isolated from ginger powder and characterized by the use of NMR and IR spectroscopy. In a subsequent bioassay, curcumin and gingerol did not show any significant effect on E.Coli with the concentrations that were used.

**Authors:** Alexis Johnson, Clifford D Miller

**Title:** Concentration of Curcumin in Mango Ginger and Turmeric

**Abstract:** Turmeric and mango ginger are flowering plants of the ginger family. Curcumin produced by these plants is used for food spices and medicinal practices to aid in the management of oxidative and inflammatory conditions. In our investigation, curcumin was isolated from these plants and analyzed using TLC, UV-Vis, IR, and NMR. Our analysis indicated that both plants contain curcumin and, surprisingly, mango ginger had a higher concentration. More studies are needed to understand this surprising finding.

**Authors:** Jayden Martin, Kirsten Miller, Sophia Okeke

**Title:** Curcumin and Gingerol: Isolation and Reactivity

**Abstract:** Issues associated with female menstruation, mainly dysmenorrhea, are driven by chemical imbalances like prostaglandin production. In an attempt to combat prostaglandin synthesis, strategies were employed to combine curcumin and gingerol. Extraction, structural analysis, and Michael addition were utilized to achieve the formation of a new compound. These procedures did not result in the hypothesized outcome; instead, the degradation of curcumin was observed. Research suggests a continuation of this study could achieve the desired effects.

**Author:** Shane Nickelson

**Title:** Geophysics and Hydrothermal Spring Surveys: Focus on Hydrogeology

**Abstract:** This project details experience gained in conducting hydrothermal spring surveys including temperature grids and shallow seismic imaging in three locations of study. In addition, local and regional geology of each site and a summary of tools and methods utilized will be described.

## FRIDAY AFTERNOON POSTER SESSION 2:00 – 3:30 WCC

### PHYSICAL, LIFE, MOVEMENT, AND SPORT SCIENCES cont'd

**Authors:** Andrew Raymond, David Sedgwick

**Title:** COVID Rates Throughout the Valley

**Abstract:** The rise of COVID-19 has impacted humans on a global scale, affecting and changing our way of life. At LC State, we have been able to track and measure local COVID rates through a combination of testing wastewater samples and PCR. Through our testing of local wastewater samples, we have observed that COVID rates throughout the valley show an increase that correlates with holidays throughout the year.

**Authors:** Cornelius Sia, Nancy A. C. Johnston

**Title:** Formaldehyde Sources and Concentrations in the Lewis-Clark Valley Ambient Air

**Abstract:** Formaldehyde is an oxygenated volatile organic compound (VOC) that causes cancer and ozone pollution. In the Lewis-Clark Valley, formaldehyde may come from industrial emissions or secondary reactions of hydrocarbons. Formaldehyde levels were measured by collecting samples with 2,4-dinitrophenylhydrazine (DNPH)-coated cartridges and analyzed via high-performance liquid chromatography (HPLC). Formaldehyde concentrations were found to be within a safe range, mainly emitted by the paper mill on the Idaho-Washington border.

**Authors:** B. Wadsworth, J. Morrison, I. Lukman, L. Bergman

**Title:** Synthesis and Analysis of Gallium Oxide and Aluminum-Gallium Oxide Nanocrystals

**Abstract:** Gallium oxide and aluminum-gallium oxide nanocrystalline samples synthesized and analyzed in this experiment. Three total samples were studied, two of gallium oxide and one sample of aluminum-gallium oxide. Transmission measurements were performed using an ultraviolet-visible spectrophotometer. The bandgaps were inferred from the data. Additional images were taken using scanning electron microscopy to understand the sizes and geometry of the particles.

**Author:** Elise Bogut

**Title:** Motivations for Body Modification Among LC Students

**Abstract:** The purpose of this study was to examine the motivations for why students at Lewis-Clark State College (N = 42) did or did not get certain kinds of body modification. A questionnaire influenced by current literature on the topics of participant motivations for getting tattoos (Dickson et al., 2015) and piercings (Hoover et al., 2017) was sent via e-mail to all students currently enrolled at LC State for at least three credit hours. Results, limitations, implications, and future research applications will be discussed.

