

UNLV

18th Annual Graduate & Professional Student Research Forum



Saturday, March 12, 2016
9:00 a.m. – 2:00 p.m.
UNLV Student Union

Sponsored by:
Graduate & Professional Student Association
and the Graduate College

UNLV

*The Graduate & Professional Student
Research Forum is sponsored by the
Graduate & Professional Student Association
and the Graduate College*

*The GPSA and Graduate College would like to acknowledge Nevada INBRE and
Dr. Carl Reiber, INBRE Program Coordinator, for the use of their partitions.*



*We'd like to thank the faculty judges and student volunteers. Without your
support this event would not be possible.*



18th Annual Graduate & Professional Student Research Forum

Letter from Chancellor Daniel Klaich

Dear Students, Colleagues, and Guests:

Welcome to the 18th Annual Graduate & Professional Student Research Forum at the University of Nevada, Las Vegas, a one-day opportunity to showcase the innovative, relevant and far-reaching research of our students across a broad spectrum of fields. In the science field, research varies widely from climate impacts to DNA and gene research to running injuries, just to name a few. Fine Arts and Humanities sessions offer fresh ways of exploring the human experience through art, writing, and poetry. The expansive field of Social Science includes numerous topics across all spectrums to expand and challenge our knowledge and theories in anthropology, psychology, physiology and human rights. The education sessions examine issues ranging from preschool to preservice teaching and beyond.



Our society is built on the discoveries, theories, and innovation that come from and are stimulated by academic research. “Wonder is the beginning of wisdom,” as Socrates said so simply so long ago. When one of our students is inspired to challenge a theory; develop new technology; find a solution to a societal problem or a human condition; offer a new way of viewing history, art or literature; or explore why and how our universe functions and evolves, we all benefit individually, culturally, and as a civilization. This is the true meaning and one of the fundamental reasons for higher education – to challenge us and expand our knowledge.

I am extremely proud of the contributions of our students and the faculty and university programs that supported to their research and explorations. I encourage you to share this spirit of adventure as you attend this conference. Thank you for your participation and ongoing support for research excellence.

18th Annual Graduate & Professional Student Research Forum

Letter from President Len Jessup

Dear students, colleagues, and guests,

Welcome to UNLV's 18th annual Graduate & Professional Student Research Forum, a time when we celebrate the incredible scholarship and creative activity produced by our graduate and professional students each year. Enhancing our graduate-level education, research, and creative activities is a key element of UNLV's Top Tier initiative and drive to rise in national prominence.



I am consistently impressed by the innovation and creativity of our graduate and professional students, and even more amazed at how well UNLV's research community fosters and promotes their contributions. We are truly championing a culture that is open to new ideas and collaboration while valuing our diversity and unique academic strengths.

I know from personal experience how conversation can spark a new way of thinking and set a student on a path for world discovery. So I encourage you to be curious and engage in conversation about the projects. Ask participants to share their moments of discovery, as well as their setbacks and how they overcame them. Find out more about the faculty and fellow students who helped along the way. And learn how their work can transform our community and improve your life.

After you spend time learning more about the work that our graduate and professional students are doing every day on this campus, I'm sure you will find their achievements as innovating, inspiring, and truly exceptional as I do.

18th Annual Graduate & Professional Student Research Forum

Letter from Acting Executive Vice President and Provost
Nancy Rapoport

Welcome to the 18th Annual Graduate Research Forum. It is a pleasure to have all of you participating on this wonderful occasion.

In addition to currently handling the responsibilities of UNLV's Acting Executive Vice President and Provost, I am also a law professor and researcher. I had the benefit of doing research as an undergraduate at Rice University, studying the effect of time of day on cognitive performance. Other than forcing my friends to let me take their temperatures several times a day (you'd be amazed at the amount of drool that someone can produce), the experiment was a wonderful way to re-test the hypothesis that most of us are best at mental tasks in the morning and at physical tasks in the mid-afternoon. The love of research that I found at Rice has stayed with me to this day, and I hope that the same will be true for all of you.



One caution from my dad, who was a research chemist his whole career: the most dangerous time is when one's results agree with one's hypothesis, because a researcher can forget that, sometimes, results agree by accident, rather than because the experiment actually worked. Always question; always test your assumptions.

Enjoy today's Graduate and Professional Students' Research Forum!

18th Annual Graduate & Professional Student Research Forum

Welcome from Interim Graduate College Dean Kate Hausbeck Korgan

Hello and welcome to the 18th Annual Graduate & Professional Student Research Forum at the University of Nevada, Las Vegas! It is a great pleasure to participate in this grand UNLV tradition with you. When this event began in 1998 we had far fewer graduate programs and students, and we were not yet recognized as the Carnegie Research High institution that we are today. UNLV is a thriving Minority Serving Institution on the path to top tier status, and graduate education is a key indicator of our excellence, as well as a significant site of growth. Over these past 18 years UNLV and Southern Nevada have grown in size, stature, and diversity; and the Graduate & Professional Student Association has become a strong, thriving, well-established voice for the more than 4,300 graduate and professional students on campus today.



The evolution of human history is driven by the dual engines of inspiration and innovation. As thinkers, analysts, researchers, scholars, and creatives, graduate students are at the cusp of change. You are, indeed, often the drivers of change. Graduate education is unique insofar as graduate students must innovate and create new ideas in their field in order to earn their advanced degrees. No longer passive students absorbing knowledge, graduate and professional students are active generators of new ideas, new theories, and new approaches to pressing problems. With more than 140 graduate and professional programs at UNLV, our students span the disciplinary spectrum. We have excellent STEAM programs (Science, Technology, Engineering, Arts and Math), strong business programs, impactful social science programs, outstanding law and dental schools, innovative professional masters and doctoral programs in an array of fields, and excellence in our health programs. Our students are diverse, and your range of expertise is even more so.

This is one of the most exciting aspects of the Annual Graduate & Professional Student Research Forum: it showcases research, scholarship, professional and applied projects, and creative activity from every corner of campus, addressing a vast array of questions and issues. By bringing all of our students together in this single event we foster communication and collaboration across disciplinary silos and encourage students to expand their own understanding by learning from one another. It is an event that inspires us to know more, to work harder, to be better --- as individuals, and as a community of graduate scholars. Equally importantly, participation in this event helps develop your professional socialization skills, provides an opportunity to practice talking about your work to non-specialists in your field, and highlights the impact that our graduate programs are having on students, and through your work, on the world we live in.

It is an honor to be involved with this event, and to celebrate you, our graduate and professional students. I am grateful for your participation this weekend and for the innovative and impactful work that you do. You inspire me! I wish you a wonderful and provocative Research Forum.

2016 Graduate & Professional Student Research Forum

Schedule of Events

Friday, March 11, 2016

Inspiration, Innovation, Impact Reception 4:00 – 6:00pm Student Union Ballroom

Saturday, March 12, 2016

Platform Sessions Student Union
Science Platform Session A: 9:00 – 11:30am Room 205
Science and Health Science Platform Session B: 9:00 – 11:15am Room 207
Science and Engineering Platform Session C: 9:00 – 11:15am Room 208A
Social Science: Platform Session A: 9:00 – 11:30am Room 208B
Social Science: Platform Session B: 9:00 – 11:30am Room 209
Social Science, Business and Hotel: Platform Session C: 8:45 – 11:30am Room 211
Social Science: Platform Session D: 8:30 – 11:30am Room 213
Education: Platform Session A: 9:00 – 11:30am Room 218
Education: Platform Session B: 9:00 – 11:30am Room 219
Humanities & Fine Arts: Platform Session A: 8:45 – 11:45am Philip J. Cohen Theatre

Poster Sessions Student Union
Science and Engineering: Poster Session A: 9:00 – 11:30am Ballroom
Science and Health Science: Poster Session B: 9:00 – 11:30am Ballroom
Science and Health Science: Poster Session C: 9:00 – 11:30am Ballroom
Science and Health Science: Poster Session D: 9:15 – 11:30am Ballroom
Science and Health Science: Poster Session E: 9:00 – 11:30am Ballroom
Social Science: Poster Session A: 9:00 – 11:30am Ballroom
Social Science: Poster Session B: 9:00 – 11:30am Ballroom
Social Science: Poster Session C: 9:30 – 11:15am Ballroom
Social Science and Hotel: Poster Session D: 9:15 – 11:30am Ballroom
Education: Poster Session A: 9:15 – 11:30am Ballroom
Fine Arts: Poster Session A: 9:45 – 10:45am Ballroom

Luncheon and Awards Ceremony: noon – 2:00pm Ballroom

2016 Graduate & Professional Student Research Forum

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2016 Graduate & Professional Student Research Forum

Abstracts at a Glance

Science Platform Session A: Room 205

9:00 – 9:15am Lynette Kogler | Chemistry
Characterizing Electronic and Chemical Properties of Solution-Processed Transparent Conductive Oxides Using Photoelectron and Inverse Photoemission Spectroscopy

9:15 – 9:30am Alicia Crespin | Life Sciences
Caterpillar-Ant Interactions in the Mojave Desert: Communication Brings Us Together

9:30 – 9:45am Daniel Lautzenheiser | Mathematical Sciences
Intersection Pairings on Fractal Images

9:45 – 10:00am Courtney Bartlett | Geoscience
Phosphate Release from Minerals is an Important Source of Phosphate for Life and Potential Prebiotic Chemistry

10:30 – 10:45am Emily Siska | Chemistry
Study: Used Waste Form for Nuclear Waste is Borosilicate Glass

10:45 – 11:00am Kate Porter | Life Sciences
The Role of Mfd in Oxidative Damage Repair

11:00 – 11:15am Christensen Javier, Danielle Hahn, Brooke Basar | Physical Therapy
Measurement of Temporomandibular Joint Arthrokinematics by Ultrasound: A Reliability Study

11:15 – 11:30am Carmen Vallin | Life Sciences
Stem Loop Structures (SLS) have a Role in B. subtilis Stationary Phase Mutagenesis

Science and Health Science Platform Session B: Room 207

9:00 – 9:15am Anthony Waddle | Life Science
A Questionable Role for Pathogenic Chytrid Fungus in the Decline of the Relict Leopard Frog

9:15 – 9:30am Moinak Bhaduri | Mathematical Sciences

An Investigation into the Forecasting Power of Empirical Recurrence Rates and Ratios with Emphasis on Rare Event Modeling

9:30 – 9:45am Jonathan Baker | Geoscience
Microclimatic Monitoring of Kinderlinskaya Cave, Russia to Interpret Paleoclimate Proxy Data

9:45 – 10:00am Amanda A. Kidman | Life Sciences
Development of the K-state Promotes Mutagenesis, Independent of DNA uptake, in Stressed Bacillus subtilis Cells

10:30 – 10:45am Justin Keane | Public Health
Rates of Hemoglobinopathies in American Indians and Alaska Natives infants born in Nevada, 2005 – 2012: Potential Implications

10:45 – 11:00am Michael Isaacs | Life Sciences
Walking Dynamics of Persons with a Lower Leg Amputation Employing a Passive or a Powered Foot-Ankle Prosthetic Device

11:00 – 11:15am Skyler Sudweeks, Jayson McClaren | Physical Therapy
Acute Effects of Walking on the Deformation of Femoral Articular Cartilage of the Knee

Science and Engineering Platform Session C: Room 208A

9:00 – 9:15am Syeda Saria Bukhary | Civil and Environmental Engineering and Construction
Analyzing the Water Requirements for Solar Power Development in Nevada

9:15 – 9:30am Phillip Merlin Uesbeck | Computer Science
An Empirical Study on the Impact of C++ Lambdas and Programmer Experience

2016 Graduate & Professional Student Research Forum

Abstracts at a Glance

Science and Engineering Platform Session C: Room 208A

(continued)

9:30 – 9:45am Matthew Hodges | Mechanical Engineering
Radiation Characterization of the UNLV Accelerator Facility

9:45 – 10:00am Sichu Shrestha | Civil and Environmental Engineering and Construction
Perchlorate: Contaminant of Concern for Drinking Water

10:30 – 10:45am Kishor Shrestha | Civil and Environmental Engineering and Construction
Cost and Customer Satisfaction of Culvert Cleaning and Sweeping Road Projects in Nevada

10:45 – 11:00am Sachiko Sueki | Computer Science
Vulnerabilities and Mitigation Methods in the NextGen Air Traffic Control System

11:00 – 11:15am Chao Chen | Civil and Environmental Engineering and Construction
Quantitative Assessment of Streamflow Changes in Lehman Creek with Influences from Global Warming

Social Science Platform Session A: Room 208B

9:00 – 9:15am Jessica Nave-Blodgett | Psychology
Perception of Auditory and Visual Disruptions to the Beat and Meter in Music

9:15 – 9:30am Kathleen Larson | Psychology
Evaluation of Bicyclist Perceptions of Current and Future Infrastructure for the Development of a Multimodal Transportation System

9:30 – 9:45am Katelyn DiBenedetto | Anthropology
An Investigation of Possible Seasonal Movement between the Lowlands and the Uplands in the Early Neolithic for Western Cyprus through the Application of Stable Isotopic Studies

9:45 – 10:00am Shelly Volsche | Anthropology
Mom, Dad, and the Dog: A New and Changing Definition of Family

10:30 – 10:45am Andrew S. Murtishaw | Psychology
An Evaluation of Peripheral Insulin Disruption on Behavior, Phosphorylated Tau Levels, and Microglia Activity

10:45 – 11:00am Alex Nelson | Anthropology
TERribly Unequal: Asymmetrical Availability of information between Internet Sexual Service Providers and Prospective Clients

11:00 – 11:15am Jamelle Q. Berry | Marriage and Family Therapy
Addressing the Unique Needs of Adult Survivors of Childhood Sexual Abuse

11:15 – 11:30am Liya M. Rakhkovskaya | Psychology
Clarifying the Role of Ethnic Identity in Body Weight and Shape Concerns in African American, Asian American, and Latina American College Women

Social Science Platform Session B: Room 209

9:00 – 9:15am Margaret George | Journalism and Media Studies
Consumers Response to Corporate Social Responsibility

9:15 – 9:30am Sarah MacIntosh | Anthropology
The Relationships between Smallholders, their Textiles, and their Bone Tools: a Case Study at the Central Anatolian Site of Kaman-Kalehöyük

9:30 – 9:45am Vanessa C. Irsik | Psychology
Change Deafness is Reduced but not Eliminated by Practice

9:45 – 10:00am Monica M. Bolton | Psychology
Interactions of Ketamine Administration and mTOR Signaling on Parvalbumin Positive Neurons

10:30 – 10:45am Courtney McDaniel | Communication Studies
"You Look Fine: A Closer Look at White Lies in Female Best Friendships"

10:45 – 11:00am Matthew Martinez | Anthropology
Coalitional Psychology and Political Preferences

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Abstracts at a Glance

Social Science Platform Session B: Room 209

(continued)

11:00 – 11:15am Marina Galante, Kaitlin Andrewjeski | Psychology

Examination of the Influence of Child Neglect Type and Disposition Status on Pre-Intervention Assessment of Child Maltreatment Potential in Mothers Referred to Treatment by Child Protective Services

11:15 – 11:30am Henry Castillo | Communication Studies

The "World's Greatest Deliberative Body" and the Decision to Invade Iraq: The Rhetoric of Senatorial Debate on S.J.Res. 46

Social Science, Business and Hotel Platform Session C: Room 211

8:45 – 9:00am Lenna V. Shulga | Hotel Administration

Customer and Company Interactions in Value Co-Creation: The Role of Commercial Friendship

9:00 – 9:15am Kaiyang Wu | Economics
Understanding Heterosexual Consumers' Reactions toward LGBT-Friendly Cues in Restaurants

9:15 – 9:30am Rafael Oganessian | Political Science
Leading Horses to Water: Compulsory Voting and Economic Voting

9:30 – 9:45am Amber Overholser | Environmental and Public Affairs
An Examination of Sagebrush Rebellion Communications Using Narrative Policy Framework

9:45 – 10:00am Dawn Lighthiser | Sociology
Content Analysis of Third Place Bulletin Boards

10:30 – 10:45am Carrie Sampson | School of Environmental Studies and Public Affairs
Triggering School Boards to (Re)Act: The Case of English Learners in the U.S. Mountain West

10:45 – 11:00am Erika Masaki | Political Science
The Institutional Design of CITES: Why Conserve when you can Reserve?

11:00 – 11:15am Andrea Dassopoulos | Sociology
A Room of My Peers: The Experiences of Problem Gamblers in Treatment

11:15 – 11:30am Kate Eugenis | Political Science
Media Coverage and Campaign Spending in State Supreme Court Races

Social Science Platform Session D: Room 213

8:30 – 8:45am Logan Kennedy | Criminal Justice
Black Lives Matter: A State-Level Analysis of Police Shootings and Protests

8:45 – 9:00am Christina Parreira | Sociology
Consuming Sexscapes: The Impact of Location and Legality on Prostitution Clients

9:00 – 9:15am Michael Trevathan | Political Science
Smoke on the Water: The Dynamics of Intrastate Conflict and Water Scarcity

9:15 – 9:30am Moritz Rissmann | Political Science
Effects of Natural Disaster on Voting Results

9:30 – 9:45am Matthew M. Le Claire | Sociology
Cyber-Bullying: Differences in Race and Gender

9:45 – 10:00am Sarah A. St. John | Sociology
The Role of Social Connections in Successful Completion of Problem Gambling Treatment

10:30 – 10:45am Breanna Boppre | Criminal Justice
Exploring Gender Differences in Cross-National Imprisonment Rates Using a Conjunctive Analysis of Case Configurations

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Abstracts at a Glance

Social Science Platform Session D: Room 213 (continued)

10:45 – 11:00am Hafthor Erlingsson | Political Science
Does Economic Voting Extend to those Living Abroad?: Exploring Whether Expatriates are Economic Voters

11:00 – 11:15am Jason Scott | Sociology
Study: How Female Tourists Participate as Consumers in Bangkok's Red Light Districts and Adult Entertainment Zones

11:15 – 11:30am Nathan Henceroth | Political Science
Do Regional Parties and their Supporters Value EU Money?

Education Platform Session A: Room 218

9:00 – 9:15am Amy Adkins | Teaching and Learning
iPad Fun with Early Childhood Math Apps

9:15 – 9:30am Jennifer Guttman | Educational Psychology and Higher Education
Cultural Competence Examined through a Multi-Disciplinary Lens

9:30 – 9:45am Robert Walker | Teaching & Learning
A Critical Race Theory Examination of the History of Black Males in the United States Army

9:45 – 10:00am Janet Van Heck | Clinical & Educational Studies
Developing Roles and Responsibilities for Co-Teachers as a Professional Development Activity

10:30 – 10:45am Pamela A. Maher | Teaching & Learning
Latency toward Public Speaking in Pre-engineering and Physics Students at a Two-year College

10:45 – 11:00am Katie Woods | Educational Psychology & Higher Education
Making Math Matter: Engaging Students in Mathematics through Innovative Uses of Social Media and Technology

11:00 – 11:15am Refika Turgut | Teaching & Learning
"It's Not My Job": How Pre-service Teachers Re(position) Themselves and English Language Learners

11:15 – 11:30am Marissa Nichols | Department of Educational Psychology & Higher Education
Student-Athlete Beliefs about Intelligence and Sport Ability

Education Platform Session B: Room 219

9:00 – 9:15am Barbara Paz Cornejo | Teaching & Learning
Alternative Disciplinary Practices

9:15 – 9:30am Lisa Baaske | Educational Psychology & Higher Education
The Collective Classroom in a Reality-Based Educational Assessment Course

9:30 – 9:45am Rebecca J. Gates | Educational Psychology & Higher Education
Policy Implications for Student Affairs Professionals at Hispanic Serving Institutions

9:45 – 10:00am Cynthia Clark | Teaching & Learning
Employing Developmental Phenomenography as a Method for Understanding the Environment of Teaching Online

10:30 – 10:45am Derek Riddle | Teaching & Learning
"Can I Manage my Own Classroom?": A Mixed-Methods Study Examining Pre-Service Teachers Self-Efficacy through an Asynchronous Classroom Management Course

10:45 – 11:00am Caitlin Saladino | Educational Psychology & Higher Education
Understanding High School Seniors' College and Career Aspirations: A Mixed Methods Investigation of College Application Month

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Abstracts at a Glance

Education Platform Session B: Room 219

(continued)

11:00 – 11:15am Fereshteh Rezaeian | Teaching and Learning

The Effects of Age and Gender on Codeswitching Patterns among Iranian/Canadian Bilinguals

11:15 – 11:30am Eshani Gandhi-Lee | Chemistry

Literacy Perceptions of International Students in an Undergraduate Chemistry Class

Humanities and Fine Arts Platform Session A: Philip J. Cohen Theatre

8:45 – 9:00am Rachel Disney | English

The Women Before Us: Role Models in Women's Magazines and the Works of Storm Jameson, Vera Brittain, and Winifred Holtby

9:00 – 9:15am Christopher Skees | Art

Generation Loss

9:15 – 9:30am Syed Haider Shahbaz | English

Locating Accra

9:30 – 9:45am Thaddeus Zoellner | Art

Microanalysis Techniques Applied to Contemporary Visual Art Making

9:45 – 10:00am Olufunke Ogundimu, Autumn Widdoes | English

Professional Development at 2016 AWP Conference

10:00 – 10:15am Gary Dean Lindeburg | English

"How Big Is Your Henriad?"

10:15 – 10:30am Rebecca Robison | English

Translating in Toulouse

11:00 – 11:45am Stefanie Resnick, Madison Kisst, Kayla Gaar, Jack Lafferty, Jasmine Mathews, Sam Cordes, Bernhard Verhoeven, Darek Riley, Amber Bonasso, Stephon Pettway, Ryan Dougherty | Theatre Arts

The Industry Showcase

Science and Engineering Poster Session A: Ballroom

9:00 – 9:15am Erica Marti | Civil and Environmental Engineering and Construction

Ozone-Reactive N-nitrosodimethylamine (NDMA) Precursors: Yields, Factors Affecting Formation and Implications for Water Reuse

9:15 – 9:30am Yiyan Li | Electrical and Computer Engineering

Digital Microfluidics with Mechanical Perturbations from the Top Plate

9:30 – 9:45am Amanda Gentry | Geoscience

Patterns of Synorogenic Sedimentation Associated with the Unroofing of the Willard-Paris-Meade Thrust Sheets, Sevier Fold-Thrust Belt

9:45 – 10:00am Sungchul Lee | Computer Science

Performance Improvement of Hadoop Process Using a Limited Nodes Block Placement Policy

10:00 – 10:15am Kazi Ali Tamaddun | Department of Civil and Environmental Engineering and Construction

Evaluating Streamflow Changes in Continental U.S. Using Wavelet Transformation

10:30 – 10:45am Jessica Hartman | Mechanical Engineering

Remote Sensing of Neutron and Gamma Radiation Using an Aerial Unmanned Autonomous System

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Abstracts at a Glance

Science and Engineering Poster Session A: Ballroom (continued)

10:45 – 11:00am William Joseph | Geoscience
Characterizing Crystal Assemblages for the Petrogenesis of Post-Collapse Rhyolites in the Long Valley Caldera, California

11:00 – 11:15am Patrick Daleiden | Computer Science
Empirical Study on Concurrency Models in Programming Languages

11:15 – 11:30am Mohammadsoroush Tafazzoli | Civil & Environmental Engineering
A Method to Measure Material-Use Efficiency in Construction Projects

Science and Health Science Poster Session B: Ballroom

9:00 – 9:15am Toni Jilka | Dental Medicine
Differential Expression of Micro(mi)RNA within Cancer Stem Cell (CSC) Subpopulations

9:15 – 9:30am Jacqueline Phan | Chemistry
Bile Salt Analogs as Anti-Germinants in the Prevention of Clostridium Difficile Infection

9:30 – 9:45am Michelle Farnoush, Daniel Swint, Seth Jennings | Dental Medicine
Melatonin-Modulation of Histone Deacetylase (HDAC) in Oral Cancer

9:45 – 10:00am Jenni Kumanchik | Kinesiology and Nutrition Sciences
Shock Attenuation in the Lumbar Spine while Running

10:30 – 10:45am Kristi Agari | Dental Medicine
Folates are Associated with a Wide Variety of Human Health Benefits

10:45 – 11:00am Lorenzo Apodaca | Life Sciences
Eldorado Valley ibutton Tower Network: Monitoring Potential Heat Energy Dynamics around a Utility-Scale Solar Panel Facility

11:00 – 11:15am Jeong Ho Seo | Dental Medicine
Parental Perspective of Dental Care Access for Children Diagnosed with Autism Spectrum Disorders

11:15 – 11:30am Sarah Litterer | Public Health
Southern Nevada Community Nutrition Assessment Report & Healthy Henderson Nutrition Partnership Project

Science and Health Science Poster Session C: Ballroom

9:00 – 9:15am Hananeh Derakhshan | Public Health
Identifying the Morphological Patterns of Muscle Regeneration

9:15 – 9:30am Whitney Saarem, Fang Yu Wang | Dental Medicine
Propolis or Caffeic Acid Phenethyl ester (CAPE) Inhibits Oral Cancer Growth and Viability

9:30 – 9:45am Surbhi Sharma | Life Sciences
The Human C-Terminome

9:45 – 10:00am Behfar Osafi, Naweed Najand | Dental Medicine
Differential Expression of Vitamin D3 Metabolism Enzyme CYP27A1 in Oral Cancers

10:30 – 10:45am Chun Yin Wong, Van Tang | Dental Medicine
Hydroxytyrosol (HT) Suppresses Growth and Reduces Viability in Human Oral Squamous Cell Carcinomas

10:45 – 11:00am Tara Kenny | Kinesiology and Nutrition Sciences
Vitamin D Status and Bone Mineral Density in Female Collegiate Dancers and Cheerleaders

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Abstracts at a Glance

Science and Health Science Poster Session C: Ballroom

(continued)

11:00 – 11:15am Matthew Thacker | Dental Medicine
Indoleamine 2,3-Dioxygenase and Tryptophan Dioxygenase Enzymes are Actively and Differentially Expressed in Oral Cancers

11:15 – 11:30am Judy Goldman | Public Health
An Evaluation of State Ombudsman Websites for Nursing Home Consumers

Science and Health Science Poster Session D: Ballroom

9:15 – 9:30am Ashley Tovar, Jack Young, Debra Tacad, Tara Kenny, Laura Kruskall, James Navalta, Robbin Hickman | Kinesiology and Nutrition Sciences
The Effect of Moderate Consumption of Non-Nutritive Sweeteners on Glucose Tolerance And Body Composition In Rats

9:30 – 9:45am Dannica Brennan | Dental Medicine
Differential miRNA Expression in Oral Cancer Oncosomes

9:45 – 10:00am Atenia Ruiz | Public Health
Chronic Inflammatory Conditions and Pediatric Obesity

10:30 – 10:45am Scott C. Thomas | Life Sciences
*Genomic and Physiological Exploration of *Thermoflexus hugenholtzii*, a Representative of a Novel Class in the Chloroflexi*

10:45 – 11:00am Adam Marina | Dental Medicine
Racial and Ethnic Oral Health Disparities among Children Participating in Community-Based Programs in the Greater Las Vegas Area

11:00 – 11:15am Joshua P. Bailey | Kinesiology and Nutrition Sciences
Inertial Sensor Validation for Lower Extremity Running Gait Analysis

11:15 – 11:30am Evan Davis | Dental Medicine
Expression of NKX2-1 and Matrix Metalloproteinases in Oral Cancers

Science and Health Science Poster Session E: Ballroom

9:00 – 9:15am Stephanie Molina | Health Physics and Diagnostic Sciences
Use of Drug Carrying Macrophages as Delivery Vehicles for Treatment of Brain Tumors

9:15 – 9:30am Inyoung Chong | Dental Medicine
All-Trans Retinoic Acid (ATRA)-Induced Effects on Dental Pulp-Derived Mesenchymal Stem Cells (DPSC)

9:30 – 9:45am Saruna Ghimire | Public Health
Validation of the Nepalese Version of Mini Nutritional Assessment Tool

9:45 – 10:00am GM Jonaid | Life Sciences
Transposable Element Expression in Human Somatic Cells

10:30am – 10:45am Ian Pearson, James Luke Taylor | School of Dental Medicine
Evaluation of Differential Oral Cell Type-Specific Responses to E-cigarette Components

10:45 – 11:00am Daniel Mast | Chemistry
Equation of State for Technetium by X-ray Diffraction

11:00 – 11:15am Ghazaleh Rezaei and Weston Milne | Dental Medicine
*Cariogenic Pathogen *Scardovia wiggisiae* Screening among Pediatric Orthodontic Patients: A Pilot Study*

11:15 – 11:30am Debra K. Tacad | Kinesiology and Nutrition Sciences
Hunger Games: The Effects of Alternate Day Fasting on Food Intake, Body Weight, and Leptin and Ghrelin in Rats

Social Science Poster Session A: Ballroom

9:00 – 9:15am Chris Kiley | Psychology
Reconsolidation: The Effect of Spatial Context and Expectations

9:15 – 9:30am Ashley Lauzon | Anthropology
Food Grinding Technology of the Mimbres Mogollon, 200-1130 A.D.

2016 Graduate & Professional Student Research Forum

Abstracts at a Glance

Social Science Poster Session A: Ballroom (continued)

9:30 – 9:45am Karli Nave | Psychology
Musical Rhythms Induce Long-Lasting Beat Perception in Musicians and Non-Musicians

9:45 – 10:00am Cristina Tica | Anthropology
Romans or “Barbarians”, Who had it Better? Health Data from Two Groups Living on the Edge of the Empire

10:30 – 10:45am Carrie R. Underwood | Psychology
Perceptions of Women Who do not Change Their Surname after Marriage

10:45 – 11:00am Stacy J. Graves | Psychology
The Relationship between ADHD Symptomatology and BASC-2 Parent Ratings

11:00 – 11:15am Elizabeth Duffy | Anthropology
Hiding in Plain View: Nonlethal Violence in the Last 100 Years at Mesa Verde (AD 1200-1300)

11:15 – 11:30am Leiszle Lapping-Carr | Psychology
Central and Reflexive Measures of Reactivity to Human and Primate Erotica

Social Science Poster Session B: Ballroom

9:00 – 9:15am Cheryl Anderson | Anthropology
Blood in the Villages: Situating Massacres within Broader Social Processes

9:15 – 9:30am Carol Franco | Anthropology
Female Mate Preferences among Unpartnered Mothers: A Pilot Study

9:30 – 9:45am R. Shane Westfall | Psychology
The Effect of Physical Attractiveness on Endorsement of the Just World Hypothesis

9:45 – 10:00am Amber Osterholt | Anthropology
Heads that Speak: Dividuals and Trophies from the Eastern Woodlands Archaic

10:30 – 10:45am Stephanie Verba | Psychology
How Predominant Female Experience Influences Children’s Categorization and Typicality Judgments

10:45 – 11:00am Mark Toussaint | Anthropology
A Bioarchaeological Analysis of an Early Bronze Age Cemetery from Szarbia, Poland: Phase I

11:00 – 11:15am Mandy Walsh | Psychology
Women’s Suspicion of Costly Traits Varies throughout the Menstrual Cycle

11:15 – 11:30am Yulia Gavrilova | Psychology
Evaluation of a Goal-Oriented Alcohol Prevention Program in Student-Athletes

Social Science Poster Session C: Ballroom

9:30 – 9:45am Brenna Wilkerson | Anthropology
Diet and Subsistence Strategies among Virgin Branch Puebloan (VBP) Groups Living in the Muddy River Valley in Southern Nevada and on the Shivwits Plateau in Northwestern Arizona

9:45 – 10:00am Travis Loughran | Psychology
Department
Psychological Skills as a Predictor of Thoughts and Stress Sport Training

10:30 – 10:45am Lisa M. Beckman | Psychology
Difficulties in Making Meaning of Health-Related Stressors as a Unique Predictor of Hopelessness

2016 Graduate & Professional Student Research Forum

Abstracts at a Glance

Social Science Poster Session C: Ballroom

(continued)

10:45 – 11:00am Elizabeth Brogdon | Anthropology
Study of the Mother-Father-Maternal Grandmother Triad in Urban Merida, Mexico

11:00 – 11:15am Christina M. Vanden Bosch der Nederlanden | Psychology
Listeners Can Be Biased to Use Object-Level Analysis during Change Detection

Social Science and Hotel Poster Session D: Ballroom

9:15 – 9:30am Alexa Bejinariu | Criminal Justice
Do Court Factors, Case Aspects, and Individual Characteristics Affect an Applicant's Likelihood of Receiving a Protective Order?