**Author:** Arielle Feucht

**Title:** Psychological Health: The Impact of Stereotypic Gender Roles

**Abstract:** Different standards are placed on mental health based on the gender of a person (Broverman et al., 1970), yet gender roles change over time (Cotter et al., 2011). To find out if mental health is still talked about in a stereotypic manner based on gender, the current study surveyed LCSC (N = 59) students about which characteristics a psychologically healthy man, woman, or adult would possess, with no differences in the characteristics of a psychologically healthy person based on their gender expected. In context of the small sample size, findings suggest that participants had a clear idea of what a psychologically healthy man should look like, but no consensus about the characteristics of a psychologically healthy woman and adult. Implications and future research will be discussed.

**Author:** Rylee George

**Title:** Childhood Trauma and Educational Attainment: Is There a Correlation?

**Abstract:** Educational attainment has long been impacted by childhood trauma (Cage, 2018) and can impact high school graduation rates, GPA, and timely degree attainment (Otero, 2021). A survey was sent out to LCSC students inviting them to participate in the research. My hypothesis was that as childhood trauma increases, educational attainment would tend to decrease. Findings suggest that there is no correlation between childhood trauma and educational attainment in the sample surveyed (N = 41). Future applications, implications, and limitations will be discussed.

## FRIDAY AFTERNOON POSTER SESSION 2:00 – 3:30 WCC

**Author:** Brandon Landkammer

**Title:** The Relationship Between Social Media Comparisons and Depression

**Abstract:** The current study's purpose was to determine if there was a relationship between the negative social comparisons people make on social media and symptoms of depression. A survey was sent out via email to LCSC students (N=45), that measured the social comparisons they make using the Social Comparison Scale (Allen & Gilbert, 1995) and their depressive symptoms using the Patient Health Questionnaire (Spitzer, 1999). As hypothesized, results confirmed a positive relationship between negative social comparisons and symptoms of depression. Limitations and future research will be discussed.

**Author:** Alahna Menter

**Title:** Do Wrapper Graphics Increase Free Condom Acquisition Behaviors? A Descriptive Study on Lewis-Clark State College Students

**Abstract:** Many educational institutions have implemented free condom distribution programs (Wang et al., 2018); as a result, many college students report receiving free condoms at some point (Reeves et al., 2016) and some researchers have found that the wrappers may affect condom taking and use (Tran et al., 2014). This study examined whether a free condom's wrapper graphics affected condom-taking behaviors, hypothesizing that humorous, unsettling, or artistic graphics would be chosen more than those with neutral designs. A Qualtrics survey was sent to a convenience sample of LC State Students (N = 42) to assess condom attitudes and preferences. Results, limitations, and implications for future research will be discussed.

**Author:** Wade Scott

**Title:** Technological Epidemic: The Rising Addiction to Social Media and The Awareness of Addiction in College Students

**Abstract:** This study aimed to examine the possibility of social media addiction in college students and whether they see themselves as addicted. Research has examined social media addiction using a variety of different scales (Allahverdi, 2022). This study replicated one of these studies (Shahnawaz & Rehman, 2020), and measured awareness of addiction using an adapted scale (Kim et al., 2021). I predicted that 50% of participants would be addicted and 25% of those addicted would be aware. The study was conducted using a survey sent to LCSC Students (N = 59) using these two scales. Results, limitations, and future directions will be discussed.

**Author:** J.D. Sinner

**Title:** In Search for Cause of Change: The Effect of Religious Conversion and Deconversion on Personality

**Abstract:** There is growing evidence that personality is capable of change throughout adulthood (Dweck, 2008; Helson et al., 2002; & Judge et al., 2014) and Cybernetic Big Five Theory (DeYoung, 2015) suggests that a shift in values may be the catalyst for this change. This study attempted to observe change in personality following religious or spiritual conversion or apostasy, by surveying, where LCSC students (N = 65) were asked to fill out a Big Five personality inventory (Soto & John, 2017) and three questionnaires: one focused on recent religious/spiritual conversion, one focused on recent religious/spiritual apostasy, and one focused on recent significant life experiences. Due to insufficient sample sizes and potential response errors, the findings of this study were deemed insufficient. Implications, limitations, and future research will be further discussed.