9:30 – 9:45am Nicole Santero | Journalism and Media Studies
#5YearsofOneDirection: An Analysis of the One Direction Fandom's Ability to Influence and Dominate Worldwide Twitter Trends

9:45 – 10:00am Kelly Stout | Public Affairs
Crossover Girls in Clark County Juvenile Detention

10:30 – 10:45am Miliiakeala S.J. Heen | Criminal Justice
Eyes in the Sky: Public Attitudes Towards Police Use of Drone Technology

10:45 – 11:00am Nicole Frady | Marriage and Family Therapy
Internet Infidelity Caused by the Misuse of Technology

11:00 – 11:15am Shinyong Jung | Hospitality Administration
Is Big Data Meaningful to the MICE Industry? Discovering Influence of Big Data on Meeting Professionals' Decision Making Behavior

11:15 – 11:30am Olivia G. Tuttle | Criminal Justice
Power of Perspective: The Effects of Public Perceptions of Police and Fear of Crime on Attitudes towards Aerial Drone Use

Education Poster Session A: Ballroom

9:15 – 9:30am Michelle Dominguez | Educational Psychology & Higher Education
Using Learning Management System to Predict STEM Achievement: Implications for Early Warning Systems

9:30 – 9:45am Cynthia Bezar | Teaching & Learning
A Case Study Analysis of Career and Technical Instructor's Development of Multicultural Self-Awareness through Transformative Learning Experience

9:45 – 10:00am Rachel Part | Educational Psychology & Higher Education
Motivation to Learn for Middle and High School Students

10:30 – 10:45am Jessica Soria | Teaching & Learning
Bilingual Education as a Vehicle for Peace Education

10:45 – 11:00am Erdogan Kaya | Teaching & Learning
Introducing Educational Robotics to Ugandan Secondary Information Technology

11:00 – 11:15am Elena Nourrie | Educational Psychology & Higher Education
Exploring Modes of Support and Impact upon First Year-First Generation Students' College Experience

11:15 – 11:30am Wynn Tashman | Law School and Educational Psychology & Higher Education
Harassment of LGBT Youth in School: Educational Interventions on Reporting Procedure

Fine Arts Poster Session A: Ballroom

9:45 – 10:00am Wendy Chambers | Art
Corporeality: Towards Finitude

10:00 – 10:15am Maureen Halligan | Art
Fine Arts Exploration of a Self-Perpetuating Series of Paintings

10:15 – 10:30am Elizabeth Johnson | Art
Erotic Sovereignty

10:30 – 10:45am Monique Arar | Music
The Evolution of the Keyboard Instrument and its Consequent Impact on Repertoire

Science Platform Session A – Room 205

Presentations

- 9:00 – 9:15am Lynette Kogler, Department of Chemistry
- 9:15 – 9:30am Alicia Crespín, School of Life Sciences
- 9:30 – 9:45am Daniel Lautzenheiser, Department of Mathematical Sciences
- 9:45 – 10:00am Courtney Bartlett, Department of Geoscience
- 10:30 – 10:45am Emily Siska, Department of Chemistry
- 10:45 – 11:00am Katelyn Porter, School of Life Sciences
- 11:00 – 11:15am Christensen C. Javeir, Brooke Basar and Danielle Hahn, Department of Physical Therapy
- 11:15 – 11:30am Carmen Vallin, School of Life Sciences



Characterizing Electronic and Chemical Properties of Solution-Processed Transparent Conductive Oxides Using Photoelectron and Inverse Photoemission Spectroscopy

Lynette Kogler, Marc Hai Ming, Kyle Aleshire, Clemens Heske | Chemistry

Transparent conductive oxides (TCOs) are a ubiquitous component of modern electronic devices, forming an integral part of displays, sensors, OLEDs, solar cells, and many other applications. Solution-processing of electronic materials promises new opportunities, such as easy customization of products by digital printing processes and the efficient use of materials, leading to reduced production costs [1]. Analyzing the chemical and electronic structure of these materials is very important, not only for insuring that the materials have the desired properties, but also to understand how the solution process affects those properties and how to make materials for specific applications [2]. To gain such insights into the chemical and electronic properties at the surface, photoelectron spectroscopy and inverse photoemission spectroscopy have proven to be powerful techniques. In this study, indium oxide, indium-tin oxide (ITO), and indium-zinc oxide (IZO) thin films were prepared by spin-coating precursor solutions of metal-acetylacetonate ligands dissolved in 2-methoxyethanol and tempering in either ambient air or dry nitrogen. These films were analyzed with X-ray Photoelectron Spectroscopy (XPS), Ultraviolet Photoelectron Spectroscopy (UPS), and Inverse Photoemission Spectroscopy (IPES), before and after low-energy (50 eV) ion treatments in ultra-high vacuum. We will discuss the observed chemical species, the positions of valence and conduction band extrema, work function and surface band gap information as a function of composition and preparation conditions.

[1] J. Perelaer et al., *J. Mater. Chem.* 20, 8446 (2010)
[2] M. Håming et al., *J. Phys. Chem. C* 118, 12826 (2014)

Projected Presentation: 58th Electronic Materials Conference (June 2016)

Caterpillar-Ant Interactions in the Mojave Desert: Communication brings Us Together

Alicia Crespin | Life Sciences

Butterflies are a diverse and essential group of pollinators whose abundance is predominantly determined by growth and survival of caterpillars. In 2,700 species of Lycaenid butterflies, caterpillars participate in a mutually beneficial interaction with ants known as a mutualism. These caterpillars provide a nutrient-rich substance (nectar) to ants. In return, ants protect their partners from predators and parasites. Though this mutualism has been widely studied, many questions about the underlying mechanisms that maintain the relationship remain. Specifically, it is not understood how caterpillars in this butterfly family are able to recruit ants and initiate the interaction. Recent research has suggested that hydrocarbons present on the cuticle of caterpillars are used to either encourage or discourage interaction with ants. Caterpillars which are not able to produce nectar may have simple hydrocarbons that reduce ant aggression and discourage interaction. Alternatively, caterpillars which are able to produce nectar may have complex hydrocarbons that encourage interaction by mimicking ant hydrocarbons. Additionally, mutualist caterpillars that closely mimic ant hydrocarbons may be better at recruiting ant partners than mutualist caterpillars that poorly mimic ant hydrocarbons, making them more likely to be protected by ants. This study focuses on identifying the composition of hydrocarbons found on the cuticles of caterpillars and ants in the Mojave Desert to determine whether communication via hydrocarbons is responsible for initiating and maintaining this important mutualism.

Fractal Images

Daniel Lautzenheiser, Arthur Baragar | Mathematical Sciences

Fractal images occur naturally in many areas of mathematics. In this paper, we begin by looking at two well-studied fractals; the Cantor set and the Apollonian circle packing. While the actual construction process of these fractals can be described in several ways, we take a geometric approach. We interpret the full image as arising from three or four given planes or “seeds” under continued reflections (inversion mappings). Previous authors such as Schmidt, Lagarias, and Stange have studied these fractals in various ways. Our approach is new in that our end interpretation of the fractal is that it is a projection of a part of a “larger” class of surfaces.

Under this interpretation, we introduce a process of assigning an intersection type matrix to fractal images. Due to an underlying hyperbolic structure of the projected fractal image, we can nicely characterize certain special functions (called isometries) of the hyperbolic space. This collection of isometries has an algebraic structure (they form a group) and, usually, this group is finitely generated. Through our process, we also have a way of identifying groups which are “thin”, which may have important arithmetic properties.

Our main result is that we identify an intersection matrix corresponding to given fractal images. By a result due to Morrison, we have shown the existence of a class of surfaces with corresponding fractal image.

Phosphate Release from Minerals is an Important Source of Phosphate for Life and Potential Prebiotic Chemistry

Courtney Bartlett, Elisabeth Hausrath, Chris Adcock | Geoscience

Phosphate is an essential nutrient for life on Earth, used in ATP, DNA, RNA and phospholipid membranes. Phosphorus is thought to have had an important role in the prebiotic reactions that led to life on Earth. Therefore, phosphate availability would have been an important factor in the potential habitability of early martian environments. Since phosphate does not have an abundant volatile phase, phosphate release from minerals is an important source of phosphate for life and potential prebiotic chemistry. Merrillite and chlorapatite are the dominant phosphate-bearing minerals in martian meteorites, and therefore are also presumably in igneous rocks on Mars. Whitlockite is the terrestrial, hydrated form of merrillite which may also be present on Mars. Phosphate release from whitlockite, merrillite and chlorapatite has previously been measured. However, the environments in which phosphate release would have been most relevant to putative early martian life likely contained abundant organic matter delivered by carbonaceous chondrites and interplanetary dust particles. No measurements have been made of whitlockite, merrillite or chlorapatite dissolution in the presence of these potentially important prebiotic organic compounds. We therefore are proposing to measure the dissolution rates of whitlockite, merrillite and chlorapatite in the presence of a range of potentially important prebiotic compounds.

Presentations: Lunar and Planetary Science Conference (March 2015 and March 2016)
Geosymposium, UNLV (April 2015 and April 2016)
Graduate & Professional Student Research Forum (March 2015)

Study: Used Waste Form for Nuclear Waste is Borosilicate Glass

Emily Siska, Daniel Mast, Keith Lawler, Barbara Lavina, Paul Forster | Chemistry

Currently, the most widely used waste form for nuclear waste is borosilicate glass. Although glass and ceramic waste forms have proven to be durable and sufficient at immobilizing many radionuclides; there are not ideal for certain radionuclides including I2, Kr, Tc and actinides. These nuclear waste products have long half-lives and have particularly harmful health and environmental effects. There is a need to design new waste forms that can immobilize these problematic radionuclides and reliably store them for thousands and in some cases millions of years. Zeolites are a family of either naturally occurring or synthetic aluminosilicate minerals composed of Earth-abundant, inexpensive, low toxicity elements. From observation of their natural analogs, they have shown to be stable in environmental conditions over long periods of time. Sodalite (a specific zeolite topology) is of particular interest because it is composed of a rigid framework of non-connected cavities (or cages). These cages could accommodate guest molecules with little to no leaching. In this study we will investigate the feasibility of the insertion of radionuclides into sodalite under moderate temperature and pressure. Compression of the rhombohedral form of silica-sodalite was performed in hopes of learning the behavior and capabilities of the structure and how to possibly improve it for waste immobilization. Computational studies are also being conducted to predict the materials behavior with guest molecules.

The Role of Mfd in Oxidative Damage Repair

Kate Porter, Carmen Vallin, Amanda Prisbrey, Eduardo A. Robleto | Life Sciences

Since the 1950s it has been shown that bacterial cells accumulate mutations even in non-dividing conditions. However, how this type of mutation occurs is still highly debated. This is an underestimated area of evolution because cells spend most of their time in non-replicating conditions. In *Bacillus subtilis*, Mfd, a precursor of the nucleotide excision repair (NER) system mediates the formation of mutations in stationary-phase or non-replicating cells. Mfd biases NER towards transcribed DNA. In growing cells, Mfd recruits repair when RNA polymerase is blocked during transcription; it then recruits proteins from NER to repair the damage. This process has been well characterized in the context of DNA damage caused by UV exposure. However, recent evidence indicates that Mfd, in cells experiencing stress, interacts with repair factors that process DNA damage other than that caused by UV. Here we examine the hypothesis that Mfd mediates the formation of mutations by interacting with cellular components that repair reactive oxygen species (ROS), a natural byproduct of respiration.

Utilizing tert-butyl hydroperoxide (TBP) as an oxidizing agent, we test the hypothesis by that Mfd protects cell viability after exposure to reactive oxygen species in stationary phase. Our data indicates that Mfd protects cells against reactive oxygen species and that such effect is independent of the UvrA protein, a component of NER. Other data from our lab has shown that MutY, a repair factor preventing mutations caused by ROS to DNA, is mutagenic in stressed cells in the absence of exogenous sources of ROS. MutY, a DNA glycosylase, functions as a step of the base excision repair (BER) pathway. Since oxidative damage repair is independent of the NER system I hypothesize that Mfd and MutY function together, as part of the (BER) pathway, to repair DNA in stationary-phase cells. This discussion is significant because it suggests that: Mfd has different roles in DNA repair and mutagenesis.

Presentation: Wind River Conference on Prokaryotic Biology (Summer 2015)

Measurement of Temporomandibular Joint Arthrokinematics by Ultrasound: A Reliability Study

Christensen Javier, Danielle Hahn, Brooke Basar, Kaiyu Ho | Physical Therapy

Background: The temporomandibular joint (TMJ) is one of the most frequently used joints in the human body and is vital to daily activities. Despite this, few studies have been conducted that focus on the TMJ. Even fewer studies delve into the methodology of quantifying TMJ arthrokinematics. The present study examined the reliability of a novel protocol to quantify the anterior translation of the TMJ using a portable ultrasound (US) device.

Methods: Adults ages 18-45 years old with healthy, non-symptomatic TMJ were screened and approved for participation in the study (n=14, 7 males, 7 females). Dynamic translational distance of the mandibular condyle from resting to maximal mouth opening was recorded by one investigator using a GE LOGIQ e R6 US machine. Analysis of anterior translation was performed by 3 investigators with measurements taken on 2 separate days, 7 days apart. The inter- and intra-rater reliability of US measurements will be examined using intraclass correlation coefficients (ICCs). All statistical analyses will be conducted using SPSS 20.0 statistical software.

Results: The data is currently under processing. It was hypothesized that excellent inter- and intra-rater reliability will be achieved upon measuring anterior translation of the TMJ during maximal mouth opening.

Discussion: Our study demonstrates an innovative, inexpensive, and reliable approach for quantifying TMJ arthrokinematics.

Stem Loop Structures (SLS) have a Role in *B. subtilis* Stationary Phase Mutagenesis

Carmen Vallin, Amanda A. Prisbrey, Eduardo A. Robleto | Life Sciences

It is widely accepted that mutations are generated during the process of DNA replication in actively dividing cells, however research dating as far back as 1955 has continued to build evidence for mutations arising in non-growing conditions, a phenomenon known as stationary-phase mutagenesis (SPM). In the Gram positive bacterium *Bacillus subtilis*, it has been proposed that the process of transcription influences stationary-phase mutagenesis. The specific mechanisms of how transcription mediates mutagenic events during stationary phase are currently under investigation. One interesting possibility is that the act of transcription promotes the formation of non-B DNA structures that prone DNA to damage and, subsequently through low-fidelity repair, to accumulate mutations. These mechanisms are novel and improve our understanding of evolution. Further, these mutagenic mechanisms have been implicated in increasing genetic diversity in all organisms.

Data thus far are showing a role for a particular type of non-B DNA structure, Stem Loop Structures (SLS), in mutagenesis. When a stable construct was compared to a construct disrupted in its ability to form the SLS, mutation levels were affected. Given that all organisms have sequences with potential to form non-B DNA structures and that these structures have also been linked to genetic instability and disease, it is important to understand their role in mutagenesis.

Presentation: 54th Annual Meeting of the American Society for Microbiology Arizona-Southern Nevada Branch. Flagstaff, AZ (April 2015)

**Science and Health Science Platform
Session B – Room 207**

Presentations

- 9:00 – 9:15am Anthony Waddle, School of Life Sciences
- 9:15 – 9:30am Moinak Bhaduri, Department of Mathematical Sciences
- 9:30 – 9:45am Jonathan Baker, Department of Goescience
- 9:45 – 10:00am Amanda Kidman, School of Life Sciences
- 10:30 – 10:45am Justin Keane, School of Public Health
- 10:45 – 11:00am Michael Isaaces, School of Life Sciences
- 11:00 – 11:15am Skyler Sudweeks and Jayson McClaren, Department of Physical Therapy



Science Platform Session B – Room 207
9:00 – 9:15am

A Questionable Role for Pathogenic Chytrid Fungus in the Decline of the Relict Leopard Frog

Anthony Waddle, Jef R. Jaeger, Rebecca Rivera, D. Tyler Harrison, Silas Ellison, Matthew J. Forrest, Vance T. Vredenburg, Frank Van Breukelen | Life Science

The decline of the *Rana onca*, the Relict Leopard Frog (RLF), has left remnant populations in geothermal springs in two distinct areas of southern Nevada. Habitat loss or degradation and introduction of nonnative predators were associated with the decline. The limited distribution of RLF within thermal water, however, led to speculation that disease may be an important factor. We conducted field sampling to detect the fungal pathogen *Batrachochytrium dendrobatidis* (Bd) within the historical range of RLFs. We detected Bd within one area occupied by RLFs, but not in the other. We conducted experiments to assess the susceptibility of RLFs to Bd, using two isolates that were associated with severe frog declines in California. We maintained two sample groups of RLFs during experiments, representing frogs derived from eggs collected in areas where populations differed in current exposure to Bd. Our experiments demonstrated that RLFs were susceptible to Bd infection. Survivorship, however, was not affected by Bd regardless of source population, with infected frogs appearing asymptomatic and most (64%) clearing infections. In the field, we observed several RLFs with Bd infections that survived for at least 8–13 months after initial testing, with one frog clearing their infection. Our data suggest that RLFs have inherent resistance to Bd or have evolved such resistance. We speculate on the possibility of attenuation (weakening) of the Bd isolates we used and also caution that the resistance we observed under laboratory conditions may not emulate situations in the wild.

Science Platform Session B – Room 207
9:15 – 9:30am

An Investigation into the Forecasting Power of Empirical Recurrence Rates and Ratios with Emphasis on Rare Event Modeling

Moinak Bhaduri, Chih-Hsiang Ho | Mathematical Sciences

Recent years are witnessing a marked increase in the frequency of unforeseen natural calamities and in view of their devastating effects on human lives and property, a need to accurately predict future occurrences is felt more strongly now than ever before. Bearing this aspect of stochastic modelling in mind, the present work endeavors to examine the applicability of the smoothing statistic termed Empirical Recurrence Rates (ERR) (introduced by Ho (2008) and popularized by Amei, Fu and Ho (2012), Tan, Bhaduri and Ho (2014) and Ho and Bhaduri (2015)) in predicting earthquakes in Parkfield, California. We are able to show how this simply constructed and intuitive statistic is able to forecast significant earthquakes that are likely to be missed by more cumbersome techniques available in literature. Empirical Recurrence Rates Ratios (ERRR), a generalized version of ERR, one that is capable of handling two related processes at the same time, is also investigated on a similar criteria. This in turn helps us in resolving an open question that has troubled geologists for decades. whether two Hawaiian volcanoes: Kilauea and Mauna Loa are inversely related.

Presentations: IISA Conference on Research Innovation in Statistics for Health, Education, Technology and Society, Riverside, CA (July 2014)

Joint Statistical Meetings, Seattle, WA (August, 2015)

Southern Nevada Branch. Flagstaff, AZ (April 2015)

Science Platform Session B – Room 207
9:30 – 9:45am

Microclimatic Monitoring of Kinderlinskaya Cave, Russia to Interpret Paleoclimate Proxy Data
Jonathan Baker, Matthew Lachniet | Geoscience

Secondary formations in caves, such as stalagmites, are among the best geological archives of past climate data, which are recorded as chemical variations in the mineral structure. Recent stalagmite collections from a dead-end room in Kinderlinskaya Cave, Russia have been analyzed for their isotopic and cation chemistry, resulting in a 12,000-year record of climate change over western continental Eurasia. To interpret these data, however, one must be able to constrain the stability of the microclimate of the cave from which the stalagmites were collected. Variables such as cave room temperature, humidity, CO₂, and drip rate can significantly impact stalagmite chemistry, masking any climate signal from the surface. We present the results of a 3-year monitoring study of Kinderlinskaya Cave, aimed at controlling for variables within the cave system that could affect our interpretation of long-term climate change. We demonstrate that room temperature and humidity are extremely stable, despite active ventilation of the cave during the winter half-year (Oct–Mar), and that drip rate likely peaks during late Spring, in response to snowmelt. These results further imply that cave-atmosphere CO₂ is controlled more by dripwater input than ventilation. Our paleoclimate record is therefore robust, albeit biased toward capturing the winter season, and records long-term winter warming over western Russia from 12,000 years ago to present, as well as recovery of forest vegetation from arid tundra between 12,000–10,000 years ago.

Science Platform Session B – Room 207
9:45 – 10:00am

Development of the K-state Promotes Mutagenesis, Independent of DNA uptake, in Stressed *Bacillus subtilis* Cells
Amanda A. Kidman, Carmen Vallin, Holly Martin, John Creech, Eduardo A. Robleto | Life Sciences

Amanda A. Kidman, Carmen Vallin, Holly Martin, John Creech, Eduardo A. Robleto | Life Sciences

Mutagenesis is central to the evolutionary process. We currently view evolution as a gradual process affecting all cells within a population. However, I aim to study an underappreciated part of the evolutionary process, mutations generated during stationary phase (caused by nutritional stress or growth arrest) within a subpopulation. Stationary phase cultures of *Bacillus subtilis* develop subpopulations that exhibit different survival strategies including competence, secondary metabolite production, biofilm formation, cannibalism and endospore. The development of competence permits cells to uptake exogenous DNA and incorporate it into their genome. During competence, new alleles can be acquired and recombine into the hosts genome leading to genetic diversity. Published results from my research group have shown that i) defects in genetic factors that control competence (ComK and ComA) result in decreases in mutagenesis in non-growing cells; and ii) the observed decrease is independent of recombination. We speculate that some other mechanism, activated during the K-state, regulated by the transcriptional activator ComK, in which more than just competence genes are activated, is responsible for most of the mutations seen during stationary phase. My project seeks to bring together these separate observations into a coherent understanding of how competence or the K-state leads to increases in mutagenesis. Here we test the hypothesis that the population of cells that develops competence experiences increased levels of mutagenesis during stationary phase.

Presentation: American Society for Microbiology
General Meeting, New Orleans, CO (June 2015)

Science Platform Session B – Room 207
10:30 – 10:45am

Rates of Hemoglobinopathies in American Indians and Alaska Natives infants born in Nevada, 2005 – 2012: Potential Implications

Justin Keane, Aaron Hunt, Echezona Ezeanolue | Public Health

Purpose: American Indian and Alaska Natives constitute about 2.9 million people in the United States. Within this subpopulation, rates of type 2 diabetes are estimated at 16.1% with another 30% estimated to have pre-diabetes. This translates to roughly 1.3 million people that have, or are at risk for, diabetes. Previous research has demonstrated abnormal hemoglobin may result in hemoglobin A1C readings that are not indicative of true disease state. The goal of this study was to determine the percentage of American Indian and Alaska Natives born in Nevada with hemoglobinopathies.

Methods: Used: Nevada Newborn Blood Spot Screening results from 2005-2012 were compared with data from the Nevada Division of Public and Behavioral Health to calculate rates of hemoglobinopathies in American Indian and Alaska Natives born in Nevada during this timeframe.

Results: American Indian and Alaska Natives accounted for 12 of 2069 (0.5%) of all hemoglobinopathies in Nevada newborns between 2005 and 2012. Three thousand four hundred and eighty-two American Indian children were born during these years, of which 0.34% had a hemoglobinopathy.

Conclusions: The rate of 1 hemoglobinopathy per 290 American Indian and Alaska Native births was more common than the 1 in 503 births for whites. If the Nevada rates were constant across the United States, over 4,500 American Indians could be receiving improper diabetes care. Physicians confounded by older American Indian patients whose clinical symptoms do not match A1C results might consider hemoglobin typing to help improve outcomes.

Science Platform Session B – Room 207
10:45 – 11:00am

Walking Dynamics of Persons with a Lower Leg Amputation Employing a Passive or a Powered Foot-Ankle Prosthetic Device

Michael Isaacs, Jeffrey Ward, Craig P. McGowan, David V. Lee | Life Sciences

Lower limb prosthetic devices have been applied to humans for centuries. Today's traditional prosthetics rely on passive mechanisms like springs and dampers to allow their user to walk within a limited range of speeds. These modern, passive designs have nearly maximized the potential of non-powered mechanisms and still require the user to swap a walking unit for a running one. The recent integrations of robotics and prosthetic devices provide the ability to generate forces between the ground and the person in order to return walking and running dynamics similar to control subjects. These battery-powered devices are designed to mimic the function of biological leg musculature without any neural input. This study looks to contrast the walking dynamics generated by traditional foot-ankle prosthetics to those of a prototype powered prosthetic device, the Odyssey, by SpringActive Inc. By relating the geometries of the foot-forces generated to the direction and velocity of the subject's center of mass, we can assess the efficacy of any system used to move about. Because our method generates quantifiable angles, we can determine the mechanical cost of transport during each instance of the stride, providing a high potential to be used as a controller for future devices. To determine the adaptability of each tested system with changes in speed, we prescribed a range of walking speeds to each group. The goal of this research is to determine if robotic integration in foot-ankle prostheses restores the walking dynamics of persons with unilateral, below-the-knee amputations.

Presentations: Adaptive Motions of Animals and Machines (July 2015)
Society of Integrative and Comparative Biology (January 2016)

Acute Effects of Walking on the Deformation of Femoral Articular Cartilage of the Knee

Skyler Sudweeks, Jayson McClaren | Physical Therapy

Background and Purpose: Osteoarthritis (OA) is characterized by progressive loss of articular cartilage which increases the amount of friction in the joint. Research has shown that loading the knee joint compresses the articular cartilage altering its ability to reduce friction. People with OA have a greater compression of their cartilage which could contribute to their pain. The purpose of our study was to determine the acute effect of walking on distal femoral cartilage deformation in individuals with and without knee OA.

Subjects: We plan to collect a total of 20 subjects (10 with OA and 10 without OA). Six subjects with knee OA and 3 subjects without knee OA were recruited by far.

Methods: Subjects received x-ray imaging on both knees and were assessed by a radiologist to determine their group assignment (i.e., OA group or control group). Each subject underwent a knee MRI scan, followed by 30 minutes of walking on a treadmill. After walking, participants received a second MRI scan to assess the cartilage compression from walking. Cartilage deformation was compared between the 2 groups using t-tests.

Results: Data is currently under processing. It was hypothesized that participants with knee OA will display greater cartilage deformation after walking for 30 minutes than participants without knee OA.

Discussion: This is the first study assessing the acute effects of walking on cartilage deformation of the knee. Our study provides an important insight into the prevention and intervention of knee OA.

**Science and Engineering Platform
Session C – Room 208A**

Presentations

- 9:00 – 9:15am Syeda Saria Bukhary,
Department of Civil and
Environmental Engineering
and Construction
- 9:15 – 9:30am Phillip Uesbeck, Department
of Computer Science
- 9:30 – 9:45am Matthew Hodges,
Department of Mechanical
Engineering
- 9:45 – 10:00am Sichu Shrestha, Department
of Civil and Environmental
Engineering and Construction
- 10:30 – 10:45am Kishor Shrestha, Department
of Civil and Environmental
Engineering and Construction
- 10:45 – 11:00am Sachiko Sueki, Department
of Computer Science
- 11:00 – 11:15am Chao Chen, Department of
Civil and Environmental
Engineering and Construction



Analyzing the Water Requirements for Solar Power Development in Nevada

Syeda Saria Bukhary, Sajjad Ahmad | Civil and Environmental Engineering and Construction

Renewables are a source of clean energy. The importance of renewables has increased tremendously due to the problems of changing climate and growing population. Solar power is particularly becoming popular in the southwestern U.S. due to the abundance of sunshine. But the water usage of the technology constrains the development of solar power in water deficient regions such as Nevada. Solar power can be harvested through solar photovoltaic (PV) or concentrated solar power (CSP). To prevent the reduction of the system's efficiency, the panels and mirrors need to be washed. The CSP technology has additional water requirements for the wet, hybrid and dry cooling processes. Wet cooling process is the most efficient and cost effective but has the high water requirements compared to dry cooling process which has much smaller water requirements, but is expensive and comparatively less efficient. This study analyzed the water availability and usage, land usage and carbon emissions of the solar installations in Nevada based on the renewable portfolio standard (RPS) of the state, for the years 2010-2030. A system dynamics model was utilized in the study that analyzes the performance of time variant complex systems. Results displayed that unappropriated groundwater has the potential to meet the water demands of solar installations for the period 2010-2030 under Nevada RPS. The water requirements and carbon emissions were found to be the smallest for PV systems, whereas the land usage was the smallest for linear Fresnel, which is a CSP type technology. For future, this model can be implemented in other regions as well.

An Empirical Study on the Impact of C++ Lambdas and Programmer Experience

Phillip Merlin Uesbeck, Andreas Stefik, Stefan Hanenberg, Jan Pedersen, Patrick Daleiden | Computer Science

As a programming language feature that is supposed to enable developers to write more concise code, lambda functions have recently been introduced to a number of programming languages.

These additions impact a great number of users as they have been introduced to broadly used programming languages such as Java and C++. The real impact on the people using this feature has, however, not been studied until now.

In an ongoing attempt to improve our understanding of the interaction of programming language features and programmer behavior and productivity, we decided to conduct a randomized controlled trial with students and developers using the C++ programming language. Our aim was to test if the productivity of programmers is different while using lambdas compared to a control group during a series of programming tasks. To measure productivity, we measure how long the participants took to solve a task satisfactorily based on automated tests. We also measured the amount of errors that the participants ran into as well as how much time they spent solving these errors.

Participants were recruited from different points in the academic pipeline at UNLV's Computer Science Program as well as from the general population of professional developers. The results show that developers did not gain any productivity from using lambda functions, and had to spend more time fixing more errors in their code. Additionally, the experiment showed that the often held believe that student performance is generalizable to professional developers did not hold true.

Science Platform Session C – Room 208A
9:30 – 9:45am

Radiation Characterization of the UNLV Accelerator Facility

Matthew Hodges, Alexander Barzilov, Yi-Tung Chen,
Daniel Lowe | Mechanical Engineering

The particle accelerator facility at the University of Nevada, Las Vegas (UNLV) was commissioned in January of 2015. A Varian M6 linear electron accelerator was installed at the facility to carry out research projects that involve irradiation of samples and imaging of large objects. Before experiments may be performed in the facility, the accelerator's photon yield and its contribution to the resulting radiation doses within the facility must be studied. An investigation was performed to characterize the source terms for the bremsstrahlung converter and the radiation background associated with operation of the accelerator. Both the angular and energy distributions for a photon flux generated by the interaction of a 6-MeV electron beam with converter materials were determined. The resulting photon source was used in conjunction with the M6 collimators to determine the beam profiles and the radiation doses at the facility building.

Presentation: 2015 American Nuclear Society (ANS) Winter Meeting and Nuclear Technology Expo, Washington, DC (November 2015)

Science Platform Session C – Room 208A
9:45 – 10:00am

Perchlorate: Contaminant of Concern for Drinking Water

Sichu Shrestha | Civil and Environmental Engineering and Construction

Perchlorate is a contaminant of concern for drinking water and is widely detected in the United States (US), particularly in the Southwest region. Perchlorate, due to its inert nature, persists in the groundwater. Biological perchlorate removal with a Fluidized Bed Reactor (FBR) is widely practiced. The bacteria growing on the FBR media removes perchlorate as the contaminated water passes through the media. However, the bacterial growth on the media decreases the density of media, causing the media to float and flow along with water, and eventually the media is lost in the effluent. Backwashing is a process for cleaning the media and maintaining the bacterial growth. Till date, backwashing lacks a systematic approach and is practiced based on visual inspection of the operator. This study focuses on determining an appropriate time for backwashing using an image processing tool to avoid media loss in a FBR treating perchlorate. A preliminary test with FBR taking digital pictures of the operation zone of the reactor and processing the pictures with image J showed a promising result. The software analyzes the picture as 2-D diagram and calculates the area (%) remaining above the media. The preliminary test indicated that the media increased gradually (around 12-15% each week). For final run, two FBR will be operated at two different concentrations of perchlorate and digital pictures will be analyzed with image J.

Science Platform Session C – Room 208A
10:30 – 10:45am

Cost and Customer Satisfaction of Culvert Cleaning and Sweeping Road Projects in Nevada

Kishor Shrestha, Pramen P. Shrestha | Civil and Environmental Engineering and Construction

In order to perform road maintenance activities in the United States, the state Departments of Transportation (DOTs) either use in-house resources or outsource the work to private contractors. The literature indicates various reasons for outsourcing the projects to private contractors, and cost saving is one of them. This study collected maintenance cost data of culvert cleaning and sweeping projects performed by in-house resources and private contractors in Nevada. Their unit costs were compared to see whether Nevada DOT saved cost by outsourcing. In addition, a customer satisfaction survey was conducted to see whether road users were more satisfied with sweeping of roads when the work was performed by in-house staff or when it was outsourced. Results of the data analysis showed that culvert cleaning and sweeping performed by in-house resources were much less expensive than that done when outsourced. Regarding survey results, customer satisfaction regarding sweeping showed that, on average, local road users were significantly more satisfied with the work performed in-house than when out-sourced.

Science Platform Session C – Room 208A
10:45 – 11:00am

Vulnerabilities and Mitigation Methods in the NextGen Air Traffic Control System

Sachiko Sueki, Yoohwan Kim | Computer Science

The air traffic control (ATC) systems have been modernizing and standardizing the automation platforms in recent years in order to control increased number of flights. In 2004, FAA started transforming the nation's ground-based ATC system to a system which uses satellite-based navigation and other advanced technology, called NextGen. The NextGen includes digital communication, performance-based navigation, satellite-based surveillance, flexible automation, decision-support tools, and integrated systems and information distribution. The NextGen system deploys Internet Protocol based network to communicate and heavily relies on computerized information system and digital data, which may introduce new vulnerabilities for exploitations. Many vulnerabilities of NextGen stem from the increased interconnection of systems through wireless networks. For instance, a critical part of the NextGen, Automatic Dependent Surveillance-Broadcast (ADS-B), which transfers essential information via wireless network without encryption, is an easy target for attackers. There have been some deployments of security measures such as in SWIM but still lacks in critical system such as ADS-B. In this study, the potential vulnerabilities of the NextGen ATC systems and their possible solutions were sought. Even though there are many security measures proposed, their practical use is still questionable because of its broadcast nature and wide operational range. One solution cannot protect variety of attacks. Therefore, the system must be protected with a defense-in-depth and an enterprise approach.

Quantitative Assessment of Streamflow Changes in Lehman Creek with Influences from Global Warming

Chao Chen, Sajjad Ahmad | Civil and Environmental Engineering and Construction

This study focuses on the climate change impact on streamflow in watershed-scale snow-dominant watershed, with bias-corrected climatic data from Coupled Model Intercomparison Project phase 5 (CMIP5) that simulated future climate change with multiple models. Lehman Creek watershed, a typical snow-dominant area, located in Great Basin Nation Park, eastern Nevada, was studied. Quantile-Quantile (Q-Q) mapping technic was applied to three climatic variables of 12 Global Climate Models (GCMs), precipitation, maximum temperature and minimum temperature, from CMIP5 data (BCCA, RCP6.0). The result of data bias-correction shows statistically consistency in temporal variation and trend features with chosen variable observations, and the bias-corrected data were forced to drive a calibrated hydrologic model to simulate the streamflow under the changing climate. Results show that, comparing to status in historical period, both positive and negative changes could occur in long-term streamflow; while, evident decreasing trends were observed in summer season (June to October) and increasing trends in spring season (January to May). The ensemble mean monthly streamflow of the model simulation shows positive changes of 0.7, 1.0, 2.3, 4.5 and 2.5 cfs in spring seasons from January to May and negative changes of -4.1, -3.5, -1.9, -0.9 and -0.4 cfs in summer time from June to October. With the greatest increase in April (4.5 cfs) and decrease in June (-4.1 cfs), the impacted changes in monthly streamflow may help water resources management with better understanding of climate change influence in the streamflow availability in long-term period in Lehman Creek watershed.

Presentation: American Geophysical Union Congress (December 2015)

**Social Science
Platform Session A – Room 208B**



Presentations

- 9:00 – 9:15am Jessica Nave-Blodgett,
Department of Psychology
- 9:15 – 9:30am Kathleen Larson, Department
of Psychology
- 9:30 – 9:45am Katelyn DiBenedetto,
Department of Anthropology
- 9:45 – 10:00am Shelly Volsche, Department
of Anthropology
- 10:30 – 10:45am Andrew Murtishaw,
Department of Psychology
- 10:45 – 11:00am Alex Nelson, Department of
Anthropology
- 11:00 – 11:15am Jamelle Berry, Program of
Marriage and Family
Therapy
- 11:15 – 11:30am Liya Rakhkovskaya,
Department of Psychology

Perception of Auditory and Visual Disruptions to the Beat and Meter in Music

Jessica E. Nave-Blodgett, Joel S. Snyder, Erin E. Hannon | Psychology

Humans can perceive an isochronous beat in rhythmic auditory patterns such as music. Music theory suggests beats can be grouped into repeating patterns, with some beats being stronger (measure downbeats) and others weaker (upbeats). Do listeners attend to higher metrical levels in addition to the beat level in music? Adult musicians and non-musicians listened to ballroom dance music paired with auditory (beeping) or visual (clock-face) metronomes. Participants rated how well the metronome fit the music they heard. These metronomes were synchronous with the music at the level of the beat, the measure (the strongest beat in the repeating patterns), both the beat and measure, or neither, yielding four metronome conditions per modality. Participants rated all beat synchronous metronomes as fitting the music better than beat-asynchronous metronomes. Musicians used the higher metrical levels, rating all measure and beat synchronous metronomes as fitting the music better than metronomes synchronous at only the beat level. Non-musicians showed the same pattern of results as musicians, but did not differ as strongly in their ratings of fit between beat synchronous alone or beat and measure synchronous metronomes in either metronome modality. Thus, all listeners successfully used beat-level information in the metronomes, but only musicians regularly used the measure level information in the music and metronomes. Formal training in music may enhance sensitivity to these additional hierarchical levels in audition and vision. Without a need to accurately synchronize performances or movements with music, non-musicians may not use these levels in judgments of fit.

Presentation: Association for Research in Otolaryngology Midwinter Meeting 2016, San Diego, CA (February 2016)

Evaluation of Bicyclist Perceptions of Current and Future Infrastructure for the Development of a Multimodal Transportation System

Kathleen Larson, Courtney Coughenour, Alexander Paz, Ashok Singh | Psychology

The Las Vegas Metropolitan Area (LVMA) is a sprawling, western metropolitan area. This auto-centric design and lack of an older “urban core” have played a significant role in the development of a public transit system. Integrating bicycling with public transit is the most effective way to increase intermodal transportation in Las Vegas, NV. Bicycling enables the users to travel longer distances to access public transit, thus increasing the catchment areas of transit lines. This study aims to understand perceptions of safety and barriers to bicycling and identify infrastructure preferences to increase the viability of intermodal transportation. A questionnaire was administered (n=520) to both bikers and non-bikers. Respondents perceived current infrastructure as unsafe, including lane width, adherence to regulations, driver behaviors, and potential for bicycle-vehicular collisions. Factors that would result in initiation or increase of bicycling were separated lanes and better lighting. The least preferred infrastructure was a five-foot-lane, the current standard; the most preferred was a painted eight-foot-lane with reflective posts. Multinomial-logistic regression found those who biked daily were more likely to choose the narrower, unbuffered lane. Those using transit less frequently were more likely to choose wider or buffered lanes. It is clear that residents perceive many safety barriers. To successfully increase intermodal transportation, actual and perceived barriers should be addressed.

Presentation: Congress for New Urbanism, Fort Worth, TX (May 2015)

Social Science Platform Session A – Room 208B
9:30 – 9:45am

An Investigation of Possible Seasonal Movement between the Lowlands and the Uplands in the Early Neolithic for Western Cyprus through the Application of Stable Isotopic Studies

Katelyn DiBenedetto | Anthropology

The Neolithic, which began around 12,000 years ago, represents a critical period in human history. For the first time, humans began to incorporate domestic resources into their economic strategies that had previously relied solely on foraging and hunting. Traditional zooarchaeological methods have been utilized to understand early animal management strategies. However, there are aspects of these strategies, including diet, seasonality, and even human management, that are less visible through this traditional approach. One way of examining these elements of animal management strategies, which can serve as a proxy for human decision-making processes, is through the application of stable isotope analyses. Stable isotope studies have been conducted at many different sites on mainland Southwest Asia; however, there are no published studies to date on Cyprus. In order to begin to fill this research gap, my dissertation research seeks to: 1) Establish stable isotopic baseline values (western Cyprus); and 2) Use these data to interpret isotopic signatures from caprine remains from the early Neolithic site of Kretou Marottou *Ais Giorkis*. These data are critical for examining early animal management strategies and human decision-making processes; something about which we know very little for the early Neolithic on Cyprus.

The results will then allow the early Neolithic on Cyprus to be placed within a broader pan-Mediterranean context. This research is not just relevant to archaeological questions on animal herding practices. Issues surrounding modern agricultural practices continue to have global impacts. Providing a greater understanding of more ancient practices might allow us to better analyze and solve current problems.

Social Science Platform Session A – Room 208B
9:45 – 10:00am

Mom, Dad, and the Dog: A New and Changing Definition of Family

Shelly Volsche | Anthropology

In America, and many other Westernized countries, dogs are coming into the home and taking a special place in the family. Americans alone spent over \$58 billion on pet services and products in 2014, with nearly half that spent on pet dogs. In this talk, Shelly Volsche, a doctoral student in the Department of Anthropology, will consider the new place of the dog, while addressing cross-cultural considerations for perspective. In doing so, an expanded definition of family will be discussed, considering the role of pets, the emphasis placed on maintaining the partner pair bond, and the increase in voluntarily childless individuals. Data from Shelly's publications and master's thesis will be presented along with other recent research, including evidence that individuals without children in the home, including the voluntarily childless, are applying parenting strategies and attachment styles to pets with increased frequency. In the end, a model for the cultural evolution of the pet parent will be reviewed.

Presentations: Society for Cross-Cultural Research 2016, Portland, OR (February 2016)

Southwestern Social Sciences Association, Las Vegas, NV (March 2016)

Social Science Platform Session A – Room 208B
10:30 – 10:45am

An Evaluation of Peripheral Insulin Disruption on Behavior, Phosphorylated Tau Levels, and Microglia Activity

Andrew S. Murtishaw, Chelcie F. Heaney, Monica M. Bolton, Krystal Courtney D. Belmonte, Michael M. Langhardt, Jefferson W. Kinney | Psychology

Diabetes Mellitus (DM) has been identified as a major risk factor for developing Alzheimer's disease (AD) and vascular dementia (VaD). While DM is a complex metabolic disorder with many associated symptoms and complications, disrupted insulin signaling has been implicated as the aspect most likely making DM a risk factor for dementia-related diseases. Much research has been conducted using streptozotocin (STZ), a compound that targets and destroys insulin producing pancreatic β -cells, to better understand DM. Additionally, the administration of STZ has been used to model sporadic Alzheimer's disease due to its ability to alter behavior and hyperphosphorylated tau in the brain. Much of the DM research utilizing STZ relies on the administration of very high single dose or repeated daily doses of a slightly lower dose, both of which are often associated with an increased mortality rate and renders sick animals not optimal for behavioral testing, particularly sensitive learning and memory tasks. The purpose of this experiment was two-fold. First, we set out to create an optimal dose schedule to be administered over the course of several weeks that would lead to a viable and sustainable diabetic state, including the elevation of blood glucose levels, alterations in learning tasks, and dementia-related protein changes, while eliminating the increased mortality rate and maintain physically healthy rodents. Second, microglia activity is not well-documented following peripheral STZ administration; therefore we investigated the effect of peripheral STZ on microglia in several areas of the hippocampus, hypothalamus, and the cortex.

Presentation: Society for Neuroscience Annual Conference; Chicago, Illinois (October 2015)

Social Science Platform Session A – Room 208B
10:45 – 11:00am

TErrribly Unequal: Asymmetrical availability of information between Internet Sexual Service Providers and Prospective Clients

Alex Nelson, Kathryn Hausbeck Korgan, Antoinette Izzo | Anthropology

Clients of online independent escorts have access to in-depth information about the escorts they hire through escort review sites and forums while providers must rely on simple blacklists, white lists and referrals that typically offer only a basic vote of confidence or no confidence. Given the intimate and vulnerable nature of escorting, a system providing escorts with more detailed information about prospective clients would grant providers more agency in their selection of clients. Using analysis of escort websites, review sites, and interview data collected from a sample of US escorts, we investigate this problem and discuss possible solutions. Specifically we propose that escorts could either opt in to using a standardized reference form when providing references to other escorts about clients combined with agreeing that by using said form they will provide at least an agreed minimum amount of information. Such a system could be developed much like the existing verification websites currently used by clients. A more ambitious alternative would be to create a client review site in which provider members of the site could read reviews of clients and perhaps even use such a database to reach out to clients in their respective niche. Either option would enhance the ability of internet sexual service providers to choose clients they feel comfortable with and avoid having to discriminate based upon crude markers of risk, such as age and race, as many do now.

Projected Presentation: Society for Applied Anthropology Annual Meeting, Vancouver, BC, Canada (April 2016)

Addressing the Unique Needs of Adult Survivors of Childhood Sexual Abuse

Jamelle Q. Berry | Marriage and Family Therapy

Once a dark secret spoken of in hushed tones, childhood sexual abuse has emerged as an area of focus for mental health professionals across disciplines in the last thirty years. The number of children and adults impacted by childhood sexual abuse is staggering. In a national survey of adults conducted in 1990, 27% of women and 16% of men reported that they were victims of childhood or adolescent sexual abuse. (Finkelhor, Hotaling, Lewis & Smith, p. 19) Researchers disagree about the current prevalence of childhood sexual abuse cases, with estimates ranging from 9-34% of women and 9-16% of men reporting childhood sexual abuse (Douglas & Finkelhor). The difference in estimate can be attributed to a number of factors, including underreporting, differing definitions of what constitutes childhood sexual abuse and the method of data collection. Irrespective of the actual number, it can be inferred from the recent data that childhood sexual abuse continues to be a fairly common occurrence. My clinical capstone is focused on understanding the unique challenges faced by survivors of this type of trauma and how to best utilize systemic therapy to promote good mental health and healing.

Clarifying the Role of Ethnic Identity in Body Weight and Shape Concerns in African American, Asian American, and Latina American College Women

Liya M. Rakhkovskaya, Cortney S. Warren, Kristen M. Culbert | Psychology

Ethnic identity (i.e., the degree to which one identifies with and feels aligned with a particular ethnic group) may be protective against body weight/shape concerns. However, previous studies of ethnic identity and its relationship with eating pathology have yielded mixed results. One possible explanation for inconsistent findings is that ethnic identity has typically been examined as a unidimensional construct, despite the fact that it is a complex multi-dimensional construct. Whether specific facets of ethnic identity are differentially associated with body weight/shape concerns *and* whether such effects vary by ethnicity is currently unknown. This study explored: 1) the factor structure of the Multigroup Ethnic Identity Measure (MEIM); and 2) associations between specific components of ethnic identity and body weight/shape concerns in African American ($n = 118$), Asian American ($n = 211$) and Latina American ($n = 253$) college women. Exploratory factor analysis of the MEIM resulted in four distinct facets of ethnic identity: Affirmation, Exploration, Assimilation, and Marginalization. In African American women, Affirmation showed the strongest inverse association with weight/shape concerns ($\beta = -.30$); however, Exploration ($\beta = -.16$) and Assimilation ($\beta = .15$) were also negatively or positively associated with weight/shape concerns, respectively. In Asian American and Latina American women, only Affirmation and Marginalization showed inverse associations with weight/shape concerns (β 's = $-.13$ -. 18). These data highlight that distinct components of ethnic identity are differentially related to weight/shape concerns, and notably, the facets of ethnic identity relevant for weight/shape concerns in African American women differ, to some degree, from those of Asian or Latina American women. Future studies should examine how these key components of ethnic identity intersect with other factors (e.g., personality, sociocultural) to alter eating disorder risk in minority women.

Presentation: International Conference for Eating Disorders, San Francisco, CA (May 2016)

**Social Science
Platform Session B – Room 209**



Presentations

- 9:00 – 9:15am Margaret George, School of Journalism and Media Studies
- 9:15 – 9:30am Sarah MacIntosh, Department of Anthropology
- 9:30 – 9:45am Vanessa C. Irsik, Department of Psychology
- 9:45 – 10:00am Monica Bolton, Department of Psychology
- 10:30 – 10:45am Courtney McDaniel, Department of Communication Studies
- 10:45 – 11:00am Matthew Martinez, Department of Anthropology
- 11:00 – 11:15am Marina Galante and Kailin Andrewjeski, Department of Psychology
- 11:15 – 11:30am Henry Castillo, Department of Communication Studies

Social Science Platform Session B – Room 209
9:00 – 9:15am

Consumers Response to Corporate Social Responsibility

Margaret George | Journalism and Media Studies

Twenty-first century consumer activism has caused a shift in corporate and stakeholder relationships resulting in considerable investment back into its community through corporate social responsibility (CSR). Today's consumers are more prone to support the companies that are viewed as socially responsible, causing CSR to become a more common business practice with an estimated \$300 billion spent on charitable giving.

The purpose of the study is to yield best practices for communicating CSR to achieve best brand perception from a consumer. Analyzing CSR through publicity compared advertising will contribute a richer understanding to CSR communication. Thus, this study will add to the discussion of challenges and opportunities anticipated with CSR communication and offer insight on best external communication practices. The significance of this study is the encouragement of the circulatory advantageous relationship between a company and the community it serves socially and environmentally. Questionnaires were deployed that contained a publicity article or advertisement from a high environmental or social brand followed by questions to gauge consumer perception. This research leverages this quasi-experimental design to answer the research question of "What media best communicates CSR initiatives to yield positive perceptions from consumers such as involvement, trust and recommendations?"

Social Science Platform Session B – Room 209
9:15 – 9:30am

The Relationships between Smallholders, their Textiles, and their Bone Tools: a Case Study at the Central Anatolian Site of Kaman-Kalehöyük

Sarah MacIntosh | Anthropology

Textiles are rarely found in Near Eastern archaeological contexts due to the rarity of suitable environmental conditions for their preservation. Cuneiform texts and limited artifactual evidence have therefore often been the main sources informing archaeologists of the technological processes involved in textile production. Yet, scanty data exist specifically on textile-manufacturing tools made from bone, a readily available raw material, and the smallholders who crafted these tools. This paper investigates the production of bone tools for textile-working during the Bronze Age (ca. 3000-1250 BCE) at the central Anatolian site of Kaman-Kalehöyük. We probe how the production of textile-working bone tools was organized and whether this organization of production was influenced by economic, sociocultural, and gender domains differentially. Furthermore, we seek to determine if the smallholders producing the bone tools for textiles were full- or part-time specialists when their livelihoods were dependent on subsistence economies. Investigating the textile industry at Kaman- Kalehöyük through a distinctive case study of bone tools associated with textile working allows us to explore how hinterland sites impacted textile trade networks during the development of complex societies.

Projected presentation: Society for American Archaeology 81st Annual Meeting, Orlando, FL (April 2016)

Change Deafness is Reduced but not Eliminated by Practice

Vanessa C. Irsik, Joel S. Snyder | Psychology

There is a growing literature on auditory change detection which suggests that listeners often miss rather large changes in their environment, a phenomenon now referred to as change deafness. Recent reports suggest that failures to notice auditory changes frequently occur due to unsuccessful encoding of the individual sounds within an auditory scene (Gregg, Irsik, & Snyder, 2014). Efforts to improve encoding ability have been reported in the visual domain, and suggest that visual detection failures, or change blindness, can be ameliorated using training with feedback. The current study aimed to improve encoding and reduce change deafness by training individuals to better individuate co-occurring sounds. Listeners were presented two auditory scenes, separated by a silent interval, after which they responded "same" or "different". Training involved either receiving detailed feedback on performance, testing without feedback, or a control condition where listeners watched a documentary. During detailed feedback, listeners were told the correct response and reheard both the individual changed sound in isolation and the entire change detection trial. All groups showed significant improvement; however, receiving detailed feedback resulted in the greatest error reduction. In summary, change deafness was reduced, but not eliminated, as a result of training or testing. Future studies should address the benefit of additional training and the longevity of observed perceptual enhancements.

Presentation: Psychonomic Society's 56th Annual Meeting (November 2015)

Interactions of Ketamine Administration and mTOR Signaling on Parvalbumin Positive Neurons

Monica M. Bolton, Chelcie F. Heaney, Andrew S. Murtishaw, Michael A. Langhardt, Kirsten N. Calvin, Jefferson W. Kinney | Psychology

Ketamine is a high affinity non-competitive antagonist of the ionotropic N-methyl-D-aspartate (NMDA) glutamate receptor. Several previous investigations in our laboratory using chronic (15 days) subanaesthetic administration of ketamine have demonstrated learning and memory deficits in rodents. We have also repeatedly observed an increase in the number and altered position of parvalbumin (PV) positive neurons in the CA3 field of the hippocampus in ketamine treated animals. In addition, numerous recent clinical studies have demonstrated a rapid-acting antidepressant effect of subanaesthetic ketamine. To understand the mechanism through which ketamine activation results in an increase in PV neurons, we've previously performed an experiment to inhibit the mTOR signaling pathway using rapamycin. The same chronic, subanaesthetic dose and administration of ketamine was performed for 15 days along with bilateral hippocampal infusion of rapamycin (inhibitor of mTOR signaling pathway). In this investigation, we demonstrated that rapamycin reduced the ketamine-induced struggle in the forced swim test, a task to examine the antidepressant effects of drugs. In the present study, we investigated PV changes in numerous locations in the hippocampus and cortex to see if rapamycin ameliorated the ketamine induced changes in number and position. Our data indicate that rapamycin attenuated ketamine induced changes in number of PV cells in the CA1 region and cortex. PV number and position was not changed in the dentate gyrus and CA3 field by the ketamine administration, which may indicate the increase and altered positioning of PV position neurons for these regions may depend on training in a learning and memory task. This study suggests that a connection exists between ketamine administration, parvalbumin expression, and mTOR signaling and may have implications in our understanding of depression.

Presentations: International Behavioral Neuroscience Society, Victoria, Canada (June 2015)
Society for Neuroscience, Chicago, IL (October 2015)

Social Science Platform Session B – Room 209
10:30 – 10:45am

"You Look Fine: A Closer Look at White Lies in Female Best Friendships"

Courtney McDaniel, Jennifer Guthrie, Adrienne Kunkel |
Communication Studies

Deception plays a crucial role in close relationships. However, on occasion, honesty may not always seem like the best policy within a friendship. In some cases, a seemingly harmless white lie may be used instead of the truth for a variety of reasons, including to “save face” or to protect the other individual’s feelings. The present study aims to provide a deeper understanding behind motivations to use white lies, which may cause them to be used within a best female friendship. The qualitative interview responses of 20 female participants were examined in order to discover the motivations and feelings behind why females use white lies within their close female friendships. Theoretical and practical implications regarding white lies are also discussed.

Presentation: Organization for the Study of
Communication, Language and Gender (October 2015)

Social Science Platform Session B – Room 209
10:45 – 11:00am

Coalitional Psychology and Political Preferences
Matthew Martinez | Anthropology

Why do some countries have extensive government programs that redistribute income and provide public goods, while other countries do not? One possible hypothesis is that the degree of social and ethnic homogeneity influences preferences for government provisioning of public goods. This hypothesis is supported by recent research in the field of coalitional psychology. Coalitional psychology is our species ability to detect alliances, initiate and engage in collective action, and detect social cheaters and free-riders. Ethnically diverse and socially divided societies may provide the proper stimuli to evoke a response from our coalitional psychology. In regions with high diversity, government programs may be perceived as a tool for redistributing goods to groups of individuals with whom you are not affiliated with. This would result in paying a large cost (in the form of taxation) and seeing a possibly rivalrous group receiving the benefits. Using data from the European Social Survey (2014) I tested whether degree of perceived ethnic diversity in a region can predict preferences for government equalization of income. Results indicated that individuals from ethnically diverse areas are more likely to support government equalization of income. Although these results do not support the hypothesis, the results may be due to the absence of threat or risk in the environment. These factors may be necessary to evoke such a response from our coalitional psychology.

Social Science Platform Session B – Room 209
11:00 –11:15am

Examination of the Influence of Child Neglect Type and Disposition Status on Pre-Intervention Assessment of Child Maltreatment Potential in Mothers Referred to Treatment by Child Protective Services

Marina Galante, Kaitlin Andrewjeski | Psychology

Individuals referred to treatment by Child Protective Services (CPS) for neglect have often been indicated to experience dissatisfaction and distress in response to the referral process (Buckley, Carr, & Whelan, 2010; Dale, 2004). This negative affect and distress may lead to socially desirable reporting on pre-intervention assessments to minimize child maltreatment potential. Participants were 72 women who were referred to treatment for substance abuse and child neglect by Child Protective Services agents; researchers examined the influence of child neglect type (i.e. exposing fetus/child to illicit drugs, all other types of child neglect) and child neglect disposition status (under investigation, founded/open case) on pre-intervention assessment of child maltreatment potential. Results indicate that mothers who were under investigation by Child Protective Services and identified to expose their child to illicit drugs were significantly more likely to distort assessment results in a socially desirable way and report less severe child maltreatment potential than other mothers. These findings suggest it may be difficult to obtain accurate information about child maltreatment potential from mothers who are under investigation for exposing their children to illicit drugs. Future directions for pre-intervention assessment planning are discussed in light of these results.

Social Science Platform Session B – Room 209
11:15 – 11:30am

The "World's Greatest Deliberative Body" and the Decision to Invade Iraq: The Rhetoric of Senatorial Debate on S.J.Res. 46

Henry Castillo | Communication Studies

On the issue of the Iraq invasion, many in the public view President George W. Bush as the primary actor in its execution. Yet, Bush explicitly sought Congressional approval before employing military force against the country. A plethora of academic research exists on how Bush rhetorically persuaded the public that invading Iraq was the correct choice. However, a dearth of scholarship exists on how Congress, specifically the Senate, played just an important role as Bush did in the invasion. My thesis seeks to address this deficit in research and is investigating the Senatorial debate on the 2002 Iraq resolution. Having been labeled as the “World’s Greatest Deliberative Body” and often viewed by scholars as highly influential in foreign policy matters, the Senate only dedicated five days to debate one of the most expansive military authorizations in recent American history. A close textual analysis of the Senatorial speeches (selected from the Congressional Record) was conducted so as to trace the various arguments that the Senators made. As federal representatives of the American public, it is crucial to understand how our Senators argued for, and ultimately passed, a momentous resolution costing more than 1.5 trillion dollars and resulted in the death of over 4,000 American soldiers.

**Social Science, Business and Hotel
Platform Session C – Room 211**



Presentations

- | | |
|-----------------|--|
| 8:45 – 9:00am | Lenna Shulga, Department of Hotel Administration |
| 9:00 – 9:15am | Kaiyang Wu, Department of Economics |
| 9:15 – 9:30am | Rafael Oganessian, Department of Political Science |
| 9:30 – 9:45am | Amber Overholser, School of Environmental Studies and Public Affairs |
| 9:45 – 10:00am | Dawn Lighthiser, Department of Sociology |
| 10:30 – 10:45am | Carrie Sampson, School of Environmental Studies and Public Affairs |
| 10:45 – 11:00am | Erika Masaki, Department of Political Science |
| 11:00 – 11:15am | Andrea Dassopoulos, Department of Sociology |
| 11:15 – 11:30am | Katherine Eugenis, Department of Political Science |

Social Science, Business & Hotel Platform Session C –
Room 211
8:45 – 9:00am

Customer and Company Interactions in Value Co-Creation: The Role of Commercial Friendship

Lenna V. Shulga, James A. Busser | Hotel Administration

Traditionally, a company creates value by identifying an enduring customer need and providing a well-engineered solution. In our new socially connected world the value of services is defined by customers and co-created continuously in a reciprocal manner during the entire service life-cycle. This study answers the calls for operationalization of value co-creation processes in the hospitality and tourism environment by exploring the relationships between customers and a company. From a theoretical standpoint, the study is based on Service-Dominant Logic. The relationality framework is applied to the co-creation process (Gronroos, 2011; FitzPatrick, Varey, Gronroos, & Davey, 2015); customer-company service provider relationship is viewed through social identity theory; and social identification is expanded with commercial friendship. The aim of the research is to understand the effects of customers' commercial friendship (i.e., pre-existing customer-company relationship) on their value co-creation perceptions and outcomes of satisfaction, loyalty and trust. Customer identification and the effects on co-creation outcomes from a generational cohort standpoint were also examined. A 3x2x2 experimental design was applied to test the role of strong commercial friendship versus potential friendship and customer versus company initiation in value co-creation processes, using multivariate analysis of variance. The practical implication is in offering suggestions to industry leaders on initiating the process of value co-creation and customizing the process based on generational perceptions.