**Author:** Stacey Skinner

**Title:** The Relationship of Mental Distress and Physical Activity during COVID-19

**Abstract:** With the global shutdown during the COVID-19 pandemic (Martinez et al., 2020), chances increased for additional emotional, psychological and physical challenges in dealing with the restrictions imposed upon individuals (Sharma et al., 2020). This study focused on the relationship between physical activity and mental distress during the recent COVID-19 pandemic. LCSC students over 18 years and enrolled in at least three credits (N = 42) were invited to participate to test for a negative correlation between physical activity (RAPA scale) and mental distress (WHOQOL scale) experienced, which results confirmed. Limitations and future research will be discussed.

FRIDAY AFTERNOON POSTER SESSION 2:00 – 3:30  
WCC

**Author:** Zoe Undercuffler

**Title:** The Process of Death: The Emotional Toil Left Behind and The Improvements That Can Be Made

**Abstract:** To learn about how the process of death can be improved, this study interviewed medical professionals about trends they've noticed in their work. Other research showed that preparing for death and having conversations early on about the process eases emotional pain for the individual and family (Gutiérrez-Sánchez et al., 2021). By interviewing medical professionals there is an in-depth expansion into practical life that might be missed by past research. Data from this collection is limited because of small sample size, but future research could help advance the death process in medical facilities and the home.

**Author:** Madeline Weaver

**Title:** Early Sport Specialization and Well-Being

**Abstract:** Well-being during athletic participation is influenced by the level at which one specializes (McFadden et al., 2016). The purpose of the current study was to identify the impact of early sport specialization on LCSC athletes vs. non-athlete's well-being. LCSC athletes were asked to answer demographic questions to classify them as early sport specializers, recreational participants, or non-specializers (Graupensperger et al., 2021). Athletes were also asked to fill out the Balanced Measure of Psychological Needs in order to measure well-being. Results and limitations will be discussed.

**Author:** Travis Wilson

**Title:** The Correlation between Transgressions and Relationship Satisfaction

**Abstract:** The background literature suggests that transgressions can have negative effects on romantic relationships (Gottman & Silver, 2018; Konstam et al., 2001; Bedrov & Leary, 2021). The current study investigated the hypothesis that transgressions in romantic relationships would have a negative correlation with relationship satisfaction. A Pearson correlation indicated no significant relationship. Individuals in romantic relationships ( $N = 43$ ) completed the Hendrick's Relationship Satisfaction Survey (1988) and a self-created Transgressions Survey. Further research is needed to better understand the nature of this relationship.



# STUDENT & FACULTY INDEX

## A

Abe, Ami 17  
Adamson, Emily 12  
Adams, Rylee 8  
Addo-Quaye, Charles 17  
Ahlers, Layton 17  
Allen, Brandy 13  
Allison, Kerensa 11  
Ames, Miriam 17  
Arc, Cassandra 16  
Ashby, Kaelynn 16

## B

Babb, Lila 15  
Bachman, Ashlee 9  
Backman, Austin 9  
Badger, Blane 7  
Ball, Joe 15  
Bergman, L. 20  
Birdsell, Ben 10  
Birdsell, Benjamin 14  
Blackman III, Gregory 15  
Boardman, Gracie 12  
Boatner, Jovita M. 13  
Bogut, Elise 20  
Boller, Tabitha 16  
Britt, Ashley 8  
Brown, Dr. Austin 9  
Broyles, Hannah 7  
Bundy, Jeffrey 7  
Burke, Shawna 6  
Busz, Anika 17, 18, 19

## C

Catt, Emily 15  
Chapman, Joshua 9  
Chase, Brooke 9  
Chimburas, Ione Skye 9  
Clabby, Adyson 7  
Clark, Marryn 8  
Combe, Savanah De la 8  
Cooper, Rosanna 12

## D

Dale Takalo 9  
Davis, Mikaelyn 8  
Dickinson, Gabrielle 9  
Dougherty, Katelyn 14  
Dregelid, Eli 8