Social Science, Business & Hotel Platform Session C –
Room 211
9:00 – 9:15am

Understanding Heterosexual Consumers' Reactions toward LGBT-Friendly Cues in Restaurants

Kaiyang Wu, Larry Martinez, Anjala Krishen, Gregory Moody | Economics

Recent legislature allows the whole nation of United States the right to same-sex marriage. Due to the strong purchasing power of the lesbian, gay, bisexual, and transgender (LGBT) market, many business operators are planning to reach out to this community. However, businesses may also be hesitant to market to LGBT customers for fear of alienating heterosexual customers. Therefore, this paper tries to answer the research question that how marketing strategies which cater to LGBT consumers might impact heterosexual market behaviors and decision making in the restaurant domain? An experimental design was used for this study. Participants were asked to imagine they were customers having a signature three-course meal in a new restaurant through a written vignette. The research design consisted of a 2(food quality: high and low) * 2(service quality: high and low) * 2(LGBT-friendly cue: high and low) factorial experiment design.

This study finds that while consumers evaluate product quality, extrinsic cues (e.g. LGBT-friendly cues) can interact with certain intrinsic cues (e.g. food quality) to assist consumers in decision making. Although intrinsic cues have predominant effect in cue utilization, when they are not satisfying, extrinsic cues could also significantly assist consumers' decision making. Second, this research sheds light on the importance of sexual orientation in the existing consumer research. Practically speaking, findings in this research informs restaurant owners that in order to maximize heterosexual consumers' perceived overall quality and re-patronage intention, offering low-level LGBT-friendly cues is more appropriate as long as the food quality is high.

Social Science, Business & Hotel Platform Session C –
Room 211
9:15 – 9:30am

Leading Horses to Water: Compulsory Voting and Economic Voting

Rafael Oganessian | Political Science

Economic voting suggests that voters base their vote function partially on perceptions of the economy. Compulsory voting mandates citizens of particular country to vote on Election Day. We demonstrate that when a country chooses a compulsory voting structure in its electoral rules, the economic vote will be depressed. This is due to presence of compelled voters, who simply vote to avoid penalties and in doing so fail to hold their government accountable for the economy.

Presentation: American Political Science Association, San Francisco, CA (September 2015)

Social Science, Business & Hotel Platform Session C –
Room 211
9:30 – 9:45am

An Examination of Sagebrush Rebellion Communications Using Narrative Policy Framework

Amber Overholser | Environmental and Public Affairs

Public conversations over the ownership and management of public lands have occurred regularly throughout the history of the West. This intractable policy issue typically revolves around demands for public lands to be turned over to the states for local administration. The Sagebrush Rebellion of the early 1980s gained widespread support but soon fizzled as a result of James Watt's good neighbor policy, a move toward privatization, and concerted environmental opposition. However, the Rebel's demands didn't go away, and this issue is still relevant today.

Content analysis of over 500 documents from the Sagebrush Rebellion debate have revealed that narratives were a powerful tool used to gain widespread support and discredit the view of the opposition. The Narrative Policy Framework (NPF), grounded in advocacy coalition framework, Deborah Stone's policy processes and the narrative policy analysis, is an emerging theoretical framework and a unique combination of literary and policy analysis. Comparing Sagebrush Rebellion and environmental narratives of the time provides new insight not only into the land transfer movement, and also in to the usage of the NPF as well.

The land transfer movement has consistently created public debate and required public and private expenditures of time and funding and yet clear resolutions are not apparent. This analysis provides insight into the priorities and policy stances of the interested parties, shows the evolution of (or similarities between) the Sagebrush Rebellion and today's movement and attempts to provide a deeper analysis of the common narrative tools and policy needs of the opposed parties.

Social Science, Business & Hotel Platform Session C –
Room 211
9:45 – 10:00am

Content Analysis of Third Place Bulletin Boards
Dawn Lighthiser | Sociology

This study examines Ray Oldenburg's (1989) concept of third places as environments that offer patrons a sense of community. Coffee houses are an example of this type of space, and can ideally be used by any individual whether they are local or just passing through. Data for this project includes a content analysis of bulletin boards located inside numerous Las Vegas coffee houses. This research examines the concept of third places to better understand the ways in which modern coffee houses live up to Oldenburg's social expectation of this often romanticized community locale. The two key findings will reveal: 1) whether or not a higher transient population uses bulletin boards in coffee houses as much as lower transient populations; and 2) are these bulletin boards in coffee houses a hub for community events and news sources. This research is needed in this field to begin to look at the effects of community bulletin boards within high transient neighborhoods versus less transient neighborhoods.

Presentations: Pacific Sociological Association (March 2016)
Eastern Sociological Association (March 2016)

Social Science, Business & Hotel Platform Session C –
Room 211
10:30 – 10:45am

Triggering School Boards to (Re)Act: The Case of English Learners in the U.S. Mountain West

Carrie Sampson | School of Environmental Studies and Public Affairs

Locally-elected school boards in the United States may be the public's closest democratic link to public education. Yet, little is known about how school boards balance their representational obligations with their responsibilities to address educational inequities. Sampson's research focuses on school boards in the understudied U.S. Mountain West region who oversee urban school districts that are increasingly diverse, complex, and often challenging in terms of performance. Specifically, she analyzes how three school boards (one each in Arizona, Nevada, and Utah) react to triggering mechanisms in addressing the needs of their growing population of English learners in the context of federal and state policies, competing interests, and limited resources.

Presentation: American Educational Research Association

Social Science, Business & Hotel Platform Session C –
Room 211
10:45 – 11:00am

The Institutional Design of CITES: Why Conserve when you can Reserve?

Erika Masaki | Political Science

In the study of institutional and treaty design, the use of reservations, which allow parties to opt out of certain aspects of the agreement, has been a controversial issue in implementation as states attempt to balance participation and effectiveness. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), however, utilizes reservations in a non-traditional way, allowing parties to reserve on the species it introduces as part of its trade restrictions. This raises a myriad of concerns about the potential for abuse: if states can essentially reserve on any species, what prevents them from overusing their reservations? There have been very few attempts to answer these questions, which are important for both theoretical (treaty effectiveness) and practical (conservation of endangered species) reasons. Consequently, this paper uses a cross-sectional negative binomial with fixed effects to help identify the reasons why parties use reservations, if they use them at all. The counterintuitive findings suggest that several influential variables, including postmodern values and pro-whaling stances, can significantly affect a party's decision to enter reservations.

Presentation: International Studies Association Annual Conference (March 2016)

Social Science, Business & Hotel Platform Session C –
Room 211
11:00 –11:15am

A Room of My Peers: The Experiences of Problem Gamblers in Treatment

Andrea Dassopoulos | Sociology

Research has shown that problem gamblers are not a homogenous population; they come from diverse backgrounds and their gambling behaviors follow myriad trajectories. Pathological gambling (problem gambling) was included in the DSM in 1980, and since then, our definitions of it have evolved from an impulse-control disorder to an addiction akin to substance abuse. These evolving definitions reflect a decades' long trend toward medicalization of deviant behaviors. The way the problem is defined has serious consequences for the problem gambler. The medical discourse has significantly expanded the available treatment options, and for some, it alleviates some of the stigma and shame associated with problem gambling. Nuanced approaches need to focus on the intersections between social, biological, and psychological factors that contribute to the development of problem gambling. For these reasons, it is important to understand the varied experiences of problem gamblers in treatment and recovery, how they engage with these broader discourses of medicalization, and how they label themselves, and how they view their recovery. This paper uses data collected as part of the Nevada Problem Gambling Project, a grant funded through Nevada Department of Health and Human Services. I analyze data from 300 follow-up telephone interviews with problem gamblers who have enrolled in a state funded treatment program in Nevada. My findings show that problem gamblers overall find their treatment highly effective but waver in their engagement with different labels.

Presentation: Annual Meetings Society for the Study of Social Problems Chicago, IL (2015)

Social Science, Business & Hotel Platform Session C –
Room 211
11:15 – 11:30am

Media Coverage and Campaign Spending in State Supreme Court Races

Kate Eugenis, Rebecca Gill | Political Science

While there is an established field looking at judicial elections and the conditions under which a challenger is likely to emerge in either judicial or congressional elections, most scholars do not take into account the role of the news media as a communicating device. The news media has long been established as a communicator to the public, but it can also act as a signaling device to potential candidates. Do challengers and political donors look to the news media to signal the strength or weakness of a judicial candidate? This paper looks at the role of the media in determining if there will be a challenger in a State Supreme Court judicial election. I hypothesize that positive media coverage of a judge facing election before the filing deadline will deter challengers, while negative coverage will open the door for a challenger. Additionally, I hypothesize the media will predict the flow of campaign money after the filing date as donors respond to positive and negative coverage. This paper uses data from all states where there are elections in order to determine the relationships between media coverage of judicial candidates and both the emergence of candidates and trajectory of campaign funds.

Projected Presentation: Midwest Political Science Association (April 2016)

**Social Science
Platform Session D – Room 213**



Presentations

- 8:30 – 8:45am Logan Kennedy, Department of Criminal Justice
- 8:45 – 9:00am Christina Parreira, Department of Sociology
- 9:00 – 9:15am Michael Trevathan, Department of Political Science
- 9:15 – 9:30am Moritz Rissmann, Department of Political Science
- 9:30 – 9:45am Matthew Le Claire, Department of Sociology
- 9:45 – 10:00am Sarah St. John, Department of Sociology
- 10:30 – 10:45am Breanna Boppre, Department of Criminal Justice
- 10:45 – 11:00am Hafthor Erlingsson, Department of Political Science
- 11:00 – 11:15am Jason Scott, Department of Sociology
- 11:15 – 11:30am Nathan Henceroth, Department of Political Science

Social Science Platform Session D – Room 213
8:30 – 8:45am

Black Lives Matter: A State-Level Analysis of Police Shootings and Protests

Logan Kennedy | Criminal Justice

There has been several highly controversial police shootings of African-American citizens within the United States during the last few years that have garnered national attention. A movement called Black Lives Matter has surfaced in response to these police shootings. This movement focuses on bringing attention to issues surrounding police violence toward African-Americans. Black Lives Matter has engaged in over one thousand protests in the last 400 days. This study hypothesizes that state black population size influences the frequency of police homicides of citizens (following Racial Threat Theory; Blalock, 1967). It is also hypothesized that state black population size, frequency of police homicides of citizens, and number of officers killed by gunfire in the line of duty has influenced the frequency and intensity of Black Lives Matter protests. Data collection took place through multiple online databases, which measured police homicides of citizens, officers killed in the line of duty, the percent of African-Americans in each state, and the frequency of Black Lives Matter protests by state. The data was submitted to a bivariate analysis to examine the correlation of each of these relationships. The findings of this study will identify areas in which Black Lives Matter protests are most likely to occur. In doing so, local police departments will be able to plan effectively for these events and reduce the possibility of violence.

Presentation: American Society of Criminology Conference (2015)

Social Science Platform Session D – Room 213
8:45 – 9:00am

Consuming Sexscapes: The Impact of Location and Legality on Prostitution Clients

Christina Parreira, Barbara Brents, Andrew Spivak Alessandra Lanti, Jennifer Whitmer, Olesya Venger | Sociology

This study explores “geographies of resistance” by examining how the legality and locations of prostitution can impact the patterns and meanings of sexual consumption. We do this through an online survey of the characteristics and attitudes of rural legal brothel clients in Nevada, and consumers of illegal sex work in the United States.

The Swedish model of criminalizing clients instead of prostitutes has brought considerable attention to consumers of sexualized entertainment. While there are many assumptions about clients, there is very little research. Most studies rely on samples of arrested “johns” or samples that do not specify the type of consumption (e.g., legal brothel, street prostitution, escort service).

We conducted an online survey of two groups of clients, 1) “hobbyist” groups and individual clients of Nevada’s legal brothels and 2) clients of illegal prostitution. The survey asks clients’ demographic information, consumption patterns, general attitudes and interests, and history of behavior with both legal and illegal adult industry commerce. As of October 21, 2015, the survey had 347 responses. We adopt questions from the National Opinion Research Center’s General Social Survey (NORC-GSS) to compare client and non-client attitudes toward women, risk-taking and thrill-seeking behavior, and neoliberal attitudes on individualism and self-expression. We are thus able to compare respondents’ consumption across these dimensions and answer questions about the motivations for seeking sexual services, patterns of consumption as well as compare legal brothel and illegal sexual consumption.

Presentation: Association of American Geographers Annual Conference, San Francisco, CA (March 2016)

Social Science Platform Session D – Room 213
9:00 – 9:15am

Smoke on the Water: The Dynamics of Intrastate Conflict and Water Scarcity

Michael Trevathan | Political Science

In the post-Cold War era intrastate conflict has become the most prominent form of violent conflict in the world. One of the posited causes for intrastate conflict is competition over scarce resources. In this paper I examine one the role played by one resource, water, on the onset of intrastate conflict. The literature examining the dynamics of water scarcity and intrastate conflict is mixed, providing contested findings, poorly constructed theoretical mechanisms, and crude proxy measures for water scarcity. This paper attempts to clear up several of these issues by reexamining the theoretical links between water scarcity and conflict in addition to providing a new proxy measure of water scarcity that moves beyond the “technical water scarcity” proxy used in most quantitative studies. The provisional findings of this study suggest that contrary to most quantitative studies, water scarcity does lead to the onset of civil conflict when conceptualized and measured according to this new measure.

Presentation: International Studies Association

Social Science Platform Session D – Room 213
9:15 – 9:30am

Effects of Natural Disaster on Voting Results

Moritz Rissmann | Political Science

Natural disasters happen when natural hazards (rain, wind, earthquakes, etc.) impact humans and overwhelm local authorities. Apart from the devastating effect on human and physical capital, natural disasters have been linked to the rise of left political parties and civil wars. Further, scholars are discussing the effect of natural disasters on incumbent vote shares. Some incumbent officials seem to profit from natural disasters while it seems that others are punished by the voters. Previous studies have focused either on regional elections in individual countries or compared multiple national election cycles across countries. However, natural disasters are usually confined to few regions within a country. This is the first study using an original data set of regional election results of a global sample to examine whether affected regions treat incumbent governments differently than non-affected regions. Also, I ask whether left parties are punished by the electorate more severely than right wing parties. I hypothesize that the electorate expects left wing parties to be more on top of controlling building codes and thus, to mitigate the impact of natural hazards. As a result, I expect left parties to be punished harder if disaster strikes. This research project is part of my dissertation and will focus, for now, on Latin America until the remainder of the data set is finalized.

Cyber-Bullying: Differences in Race and Gender

Matthew M. Le Claire, Andrew L. Spivak | Sociology

This study examines the connection between gender and cyber-bullying using a secondary data set, the National Crime Victimization Survey's (NCVS) School Crime Supplement (SCS) 2013, collected by the Bureau of Justice Statistic (BJS). Of 5,757 students between the 12 and 18 years of age, 444 (7.71 percent) students reported being victims of cyber bullying (n=444). Preliminary bivariate results show that girls are significantly more likely than boys to be victims of cyber-bullying – 11 percent of girls (n=314), compared to 4.48 percent of boys (n=130) [$\chi^2 = 186.1$, $p < .0001$]. Female students are twice more likely of being victims of cyber-bullying than male students [b = 1.08, SE = .002, $p < .0001$]. Compared with non-Hispanic whites, black students had 47 percent lower odds of being cyber-bullied [b = -.63, SE = .003, $p < .0001$], while Hispanic students had 46 percent lower odds [b = -.61, SE = .002, $p < .0001$]. Victimization through cyber-bullying increases 10.5 percent every year until the age of 18 [b = .1, SE = .000, $p < .0001$].

Cyber-bullying is an emergent trend in adolescent behavior and aggression, and these results confirm the importance of its associations with race and gender.

The Role of Social Connections in Successful Completion of Problem Gambling Treatment

Sarah A. St. John | Sociology

Sociological research on health finds that people who have better access to resources like knowledge, money, power, prestige, and beneficial social connections experience better health outcomes than their counterparts with less access to resources. This study investigates the effect having access to resources has on treatment outcomes. Specifically, I examine the effect of having access to two key social resources: 1) residing with a partner or family members during problem gambling treatment, and 2) gaining beneficial social connections through attending group therapy as a part of problem gambling treatment. Using intake and encounter data collected between 2011 and 2015 as part of the Nevada Problem Gambling Study, I examine the effects of living with family and the treatment modality utilized during treatment on treatment outcomes for clients of problem gambling clinics funded by the state of Nevada. I hypothesize that clients with access to more social resources are more likely to complete treatment successfully than clients with little access to social resources. If particular treatment modalities produce increased access to social resources, resulting in a greater likelihood of successful treatment completion, it is in the best interest of the state of Nevada to encourage treatment providers to provide a program structured to provide the optimum treatment scenario.

Projected presentation: International Conference on Gambling & Risk Taking (June 2016)

Social Science Platform Session D – Room 213
10:30 – 10:45am

Exploring Gender Differences in Cross-National Imprisonment Rates Using a Conjunctive Analysis of Case Configurations

Breanna Boppre, Terry Miethe, Emily Salisbury | Criminal Justice

Many cross national studies of imprisonment rates have examined the social, political, and economic conditions associated with these criminal punishments. However, because of the higher numbers of male incarcerates and national data is often not disaggregated by gender, most previous research has focused directly or indirectly on the socio-economic predictors of solely male imprisonment rates. Using disaggregated data for 122 nations, the current study employs the method of conjunctive analysis to explore the unique and common effects of particular social conditions that underlie gender differences in national incarceration rates. Measures of nations' social development, crime rates, socio-economic inequality, and political instability are used for this comparative analysis. The results of this study are discussed in terms of their implications for future research on the sources of gender inequality in national imprisonment rates and other correctional practices.

Presentation: American Society of Criminology, Washington D.C. (2015)

Social Science Platform Session D – Room 213
10:45 – 11:00am

Does Economic Voting Extend to those Living Abroad? Exploring Whether Expatriates are Economic Voters

Hafthor Erlingsson, Rafael Oganessian | Political Science

This paper seeks to expand the scope of the economic voting literature by examining a new dimension of economic voting: external economic voting. Using election data of Latin American countries from voters living abroad, we find that that external voters base their vote on the economy of their country-of-origin. The results contribute to the literature on economic voting which has focused on the locality of the voters. Furthermore, the results add to the literature on transnational political behavior as it suggests that voters living abroad do consider the economic performance in their country-of-origin when casting their vote.

Presentation: International Studies Association, Atlanta, GA (March 2016)

Social Science Platform Session D – Room 213
11:00 – 11:15am

Study: How Female Tourists Participate as Consumers in Bangkok’s Red Light Districts and Adult Entertainment Zones

Jason Scott | Sociology

This study examines how female tourists participate as consumers in Bangkok’s red light districts and adult entertainment zones. Despite a plethora of research exploring motivations and consumption patterns among male tourists, little is known about the roles foreign women play and how the Thai sex industry is organized to facilitate their participation. Drawing on thirteen months of fieldwork observations and interviews from 2013-2015, preliminary findings suggest that generalizing women as either romance or sex tourists is an insufficient approach to adequately explain the variety of ways in which they actively engage in adult entertainment, sexual relations and spaces. Instead, a typology is presented to demonstrate how female consumption patterns go beyond the dichotomous explanations of commercial sex and intimacy entrenched in the status quo.

Projected presentation: Pacific Sociological Association, Oakland, CA (March 2016)

Social Science Platform Session D – Room 213
11:15 – 11:30am

Do Regional Parties and their Supporters Value EU Money?

Nathan Henceroth, Moritz Rissmann | Political Science

Previous research has shown that governing parties steer EU Structural Fund money to regions that will benefit them electorally, particularly Socialist governments (Kemmerling and Bodenstein 2006; 2011). A logical extension of this argument is that regional parties ought to be even more eager to steer EU money to their home regions due to their unique relationship to those geographic areas. But are they? In this study, we investigate how regional parties prioritize bringing home EU Structural Funds. Does this only happen when they are part of government, does this happen whether they are in a governing coalition or not, or do they simply ignore an invaluable opportunity to reallocate EU resources to their home region? Do elevated levels of EU money benefit regional parties electorally? In order to answer these questions, we use a dataset that includes electoral data from ParlGov (Daring and Manow 2015), ideological data from the Chapel Hill Expert Survey (Bakker et al. 2015), salience data from the Comparative Manifesto Project (Lehmann et al. 2015), and EU Structural Fund data collected by the authors. This project complements previous work on this topic by investigating how regional parties behave in the allocation process and if they benefit electorally from EU money.

Projected presentation: Midwest Political Science Association (April 2016)

Education
Platform Session A – Room 218



Presentations

- 9:00 – 9:15am Amy Adkins, Department of Teaching & Learning
- 9:15 – 9:30am Jennifer Guttman, Department of Educational Psychology & Higher Education
- 9:30 – 9:45am Robert Walker, Department of Teaching & Learning
- 9:45 – 10:00am Janet Van Heck, Department of Educational & Clinical Studies
- 10:30 – 10:45am Pamela Maher, Department of Teaching & Learning
- 10:45 – 11:00am Katie Woods, Department of Educational Psychology & Higher Education
- 11:00 – 11:15am Refika Turgut, Department of Teaching & Learning
- 11:15 – 11:30am Marissa Nichols, Department of Educational Psychology & Higher Education

Education Platform Session A – Room 218
9:00 – 9:15am

iPad Fun with Early Childhood Math Apps

Amy Adkins | Teaching & Learning

College iPads offer a new and engaging platform for young children to learn mathematics. Due to the newness of digital play for young children, this research seeks to inspire mathematics educators to consider the attributes of the apps that would support maximized learning for elementary students. Digital platforms have been depicted as being transformative in the learning process. However, very modest amounts of guidelines for teachers on how to choose apps have been explored. Approximately 35 apps were analyzed for criteria of cognitive demand, mathematics content, engagement, differentiation, and ease of use of the app. The apps were then rated with a developed rubric. Three researchers rated the apps individually and then a consensus was reached among all three of the researchers. The goal of the research is to support teachers in the implementation of iPad use into the classroom by providing the teachers with a rubric that examines apps. The presentation will teach effective implementation skills to promote academic student success in the early elementary classroom. Results include identifying ten early elementary number sense apps and ten fraction apps that will be presented along with the rubric that will guide teachers on choosing appropriate apps for learning. The research study seeks to inspire mathematics educators to consider the attributes of apps that will support increased learning.

Presentations: Annual Meeting of the National Council of Teachers of Mathematics, San Francisco, CA (April 2016)

Research Council on Mathematics Learning Conference, Orlando, FL (February 2016)

School Science Mathematics Association Annual Convention, Oklahoma City, OK (October 2015)

Education Platform Session A – Room 218
9:15 – 9:30am

Cultural Competence Examined through a Multi-Disciplinary Lens

Jennifer Guttman, Jacqueline Hart, Hagikah Birden, Tara Raines | Educational Psychology & Higher Education

This symposium will provide an examination of the construct of cultural competence. Participants will gain knowledge of how cultural competence is defined, measured, and exhibited in clinical counseling and school psychology practice and training programs. Issues and advantages of both the similarities and differences will be discussed.

General Statement: As the population of the United States becomes increasingly more diverse, emphasis is being placed on the best ways to learn about and meet the needs of people from a wide array of cultures.

Interventions and Strategies for the Culturally Competent Counselor - According to Sue and Sue (2007) cultural competence means to approach the counseling relationship from the point of view of the client taking the client's background, culture and worldview into consideration. Removing the "invisible veil" (Sue, 2004); which is the counselor's cultural conditioning, values and beliefs, enables the client and counselor to have a more genuine therapeutic relationship regardless of difference in race, ethnicity, class, culture, religion, or gender. Culturally competent counselors share characteristics, which include credibility, expertness, and trustworthiness (Ahmed et al., 2011). Being aware of one's own biases and stereotypes is extremely important for the culturally competent counselor.

The paper presented will provide commonly used methods by counseling training programs and professional organizations to increase cultural competence in counselors. Literature on culturally competent counseling practices and interventions will be provided.

Presentation: Association for Psychological Science, New York City (May 2015)

Education Platform Session A – Room 218
9:30 – 9:45am

A Critical Race Theory Examination of the History of Black Males in the United States Army

Robert Walker | Teaching & Learning

The purpose of this paper is to design a research project that could be implemented to study the representation and utilization of African-American Soldiers in the United States Army. Considered in designing this project is: research questions and/or hypothesis, quantitative research methodology. A population sample will be chosen by using Army data bases, data from U.S. Recruiting Command's (USAREC) Survey of New Recruits, and the Population Representation in the Military Services from the U.S. Department of Defense as primary source. The data will be analyzed using descriptive and inferential statistical analysis methods. This paper includes a statement of the problem, the purpose of the project and the significance of a study using this design. Second, the paper will review the history of Blacks in the Army, and a review of the theoretical framework for the study, which is Critical Race Theory (CRT). Third, the paper will review appropriate literature relevant to the design of the study, and set the hypothesis for the study. The questions to be answered are: 1) African American male recruits are motivated to join the United States Army because they have fewer options in the public sector. 2) African Americans males are over represented in the United States Army in relation to their representational ratio in the total population. 3) African American male officer grades (rank) are not in proportion to their representation in the United States Army. Fourth, the methods section of the study will include; methodology (quantitative), population, source of data, operationalizing variables, analysis (including tests), reliability, validity, and any study limitations.

Education Platform Session A – Room 218
9:45 – 10:00am

Developing Roles and Responsibilities for Co-Teachers as a Professional Development Activity

Janet Van Heck | Clinical and Educational Studies

The purpose of this research is to determine whether an intervention using in-service training for teachers who are presently in a co-teaching situation indicate their roles and responsibilities in a division of labor that will be equitable and contribute to a positive working relationship. This is a very relevant topic, especially for school administrators and all co-teachers, whether general education or special education teachers.

This interactive session will give participants the opportunity to participate in a training for new co-teachers or administrators supervising them. The participants will learn about the variety of roles and responsibilities for co-teachers identified in the literature, and then define between pairs whether the general education or special education teacher should take certain roles and responsibilities (Benninghof, 2011; Brown, et al 2013; Conderman, 2008; Murawski, 2009; Perez, 2012; Sileo, 2011).

Presentation: Council for Exceptional Children Teacher Education Division, Tempe, Arizona (November 2015)

Education Platform Session A – Room 218
10:30 – 10:45am

Latency toward Public Speaking in Pre-Engineering and Physics Students at a Two-Year College

Pamela A. Maher, Janelle M. Bailey, Allan Tucka | Teaching & Learning

This paper results from a research opportunity for students at a two-year college. It reports on latency, or hesitancy, toward public speaking among participating pre-engineering and calculus-based physics students. Thirty (N = 30) students self-selected to participate in this grant-funded outreach project. Participants each built a kit-based model of a da Vinci machine, designed an informational flyer aligned to state K-12 physical science standards, and presented informally to the general public visiting a planetarium. Multiple qualitative analyses about public speaking. Results suggest that latency stems from the fear of making mistakes or giving out misinformation. Participants demonstrated increased confidence in their ability to share their knowledge with the general public after having guided informal speaking opportunities. The results of this study can inform the practice of training future scientists and engineers in such soft skills.

Presentation: American Association of Physics Teachers International Conference (January 2016)

Education Platform Session A – Room 218
10:45 – 11:00am

Making Math Matter: Engaging Students in Mathematics through Innovative Uses of Social Media and Technology

Katie Woods | Educational Psychology & Higher Learning

In Higher Education there is continued and sustained interest in best teaching practices. This presentation discusses a pedagogical tool that can be used with learning to apply math skills. Math is a known problem area for many students and yet every student coming into UNLV is expected to learn math. Through the Math Bridge program we looked for a way to engage students in math and make it more relevant to their daily lives. To do this we created the Math in the Real World photo project. The goal was to see if it impacted student learning and interest in math. This would allow student to not only learn new material, but show that they could apply it. Inspired by other similar project on social media we asked our participants to team up and take a picture of something from their everyday lives. Students were then asked to explain part of the math concept in the picture and share it on Facebook. While some students were resistant others went above and beyond to make their picture great. This project was piloted in Summer 2015 and we used surveys to gauge students' general reactions and how feasible it was to implement. This upcoming summer we will again have the Math in the Real World photo project and will ask students more in depth questions about its impact on their learning.

Projected presentation: Association of Colleges for Tutoring and Learning Assistance Conference, Las Vegas, NV (April 2016)

“It’s Not My Job”: How Pre-service Teachers Re(position) Themselves and English Language Learners

Refika Turgut, Elif Adibelli, Margarita Huerta | Teaching & Learning

Grounded in positioning theory, this qualitative study investigated how mainstream preservice teachers (PSTs) negotiate their teacher identities in relation to English language learners (ELLs) in the context of a Second language acquisition (SLA) course. Data were collected from 26 PSTs through demographic profiles, pre- and post-course reflections and course evaluations. Findings revealed how PSTs position ELLs and themselves in relation to ELLs were influenced by the course. Findings also revealed the PSTs perceived the seven course features influential in their teacher identity negotiation process: the impacts of teacher characteristics (the course instructor’s being a nonnative speaker of the English language), language sensitivity exercises, case-studies, group discussions, interviewing ELL students, and awareness-raising readings and videos, collaborative work with minority preservice teachers.

Presentation: American Educational Research Association, Washington DC (April 2016)

Student-Athlete Beliefs about Intelligence and Sport Ability

Marissa Nichols, Alice Corkill | Educational Psychology & Higher Education

The student-athlete literature is comprehensive in terms of factors that positively influence or inhibit academic and athletic performance. Nevertheless, the internal characteristics that might be responsible for variations in performance tend to be understudied. Furthermore, academic and athletic performance is typically examined separately, versus seeing the whole person - student and athlete.

In this study, Dweck’s Mindset framework was used as a lens to investigate differences in student-athletes’ mindset towards their academic and sport abilities. The framework classifies individuals with a growth mindset, a belief that abilities are malleable, or a fixed mindset, a belief that abilities are inherently fixed. A growth mindset has many benefits, including increased academic motivation and performance, positive responses to challenges, a focus on learning goals that expand knowledge (versus performance goals documenting ability), motivation to seek challenges, and attribution of shortcomings to a lack of effort versus ability.

The subjects comprised student-athletes from a Division I institution. Participants responded to academic and athletic performance questions. They also completed the Intelligence and Sport Ability Mindset questionnaires.

The results revealed that student-athletes fell across the spectrum of having a growth and fixed mindset for both academic and sport ability. Participants tended to have more of a growth mindset towards sport ability than towards academic ability. In addition, the Intelligence and Sport Ability Mindset instruments demonstrated strong reliability. These factors helped validate both the framework and instruments as viable for a dissertation study with this population. Additionally, other results will be discussed related to participant mindset and academic and athletic performance.

**Education
Platform Session B – Room 219**



Presentations

- 9:00 – 9:15am Barbara Paz Cornejo,
Department of Teaching &
Learning
- 9:15 – 9:30am Lisa Baaske, Department of
Educational Psychology &
Higher Learning
- 9:30 – 9:45am Rebecca Gates, Department
of Educational Psychology &
Higher Education
- 9:45 – 10:00am Cynthia Clark, Department of
Teaching & Learning
- 10:30 – 10:45am Derek Riddle, Department of
Teaching & Learning
- 10:45 – 11:00am Caitlin Saldino, Department
of Educational Psychology &
Higher Education
- 11:00 – 11:15am Fereshteh Rezaeian,
Department of Teaching &
Learning
- 11:15 – 11:30am Eshani Gandhi-Lee,
Department of Chemistry

Alternative Disciplinary Practices

Barbara Paz Cornejo | Teaching & Learning

For decades scholars have explored the unintended consequences of disciplinary practices on students including the effects of zero tolerance policies and the school to prison pipeline. Students of color, males, and students with special needs are the most impacted by punitive school disciplinary practices in U.S. public schools (Noguera, 2003).

My research focuses on alternative disciplinary practices, integrated multicultural curricular design, teacher preparation, identity formation, and public policy. Currently, schools outsource discipline to alternative schools, courts and juvenile facilities. Facility outcomes vary depending on location, legislation, resources, programming, community relations and staff development. Current literature concentrates only on the experiences of male youth of color. I will focus on the experiences of female juveniles upon community reintegration and successful passage to adulthood.

My research will contribute literature to the UNLV and CCSD community on (a) juvenile justice prevention; (b) the impact and implementation of restorative justice practices to reduce district expenditures on out-of-school suspensions and behavioral school placement; (c) the impact of culturally relevant pedagogies on teachers' instruction.

The American Educational Research Association (AERA) annual conference will allow me to acquire meaningful research exposure and collaborate with scholars, recognized thinkers and faculty dedicated to alternative disciplinary practices. Possible research question: Can the training and implementation of restorative practices in juvenile facilities decrease rates of recidivism for female youth offenders of color? Research will assess:

- School relationships
- Antisocial attitudes
- Antisocial behaviors
- Persistence
- Secondary and Post-secondary/trade completion
- Employment retention

The Collective Classroom in a Reality-Based Educational Assessment Course

Lisa Baaske | Educational Psychology and Higher Education

The collective classroom principles were an integral component to the experiences of five education students taking an undergraduate assessment course. The traditional, lecture-driven curriculum was replaced with a reality-based, collective classroom that facilitated mastery of learning and increased self-efficacy. This classroom experiment was created to simulate a real-world environment for pre-service teachers incorporating experiential activities. This approach motivates the student to become an active participant in the learning process. The students were willing to make decisions and abandon the traditional pedagogy of a teacher-centered classroom.

The students engaged in self-directed discussions, created teacher-made tests, participated in experiential workshops, and created a Professional Learning Community (PLC), which was the center of the collective, classroom experience. The students realized that the classroom collective directly impacted their successes. By the end of the semester, the students were able to master a standard-based assessment design, perform effectively within a PLC, and felt confident in their abilities. This collective approach is aligned with empirically based, pedagogical methods that inform and improve instructional strategies. The students' successes show that a rigorous, student-centered, reality-based, collective classroom can have a major impact on the readiness and self-efficacy of adult learners.

Education Platform Session B – Room 219
9:30 – 9:45am

Policy Implications for Student Affairs Professionals at Hispanic Serving Institutions

Rebecca J. Gates | Educational Psychology & Higher Education

This article reviews the literature regarding policies impacting Hispanic Serving Institutions (HSIs), beginning with a positioning of HSIs within the landscape of Minority Serving Institutions (MSIs). An overview and background of HSIs frames the gaps in the literature regarding policies on the institutional level, dating back to the Higher Education Amendments of 1964. The literature addressing policy development in regards to HSIs is somewhat limited and mostly historical. This small body of literature presents two perspectives regarding HSIs: the history of the political and congressional action to establish HSIs and scarce funding resources for HSIs. Neither of these perspectives addresses policy issues at the local institutional level, leaving institutions to define and interpret what it means to be Hispanic serving. The literature available highlights issues of access and funding. Student affairs professionals can reframe these issues on the local level in order to better serve students. Implications for student affairs professionals working within HSIs are discussed.

The findings of this literature review will be published in the Journal of Student Affairs at Colorado State (Spring 2016)

Education Platform Session B – Room 219
9:45 – 10:00am

Employing Developmental Phenomenography as a Method for Understanding the Environment of Teaching Online

Cynthia Clark | Teaching & Learning

The purpose of this article was to describe how to use Developmental Phenomenography to conduct online education research in order to answer the “why” of a phenomenon and not simply the “what”. The backdrop of this paper is a study which investigated the experience of teaching online secondary science. This study was used to help elucidate the steps required to conduct effective phenomenographic interviews and how best to employ developmental phenomenography to identify structures of awareness of teaching secondary science online. The structure of awareness defines the experience and provides guidance on how those involved can change the way the phenomenon operates in the world. Issues of reliability and validity particular to this methodology were also discussed.

Projected Presentation: 2016 Annual Conference for the American Education Research Association (April 2016)

Education Platform Session B – Room 219
10:30 – 10:45am

“Can I Manage my Own Classroom?”: A Mixed-Methods Study Examining Pre-Service Teachers Self-Efficacy through an Asynchronous Classroom Management Course

Derek Riddle | Teaching & Learning

Teacher attrition is becoming a problem in today’s schools. While there are many reasons for a teacher to leave the field, some research suggests that low-efficacy in classroom management is among the reasons teachers leave the profession. There is a limited evidence base on how teacher education programs influences pre-service teachers self-efficacy in classroom management. This mixed methods multi-case study will seek to explore how pre-service teachers’ self-efficacy in classroom management is developed through taking an asynchronous course in classroom management.

Presentation: Association of Teacher Educators Conference

Education Platform Session B – Room 219
10:45 – 11:00am

Understanding High School Seniors’ College and Career Aspirations: A Mixed Methods Investigation of College Application Month

Caitlin Saladino | Educational Psychology & Higher Education

According to a report by the Nevada System of Higher Education (2014), only 30.1 percent of Nevada residents between the ages of 25 and 34 held a post-secondary degree in 2012, far below the national average of 41.1 percent. This is economically problematic because it is estimated that 58 percent of all jobs in Nevada will require employees to hold a post-secondary degree by the year 2020. In order to meet the needs of our diversifying economy, Nevada must increase post-secondary degree and certificate attainment. The purpose of this research is to investigate what the current pipeline to degree attainment looks like. After all, college enrollment is a pre-requisite for degree attainment. To encourage college enrollment, Nevada has implemented College Application Month, a statewide initiative that provides support to high school seniors during regular school hours as they apply for college. In October 2015, College Application Month participants also completed a survey that assessed their college and career aspirations. The quantitative data from this survey account for students’ career and college plans, educational experiences and perceptions, and the presence of college messages in high schools. However, the nuances of the college-going culture are also critical to understanding the landscape of college completion in Nevada. For this reason, I also conducted naturalistic observations to investigate the everyday language use of high school seniors during College Application Month. Ultimately, qualitative inquiry reveals the challenges students face as they enter the pipeline to degree attainment, despite their self-reported aspirations.

Education Platform Session B – Room 219
11:00 – 11:15am

The Effects of Age and Gender on Codeswitching Patterns among Iranian/Canadian Bilinguals

Fereshteh Rezaeian | Teaching and Learning

Language is a heterogeneous system in which linguistic behavior can be influenced by factors such as age, gender, social class, ethnicity, race, and community size (Labov, 1994, p.2). In the CS literature, Bentahila and Davies (1992, 1998), and Boussofara-Omar (1999) posit that in order to fully understand CS phenomenon, it is not sufficient to study it in terms of the grammatical aspects. The sociolinguistic factors should also be accounted for. This study, however, investigates the effect of age and gender on codeswitching behavior in Persian/Canadian English conversations as age and gender have been demonstrated to be the most significant factors in language variation (Labov, 2000). The codeswitching data were collected from interviews with four homogeneous groups of 16 young adult men and women and middle-aged men and women. The analysis of 1,043 instances of intra-sentential codeswitching indicates no significant effect of age or gender on the CS patterns.

Education Platform Session B – Room 219
11:15 – 11:30am

Literacy Perceptions of International Students in an Undergraduate Chemistry Class

Eshani Gandhi-Lee and CarolAnne Kardash | Chemistry

A main focus of fixing the “leaking” STEM pipeline involves recruitment and retention of underrepresented minorities, but one important minority group often overlooked is international students enrolled in [STEM disciplines](#). Although international students may possess only limited English proficiency, few researchers have addressed their literacy needs at the post-secondary level (Mulligan & Kirkpatrick, 2000). We surveyed 28 English Language Learners enrolled in an introductory chemistry class at a southwestern university to examine their perceptions of how their language backgrounds influenced what they were able to learn and how they learned in their chemistry class. Of the 28 International students who were surveyed, 16 considered English their dominant language, while 12 students considered a language other than English to be their dominant language. In this poster presentation, we will discuss the surveyed students’ perceptions of (1) the influence of their language background on their understanding of lecture content and their participation in chemistry class, and (2) the strategies they used to make the lecture, textbook, and exams easier to understand. We will also discuss similarities and differences between the perceptions of the students who consider English their dominant language and students who consider a language other than English to be their dominant language. The results of the current study can inform the development of effective teaching strategies for this population.

Presentation: American Psychological Association, Toronto, Ontario, Canada (August 2015)

**Humanities and Fine Arts
Platform Session A**



Philip J. Cohen Theatre

Presentations

- | | |
|-----------------|--|
| 8:45 – 9:00am | Rachel Disney, Department of English |
| 9:00 – 9:15am | Christopher Skees, Department of Art |
| 9:15 – 9:30am | Syed Haider Shahbaz, Department of English |
| 9:30 – 9:45am | Thaddeus Zoellner, Department of Art |
| 9:45 – 10:00am | Olufunke Ogundimu and Autumn Widdoes, Department of English |
| 10:00 – 10:15am | Gary Dean Lindeburg, Department of English |
| 10:15 – 10:30am | Rebecca Robison, Department of English |
| 11:00 – 11:45am | Amber Bonasso, Samuel Cordes, Ryan Doughery, Kayla Gaar, Madison Kisst, Jack Lafferty, Jasmine Mathews, Stephon Pettway, Stefanie Resnick, Darek Riley, Bernhard Verhoeven, Department of Theatre Arts |

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
8:45 – 9:00am

The Women before Us: Role Models in Women's Magazines and the Works of Storm Jameson, Vera Brittain, and Winifred Holtby

Rachel Disney | English

Historians and literary scholars argue that with the rise of European fascism and the 1928 Representation of the People Act, which gave full enfranchisement to all women, feminist activism all but disappeared in England in the 1930s. Feminist journals either drastically changed their content or they simply folded, replaced by domestic magazines such as *Good Housekeeping*, one of the most popular. The anti-progressive and nationalistic 1930s were in full swing in the pages of these popular magazines, telling women that their greatest duty as citizens was to cultivate the private, domestic sphere, especially through motherhood, for “the State of tomorrow is the nursery of today.” I argue that the woman’s magazine is one of the strongest disseminating forces of political conservativeness for women. And yet, authors Storm Jameson, Vera Brittain, and Winifred Holtby, three of its most famous contributors, disrupted those underpinnings both within *Good Housekeeping*’s pages and within their own novels and memoirs. This project uses a periodical studies framework to, first, analyze *Good Housekeeping*’s presentation of historical, political, and foreign women as domestic role models for the readership, and then to analyze the same and similar female figures in the works of Jameson, Brittain, and Holtby. Through analysis of these authors’ texts alongside the popular press, I show that middlebrow literature for women at once normalized and undermined the domestic model of female political engagement.

Presentation: The 25th Annual International Conference on Virginia Woolf (June 2015)

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
9:00 – 9:15am

Generation Loss

Christopher Skees | Art

Where do we come from? What are we? Where are we going? These are basic questions of human existence that many fields of study attempt to answer. The field of fine art is no different. Just like areas of science, history, or English, certain works of fine art aim to explore the seemingly unanswerable about our subjective human experience.

A way in which we exist, that is becoming ever more prevalent, is digitally. This digital existence abstracts even further our physical existence. With the rise of social media platforms, people are creating chronological, digital archives of their lives.

The autobiographical digital network created by this online presence makes our finite existence seem infinite. We become saved digital artifacts rather than a physical object, as a string of code replaces a printed image of the bodily self. An easily lost or ruined printed picture is now a digitally archived file.

A driving force behind printing or saving images of ourselves remains the wish to be remembered. But how long can we really be remembered? It is apparent the conditions that cause a printed image to degrade, but what about the conditions for a digital file?

The work explores a phenomenon known as generation loss. Through the use of social media websites as tools, generation loss is explored within the context of a self-portrait image file. The result is a photographic and sculptural work that joins an ongoing dialogue of artists considering memory, existence, and the Internet age.

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
9:15 – 9:30am

Locating Accra

Syed Haider Shahbaz | English

As someone who grew up in Pakistan, my writing urgently deals with questions of migration and the relationship between the First and Third World. I feel that English-language writers from other Commonwealth countries (ex-colonies of Britain) such as India, Kenya, Nigeria, and Ghana address similar concerns in their literature. Therefore, traveling to Ghana this past summer was the perfect way for me to extend the literary conversation that I had already begun with Ghanaian writers such as Taiye Selasie, Muhammad Naseehu Ali, and Kwame Dawes. Being physically present in Accra allowed me to understand the historical and cultural complexities I might have missed in the pages of books. In my writing, built around the themes of migration and stretched across geographies such as America, Ghana and Pakistan, I hope to address these complexities.

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
9:30 – 9:45am

Microanalysis Techniques Applied to Contemporary Visual Art Making

Thaddeus Zoellner | Art

One of the most important aspects of contemporary art is that it has capacity to integrate all other aspects of modern society (e.g. math, science, social advocacy, politics etc.) which is frequently under-utilized, particularly in relation to sculpture. Advancing this capacity through interdisciplinary study is vital to the advancement of contemporary fine art as a discipline. Therefore; I have been working in collaboration with the faculty running the Imaging and Microanalysis lab to take high magnification images of metallic crystalline structures with the Scanning Electron Microscope (SEM). I am taking these images and extrapolating them into three dimensional installation scale sculptures made out of wood, expandable spray foam, and paint. The purpose of this project is to combine the academics and active cultures of the fields of contemporary sculpture and photography, while highlighting the importance of the SEM component; the SEM directly relates this work to the world of current scientific technologies and processes. In so doing, this project not only uses the SEM as a tool but also highlights the aesthetic and artistic potential of disciplines that are not commonly associated with art.

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
9:45 – 10:00am

Professional Development at 2016 AWP Conference
Olufunke Ogundimu, Autumn Widdoes | English

For UNLV Creative Writing MFA students whose goals are to publish books, become editors of literary journals, or who wish to pursue further study to become a professor of English with a focus on Creative Writing, being able to attend the yearly AWP Conference is highly beneficial for their emerging careers. AWP, otherwise known as Association for Writers and Writing Programs, offers workshops on a variety of creative writing and composition writing topics, a mentoring program, as well as keynotes and talks given by well-known writers. For the current AWP Conference held in Los Angeles March 30-April 2, 2016, students can attend workshops and talks with established writers such as Claudia Rankine, Juan Felipe Herrera, Joyce Carol Oates, Jonathan Franzen, and Emily St. John Mandel in order to learn more about the craft of writing and publishing. It is also an opportunity to network and expose their work to agents, editors, presses and publishers. In addition to this, UNLV students can also learn more about professional development as writers and instructors of writing that will provide them with knowledge that they can share, as colleagues, instructors, and founders or participants of community outreach writing projects, which can benefit UNLV as well as the surrounding Las Vegas community.

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
10:00 – 10:15am

Understanding High School Seniors' College and Career Aspirations: A Mixed Methods "How Big Is Your *Henriad*?"

Gary Lindeburg | English

Within the study of Shakespeare, certain conventions and approaches tend to become “law” and those that attempt to change the status quo are generally met with resistance and sometimes outright hostility by the “establishment” that feels they are the guardians of how the bard’s works should be approached and read.

I argue that radicalism and a willingness break convention is necessary for the next 400 years of Shakespeare. In classrooms, where Shakespeare frequently becomes dogmatic, a culture of indoctrination leads many young scholars to feel they must toe the line and follow accepted critical terminology and analysis.

To this end, I will focus on a topic that has led me, personally, into a number of conflicts with professors and arbiters of Shakespearean cannon: I argue that the *Henriad*, by necessity, includes not only the accepted four (*Richard III*, *Henry IV* parts 1 and 2, and *Henry V*), but the cycle composed of *Henry VI* parts 1,2,and 3 and *Richard III*.

While this debate is one I find important, the ability to argue my stance and not have it immediately shut down is a development necessary for the field to thrive.

Projected presentation: Elsinore Conference, Shakespeare: the Next 400 years, Kronborg, Denmark (April 2016)

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
10:15 – 10:30am

Translating in Toulouse

Rebecca Robison | English

During the summer of 2015, I fulfilled the international requirement of UNLV's graduate creative writing program by traveling for two months in France; though I briefly visited Paris, Nice, and Bayonne, as well as Spain and Morocco, the majority of my time was spent in Toulouse. I selected Toulouse as my home base for one specific reason: the Université Toulouse Jean Jaurès is one of the few universities in continental Europe that has a creative writing graduate program. UNLV's MFA program also requires that we complete a translation, and though I could have easily found a text that has been translated from French into English a dozen times or more, I preferred to locate a text that was fresh, something that English-speaking audiences had never seen. To that end, I contacted several students from the program in Toulouse, one of whom, Catherine Derieux, agreed to work with me on my project. We each wrote a brand new story, and then we traded stories so we could translate them into our respective languages. Not only did this allow me to translate something unique, but it also provided me with the experience of working directly with the author an arrangement that is typically afforded only to professional translators. I now have a better understanding of the skills needed to complete a translation, and I have hopefully established connections at the Université Toulouse Jean Jaurès that can benefit other UNLV creative writing students who are seeking to complete the translation requirement in the future.

Humanities and Fine Arts Platform Session A – Philip J. Cohen Theatre
11:00 – 11:45am

The Industry Showcase

Stefanie Resnick, Madison Kisst, Kayla Gaar, Jack Lafferty, Jasmine Mathews, Sam Cordes, Bernhard Verhoeven, Darek Riley, Amber Bonasso, Stephon Pettway, Ryan Dougherty | Theatre Arts

We are the MFA Acting class of 2016, currently in our final semester of a three-year terminal degree program designed to prepare actors for a career on stage, in film, and TV as well as other performance venues. The culminating project of our MFA actor training is the "Industry Showcase." The Showcase itself is a rehearsed and directed stage show consisting of scenes and monologues. We will travel as a group to New York City to perform the show for industry professionals (artistic directors, casting directors, agents, producers, and managers) who can help advance us in our careers. This presentation will be our formal introduction to the highly competitive professional world of theatre and film. We are a group of 11 actors from varied backgrounds doing works from varied authors and genres. We selected each of our scenes and monologues in hopes of best showcasing ourselves as actors as we enter into the professional world of theatre.

**Science and Health Science
Poster Session A – Ballroom**



Presentations

- 9:00 – 9:15am (#1) Erica Marti, Department of Civil and Environmental Engineering and Construction
- 9:15 – 9:30am (#2) Yiyang Li, Department of Electrical and Computer Engineering
- 9:30 – 9:45am (#3) Amanda Gentry, Department of Geoscience
- 9:45 – 10:00am (#4) Sungchul Lee, Department of Computer Science
- 10:00 – 10:15am (#5) Kazi Tamaddun, Department of Civil and Environmental Engineering and Construction
- 10:30 – 10:45am (#6) Jessica Hartman, Department of Mechanical Engineering
- 10:45 – 11:00am (#7) William Joseph, Department of Geoscience
- 11:00 – 11:15am (#8) Patrick Daleiden, Department of Computer Science
- 11:15 – 11:30am (#9) Mohammadsoroush Tafazzoli, Department of Civil and Environmental Engineering and Construction

1. Ozone-Reactive N-nitrosodimethylamine (NDMA) Precursors: Yields, Factors Affecting Formation and Implications for Water Reuse

Erica Marti, Aleksey Pisarenko, Julie Peller, Eric R. V. Dickenson, Jacimaria Batista | Civil and Environmental Engineering and Construction

N-nitrosodimethylamine (NDMA) is a probable human carcinogen and may be a regulated drinking water contaminant in the future. Although there are some industrial sources, the main process for this contaminant to enter the water is as a disinfection byproduct. Substantial research has focused on NDMA formation with chloramination, but recent studies show direct formation during ozonation of surface water and treated wastewater. NDMA formation may be a significant barrier to ozonation in water reuse applications, particularly for potable reuse. This research focused on identifying a set of model compounds or precursors that form NDMA with high yields. Several factors affecting formation were investigated, including: bromide presence, ozone dose, and addition of hydrogen peroxide. Comparisons in NDMA formation were made between: formation associated with molecular ozone vs hydroxyl radical, formation in ultrapure water vs wastewater, and formation due to chloramination vs ozonation. Results show that bromide concentration was significant for some model compounds, but did not enhance NDMA formation for the other precursors. This suggests that different pathways may be involved in NDMA formation. Molecular ozone is the dominant oxidant leading to NDMA formation for the model compounds and the presence of hydroxyl radical scavengers could lead to increased NDMA concentrations. Formation due to chloramination was minimal compared to formation due to ozonation. Pre-chlorination was investigated as a mitigation strategy. Initial results suggest that it may be highly effective at reducing NDMA formation due to ozonation or chloramination. However, trade-offs in disinfection byproducts must be evaluated.

2. Digital Microfluidics with Mechanical Perturbations from the Top Plate

Yiyan Li, R. Jacob Baker | Electrical and Computer Engineering

The electrowetting on dielectric (EWOD) digital microfluidic (DMF) chip is becoming popular as a droplet level versatile lab-on-a-chip solution for actuating, merging, dispensing, and splitting droplets with fine-time resolution. However, there are two limitations that affect the performance of the conventional DMF systems: poor dispensing volume control and droplet contact line hysteresis in an air ambient. Using a quasi-static height-adjustable top plate in the dual-plate DMF system can solve the two problems simultaneously. Two piezoelectric (PZT) cantilever structures are used to control the height of the top plate, and at the same time, provide a mechanical vibration to cancel the contact line pinning force that caused by the hysteresis. The PZT deflection can be controlled by an intelligent linear driver or by an operator on the user's demand. Vibrating the top plate in low frequency is proved increasing the droplet actuation velocity at low driving voltages, and propelling the droplet forward in a ratchet manner at sub-threshold voltages. The "stuck in place" droplet caused by hysteresis can be depinned by a gentle top plate vibration. The droplet ratchet-like motion step is dominated by the EWOD driving voltage magnitude and the vibration magnitude of the top plate. The proposed dynamic gap height control using PZT chips attached to the top plate is promising for DMF droplet volume control and contact line pinning cancellation.

3. Patterns of Synorogenic Sedimentation Associated with the Unroofing of the Willard-Paris-Meade Thrust Sheets, Sevier Fold-Thrust Belt

Amanda Gentry, Michael Wells, Adolph Yonkee | Geoscience

The Willard-Paris-Meade thrust is the oldest and westernmost sheet to develop in the Wyoming salient of the Sevier FTB. The 10-15 km thick thrust sheet was emplaced ~60 km eastward and included Jurassic-Triassic strata, mixed siliciclastic-carbonate upper Paleozoic strata, carbonate-rich lower Paleozoic strata, and quartzite-rich basal Cambrian to Neoproterozoic strata. Each stratigraphic interval has a distinctive detrital zircon (DZ) age signature, which can be used in provenance analysis of foreland basin fill. The thrust system had a long deformation history recorded by westward thickening and coarsening synorogenic strata. DZ U-Pb geochronology of 27 synorogenic samples collected from two transects reveals an unroofing sequence with stratigraphically consistent changes in DZ patterns. DZ spectra for the Gannett Group in the lower part of the basin fill are consistent with erosion of Mesozoic to upper Paleozoic strata. Maximum depositional ages (MDA) from limited euhedral and likely volcanic grains for the foreland basin sequence show the following for the northern transect: basal Ephraim Formation, 150 ± 2.8 Ma (n=10); upper Ephraim, 115.2 ± 1.8 Ma (n=13); lower Bechler, 116.2 ± 2.3 Ma (n=9); upper Bechler 107.3 ± 3.3 Ma (n=4). These data clarify that there is not a significant unconformity at the base of the Bechler, and that the Bechler conglomerate facies at Red Mountain spans the depositional interval including the ~112 Ma Draine Limestone, which is absent at Red Mountain but present elsewhere. The southern transect yields the following MDAs: Upper Gannett, 109 ± 6.1 Ma (n=5) and 108.3 ± 3.4 Ma (n=10); Cokeville, 101.6 ± 0.7 Ma (n=32); Lower Sage Junction 101.55 ± 0.5 Ma (n=67); Upper Sage Junction, 101.3 ± 0.6 Ma (n=29); Aspen, 98.8 ± 0.4 Ma (n=51); lower Frontier, 99.93 ± 0.6 Ma (n=21); upper Frontier, 95.68 ± 1.4 Ma (n=38). DZ spectra for the Bear River and Aspen formations in the middle part of the basin fill are consistent with erosion of mostly Paleozoic bedrock. DZ spectra in the Frontier Formation in the upper part of the basin fill are consistent with increased erosion of basal Cambrian and Neoproterozoic quartzites. The early history of deposition is elusive due to the potential bias from the early Cretaceous Sierran magmatic lull and a lack of datable materials related to corollary studies.

4. Performance Improvement of Hadoop Process Using a Limited Nodes Block Placement Policy

Sungchul Lee, Ju-Yeon Jo, Yoohwan Kim | Computer Science

We describe the model and the scheme of Hadoop system by analyzing the workflow of MapReduce in Hadoop with the purpose of better understanding various research areas in the Hadoop system. The paper introduces the current research areas in the MapReduce such as Map, Shuffle and so on. To improve the performance of MapReduce, the paper focuses on MapReduce's workflow within Hadoop instead of investigating the entire Hadoop system. The previous MapReduce research have lacked in constructing the computation method to organize and analyze MapReduce performance. The current research introduces the computation model of MapReduce by providing the details of MapReduce's workflow. To make the computation model simple, we create the model by analyzing the workflow of MapReduce such as Map, Shuffle, Merge and Reduce in Terasort Benchmark. We make new Limited Nodes Block Placement Policy (LNBPP) based on the computation model to improve the process of MapReduce. The LNBPP reduces the movement of the data from Mapper to Reducer within the Shuffle. By executing Terasort Benchmark, the paper proves that the LNBPP significantly improves the process of Shuffle. The current research describes several tests to compare the default MapReduce with the advanced MapReduce.

5. Evaluating Streamflow Changes in Continental U.S. Using Wavelet Transformation

Kazi Ali Tamaddun, Ajay Kalra, Sajjad Ahmad |
Department of Civil and Environmental Engineering and
Construction

This study focused on investigating the long term seasonal trends (gradual change and shifts) in 600 streamflow stations across the continental United States with each station having a continuous streamflow data of at least 30 years. The non-parametric Mann-Kendall test, with appropriate modifications to account for persistence in data, was used to identify the trends whereas the non-parametric Pettitt test was used to identify the shifts. Discrete Wavelet Transformation (DWT) was further applied on a subset of the selected stations (237/600 were selected for DWT) to evaluate the most significant periodicities or recurrence intervals present in the change patterns. The results showed a clear increase in streamflow in the northeast and upper-central regions whereas southeast and northwest regions underwent decrease. The central regions had assorted results while number of stations with decreasing trends was observed to increase from east to west. The shifts were found to be more spatially distributed across the whole study area and followed similar patterns as the trends. The seasons also showed certain patterns in all time-scales under DWT. The presence of persistence was also observed to increase with the increasing time-scales. The results may assist water managers to efficiently plan and manage the water resources under changing climatic conditions across continental United States.

Presentation: American Geophysical Union Conference,
San Francisco, CA (December 2015)

6. Remote Sensing of Neutron and Gamma Radiation Using An Aerial Unmanned Autonomous System

Jessica Hartman, Alexander Barzilov, Ivan Novikov |
Mechanical Engineering

With the continuing advancement of nuclear technologies, the detection and identification of radioactive material is a necessary part of commercial and government applications. There is a wide array of options available for detection and identification of material, but most rely on compact devices which are manually positioned. The deployment of robots equipped with detection equipment is not always feasible, especially in locations where there is considerable debris on the ground, or where there are low clearance areas. To solve this, the goal of this research was to design a remote sensing system for radiation using unmanned aerial vehicles (UAVs). A swarm of small-scale quadcopters with detection and navigation capabilities were employed to carry out dynamically tracked radiation measurements. Detection was carried out through the use of a Cs₂LiYCl₆:Ce³⁺ scintillation detector equipped with pulse shape discrimination (PSD). This allowed for differentiation between neutron and photon radiation signatures based on the shape of the signal. The maximum likelihood estimation technique was employed to search remotely for radiation sources using the data obtained by multiple UAVs.

Presentation: IEEE Nuclear Science Symposium &
Medical Imaging Conference (November 2015)

7. Characterizing Crystal Assemblages for the Petrogenesis of Post-Collapse Rhyolites in the Long Valley Caldera, California

William Joseph | Geoscience

Post-collapse rhyolites erupted from the Long Valley caldera have long been considered the product of a long-lived, voluminous magma body characterized by thermal and compositional stratification. However, recent geobarometric data (Gualda and Ghiorso, 2013) combined with Nd and Hf isotopes and geochronology from zircon populations (Simon et al., 2014) suggest a system involving several independent magma chambers. Despite recent work, questions remain regarding the characteristics of individual magma batches and whether or not each successive eruption incorporates recycled material from previous events. Therefore, a detailed study of crystal assemblages from the Resurgent Dome Rhyolite (700 ka), Moat Rhyolites (576 ka), the Hot Creek Flow (335 ka), and the Deer Mountain Rhyolite (100 ka) has been undertaken to constrain on the evolution of the post-collapse magma system beneath the Long Valley caldera.

Initial petrographic observations suggest complex and distinctive magmatic origins for the post-collapse rhyolites. The absence of resorption textures coupled with normal zoning of feldspar populations within the Resurgent Dome Rhyolite suggest a simple evolutionary history. Conversely, Moat Rhyolites show intense resorption and sieve textures within plagioclase populations but also exhibit distinct rim overgrowths. Glomeroporphyritic sanidine, biotite, plagioclase, and pyroxene from the Hot Creek Flow similarly show high degrees of resorption and embayment. Additionally, plagioclase grains display sieve textured cores. Intense resorption is also apparent in Deer Creek Rhyolite where plagioclase populations exhibit skeletal textures. An increase in disequilibrium and dissolution textures with decreasing age may indicate changes in the pressure, temperature, compositional parameters of the post-collapse plumbing system.