## E

Elder, Bekah 14  
Ellison, Grant 7  
Evbuomwan, Dr. Osasere 9

## F

Feucht, Arielle 20  
Fletcher, Zachary 6  
Freeman, Kenedi 14, 19

## G

Garrison, Meghan 14  
George, Rylee 20  
Giroux, Rachel 6  
Graves, Brayden 14, 19  
Grimm, Brian 9

## H

Hagestad, Gus 19  
Halbert, Nikki 7  
Hall, Dakota 15  
Hall, Taylor 8  
Hansen, Paytan 14  
Hardee, Jack 15  
Harrington, Natori 15  
Hathaway, Sara 19  
Hebert, Grace 7  
Helms, Tess 6  
Henry, Kelsey 6  
Hernandez-Nunez, Andrea 6  
Hill, Leah 15  
Howell, Megan 12  
Huddleston, Shastine 14

## J

Jimenez, Maria 13  
Johnson, Alexis 19  
Johnston, Nancy A. C. 14, 19, 20  
Jones, Joseph 15

## K

Keith, Ensley 16  
Kelley, Jessica R. 13  
Kelley, Kenneth 13  
Kelly, Jacobie 18  
Kenerson, Dalynn 14  
Kilgore, Kade 15  
Knigge, Dr. Kyle 9  
Korakis, Michael 15  
Koroleva, Kseniia 18  
Kumenda, Ibrahim 6  
Kupriyanova, Anna 18  
Kyes, Alexandrea 6

## L

LaMothe, Matthew 15  
Landkammer, Brandon 21  
Lawrence, Shelby 18  
Lockett, Kyra 19  
Lorton, Mackenzie 13  
Lukman, I. 20  
Lyon, Rachael 7

## M

Mamble, Gwen 14  
Marler, Abygail 19  
Martin, Jayden 19  
Matt Silvers 5  
McCormick, Grace 19  
McNamara, Kyle 10  
Menter, Alahna 21  
Merrifield, Sydney 6  
Miller, Clifford D 19  
Miller, Kirsten 19  
Morales, Rosario 14  
Morris, McKenzie 8  
Morrison, J. 20

**M cont'd**

Moulds, Isabel 8  
Murphree, Zachary 14  
Mwai, Ann 6

**N**

Nickelson, Shane 19

**O**

Okeke, Sophia 19  
Ovnicek, Conley 16

**P**

Parker, Daniel 14  
Peightal, Abigail 7  
Penney, Elaina 6  
Perez, Mayra 8  
Petrie, Robert 15  
Platts, Hannah 6

**R**

Raymond, Andrew 20  
Reuter, Zachary 15  
Riggers, Kristine 18  
Rogers, Elle 8  
Rosenbaum, LaChelle 11  
Ross, Angela 18  
Ross, Ashley 12  
Rubin, Bryan 8

**S**

Schaff, Daniel 6  
Schneider, Mackenzie 8  
Scott, Emily 8

Scott, Wade 21

Sedgwick, David 20  
Shell, Brooklyn 7  
Sia, Cornelius 18, 20  
Sinner, J.D. 21

Sivertsen, Jessilynn 6

Skinner, Stacey 21

Smith, Cameron 14

Smith, Cynthia 7

Sol, Alex 19

Steele, Tessa 6

Steeman, Ines 10

Stoffregen, Eric 19

Stuart, Justin 7

Susee, Cole 8

**T**

Thomas, Tyler 6  
Thorpe, Sari 12  
Tibbits, Jessie 12  
Tieken, Bella 6  
Tipton, Ashlee 7  
Tursyngazy, Beknazar 17

**U**

Undercuffler, Zoe 22

**V**

Vanhoose, Erin 6

**W**

Wadsworth, B. 20

Wahl, KC 18

Wangari, Nelly 6

Wapsheli, LaAnnabria 13

Warren, Larry 13

Weaskus, Roland 11

Weaver, Madeline 22

Wilson, Kylie C. 10, 14

Wilson, Travis 22

Wing, Jeffrey 14

Wirtz, Jennifer 7

Witham, LaDawn Spencer 10

**Y**

Yount, Tiara 16

**Z**

Ziegler, Riley 17