8. Empirical Study on Concurrency Models in Programming Languages

Patrick Daleiden | Computer Science

The shift in the computer industry towards concurrency in both multiprocessors and distributed computing presents a challenge to computer programmers' ability to generate high performing bug-free code. Programmers are no longer able to rely on faster clock speeds on processors each year to deliver automatic improvements. Due to power and heat constraints computer chip manufacturers have now turned to multicore and multiprocessor architectures to make performance gains. These architectures require more complex programming in a new paradigm and with new algorithms that are much harder for programmers to learn and use effectively. In my review of the existing body of evidence on concurrent programming language design I found that although concurrency issues have been explored and evaluated for decades, the human factors considerations have not. The underlying research for this thesis evaluates two concurrent programming paradigms in a randomized controlled trial intended to better understand the human factors issues. The study was conducted with computer science undergrad and graduate students at UNLV who were asked to perform programming tasks alternatively with either Java threads or Communicating Sequential Processes (CSP) in a standardized language. The tasks were conducted through a web-based testing application and results analyzed using a token accuracy mapping algorithm.

9. Method to Measure Material-Use Efficiency in Construction Projects

Mohammadsoroush Tafazzoli | Civil & Environmental Engineering

The construction industry is responsible for generating a high proportion of solid waste worldwide. Considering the increasing importance of sustainable development, reduction of material waste should be pursued more vigorously in the construction industry. An effective step for waste generation reduction is to increase the efficient use of materials. Material-use efficiency goes beyond waste generation, and aims at transforming waste to value again. This paper proposes a method that measures the sum of materials that was directly used in a structure plus the waste material that has been returned to the supplier, or recycled, divided by all the purchased materials for that project. By sorting and measuring wasted materials, this method provides a quantitative value for material-use efficiency, and is termed the Material Efficiency Index (MEI). The method facilitates keeping track of waste as well as detecting its root causes, thus preventing them. The Project Material Efficiency Index can be used as a performance measurement tool as well, in order to compare the efficiency of utilizing materials in different projects, a self-assessment tool by contractors to evaluate their crew performance, and, ultimately, a criterion to select more efficient contractors or subcontractors in subsequent projects.

Presentation: International Conference Associated Schools of Construction Education Conference, Provo, UT (April 2016)

**Science and Health Science
Poster Session B – Ballroom**



Presentations

- | | |
|-----------------|--|
| 9:00 – 9:15am | (#10) Toni Jilka, School of Dental Medicine |
| 9:15 – 9:30am | (#11) Jacqueline Phan, Department of Chemistry |
| 9:30 – 9:45am | (#12) Michelle Farnoush, Seth Jennings and Daniel Swint, School of Dental Medicine |
| 9:45 – 10:00am | (#13) Jessica Kumanchik, Department of Kinesiology and Nutrition Sciences |
| 10:30 – 10:45am | (#14) Kristi Agari, School of Dental Medicine |
| 10:45 – 11:00am | (#15) Lorenzo Apodaca, School of Life Sciences |
| 11:00 – 11:15am | (#16) Jeong Ho Seo, School of Dental Medicine |
| 11:15 – 11:30am | (#17) Sarah Litterer, School of Public Health |

10. Differential Expression of Micro(mi)RNA within Cancer Stem Cell (CSC) Subpopulations

Toni Jilka, Beau Seager, Karl Kingsley | Dental Medicine

Background: Mortality associated with oral cancer remains comparatively high, mainly due to the late stage diagnosis of many oral tumors. Despite advances in diagnosis and treatment, oral cancer recurrence and treatment failures remain a significant barrier to care. Studies have demonstrated that many oral tumors may contain subpopulation of cells with stem cell-like properties that allow them to survive normal radiation and chemotherapy regimens. Newer evidence has suggested non-coding microRNA expression, often exported in macrovesicles, may be useful as potential biomarkers to screen tumors and cancer stem cells (CSC).

Objective: To utilize two well-characterized, aggressive cancer cell-lines (CAL27 oral squamous cell carcinoma; CaSKi cervical adenocarcinoma) to evaluate miRNA expression from the cell cultures and CSC isolates. **Methods:** CAL27 and CaSKi cells were cultured and adhesion-independent tumor spheres were isolated for analysis. RNA was extracted from both primary cells and CSC's cellular and extracellular fractions for screening using highly sensitive relative-endpoint (RE)-PCR primers specific for miR-16, miR-21, miR-133, miR-155 and mir210.

Results: CaSKi-primary and CaSKi-CSC cultures expressed the cancer-specific miR-21 and miR-133, but not miR-16. CAL27-primary cultures expressed miR-21, miR-133 and miR-155, however CAL27-CSC cultures only expressed miR-133. Finally, both the CaSKi-CSC and CAL27-CSC subpopulations expressed the stem cell-specific miR-210.

Conclusions: Although these results are preliminary, these data suggest there may be unique miRNA expression profiles for CSC subpopulations within larger tumors that may affect cellular responsiveness to treatment. More research is needed to determine the potential to screen for miR-210 expressing CSC to more effectively assess tumor responsiveness.

11. Bile Salt Analogs as Anti-Germinants in the Prevention of Clostridium Difficile Infection

Jacqueline Phan, Ernesto Abel-Santos | Department of Chemistry

Clostridium difficile infection (CDI) is a leading cause of nosocomial complications, namely antibiotic-associated diarrhea. In 2011, over 500,000 patients were diagnosed with CDI in the United States and over 29,000 people died from CDI complications. With an average cost of \$35,000 to treat a single inpatient CDI, cost burden to the healthcare system can reach up to \$3.2 billion annually. Due to the emergence of hypervirulent strains and CDI reoccurrences of up to 25%, standard treatments are rendered less effective and new methods of prevention are critical.

CDI is caused by germination of Clostridium difficile spores. Spores are the infectious form of Clostridium difficile and are dormant and tough structures produced when the cell is under stress. This dormant nature allows spores to survive in the gastrointestinal tracts of susceptible patients without showing any infection symptoms until they germinate into toxin-producing bacteria.

Clostridium difficile germination is essential for symptomatic infection. Studies have demonstrated that Clostridium difficile germination is promoted by the bile salt taurocholate and can be competitively inhibited by the bile salt chenodeoxycholate. CamSA, a synthetic bile-salt analog of taurocholate, was found to be a more potent inhibitor of Clostridium difficile germination than chenodeoxycholate.

Because CamSA has its weaknesses, new analogs are currently being synthesized to find more stable and effective anti-germinants. One analog revealed to be a 60-fold more potent germination inhibitor than CamSA in vitro and is currently being tested in mice. This analog and others will be tested against various Clostridium difficile strains in future studies.

12. Melatonin-Modulation of Histone Deacetylase (HDAC) in Oral Cancer

Michelle Farnoush, Daniel Swint, Seth Jennings, Karl Kingsley | Dental Medicine

Background: Histone deacetylase (HDAC) activity is associated with tumor development and progression in many human cancers, while HDAC inhibitors such as Vorinostat and Romidepsin have recently gained FDA approval as chemotherapy agents. Recent evidence has now suggested that other systems and feedback loops associated with circadian rhythms, such as melatonin (MLT) can modulate the activity of some HDAC family members. In addition, recent studies from this group have revealed that MLT significantly inhibits oral cancer growth and development.

Objective: Therefore, the primary objective of this study was to assess whether MLT-induced growth-inhibition of oral cancers also affects HDAC activity in these cells.

Methods: Using well-characterized oral cancer cell lines (SCC15, SCC25, CAL27), MLT was administered at physiologic (natural) and supraphysiologic (supplementation) levels in vitro. RNA was subsequently collected from these cells, as well as non-treated controls.

Results: RNA extracted from these cells was then screened using RT-PCR primers specific for HDAC1 and HDAC2, which was highly expressed in all three oral cancer cell lines, but was barely detectable from normal cells. Although physiologic levels (10-100 pg/mL) of MLT induced no changes to HDAC1 or HDAC2 mRNA levels, supraphysiologic (0.2-10 ug/mL) or supplementation-equivalent levels induced a significant reduction in HDAC1 and HDAC2 mRNA. In addition, expression of the transcriptional activator CLOCK was induced by MLT at both physiologic and supraphysiologic levels.

Conclusions: These data may be among the first to demonstrate supraphysiologic MLT administration is sufficient to inhibit HDAC1 and HDAC2 activity in oral cancer cells. Moreover, as previous research from this group has demonstrated that growth inhibition and apoptosis was greatly enhanced by supraphysiologic MLT administration, this may suggest further research is needed in this area to determine if MLT may be able to function as a natural, complementary or alternative method to inactivate HDAC activity in aggressive oral cancers.

13. Shock Attenuation in the Lumbar Spine while Running

Jennifer Kumanchik, Janet Dufek, John Mercer | Kinesiology and Nutrition Sciences

The body is exposed to forces every time our feet strike the ground. This force is then absorbed throughout the body as it travels from the feet toward the head. Various factors can impact magnitude and location this force is absorbed in the body, such as running speed. This study sought to assess changes in the amount of force absorbed in the lower back while running at different speeds as well as comparing the effectiveness of two different assessment devices: accelerometers and inertial sensors. A single-subject design was used, where the participant performed three running conditions (preferred pace, 20% faster, and 20% slower) for each measurement device positioned at the 5th lumbar vertebra. Independent t-tests were used to assess whether a significant difference in the magnitude of force absorbed between measurement devices.

Presentation: IEEE Nuclear Science Symposium & Medical Imaging Conference (November 2015)

14. Folates are Associated with a Wide Variety of Human Health Benefits

Kristi Agari, Weiye Lin, Byron Junio, Karl Kingsley |
Dental Medicine

Background: Folates are associated with a wide variety of human health benefits, while lack of dietary folate is a risk factor for many health problems, congenital defects, and many human cancers mainly due to dysregulation of basic cellular functions such as DNA synthesis, repair and methylation. Although some studies have evaluated the potential effects of folic acid (FA) to facilitate growth and protect cellular viability in mesenchymal stem cells, to date no studies have examined this potential in dental pulp-derived stem cells (DPSCs).

Objective: Based upon the paucity of evidence, the goal of this study was to assess the effects of FA supplementation on human DPSCs. **Methods:** Using an existing repository of DPSCs, FA was administered within the normal human physiologic range [0-400uM] to evaluate growth and viability over three days. **Results:** Preliminary data suggest that DPSC growth among unstimulated (control) cells was approximately 1.56-fold, with a significant increase in growth observed under low [100 uM=2.62-fold] and high [400 uM=4.45-fold] FA concentrations. Corresponding increases in cellular viability were also observed with viability increasing from approximately 55% (control) to a range of 64% [100 uM] to 85% [400 uM]. **Conclusions:** These data strongly suggest FA may significantly increase cellular growth and viability in some DPSCs in vitro. Moreover, these results were obtained using FA concentrations within the human physiologic range, which may prove to be critical for future studies that attempt to create positive homeostatic microenvironments to develop and differentiate DPSCs for therapeutic and clinical treatments.

15. Eldorado Valley ibutton Tower Network: Monitoring Potential Heat Energy Dynamics around a Utility-Scale Solar Panel Facility

Lorenzo Apodaca, Dale Devitt | Life Sciences

The demand for cleaner sources of energy has been steadily increasing as the effects of fossil fuel consumption on global climate change have become more widely accepted. Southern Nevada is poised to become a large contributor to this supply of green energy through the commissioning of public lands for solar development. However, there exists a pressing need to better understand the ecological consequences of these facilities as documentation on the impacts of massive solar operations on the adjacent environment is severely lacking. One such consequence is the effect of large-scale photovoltaic solar panel developments on the energy dynamics of the surrounding area. For example, air warmed directly over the panels could be blown downwind and spilled into adjacent natural habitat, which could adversely affect native vegetation by placing plants under greater heat and water stress. To study this potential heat generation and transfer, a gridded network of 24 ibutton sensor towers was constructed directly north of the Copper Mountain Two solar energy facility located in Eldorado Valley, NV. Each tower is equipped with 4 ibutton sensors programmed to measure ambient air temperature every thirty minutes at four heights (0.5, 1.0, 2.0, and 3.0m). The gridded placement of these towers (300x300m cell size, 1500x900m total grid size) allows for the use of spatial statistics in generating heat maps to visualize potential heat transfer. The tower network has been fully operational since May 2015. Preliminary data will be presented.

16. Parental Perspective of Dental Care Access for Children Diagnosed with Autism Spectrum Disorders

Jeong Ho Seo, Christina Demopoulos | Dental Medicine

Purpose: The purpose of this study is to describe parental perceptions of access and barriers to comprehensive dental services for families of children with autism spectrum disorders.

Methods: Parents of autistic children, 1-18 years of age, that are registered with the University of Nevada, Las Vegas Center for Autism Spectrum Disorder (UNLV CASD) will be contacted to participate in the study. The UNLV CASD conducts community-focused research, assessment, and training of persons with autism spectrum disorders, their families, and community service providers in Southern Nevada. The CASD has approximately 1500 members on their listserv. A survey link will be generated that will be embedded in the recruitment email that will be sent out through the CASD listserv. This ensures there is no link between those who participate and the survey. The invitation will explain the survey and invite members to participate. Reminders will be sent approximately every 2 to 3 weeks until the minimum sample size is established.

Results: Results will be available by the conference date.

Conclusions: Access to dental care is important for children with special needs. Autistic children are at greater risk for oral diseases, which further compromise their overall health.

17. Southern Nevada Community Nutrition Assessment Report & Healthy Henderson Nutrition Partnership Project

Sarah Litterer | Public Health

American society has become characterized by environments that promote consumption of unhealthy food. One way to improve community nutrition environments is through adoption of healthy vending policies. The objectives of this research included analyzing and reporting findings of a community nutrition assessment completed by Southern Nevada Health District (SNHD) and completing a component for the Partnerships to Improve Community Health (PICH) grant received by SNHD to increase access to healthy foods/beverages in government facilities.

An online survey regarding community nutrition environments throughout Clark County was conducted. Assessments of select locations were conducted using the Nutrition Environment Measurement Survey for Vending (NEMS-V). Results were compared to SNHD's established nutrition standards for vending to determine compliance.

Vending machines are a significant element in the nutrition environments surveyed. 100% of locations had beverage vending machines; 90% had snack vending machines. Compliance with recommended nutrition standards was low: individual machines ranged from 8% to 66%, and average compliance (based on machine type) ranged from 8% to 41%. A majority of respondents stated: "We are currently promoting and providing healthy eating options for employees and the public," however, survey data did not reflect this. Many respondents are not actively involved in vending operations and leave responsibility solely to outside vending companies. Employers do not appear to be incorporating healthy vending policies as a way to meet demand for healthier food choices. Nutrition environments for both employees and the public could be improved substantially through increased implementation of nutrition criteria/guidelines, specifically policies related to healthy vending.

**Science and Health Science
Poster Session C – Ballroom**



Presentations

- 9:00 – 9:15am (#18) Hananeh Derakhshan, School of Public Health
- 9:15 – 9:30am (#19) Fang Yu Wang and Whitney Saarem, School of Dental Medicine
- 9:30 – 9:45am (#20) Surbhi Sharma, School of Life Sciences
- 9:45 – 10:00am (#21) Naweed Najand and Behfar Osafi, School of Dental Medicine
- 10:30 – 10:45am (#22) Van Tang and Chun Wong, School of Dental Medicine
- 10:45 – 11:00am (#23) Tara Kenny, Department of Kinesiology and Nutrition Sciences
- 11:00 – 11:15am (#24) Matthew Thacker, School of Dental Medicine
- 11:15 – 11:30am (#25) Judy Goldman, School of Public Health

18. Identifying the Morphological Patterns of Muscle Regeneration

Hananeh Derakhshan, Barbara St. Pierre Schneider | Public Health

Background: During the recent Middle East conflict, approximately 50% of battlefield injuries of U.S. soldiers consisted of trauma to arms and legs. Because skeletal muscle comprises a large percentage of the tissue in these extremities, muscle trauma commonly occurs as part of these battlefield injuries. However, the recovery of damaged muscle is not always successful or requires weeks to months to occur. Therefore, understanding the cellular events of muscle recovery is important so therapies that will ensure a timely and complete recovery can be developed.

Objective: To identify the morphological patterns of muscle regeneration.

Methodology: The gastrocnemius muscle of mice with or without ovaries underwent a crush injury. Then 24 hours later, the mice underwent hypobaric to simulate air transport. The muscle was harvested at 96 or 192 hours after the injury.

Results: At 96 hours, regenerating muscle fibers were indistinct and in areas with or without increased spacing; and macrophages were present in clusters. At 192 hours, distinct, organized regenerating muscle fibers with surrounding discrete macrophages were present. But also at 192 hours, in the muscle of some mice without ovaries, several areas exhibited a pattern similar to that observed at 96 hours.

Conclusion: Specific morphological patterns of regeneration occur at 96 and 192 hours. However, the muscle of mice without ovaries may be prone to prolonged regeneration.

This project was supported by the Department of Defense, Air Force. Review of material does not imply Department of the Air Force endorsement of factual accuracy or opinion.

19. Propolis or Caffeic Acid Phenethyl ester (CAPE) Inhibits Oral Cancer Growth and Viability

Whitney Saarem, Fang Yu Wang, Karl Kingsley, Elena Farfel | Dental Medicine

Background: Propolis is a natural antimicrobial resin from honeybee hives that contains caffeic acid phenethyl ester (CAPE), the main active component. Although some evidence has found propolis and extractions containing CAPE have anti-proliferative activity against some human cancers, including colon, liver, lung and breast, limited evidence has evaluated this potential in oral cancers.

Objective: Based upon this preliminary evidence, the primary goal of this study was to evaluate the anti-tumor potential of propolis and CAPE against well-characterized oral cancer cell lines. Methods: Oral cancer cell lines (SCC25 and CAL27) and a non-cancerous gingival fibroblast control (HGF-1) were grown in culture. 96-well growth assays were administered to evaluate the effects of CAPE administration. Viability was also examined using the Trypan Blue exclusion assay.

Results: These experiments revealed CAPE administration had no effect on cellular proliferation of normal, non-cancerous (control) cell lines over three days, HGF-1, $p=0.878$. However, CAPE strongly inhibited both SCC25 cell growth (-22.01%) and CAL27 growth (-18.54%), $p<0.01$. In addition, viability of HGF-1 cells was not affected by CAPE administration, but oral cancers exhibited a strong reduction in viability (~22%) over the time course evaluated, $p<0.01$.

Conclusion: Although these data are preliminary, the results clearly demonstrate a significant and immediate effect on oral cancer growth and viability and therefore should be considered for future studies as a potential therapeutic agent for oral cancer.

20. The Human C-Terminome

Surbhi Sharma, Oniel Toledo, Michael Hedden, Kenneth F. Lyon, Steven B. Brooks, Roxanne P. David, Justin Limtong, Jacklyn M. Newsome, Nemanja Novakovic, Sanguthevar Rajasekaran, Vishal Thapar, Sean Williams and Martin R. Schiller | Life Sciences

The C-termini of proteins often possess minimotifs (also known as short linear motifs). Minimotifs are 2-15 amino acids long contiguous peptide sequences with a known function in at least one protein. Minimotifs regulate cellular functions by binding to other molecules in a cell, trafficking molecules to different cellular compartments, and through post-translational modifications. The analysis of ~550,000 minimotifs from the Minimotif Miner 3.0 database revealed 3,593 minimotifs on the C-termini of human proteins. These minimotifs are encoded by 13% of human genes. We asked if the remaining 87% of the human genes also express proteins with a functionalized C-terminus. We designate this area of research as the C-terminome. Our hypothesis is that many human proteins have a functional C-terminus. To test our hypothesis, we used sequence based prediction of new functions on the C-termini of proteins. Functions were predicted for 27,546 sequences based on minimotif consensus sequences, and 867 minimotifs were inferred based on the experiments done in the rodent proteome. The human proteome was mined to identify novel consensus sequences that were highly overrepresented in the proteome. Some patterns were experimentally tested, identifying potential binding partners. The information has been consolidated into the C-terminome database and websystem where users can mine the C-termini of their proteins for its functions. The websystem has a browse and search minimotifs and proteins functionality. Weblink: <http://www.cterminome.elasticbeanstalk.com>

21. Differential Expression of Vitamin D3 Metabolism Enzyme CYP27A1 in Oral Cancers

Behfar Osafi, Naweed Najand | Dental Medicine

VitaminD3 (VitD3) contains many health benefits. It is known that a deficiency in VitD3 is associated with poor health outcomes and an increased risk of cancer. This increase risk of cancer is due to mutations within the VitD3 genes or their receptors (Vitamin D3 receptor; VDR), which results in alternating the function of VitD3. The research that will be presented at the 2016 AADR focuses on the most common VitD3 and VDR mutations, as well as the expression of different enzyme metabolites.

While many research studies have evaluated the potential effects of VitD3 in reducing oral cancer growth, this project is unique in that it aims to find a potential mechanism that may be directly responsible for finding these effects. The results of this study revealed differential expression in CYP27A1, which was absent in all oral cancers but functional in normal cells. CYP27A1 is a gene that codes for cytochrome P450 oxidase, an enzyme that contains many functions. One of those functions includes VitD3 metabolism and cellular clearance. The absence of this enzyme may suggest the anti-proliferative and long term effects of VitD3 administration on these cells. This research contains great significance because it can potentially lead to discovering a way of stopping or slowing down the growth mechanism of the number one most common malignant cancer found in the oral cavity: oral squamous cell carcinoma. Understanding the cellular effects of VitD3 administered to these cells is a critical part of the future treatment for oral squamous cell carcinoma.

22. Hydroxytyrosol (HT) Suppresses Growth and Reduces Viability in Human Oral Squamous Cell Carcinomas

Chun Yin Wong, Van Tang | Dental Medicine

Background: Recent evidence suggests potential for anti-tumor properties of hydroxytyrosol (HT) or 3,4-dihydroxyphenyl ethanol (3,4-DHPEA) to inhibit growth and induce apoptosis in a variety of human cancers. Although many components of the Mediterranean diet have been demonstrated to possess potent anti-tumor effects on developing cancers, HT derived from virgin olive oil has been demonstrated to strongly inhibit the growth and viability of colorectal tumors and hepatocellular carcinomas, both in vitro and in vivo. However, limited information is available to evaluate this potential with oral cancers.

Objective: Based upon the lack of evidence, the primary goal of this study was to evaluate the potential for HT to modulate growth or viability of oral cancers.

Methods: In vitro assays to measure viability (Trypan blue exclusion assay) and short term growth (96-well plate assay) were performed to assess the effects of HT/3,4-DHPEA within physiologically relevant ranges [0-400 uM].

Results: Preliminary data revealed growth and viability of normal gingival fibroblasts (control) were unaffected within the lower physiologic range [0-100 uM] but were growth-responsive (+11%–+139%) at higher concentrations [0200-400] with a significant increase in cell viability (+9%). However, differential results were observed with the oral cancer cell lines. Growth inhibition among CAL27 cells was slight and not statistically significant at lower concentrations [0-300 uM] but was more robust at the highest concentration of 400 uM (-11.9%) with only a slight reduction in cell viability observed (-4%). In contrast, SCC25 cell growth was strongly inhibited at all concentrations, ranging from -22.4%–70.3% with a correspondingly strong reduction in cell viability (-31%).

Conclusions: Although these data are preliminary, these results suggest that HT, which possesses strong biocompatibility with normal cells and few (if any) side effects, may represent a potential anti-tumor agent against some oral cancers.

Presentation: American Association for Dental Research Annual Meeting & Exhibition, Los Angeles, CA (March 2016)

23. Vitamin D Status and Bone Mineral Density in Female Collegiate Dancers and Cheerleaders

Tara Kenny, John Young, Laura Kruskall, James Navalta, Robbin Hickman, Damon McCune | Kinesiology and Nutrition Sciences

An athlete's bone mineral density reflects their cumulative history of energy availability, physical activity, genetic predisposition for bone health, and menstrual status, as well as nutritional, behavioral, and environmental factors. Purpose: To determine if bone mineral density (BMD) and nutritional factors in bone health are different in two groups of female athletes who have comparable body size/weight requirements, but who engage in qualitatively different training regimens. Methods: Participants were female collegiate athletes who were members of the UNLV Dance team (n=10) or Cheer team (n=9), ages 18-22. Results: There was no significant difference between the groups for total body BMD (1.23 g/cm² dance vs 1.22 g/cm² cheer, p=0.70), spine BMD (1.39 g/cm² dance vs 1.36 g/cm² cheer, p=0.72) or dual femur BMD (1.20 g/cm² dance vs 1.11 g/cm², p=0.23). There was a significant difference between z-scores of the dance team vs. non-athlete female controls (1.46 \hat{A} ±1.23 dance vs 0.19 \hat{A} ±1.22 control, p=0.033). Serum vitamin D status was found to be insufficient (10-29 ng/mL) in 74% of the athletes (27 \hat{A} ± 4 ng/mL dance and 25 \hat{A} ± 8 ng/mL cheer). Daily calcium intake was 504 \hat{A} ± 723 mg for dance and 531 \hat{A} ± 236 mg for cheer versus the RDA of 1,000mg/day. Daily vitamin D intake was 256 \hat{A} ± 335 IU for dance and 228 \hat{A} ± 145 IU for cheer versus the RDA of 600 IU/day. Conclusion: BMD was not significantly different between the low impact dance team and high impact cheer team. These results suggest that the type of activity (low impact dance vs. high impact cheerleading) was not as important for BMD as participating in 20+ hours a week of physical activity. Although the low levels of calcium and serum vitamin D are of concern, the amount of physical activity in these athletes could have counteracted the negative effects of these nutrient insufficiencies on their bone health.

Presentation: SWACSM (2015)

24. Indoleamine2,3-Dioxygenase and Tryptophan Dioxygenase Enzymes are Actively and Differentially Expressed in Oral Cancers

Matthew Thacker, Vivi Baldwin, Karl Kingsley | Dental Medicine

Objectives: Previous studies have demonstrated indoleamine2,3-dioxygenase (IDO) and tryptophan dioxygenase (TDO) enzymes are actively and differentially expressed in oral cancers. Both IDO and TDO function to process tryptophan (Trp) for use in biosynthetic and metabolic pathways. Many cancers upregulate cellular intake of L-tryptophan, while exporting the cytosolic metabolic byproduct kynurenine. Kynurenine has recently been demonstrated to suppress local immune response of T-cells, providing a mechanism to inhibit localized immune responses. This coupled antiport transfer mechanism of Trp intake and Kynurenine export may be facilitated through a small family of membrane-associated receptors known as LAT1/2. The objective of this study was to determine which members of this family, if any, are expressed in oral cancers.

Methods: Using well-characterized oral cancer cell lines (SCC15, SCC25, CAL27), RNA was extracted. Polymerase chain reaction (PCR) was used to assess the expression of mRNA using primers specific for IDO, TDO, LAT1 and LAT2. Cell cultures were treated with Trp to determine if cell growth or LAT receptor expression can be modulated by this substrate.

Results: Although IDO and TDO were expressed, LAT1, but not LAT2, mRNA was observed suggesting a common differential expression. Trp administration induced no change in cellular growth which may also suggest that the primary mechanisms controlling growth are not linked with availability of this substrate or feedback from this receptor.

Conclusions: These results may be the first evidence to demonstrate differential mRNA expression and regulation of LAT1/2 receptors in oral cancer, as well as evidence that suggests the availability of Trp is not sufficient to alter growth or proliferation. These preliminary studies may suggest that treatments that block LAT1 or interfere with IDO and TDO expression may be alternative pathways for inhibiting the growth and development of oral cancers.

Presentation: American Association of Dental Research, Los Angeles, CA (March 2016)

25. An Evaluation of State Ombudsman Websites for Nursing Home Consumers

Judy Goldman, Darren Liu, Chi-Jung Lu and Takashi Yamashita | Public Health

The quality of life for nursing home residents has been a major public health concern since the mid-20th century. One response to quality of life concerns was the Long-Term Care Ombudsman Program (LTCOP) which all states were federally mandated to implement in 1978. Ombudsmen were to act as advocates to help empower nursing home residents to voice and resolve complaints. Additionally, residents were federally granted a “Bill of Rights” in 1987. Ombudsmen were tasked to ensure these rights were protected. However, access to an ombudsman can be limited due to infrequent facility visits and lack of familiarity with the program. When an ombudsman cannot be contacted, state websites could be a viable option for filing complaints. This study evaluates the existence of complaint information on 51 LTCOP websites; as well as, 51 state survey agency websites. Results showed that the state resource information posted on Nursing Home Compare (NHC) for filing a complaint is not up-to-date. About 18% of state survey agency links listed on NHC were either missing or incorrect, as were 16% of state ombudsman websites on the National Long-Term Care Ombudsman Resource Center (NORC). Overall, only 55% of state survey agency and 14% of state ombudsman websites included a “Complaint Form”. Over a third (39%) of state survey agencies provided less than three methods (e.g., email, mail, fax, phone, and submit online) for filing a complaint. The results show that the differences between complaints made to the state survey agencies and the LTCOP were not clear. The current information on state websites for filing complaints against nursing homes could confuse consumers and hence needs further investigation.

Presentation: The Gerontological Society of America's 68th Annual Scientific Meeting, Orlando, Florida (November 2015)

**Science and Health Science
Poster Session D – Ballroom**



Presentations

- 9:15 – 9:30am (#26) Ashley Tovar
Department of Kinesiology
and Nutrition Sciences
- 9:30 – 9:45am (#27) Dannica Brennan,
School of Dental Medicine
- 9:45 – 10:00am (#28) Atenia Ruiz, School of
Public Health
- 10:30 – 10:45am (#29) Scott Thomas, School
of Life Sciences
- 10:45 – 11:00am (#30) Adam Marina, School
of Dental Medicine
- 11:00 – 11:15am (#32) Joshua Bailey,
Department of Kinesiology
and Nutrition Sciences
- 11:15 – 11:30am (#33) Evan Davis, School of
Dental Medicine

26. The Effect of Moderate Consumption of Non-Nutritive Sweeteners on Glucose Tolerance And Body Composition in Rats

Ashley Tovar, Jack Young, Debra Tacad, Tara Kenny, Laura Kruskall, James Navalta, Robbin Hickman | Kinesiology and Nutrition Sciences

Introduction: To combat the effects of excess energy intake on obesity and glucose intolerance, non-nutritive sweeteners (NNS) have been used as a replacement for more energy dense traditional sweeteners. However, limited research has been completed regarding the effects of moderate consumption of non-nutritive sweeteners on blood glucose tolerance and body composition.

Purpose: To determine the effect of moderate consumption of NNS on glucose tolerance and body composition in an animal model.

Methods: Male Sprague-Dawley rats (N=30) were given aspartame (n=10, 8.5 mg/kg/day) or sucralose (n=10, 2.6 mg/kg/day) in drinking water, or a control of water (n=10) for 6 weeks. After overnight fasting, rats underwent an oral glucose tolerance test. Blood was obtained by tail clip; glucose was measured by glucose meter and insulin was measured by radioimmunoassay. Following euthanasia, lean mass and fat mass were determined by dual energy x-ray absorptiometry and weighing epididymal fat pads.

Results: No differences were found between groups in either the glucose or insulin response to an oral glucose load, although the aspartame response was qualitatively different from control. While percent body fat was not different between groups, epididymal fat pad mass was significantly higher in the ASP group compared with the control group (5.50 ± 0.34 g vs 4.55 ± 0.19 g, $p=0.042$).

Conclusion: Moderate consumption of aspartame or sucralose had no effect on glucose tolerance or percent body fat. However, aspartame at low doses altered body fat distribution. These results may have implications for addressing abdominal obesity.

27. Differential miRNA Expression in Oral Cancer Oncosomes

Dannica Brennan, Kunal Patel, Nicole Howard, Karl Kingsley, Katherine Howard | Dental Medicine

Background: Exosomes are small membranous secreted vesicles (30-120 nm) believed to function as intercellular messengers delivering their cargo of RNA and protein to target cells. While many cells secrete exosomes, cancer cells have been found to produce higher numbers of exosomes than normal cells. Cancer specific exosomes, also termed oncosomes, transport intercellularly bioactive molecules including pro-teins, lipids, and microRNAs (miRNA), the latter of which are discarded into the extracellular environment via exo-somes. These bioactive molecules can modulate oral squamous cell carcinomas (OSCC) disease progression in vivo.

Objective: To date, only one study had demonstrated the secretion of oncosomes from cultured OSCC cells therefore the objective of this study is to determine if intact oncosomes can be isolated from oral cancer cells.

Methods: Using a reagent that binds water and forces less-soluble lipid vesicles out of solution, oncosomes from oral cancer cell cultures (SCC4, SCC9, SCC15, SCC25 and CAL27) were collected by low-speed centrifugation. RT-PCR was performed on RNA isolated from culture-derived oncosomes for miR-21, miR-365, miR-155 and miR-133a1; all previously identified from cancers of other tissues.

Results: Differential expression was observed from all isolates, with CAL27 and SCC4 expressing significantly higher levels of miR-21, miR-155 and miR-365, while SCC-9 expression was characterized by high levels of miR-133. Normal (non-cancerous) control cells HGF-1 (human gingival fibroblasts) expressed only very low levels of these miRNAs. **Conclusions:** Exosomes were successfully isolated from OSCC conditioned media. miRNAs were detectable through Taqman microRNA assays, with unique characteristic expression of the miRNAs in the cell lines examined. For example the SCC-9 had no similarities to the other cell lines examined. Cal 27 and SCC-4 were similar in miRNA expression levels while SCC-15 expression was similar to the control, HGF-1. Although more investigation is needed, potential correlations between miRNA levels and proliferation rates were also observed.

28. Chronic Inflammatory Conditions and Pediatric Obesity

Atenia Ruiz, Sheniz Moonie, Amanda Haboush-Deloye | Public Health

Background: The national prevalence of obesity, asthma, food allergies, and skin allergies is increasing
1) Previous research has linked asthma with increased risk of obesity, although this is not consistent in children
2) There are incongruent findings for the association between allergies and obesity (3). We proposed that allergies and asthma may increase the risk of obesity, after adjustment of covariates.

Methods: The 2013-2015 Nevada Kindergarten Health Survey conducted by the Nevada Institute for Children's Research and Policy was selected for this study (n=14,810). This cross-sectional study employed multinomial logistic regression, with body mass index category as the measurable outcome. Asthma status, allergy status, and the interaction between asthma and allergies were assessed, as well as other covariates previously found to be associated with obesity (race; insurance type; Federal Poverty Level (FPL); gender; total number of children in household; parents' marital status; physical activity; time spent watching television; time spent playing video games; and non-diet soda consumption).

Results: Children with asthma were 62% more likely to be obese compared to those without asthma (OR=1.618; 95% CI: 1.05-2.49; p=.029), after adjustment of covariates. Other variables associated with an increased risk of obesity included FPL (p<.001-.017), race (p<.001-.017), non-diet soda consumption (p=.006-.021), and gender (male: p=.023). No association between allergies and obesity was found.

Discussion: The association between obesity and asthma at 4-6 years of age warrants the establishment of activity and diet guidelines for children with asthma. Such interventions would need to be evaluated for effectiveness of disease management over time.

29. Genomic and Physiological Exploration of *Thermoflexus hugenholtzii*, a Representative of a Novel Class in the *Chloroflexi*

Scott C. Thomas, Kevin O. Tamadonfar, Jeremy A. Dodsworth, Paul Dijkstra, Bruce A. Hungate, Brian P. Hedlund | Life Sciences

Thermoflexus hugenholtzii is the first cultivated representative of a novel class in the phylum *Chloroflexi*. Close relatives of this chemoorganotrophic thermophile are abundant in sediment communities of some geothermal springs in the US Great Basin, Yellowstone National Park, and China. The genome of *T. hugenholtzii* was sequenced, resulting in a ~3.2 Mbp genome with a G+C content of 67.3%. Genomic analyses suggest *T. hugenholtzii* may play an important role in carbon and nitrogen cycling in geothermal springs. However, its dependence on complex carbon sources such as peptone for growth in the laboratory have prevented a more detailed characterization of its substrate range using conventional techniques. Genomic predictions of the physiological capabilities of *T. hugenholtzii* were tested in pure culture using ¹³C-labeled position-specific metabolites (glucose, acetate, and pyruvate), in conjunction with universally ¹³C-labeled amino acids and tricarboxylic acid (TCA) cycle metabolites. ¹³C experiments suggest: the disassociation of metabolite flux between glycolysis and the TCA cycle, with predicted acetate excretion; an inactive oxidative pentose phosphate pathway, suggesting that *T. hugenholtzii* may rely on exogenous sources of pentoses; and *T. hugenholtzii's* ability to catabolize a diversity of exogenous organic carbon sources. In addition, ¹³C pure culture results correlate with ¹³C environmental results from a habitat where *T. hugenholtzii* is abundant.

Presentation: American Society for Microbiology General Meeting, New Orleans, LA (June 2015)

30. Racial and Ethnic Oral Health Disparities among Children Participating in Community-Based Programs in the Greater Las Vegas Area

Adam Marina, Christina Demopoulos | Dental Medicine

There exists, in Nevada, a large population of racial and ethnic minorities (U.S. Census Bureau, 2013). From previous studies this demographic has shown a higher risk for developing tooth decay; being especially higher for individuals under 18 years of age (Beltrán-Aguilar, 2002). Community-based programs designed to identify, diagnose, and provide preventative care have been effective in other states where they have been implemented (Gooch DMD); however, currently only a few exist in Nevada. Our goal was to create a community-based program to evaluate the oral health disparities among individuals of racial and ethnic minority populations in Nevada who are under the age of 18.

Presentation: UNLV School of Dental Medicine Student Research Day (2013 & 2014)

31. Inertial Sensor Validation for Lower Extremity Running Gait Analysis

Joshua P. Bailey, John Mercer | Kinesiology and Nutrition Sciences

Laboratory analyses are within highly controlled environments that incorporate measurement devices and techniques that have been validated for their intended use. The inability to actively measure instantaneous running velocity during outdoor running is a valid contention point for outdoor running research. Therefore, the purpose of this study is an attempt to validate Catapult inertial sensors against an industry standard motion capture system. Inertial sensors were attached to the reflective marker cluster sets, oriented to measure sagittal plane segmental angular motion with respect to time. Data collection phase finished with 20 participants (8 Female, 12 Male; 24.7 ± 4.1 years; 74.9 ± 12.6 kg; 170.3 ± 8.1 cm) volunteering to run at five speeds on a treadmill with reflective markers and six inertial sensors. Treadmill running speeds ranged from 1.95 m/s to 6 m/s (4.4 – 13.4 mph), encompassing a large range of running speeds. The range of speeds was selected due to the known effect of movement velocity and inertial measurement accuracy. The research is currently in the data processing phase, which includes separate calculation of segmental motion from each data collection method. Continuous relative phase (CRP) motion is the analysis technique being incorporated to identify the relative variability in motion of the thigh relative to the shank during the running cycle. CRP calculation utilizes the normalized phase angle plots (angle vs angular velocity) of each segment to identify periods where the two segmental motions are in-phase or out-of-phase.

32. Expression of NKX2-1 and Matrix Metalloproteinases in Oral Cancers

Evan Davis, Karl Kingsley | Dental Medicine

Background: NKX2-1 is a homeobox protein coding gene, which has also been associated with some types of gastrointestinal, lung and neuroendocrine tumors. Some evidence now suggests that NKX2-1 is regulated by microRNA-365, a key central mediator of lung cancer progression; although virtually no information is available regarding the expression of NKX2-1 in oral cancers. Based upon this evidence, the primary goal of this study was to determine if any well-characterized oral cancer cell lines express mRNA specific for NKX2-1, as well as other critical miR-365 downstream inhibition targets, such as MMP-2 and MMP-9.

Methods: Three oral squamous cell carcinoma cell lines (CAL27, SCC25, SCC15) were cultured and RNA extracted from 10^7 cells. Following purity and quantification, standardized aliquots of RNA were subsequently screened for mRNA expression using PCR primers specific for NKX2, MMP-2 and MMP-9. GAPDH and Beta-actin were used as positive controls and PCR standards.

Results: NKX2 mRNA expression was observed in all three cell lines, as were both MMP-2 and MMP-9. However, comparative analysis using relative endpoint (RE)-PCR revealed greater expression of both NKX2 and MMP-9 in all cell lines examined.

Conclusions: This study may be among the first to describe NKX2-1 expression in any oral cancer cell line. Moreover, as recent evidence has suggested that higher expression levels of NKX2-1 may, in fact, correlate with decreased potential for metastasis due to concomitant inhibition of MMP-2 and MMP-9; these studies may be among the first to describe cellular expression of NKX2-1 with enhanced expression of MMP-9. In addition, other studies demonstrate the NKX2-1 axis may be required for human papillomavirus-mediated tumorigenesis (an increasing feature of many oral cancers), which further suggest more elucidation is necessary regarding expression of NKX2-1 and any functional interactions and associated signaling pathways.

Presentation: School of Dental Medicine Student Research Day, UNLV (February 2016)
AADR Annual Meeting, Los Angeles, CA (March 2016)

**Science and Health Science
Poster Session E – Ballroom**



Presentations

- 9:00 – 9:15am (#33) Stephanie Molina,
Department of Health
Physics and Diagnostic
Services
- 9:15 – 9:30am (#34) Inyoung Chong, School
of Dental Medicine
- 9:30 – 9:45am (#35) Saruna Ghimire,
School of Public Health
- 9:45 – 10:00am (#36) GM Jonaid, School of
Life Sciences
- 10:30 – 10:45am (#37) James Luke Taylor and
Ian Pearson, School of Dental
Medicine
- 10:45 – 11:00am (#38) Daniel Mast,
Department of Chemistry
- 11:00 – 11:15am (#39) Ghazaleh Rezaei and
Weston Milne, School of
Dental Medicine
- 11:15 – 11:30am (#40) Debra Tacad,
Department of Kinesiology
and Nutrition Sciences

33. Use of Drug Carrying Macrophages as Delivery Vehicles for Treatment of Brain Tumors

Stephanie Molina, Henry Hirschberg, Steen Madsen | Health Physics and Diagnostic Sciences

Photochemical internalization (PCI) is a novel modality for the site-specific release of endocytosed macromolecules (such as chemotherapeutic drugs) based on the activation of vesicle-localized photosensitizers by light. This technique has proven to be effective in enhancing the delivery and biological activity of endocytosed chemotherapeutic agents as observed through inhibited cell growth.

As with current chemotherapeutic treatment approaches, conventional PCI is limited by the lack of tumor cell specificity of the chemotherapeutic agent. To address this limitation, macrophages (Ma) will be used as drug delivery vehicles. As a result, cancer cell killing will occur through a bystander effect rather than through direct contact with the chemotherapeutic agent. Since chemotherapeutic agents have significant cell toxicity, their effect on these living delivery vehicles must be examined in order to optimize efficacy. Initial work will focus on a comparison between conventional PCI and Ma-mediated PCI. In particular, drug loading optimization (i.e. the Ma carrying capability) will be emphasized.

Development of this cell-based vectorization technique has tremendous applicability to brain tumor treatment given these circulating cells have the ability to actively migrate past the compromised blood-brain barrier to directly release elevated concentrations of a compound to the tumor microenvironment.

34. All-Trans Retinoic Acid (ATRA)-Induced Effects on Dental Pulp-Derived Mesenchymal Stem Cells (DPSC)

Inyoung Chong, Yikwon Jang | Dental Medicine

Dental pulp stem cell (DPSC) recovery and storage is a recent phenomenon that provides the potential for functional cell replacement and therapy over the long term. Recent evidence suggests that mesenchymal stem cells (MSC) may be induced towards differentiated phenotypes in vitro using a variety of stimuli and cytokines, including all trans retinoic acid (ATRA), although fewer studies have explored this potential in DPSC. The primary goal of this study is to explore and evaluate the potential for ATRA to influence four distinct DPSCs in vitro. A series of short- (3 day) in vitro assays involving four pluripotent DPSC lines (dpSC-17322, dpSC- 11835, dpSC-5653, dpSC-7089) were executed to assess proliferation, viability and phenotype under ATRA administration within the previously established, physiologically relevant range of 1-20 uL/mL. A dose-dependent relationship between ATRA administration and DPSC proliferation was observed. The lowest concentration evaluated (1 uL/mL) induced an increase in growth over three days that ranged between 8.9 – 41.1% compared with baseline (untreated) controls. The highest concentration evaluated (20 uL/mL) induced a much greater increase in growth over the same time period, which ranged between 52.3% and 145.3% compared with controls. Viability was slightly higher among all ATRA treated cells' although no specific, linear dose-dependent relationships were observed. In addition, qualitative observations using microscopy further suggest ATRA may induce changes to cellular morphology that may indicate initial steps towards differentiated phenotypes in all cell lines examined. These results provide some evidence that DPSC collected from different teeth and separate patients may respond nonetheless to a common proliferation and differentiation RA signal that induces similar and reproducible effects and may ultimately play an important function in providing functional, differentiated cellular replacements for injured or diseased tissues in dental patients.

Presentation: School of Dental Medicine Symposium and Student Research Day, School of Dental Medicine Campus, UNLV (February 2016)

35. Validation of the Nepalese Version of Mini Nutritional Assessment Tool

Saruna Ghimire, Binaya Kumar Baral | Public Health

Background:

There is scarce research and information related to nutritional status of elderly in Nepal. Considering the limitations in health services in terms of man, money and materials; simple instruments that require less clinical staff and resources are appropriate in context to Nepal. Therefore, this study aims to validate Mini Nutritional Assessment (MNA), a screening tool for identifying malnourished or at risk of malnutrition, among elderly people in Okharpauwa VDC in Nuwakot District, Nepal.

Methodology:

A cross-sectional study was conducted among 242 elderly in Okharpauwa VDC. Statistical analysis was performed in SPSS 20 (SPSS Inc. Chicago IL, USA). Descriptive statistics was performed to calculate the prevalence of malnutrition. Exploratory factor analysis with principal components (PCA) extraction was performed, using VERIMAX rotation with Kaiser Normalization. Sensitivity, specificity, and areas under receiver operating characteristic (ROC) curves were calculated using MedCalc version 15.11. A two-tailed p -value <0.05 was considered statistically significant.

Results:

The mean age, weight, height and BMI of the respondents were 69.76 ± 7.42 years, 48.10 ± 9.08 Kg, 150.22 ± 11.19 cm and 21.43 ± 3.93 Kg/m² respectively. The mean MNA score was 19.31 ± 4.17 and 24 % of the respondents were malnourished with further 64.9% at risk of malnutrition. Similarly, 18% of male and 29% of female were malnourished. In the principal component analysis 7 components had eigenvalues over Kaiser's criterion of 1 and in combination explained 57.7 % of the variance. The total MNA score was significantly correlated with BMI ($r=0.58$; $p<0.001$). In (ROC) curve analysis, area under curve (AUC), sensitivity and specificity were 0.81 (95 % CI =0.75-0.85; $p<0.001$), 86.21(95% CI=74.60 - 93.90) and 66.85 (95% CI=59.50 - 73.60) respectively.

Conclusions:

MNA appears to be a valid and sensitive tool for rapid nutritional screening of the elderly in context to Nepal.

36. Transposable Element Expression in Human Somatic Cells

GM Jonaid, Mira Han | Life Sciences

Retrotransposons are genetic elements that can multiply themselves in a genome. Retrotransposons are reported to affect human genome by inserting mutations, causing genomic instability and variations in gene expressions. LINEs, particularly L1 family, have been reported to be discovered in numerous cancer types such as colorectal carcinoma, breast carcinoma, liver hepatocellular carcinoma, etc. Moreover, numerous bioinformatics tools such as cufflinks, Repenrich, TETranscripts, etc. have paved the opportunity to provide us the raw count data of the genes and retrotransposons from the RNA-seq data. In this study, we have investigated the expression of retrotransposons, particularly LINEs (L1) and SINEs (alu), in human somatic cells. With the huge amount of data we generated, we performed differential expression analysis by three specific tools: DESeq, DESeq2 and EdgeR. We found huge amount of L1 expression in colorectal carcinoma, liver hepatocellular carcinoma, kidney renal adenocarcinoma, kidney papillary carcinoma, breast carcinoma, and prostate carcinoma, etc. As our study is still underway, we could not perform analysis for the differential expression of L1 and alu across every specific types of cancer till today. However, we have completed differential expression analysis of rectum cancer. With 9 rectum cancer raw count data along with normal cell raw count data, we found that both L1 and alu are differentially expressed in the rectum cancer. Our ultimate purpose is to explore large scale analysis retrotransposon expression in cancer that has not been performed by in large extent by any study.

37. Evaluation of Differential Oral Cell Type-Specific Responses to E-cigarette Components

Ian Pearson, James Taylor, Karl Kingsley | School of Dental Medicine

Background: Tobacco use and alcohol consumption are the main risk factors contributing to the development of oral and pharyngeal cancers (OPC) in the United States, although recent efforts at smoking cessation and prevention have made significant progress. One of the more recent tools has been the introduction of electronic cigarettes (EC), which is promoted as a safe alternative to tobacco products by removing multiple carcinogenic compounds. This has led to widespread use, although limited scientific evidence exists to support the safety of EC components.

Objectives: Determination of the synergistic biological effects of EC aerosol mixtures on cells and tissue specifically from the oral cavity. **Methods:** Using in vitro protocols, the effects of EC components on cell viability, metabolism, proliferation, and death (which are largely missing from the evidence base) are the primary focus of this study.

Results: Preliminary data suggests that the primary constituent (vapor condensate of liquid nicotine) at 5.77×10^{-5} M has differential and specific effects on normal oral gingival cells, including significant reductions in cell viability (-61.1%) and proliferation (-48.7%) over three days.

Conclusions: A limited number of studies have demonstrated nicotine-induced genotoxicity in parotid gland cells and decreased viability in periodontal ligament cells, but none have explored these effects on the major oral tissues, such as gingival epithelial cells. Our working hypothesis is that co-administration of EC-based levels of nicotine in combination with the most commonly described chemical additives including glycerol, propylene glycol and ethylene glycol may, in fact, synergistically amplify these deleterious effects.

Presentation: American Association for Dental Research Annual Meeting, Los Angeles, CA (March 2016)

38. Equation of State for Technetium by X-ray Diffraction

Daniel Mast, Eunja Kim, Emily Siska, Frederic Poineau, Kenneth Czerwinski, Barbara Lavina, Paul Forster | Chemistry

Technetium is one of the few elements that there is no structural information or phase diagram for the high pressure and high temperature regimes. Due to the unstable nature of technetium, there have been minimal studies investigations the high pressure behavior of this element. In this study, the equation of state has been determined from direct measurements of the pressure-volume relationship. The structural investigation of technetium metal was conducted using synchrotron X-ray diffraction in a diamond-anvil cell. The hexagonal structure has been predicted to be stable up to 273 GPa and observed to be stable up to a maximum pressure of 155 GPa. Using the Vinet equation of state, the data was fit with an ambient isothermal bulk modulus of $B_0 = 266(3)$ GPa and its first pressure derivative of $B_0' = 5.3(1)$. Previously accepted values of the bulk moduli, determined by indirect experimental techniques or theoretical models, are considerably high and demonstrate a contradiction in our understanding of periodic trends in the transition metals.

Presentations: IUCr High Pressure Workshop (September 2015)
American Crystallographic Association Annual Meeting (July 2015)

39. Cariogenic Pathogen *Scardovia wiggsiae* Screening among Pediatric Orthodontic Patients: A Pilot Study

Ghazaleh Rezaei and Weston Milne | Dental Medicine

Background: Dental caries remains one of the most prevalent oral health diseases in the United States, affecting nearly half of all children and a majority of adults. Most medically important cariogenic bacteria, including *Streptococcus*, *Lactobacillus*, *Actinomyces* and *Veillonella* species are well known, although recent evidence has identified the new cariogenic pathogen *Scardovia wiggsiae* (*S. wiggsiae*) among children and minorities with severe early childhood caries. Objectives: Based upon these new findings, the goal of this project was to determine the prevalence of this new cariogenic pathogen *S. wiggsiae* from a repository of previously collected pediatric saliva samples.

Methods: DNA was isolated from previously collected saliva samples (n=48) and was subsequently screened for the presence of *S. wiggsiae* using polymerase chain reaction (PCR) and primers designed specifically to distinguish this organism. Results: Fifteen (15) samples tested positive for *S. wiggsiae*, representing 31.25% of the samples screened.

Conclusions: As previous studies from this laboratory using adult orthodontic patients and pediatric non-orthodontic patients revealed prevalence of and 14% and 21.5%, respectively - these findings suggest that the newly identified cariogenic pathogen *S. wiggsiae* may disproportionately affect pediatric orthodontic patients for reasons that are not well understood, which imply more detailed and focused research in this area is needed. As previous research has demonstrated that oral health status and caries risk may be related to education, income, and socioeconomic status, these findings help to elucidate and contextualize the risks facing these populations.

40. Hunger Games: The Effects of Alternate Day Fasting on Food Intake, Body Weight, and Leptin and Ghrelin in Rats

Debra K. Tacad, John C. Young, Laura Kruskall, James Navalta, Richard Tandy and Robbin Hickman | Kinesiology and Nutrition Sciences

Purpose: To determine whether a compensatory increase in food intake occurs following a day of fasting; and to determine the response of leptin and ghrelin to alternate day fasting.

Introduction: Leptin and ghrelin are two hormones implicated in the regulation of food intake and body weight. Alternate-day fasting is an alternative to calorie restriction diets in reducing body weight.

Methods: Male Wistar rats were randomly assigned to either the ADF group (n=7) or the control group (n=7). The ADF group will have alternating 24-hour fasting and feeding days for 30 days. Fasting rats will be limited to 3-4 g of standard chow on fasting days and 50-60 g on feeding days. The control group will have 50-60 g of food every day for 30 days. Food consumption for both groups will be measured daily, and body weight will be measured weekly. Blood (600 µl) will be taken from the tail of each rat on days 1, 2, 29, and 30 for determination of leptin and ghrelin levels by radioimmunoassay.

Preliminary Results: Food intake of ADF rats was 20% greater on fed day compared with control rats (23.7 g vs 19.8 g, respectively). Body weights were significantly different between groups (p<0.001) after the 1st week of treatment (control: 231 g vs ADF: 186 g).

Conclusion: It is premature to make definitive conclusions based on these preliminary results.

**Social Science
Poster Session A – Ballroom**



Presentations

- 9:00 – 9:15am (#41) Christopher Kiley,
Department of Psychology
- 9:15 – 9:30am (#42) Ashley Lauzon,
Department of Anthropology
- 9:30 – 9:45am (#43) Karli Nave,
Department of Psychology
- 9:45 – 10:00am (#44) Cristina Tica,
Department of Anthropology
- 10:30 – 10:45am (#45) Carrie Underwood,
Department of Psychology
- 10:45 – 11:00am (#46) Stacy Graves,
Department of Psychology
- 11:00 – 11:15am (#47) Elizabeth Duffy,
Department of Anthropology
- 11:15 – 11:30am (#48) Leizle Lapping-Carr,
Department Psychology

41. Reconsolidation: The Effect of Spatial Context and Expectations

Chris Kiley, Colleen Parks | Psychology

Consolidation is the process by which memories become stable over time. Accessing a previously consolidated memory trace brings it back into a labile state where it must then undergo a re-stabilization process known as reconsolidation. During this process memories are susceptible to interference and may be updated with new information. However the specific boundary conditions for this effect in episodic memory are still unclear. Some studies suggest that reconsolidation is only necessary when new information is presented in a spatial context that is indistinguishable from the spatial context of the original memory. Other results indicate that regardless of space, reconsolidation is required when there is a mismatch between the conditions of the original and new learning. Here, we aimed to investigate whether spatial context is the only reminder that is necessary to trigger reconsolidation (experiment 1) and if a violation of expectations in the same spatial context would trigger the need for reconsolidation (experiment 2). Results from experimental 1 indicated a significant main effect of spatial context, replicating the finding that spatial context can trigger a memory updating process. Preliminary results from experiment 2 suggest that engaging in an unexpected activity can trigger a memory updating process.

Projected presentation: Conference for the Association for Psychological Science (May 2016)

42. Food Grinding Technology of the Mimbres Mogollon, 200-1130 A.D.

Ashley Lauzon | Anthropology

Food grinding technology was a vital aspect of prehistoric food processing strategies and is therefore important in understanding how prehistoric groups modified technology to adapt to environmental, economic, and social impacts. The Mimbres Mogollon culture of southwestern New Mexico used specific forms of grinding technology to process maize and other food resources for various recipes. The goals of this research were to document food grinding technology and examine how it developed in the region between 200-1130 A.D. Using data gathered from published research by scholars in the field, and through personal analysis of grinding technology, this research examined the developments of food grinding technology and how factors, such as agriculture, population density, labor demands, and human agency, may have affected these developments. Over the course of this time period the Mimbres Mogollon became more dependent on maize agriculture and data indicates the introduction of more efficient grinding technology. Not one factor can be solely responsible for modifications in technology that are found within the region. Evidence indicates that multiple interacting factors accounted for changes in food grinding technology between 200 and 1130 A.D. in the Mimbres Valley.

43. Musical Rhythms Induce Long-Lasting Beat Perception in Musicians and Non-Musicians

Karli Nave, Erin Hannon, Joel Snyder | Psychology

Listeners are exposed to rhythmic stimuli on a daily basis, whether from observing others moving, listening to music, or listening to speech. Humans easily perceive a beat (quasi-isochronous pattern of prominent time points) while listening to musical rhythms, as evidenced by experiments measuring synchronized tapping or perceptual judgments. It is assumed that listeners infer the beat from regularly occurring events in the musical surface, but they sustain an internally driven metrical percept once the beat is inferred. Nevertheless, relatively few studies have attempted to disentangle the surface information from the internal metrical percept. We therefore attempted to measure the robustness of internally driven metrical percepts using a musical rich induction stimulus followed by a beat matching task with metrically ambiguous stimuli. During induction listeners heard an excerpt of unambiguous duple- or triple- meter piano music. They then heard a beat-ambiguous rhythm, which could be perceived as either duple or triple. In the probe phase, listeners indicated whether a drum accompaniment did or did not match the stimulus. Listeners readily matched the drum to the prior musical induction meter after the beat-ambiguous phase. Although musicians outperformed non-musicians, non-musicians were above chance. Experiment 2 examined the time course of the internal metrical percept by using the same task but varying the duration of the ambiguous phase. This revealed that listeners performed accurately and comparably for 0, 2, 4, or 8 measures of the ambiguous stimulus. Overall these results provide additional evidence for perception and long-lasting memory for musical beat.

Presentation: Association for Research in Otolaryngology Annual Mid-Winter Meeting; San Diego, CA (February 2016)

44. Romans or “Barbarians”, Who had it Better? Health Data from Two Groups Living on the Edge of the Empire

Cristina Tica | Department of Anthropology

The goal of this research project is to examine through the methodical study of human remains how the political and socioeconomic transactions between the Romans and the “barbarians” affected health. Looking at two populations coming from the territory of modern Romania, and dating to the 4th-6th centuries CE, the study will examine and compare health status. One collection comes from the territory under Roman-Byzantine control, the site of Ibida (Slava Rusū) from the Roman province of Scythia Minor, and the other originates from the Târgsor site, located to the north of the Danube frontier, in what was considered the “barbaricum”.

The study will be looking at the individual level, community level, and regional level, in terms of pathologies and trauma to answer the questions: Were some individuals at more risk for trauma, which group was potentially more exposed to violence? Do the health profiles differ between the two sites? If so, which site was more exposed to and which was more protected from nutritional, physiological and pathological stresses? Was there any inter- and intra-group differential access to resources? Which group was doing better in terms of health, and which group was doing better in terms of trauma? By carrying out this type of research I hope to gain a better understanding of how ancient people living on the “edge” were affected and what coping mechanisms they adopted when making an existence on the border between two antagonistic spheres of influence.

Presentation: Western Bioarchaeology Group, Tempe, Arizona State University (October 2015)

45. Perceptions of Women Who do not Change Their Surname after Marriage

Carrie R. Underwood, Rachael D. Robnett, Nikki Luu, Kristin J. Anderson | Psychology

The current research focuses on perceptions of women who choose to keep their own surname after getting married. Using a between-subjects experiment, Study 1 (N = 144) demonstrated that participants perceived a woman who retained her surname as less committed to the relationship than a woman who adopted her husband's surname. Study 2 (N = 734) explored whether demographic variables and social dominance orientation (SDO), a personality trait reflecting endorsement of hierarchical social structures, influences participants' negative perceptions of women who retain their surname. A hierarchical regression revealed that demographic and personality variables' gender, age, SDO, and the 2-way interaction between SDO and gender were significantly associated with viewing a woman who keeps her surname as lower in marriage commitment. Specifically, being a woman, being younger, and being higher in SDO were associated with viewing a nontraditional woman as less committed to the success of her relationship. Furthermore, as hypothesized, the Gender x SDO interaction demonstrated that the link between SDO and perceived marriage commitment was stronger for men than for women. This research furthers the literature on sexism through demonstrating that negative perceptions of women can form based simply on the choices they make for their surnames. Specifically, this research illustrates that by merely retaining her own surname a woman is subjected to prejudice.

Presentation: Society for Personality and Social Psychology, Long Beach, CA (January 2016)

46. The Relationship between ADHD Symptomatology and BASC-2 Parent Ratings

Stacy J. Graves, Elyse M. Park, Daniel N. Allen | Psychology

Objective: Neuropsychological assessments conducted with children with Attention Deficit Hyperactivity Disorder (ADHD) often include both measures of broad behavioral ratings and levels of ADHD symptomatology. However, it is unclear the extent to which these two measures share substantial common variance or measure unique domains. In efforts to increase efficiency, clinicians may eliminate a measure from their assessment battery. Therefore, the current study examined this matter.

Method: Participants included 253 children with ADHD-Inattentive (n=163) and ADHD-Combined (n=90). Children were 10.4 years old and 70.4% male with a Full Scale IQ of 98.7. Diagnoses were established in a private practice through comprehensive evaluations, including administration of the Behavior Assessment System for Children, Second Edition (BASC-2) and DSM IV ADHD Symptom Rating Scale (DSM ADHD SRS).

Results: There were significant moderate correlations between the respective mothers' ratings of Attention Problems/Inattention and Hyperactivity on the BASC-2 and DSM-ADHD-SRS parent ratings, $p < .01$. Additionally, there were low correlations between inattention and hyperactivity on these two measures. Item level analysis indicated that DSM symptoms of poor sustained attention, distractibility, and difficulty following directions were particularly related to BASC-2 ratings of Attention Problems.

Conclusion: These data suggest that it is valuable to examine both BASC-2 and DSM ratings of inattention and hyperactivity in clinical evaluations. While these ratings share common variance, each measure provides unique information in establishing current levels of functioning. Findings with these measures are also consistent with prior research indicating that inattention and hyperactivity are related but unique symptom domains.

Projected Presentation: National Academy of Neuropsychology (November 2016)

47. Hiding in Plain View: Nonlethal Violence in the Last 100 Years at Mesa Verde (AD 1200-1300)

Elizabeth Duffy, Debra Martin | Anthropology

During the 700 period Mesa Verde was occupied by the Pueblo (AD 550 to 1300), people spent the majority of that time living on the mesa tops. However, in the late AD 1000s people moved within the alcoves beneath overhanging cliffs and began building defensive structures and housing with up to 150 rooms, making these defensive sites difficult to access but visible to those in the canyons. By the late AD 1270s there were no people left in the Mesa Verde Region. Analysis of the skeletal assemblages from several of the larger alcove communities revealed the frequencies of healed cranial depression fractures. Of the total sample of 77 individuals, 38% of males and 47% of females exhibited nonlethal head wounds. In both females and males, individuals with nonlethal head wounds were primarily young or middle aged accounting for 88% of the total number of individuals with nonlethal head wounds. The location of wounds on females were largely on the front and back of the cranium whereas males were more variable with wounds occurring on the front, top, and back of the cranium. Head wounds located above the hat brim line and other facial fractures are indicative of hand to hand fighting for both males and females. This suggests males and females were involved in similar forms of violence and that they were increasingly attacked by outsiders culminating in mass migrations out of the area.

Projected Presentation: 43rd Annual North American Meeting of the Paleopathological Association in Atlanta, Georgia (April 2016)

48. Central and Reflexive Measures of Reactivity to Human and Primate Erotica

Leiszle Lapping-Carr, Taylor Oliver, Adam Duckro, Stephen Benning | Psychology

Using measures of vasocongestion, women typically exhibit sexual reactivity to a broader range of stimuli than men. However, for women, these measures may reflect a defensive response against sexual violation rather than assessing sexual arousal. Thus, we included central ERP and reflexive measures of emotional processing during erotic and non-erotic pictures with heterosexual undergraduate participants. Erotic pictures included opposite sex couples, men having sex with men, women having sex with women, and erotic primates. Non-erotic pictures encompassed humans, primates, and landscapes. Both men and women had greater late positive potential (LPP) ERP amplitude to erotic than non-erotic pictures. Though men also had smaller P3 amplitude to the startle probe during erotic human vs. non-erotic human pictures, women had smaller probe P3 amplitude during erotic human vs. non-erotic primate pictures. Reflexive activity did not track with the ERP findings. Women had larger postauricular reflexes during opposite-sex erotica vs. non-erotic primates, whereas men had larger postauricular reflexes during men having sex with men vs. non-erotic pictures and opposite-sex erotica. However, women's startle blink magnitude did not differ among picture categories, and men showed smaller startle blink magnitude during opposite sex erotica vs. erotic primates. Overall, ERP measures broadly reflected what would be expected from emotional arousal, but postauricular and startle blink modulations indexed different emotional processes separate from those measured by prior vasocongestion research.

Presentation: 55th Annual Meeting of the Society for Psychophysiological Research (September 2015)

**Social Science
Poster Session B – Ballroom**



Presentations

- 9:00 – 9:15am (#49) Cheryl Anderson,
Department of Anthropology
- 9:15 – 9:30am (#50) Carol Franco,
Department of Anthropology
- 9:30 – 9:45am (#51) R. Shane Westfall,
Department Psychology
- 9:45 – 10:00am (#52) Amber Osterholt,
Department of Anthropology
- 10:30 – 10:45am (#53) Stephanie Verba,
Department of Psychology
- 10:45 – 11:00am (#54) Mark Toussaint,
Department of Anthropology
- 11:00 – 11:15am (#55) Mandy Walsh,
Department of Psychology
- 11:15 – 11:30am (#56) Yulia Gavrilova,
Department of Psychology

49. Blood in the Villages: Situating Massacres within Broader Social Processes

Cheryl Anderson and Debra L. Martin | Anthropology

Massacres are a unique form of violence that has been documented in both ancient and modern societies. Massacres should not be viewed as events occurring at specific moments in time but rather should be seen as non-random processes. The purpose of the perpetrators of a massacre can vary but often include a desire to eradicate a group of people perceived as the other. In order to gain a broader understating of the history of massacres we examined published data from 15 massacre archaeological human skeletal samples. These cases ranged in time from approximately 12000 BCE to 1300 CE and were from a wide variety of locations including North America, North Africa, Southwest Asia, and Central Europe. Variables used included time period, archaeological context, demography and the interpretation provided by the authors of the study while patterns were difficult to identify some interesting data resulted from the analysis. For example, 11/15 (73%) of the cases had evidence of torture and/or mutilation of the victims. This included 2 cases (13%) with skeletal evidence suggestive of torture of the feet or legs and 7 sites (46%) with “extreme processing” that was sometimes interpreted as evidence for cannibalism. Demographic profiles published in these cases were often consistent with a typical population profile but abduction of some females was suggested in one study and is possible in at least 2 others based on male to female ratios. Overall, this supports the idea that massacres often target entire communities, including even the youngest members of society.

Projected Presentation: 85th annual meeting of the American Association of Physical Anthropologists (April 2016)

50. Female Mate Preferences among Unpartnered Mothers: A Pilot Study

Carol Franco | Anthropology

The purpose of the proposed study is to sample an experimental design resembling online dating profiles that will be used to understand mate preferences among single mothers. Participants will be asked to rate 16 male profiles that include three qualities. These qualities are 1) Facial attractiveness 2) Financial security 3) Kindness Each quality is dichotomized and then randomized on each “Online Dating Profile”. The pilot study will provide information about the reliability of the design to test three proposed hypotheses using a life history and evolutionary framework. The proposed research questions are: 1) How does having direct childcare assistance from family members influences the qualities she prefers in a mate? 2) How do differences in income among single mothers influence mate preferences? 3) How do single mothers and women without children rate qualities differently in potential mates?

Previous research has not investigated how having a young dependent child can influence a woman’s mating decisions and the qualities that she may find valuable in a romantic partner. This study will contribute to existing mate preference research by investigating how having children will influence mating decisions.

Social Science Poster Session B – Ballroom
9:30 – 9:45am

51. The Effect of Physical Attractiveness on Endorsement of the Just World Hypothesis

R. Shane Westfall, Murray G. Millar | Psychology

The just-world hypothesis revolves around two key elements: that good people are rewarded and that bad people are punished. This important construct plays a significant role both in determining an individuals' view of the world and influencing their subjective experiences within that world. Previous research has found that endorsement of the just-world hypothesis varies depending upon personality factors such as gender, wealth, and race. Typically, individuals privileged by society tend to be stronger endorsers. Extending on work exploring physical attractiveness stereotypes, the current study aims to add to this body of research by examining the effect of physical attractiveness of the self on endorsement of this belief. Participants completed a measure of perceived physical attractiveness as well as a measure of endorsement of the just-world hypothesis. Participants were then photographed and these photos were rated on attractiveness by another group of participants. Consistent with our predictions, our findings suggest a statistically significant relationship between physical attractiveness and belief in a just-world.

Presentation: Annual Meeting Society of Personality and Social Psychologists, San Diego, CA (January 2016)

Social Science Poster Session B – Ballroom
9:45 – 10:00am

52. Heads that Speak: Dividuals and Trophies from the Eastern Woodlands Archaic

Amber Osterholt | Anthropology

The practice of trophy taking is the intentional, often violent removal of human tissues and spans space and time. Late Middle to Late Archaic trophy taking is found throughout the Eastern Woodlands but concentrates around the Ohio River and its major tributaries. Although trophy taking has been found at several late Middle to Late Archaic sites, trophy taking is infrequent, and relatively few individuals overall were harvested for a trophy. Though any body part could be taken, heads were common. Trophy heads were utilized for a short time, then deposited as grave goods. While trophy taking was related to warfare practices in the Archaic, not every individual who was killed had a trophy taken from them. A more nuanced approach to trophy taking is necessary. The meaning and power of trophy heads are examined using perspectives of the partible body and dividuality, which highlight the ways body parts retain the identity of the individuals from whom they were harvested. Thinking about trophies in this way contextualizes the meanings that trophies may have had and the ways they were used to negotiate group and individual identity during the Middle and Late Archaic Periods in the Eastern Woodlands.

Presentation: Society for American Archaeology 81st Annual Meeting, Orlando, FL (April 2016)

53. How Predominant Female Experience Influences Children’s Categorization and Typicality Judgments
Stephanie Verba, Jennifer Rennels | Psychology

Infants’ predominant experience with females results in an asymmetry in their face processing. Yet, little is known how predominant female experience influences development beyond infancy. We investigated how early familiarity with females affected children’s grouping of people and judgments of a person’s typicality.

To assess grouping, children viewed 12 triads of faces. We examined whether children would choose likeness to a target based on sex or femininity. To assess typicality judgments, children saw male and female face drawings that were high or low feminine. We asked each child if the artist did a “good job” or if they made a “mistake.”

For the triad task, early childhood participants more often matched faces based on sex, whereas middle childhood participants were equally likely to match faces based on sex or femininity. For the typicality task, children more often stated that the artist did a good job than made a mistake in drawing the picture. Children stated high feminine females, high feminine males, and low feminine males, were a good job, whereas, children were equally likely to state the artist did a good job or made a mistake when viewing low feminine females.

During early childhood, children notice sex similarities when grouping faces together, which might result from having a female-like facial representation they use to categorize faces as female or not. By middle childhood, however, children appear more attuned to use femininity to group faces together, which might be due to having more differentiated facial representations at this age.

Presentation: Society of Research of Human Development, Denver, CO (March 2016)

54. A Bioarchaeological Analysis of an Early Bronze Age Cemetery from Szarbia, Poland: Phase
Mark Toussaint, Piotr Wlodarczak | Anthropology

This work represents the first phase of a full bioarchaeological analysis of an Early Bronze Age cemetery in Southern Poland. In 2000, a section of a cemetery of the Mierzanowice culture was excavated by Barbara Baczynska and her team as part of an archaeological rescue operation. This section of the cemetery in Szarbia (gmina Koniusza), Poland, was found to contain the graves of 45 individuals. Until now, the remains have not been investigated bioarchaeologically. This presentation reflects the first data gathered over 3 weeks in January, during which time approximately 20% of the collection was thoroughly cleaned and curated. The remainder of the curation and analysis will take place in the summer of 2016. Preliminary data show extensive tooth wear and the presence of caries, periapical abscesses, and antemortem tooth loss’ consistent with other prehistoric farming populations’ as well as the possible use of dentition as a tool; furthermore, the adults investigated show remarkable development of lower-body musculature. Future analyses will focus particularly on sex-based differences in health, nutrition, and muscle development as a window onto gender roles and divisions of labor in this community, which practiced a strict dichotomy in the mortuary treatment of males versus females.

Presentation: Society for American Archaeology Annual Meeting (April 2016)

55. Women's Suspicion of Costly Traits Varies throughout the Menstrual Cycle

Mandy Walsh, Murray Millar | Psychology

The purpose of this study was to explore women's suspicion of claims made during courtship communications across the menstrual cycle. It was hypothesized that participants would be more suspicious of claims made about reproductive relevant traits when they are at peak fertility. To test the hypothesis, participants read a total of eight scenarios describing traits relevant to female reproduction (wealth, commitment, and child interest), traits relevant to male reproduction (physical beauty, youth, and sexual availability), and traits neutral to both genders (stargazing and game playing). After each scenario, participants indicated their suspiciousness about the veracity of the communication on five scales. Participants also completed a self-report measure to estimate fertility status. As predicted, women were significantly less likely to believe female costly scenarios than male costly or neutral scenarios when they were most fertile. When women were not at peak fertility, there were no significant differences in suspicion.

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Presentation: Society for Personality and Social Psychology Conference, Long Beach, CA (February 2015)

56. Evaluation of a Goal-Oriented Alcohol Prevention Program in Student-Athletes

Yulia Gavrilova, Travis Loughran, Arturo Soto-Neva, Michelle Pitts, Kimberly Schubert, Graig Chow, Bradley Donohue | Psychology

Student-athletes are a high-risk group for alcohol misuse and abuse in need of effective prevention and intervention programs. Indeed, eighty percent of student-athletes have consumed alcohol in the past year, and collegiate student athletes evidence higher binge-drinking rates in the past two weeks (55%) as compared with non-athlete students (36%). There has been limited research regarding alcohol prevention programs tailored specifically for student-athletes and the brief interventions tailored for general college student populations have not been as effective for student-athletes as their non-athlete counterparts. The purpose of the current study was to examine the efficacy of a goal-oriented prevention program for student-athlete alcohol use in a randomized controlled trial. It was hypothesized that a behaviorally based goal setting program would lead to reduced alcohol consumption, as compared with student athletes who were randomly assigned to a no-prevention control group. Participants were 183 (101 female; 82 male) NCAA student-athletes from a southwestern university. At baseline, student-athletes completed the Sport Interference Checklist (SIC; Donohue et al., 2007) to assess cognitive and behavioral problems that interfere with sport performance in training and competition, and the Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 2001) to assess alcohol-related risk. After baseline, student-athletes were randomly assigned to a goal-based prevention program (N=93) or a control group (N=90). Two months later student-athletes completed the SIC and AUDIT. Analyses of covariance revealed that the participants in the goal prevention program evidenced significantly lower AUDIT-C [$F(1,180)=4.14, p=.02$, one-tailed], SIC training scores [$F(1,179)=5.38, p=.01$, one-tailed], and SIC competition scores [$F(1,174)=3.87, p=.03$, one-tailed]. These results support that goal-based prevention programs may be efficacious in reducing alcohol use consumption while concurrently reducing cognitive and behavioral factors that have been found to interfere with sport performance. Implications for future incorporation of goal-based prevention programming for student-athletes will be discussed.

**Social Science
Poster Session C – Ballroom**



Presentations

- 9:30 – 9:45am (#57) Brenna Wilkerson,
Department of Anthropology
- 9:45 – 10:00am (#58) Travis Loughran,
Department of Psychology
- 10:30 – 10:45am (#59) Lisa Beckman,
Department of Psychology
- 10:45 – 11:00am (#60) Elizabeth Brogdon,
Department of Anthropology
- 11:00 – 11:15am (#61) Christina M. Vanden
Bosch der Nederlanden,
Department of Psychology

57. Diet and Subsistence Strategies among Virgin Branch Puebloan (VBP) Groups Living in the Muddy River Valley in Southern Nevada and on the Shivwits Plateau in Northwestern Arizona

Brenna Wilkerson | Anthropology

This study focuses on better understanding diet and subsistence strategies among Virgin Branch Puebloan (VBP) groups living in the Muddy River Valley in southern Nevada and on the Shivwits Plateau in northwestern Arizona. Residue analysis, specifically gas chromatography and mass spectrometry (GC-MS), are used to identify absorbed food residues in three types of VBP ceramic jars: Moapa Gray Ware, Shivwits Ware, and Tusayan Virgin Series. Currently, there is no consensus on the diet and subsistence strategies practiced by VBP groups. In part, this is due to the limited archaeological research in the area, particularly on the Shivwits Plateau, and the lack of plant and animal remains found in this area (likely due to preservation issues). This project will produce data on the types of lipids present in VBP ceramics which can be used to infer general categories of foods which may have been cooked in that vessel. Additionally, this data will be used to compare patterns of subsistence between Virgin Branch Puebloan sites in the lowlands along the Muddy River and at an upland site on the Shivwits Plateau. These two areas have markedly different environments, meaning there were different resources available in each area and different risks associated with maize agriculture. The results of this research will also be used to look at the possibility of food exchange between these two environmental zones.

Presentations: Three Corners Conferences, University of Nevada, Las Vegas (November 2015)
Society for American Archaeology Annual Conference, Orlando, FL (April 2016)

58. Psychological Skills as a Predictor of Thoughts and Stress Sport Training

Travis Loughran, Bradley Donohue | Psychology Department

Psychological experience contributes significantly to optimum sport performance (Anderson, Hanrahan, & Mallett, 2014). Athletes report factors such as negative thoughts, anxiety, and an inability to maintain focus interfere with sport performance (Donohue, Silver, Dickens, Covassin, & Lancer, 2007). Conversely, the use of psychological skills predicts subjective sport performance (Cox, Shannon, McGuire, & McBride, 2010). The purpose of this study was to assess the extent that using psychological skills specific to improving attention and managing emotions had on reducing thoughts and stress that interfere with sport performance in athletic training. Participants were 101 intercollegiate athletes (27 Male; 74 Female) from eight sports and representative of all levels of NCAA competition (D1=39; D2=22, D3=40). Age of athletes ranged from 18-24 years (M=19.65, SD=1.31). Participants completed a demographic form, the Sport Interference Checklist (SIC; Donohue et al., 2007), and the Test of Performance Strategies (TOPS; Thomas, Murphy, & Hardy, 1999) as part of a larger battery. Multiple regression analyses were conducted to examine the relationship between SIC Training subscales and TOPS practice subscales. Results revealed that TOPS Emotional Control in Practice and TOPS Attentional Control in Practice subscales explained 30.4% of the variance for scores on the SIC Thoughts & Stress in Training subscale. The use of emotional control strategies in practice was a significant predictor of interfering thoughts and stress in training, while the use of attentional control strategies approached significance. Implications for the understanding of the relationship between barriers to sport performance and psychological skills are discussed.

Presentation: Association for Applied Sport Psychology 30th Annual Conference (October 2015)

59. Difficulties in Making Meaning of Health-Related Stressors as a Unique Predictor of Hopelessness

Lisa M. Beckman, Vincent Rozalski, Jason M. Holland | Psychology

The present study aimed to examine difficulties making meaning of health-related stressors as a unique correlate of hopelessness among older adults with a chronic illness. Older adults who experience hopelessness have a higher likelihood of experiencing depression and are at higher risk for suicide. Difficulties making meaning out of stressful life experiences have been shown to be uniquely associated (after controlling for other known predictors) with a number of detrimental outcomes including suicide risk, life threatening behavior, dysregulated cortisol, and poorer general health. However, the link between meaning-making and hopelessness has yet to be established, and few studies have examined meaning-making among older adults using a validated measure. In the present study, we tested the hypothesis that greater difficulties with meaning made of health-related stressors (as assessed by the Integration of Stressful Life Experiences Scale [ISLES]) would be uniquely associated with hopelessness in a geriatric sample ($n = 275$) of chronically ill older adults (Mean age = 68.61 years) who had experienced debilitating illness for an average of approximately 10 years. Multiple regression analysis demonstrated that greater difficulties with meaning-making were uniquely associated with hopelessness ($\hat{\beta} = -.34$, $t(253) = -3.52$, $p < .01$), even after controlling for demographic-, health-, and psychosocial-related variables. The present findings highlight the utility of the ISLES as an assessment tool with older individuals. Given that older adults who experience hopelessness are likely to experience other psychiatric problems as a result of hopelessness, clinicians may consider using this measure to better guide therapeutic intervention.

Presentation: Annual Meeting Gerontological Society of America (2015)

60. Study of the Mother-Father-Maternal Grandmother Triad in Urban Merida, Mexico

Elizabeth Brogdon | Anthropology

Cooperative breeding models have offered great insight into the facultative nature of the human child rearing experience. Emphasis has been placed on the importance of both the maternal grandmother and the child's biological father in providing different forms of child and maternal support. Many of these studies have neglected to recognize the agentive status of the maternal role in mediating and seeking out care from these multiple actors. The purpose of this study is to investigate the strategies used by new mothers, who are entering a stringent life history stage with unique energetic trade-offs, and the social factors which may influence her use of differential strategies. The proposed study will use semi-structured interviews paired with a questionnaire to consider the impact of residential patterns and socioeconomic variation on the types of strategies employed to elicit specific forms of care within the mother-father-maternal grandmother triad in urban Merida, Mexico. This study will be building on the evolutionary concept that human child rearing is a group endeavor with the mother as an active intermediary between the child and the contributing group with whom she must act in ways that maximize potential support while maintaining the social network cohesion.

61. Listeners Can Be Biased to Use Object-Level Analysis during Change Detection

Christina M. Vanden Bosch der Nederlanden, Joel S. Snyder, Erin E. Hannon | Psychology

When we listen to the sounds around us, we use both acoustic details (e.g., pitch or harmonicity) and our knowledge about object categories and meaning in order to process every day sounds. However, paying attention to object-level representations may sometimes interfere with the perception of the features that make up those objects. In two change detection experiments, we assessed whether participants would be more likely to miss changes relying on semantic category knowledge (within-category: small dog to big dog; between-category: dog to trumpet) when they were primed to listen for individual objects (Experiment 2) compared to no prime (Experiment 1). Participants relied more heavily on category knowledge when primed with a secondary object-encoding task compared to no secondary task (No Prime: category effect=10%, acoustic effect=5%, $p=.141$; With Prime: category effect= 25%, acoustic effect=0%, $p<.001$). These data suggest that the object-encoding task likely biased participants to use an object-level of analysis. We thus provide some of the first evidence that a secondary task can bias the level of representation used to detect changes in complex auditory scenes.

Presentation: Association for Research Otolaryngology, San Diego, CA (February 2016)

**Social Science and Hotel
Poster Session D – Ballroom**



Presentations

- 9:15 – 9:30am (#62) Alexa Bejinariu,
Department of Criminal
Justice
- 9:30 – 9:45am (#63) Nicole Santero, School
of Journalism and Media
Studies
- 9:45 – 10:00am (#64) Kelly Stout, School of
Environmental and Public
Affairs
- 10:30 – 10:45am (#65) Miliiakeala Heen,
Department of Criminal
Justice
- 10:45 – 11:00am (#66) Nicole Frady, Program
of Marriage and Family
Therapy
- 11:00 – 11:15am (#67) Shinyong Jung,
Department of Hospitality
Administration
- 11:15 – 11:30am (#68) Olivia Tuttle,
Department of Criminal
Justice

62. Factors, Case Aspects, and Individual Characteristics Affect an Applicant's Likelihood of Receiving a Protective Order?

Alexa Bejinariu | Criminal Justice

Using data from ethnographic observations, the current study examined the influence of court factors (i.e. whether or not courtroom actors were present during the scheduled hearing date and judge's gender), case aspects (i.e. type of abused mentioned), and individual characteristics (i.e. litigants' race) on an applicant's likelihood of being granted a civil protective order. Several bivariate and multivariate analyses were conducted to assess the impact of these factors on judicial decisions to approve of civil protective orders. Based on a sample of 50 cases, this study found that protective orders were far more likely to be granted when a victim advocate was present during the scheduled hearing date. Further, after controlling for judge's gender, this study found that the female judge was significantly more likely to grant a protective order and for longer periods of time when a victim advocate was present compared to the male judge. The results of this study are then discussed in terms of their limitations and implications for the future treatment of litigants for civil protective orders.

Presentation: The American Society of Criminology, Washington, D.C. (November 2015)

63. #5YearsofOneDirection: An Analysis of the One Direction Fandom's Ability to Influence and Dominate Worldwide Twitter Trends

Nicole Santero | Journalism and Media Studies

With more than 25 million followers on Twitter and counting, One Direction's fans' known as Directioners' make up one of the most recognizable fandoms on the site. Drawing upon an updated version of fan theory highlighting the interpretive community and social hierarchy that exist within a fandom, it examines the participatory culture between One Direction fans online that helps them create worldwide Twitter trends and sometimes overshadow what is regarded as more serious news topics. Previous research studies have examined Directioners and other fandoms' Twitter relationships, but none have done so on a global scale. During a week-long tribute to the band's five-year anniversary, the fandom successfully created seven number one worldwide Twitter trends. My social network analysis through NodeXL showed that the fandom has a system of news trending on Twitter, built on an intense emotional investment to their idols, where top influencers are able to push out information to an extensive network of followers' those who play a key supporting role in executing the difficult task of creating worldwide Twitter trends on a daily basis. Directioners' use Twitter to maintain One Direction's relevance in pop culture, while establishing their own status as prominent and savvy social media users in the digital era. Implications discuss fandoms as targets for promotional efforts via social media, and their power as a large group to potentially raise global awareness on topics and issues beyond the biggest boy band in the world.

Presentation: Far West Popular Culture Association, Las Vegas, NV (February 2016)

64. Crossover Girls in Clark County Juvenile Detention

Kelly Stout, M. Alexis Kennedy, Magann Jordan | Criminal Justice

Far more is known about boys in the juvenile justice system than about girls. While boys still represent the majority of the population in juvenile justice, there has been an increase in the detention and placement of girls. Between 1991 and 2003 there was a 98% increase in detention of girls in contrast to a 29% increase in detention of boys (Chesney-Lind, Morash & Stevens, 2008). When looking at types of crimes juveniles are detained for, girls are more likely to be held for family-related crimes (e.g., incorrigibility, family related physical altercations) whereas boys are detained for more serious crimes (Gavazzi, Yarcheck & Chesney-Lind, 2006).

The current study is an update of research that was initiated seven years ago by the Clark County Department of Juvenile Justice Services (DJJS). The goal of the original and the current research project is to identify the specific needs and issues of the girls in the Clark County Juvenile Detention Center (CCJDC). The girls were directly asked questions from three sources: the Center for Disease Control's Youth Risk Behavior Survey, the survey by Owen & Bloom (2000), and the GIRLS Initiative Workgroup convened by DJJS.

Presentation: Western Psychological Association

65. Eyes in the Sky: Public Attitudes Towards Police Use of Drone Technology

Miliaikeala S.J. Heen, Joel D. Lieberman, Terance D. Miethe | Criminal Justice

To date, the use of unmanned aerial systems (i.e. aerial drones) for law enforcement work has primarily occurred at the Federal level. However, this technology has tremendous utility for state and local law enforcement agencies, as well. In some instances, the Federal Aviation Administration (FAA) has already approved the use of drone technology by police departments around the country. Further, recent changes to FAA policy (regarding the use of drones in the national airspace) will undoubtedly lead to rapid adoption by state and local law enforcement agencies in the near future. Although there is considerable interest and enthusiasm on the part of law enforcement agencies for using drones, research has indicated that public attitudes toward government and commercial use of drone technology are mixed. This paper presents results from a national survey that assesses public perceptions about the various ways police departments use drone technology. More specifically, we examined drone use in different contexts (e.g., search and rescue, crime scene photography, tactical operations, etc.). We also examined the relationship of social and demographic factors to these attitudes. The implications of our findings for public policy and law enforcement practices are discussed.

Presentation: American Society of Criminology (November 2015)

66. Internet Infidelity Caused by the Misuse of Technology

Nicole Frady | Marriage and Family Therapy

Marital infidelity is a multidimensional issue, which causes the couple to seek marital therapy. There are many types of extramarital relationships characteristics that lead to affairs. Treating infidelity is a difficult processâ both traditional and Internet infidelity can be composed of sexual and emotional elements (Atkin, Baucom, & Christensen, 2005) The Internet has altered the way that individuals, couples, and families interact with one another. The ability to connect to people at your fingertips on the Internet has become very assessable with this new era people can develop emotional relationships rather than physical relationships (Jones & Hertlein, 2015). Clinically, the problem with the misuse of the Internet can be categorized as an addiction or as infidelity. At this time, there is not a diagnosable disorder for Internet infidelity, Internet addiction, or sex addiction facilitated by the Internet. Whereas, the controversy categorizing emotional infidelity and physical infidelity as infidelity, each individual and couple have a different definition of emotional and physical infidelity.

The term infidelity has been defined in multiple ways and has a range of behaviors outside the committed.

67. Is Big Data Meaningful to the MICE Industry? Discovering Influence of Big Data on Meeting Professionals' Decision Making Behavior

Shinyong Jung, Eunmin Hwang, Kristin Malek | Hospitality Administration

Developing and utilizing good data analysis can help the hospitality industry solve various business problems if analyzed properly. Big data analytics has become a demanded skillset that can be used to enlighten business decisions under uncertainty. With the rapidly expanding volumes of data that customers and/or the public generate, the resulting analyses can provide valuable information that can enable hospitality organizations to optimize and enhance the guest experience. This can help the company become more competitive and profitable. Nevertheless, application of big data in the hospitality industry has yet to be established and has not been fully integrated into daily operation (Xiang, Schwartz, Gerdes, & Uysal, 2015). This means that organizations are missing opportunities to take the guest experience to the next level. As lodging operations are beginning to incorporate big data, the meeting and event industry are beginning to look at the potential this data could provide. As the MICE industry is maturing and real-time data collection in a variety of forms is available, the ability to utilize the information garnered by various technologies could revamp the industry and help generate more satisfied and repeat attendees. This study will investigate if meeting professionals are aware of the availability of this data and how ready they are to adopt and adapt to this rise of information. Also this study will examine how significant this big data could be in meeting professionals' decision making behavior from a traditionally intuition-based approach to being data-driven.

Presentation: 21st Annual Graduate Education & Graduate Student Research Conference in Hospitality and Tourism, Temple, Philadelphia (January 2016)

68. Power of Perspective: The Effects of Public Perceptions of Police and Fear of Crime on Attitudes Towards Aerial Drone Use

Olivia G. Tuttle, Joel D. Lieberman, Terance D. Miethe,
Mari Sakiyama, Miliiaikeala S.J. Heen | Criminal Justice

Historically, unmanned aerial systems (UAS; i.e., drones) have largely been used by the military and federal government. As UAS have become more affordable and easier to operate in recent years, state and local law enforcement agencies have become interested in adopting this technology to facilitate a wide range of police activities (e.g., search and rescue, surveillance, tactical operations, etc.). The Federal Aviation Administration (FAA) has begun to regulate the use of unmanned aerial systems, which will likely lead to the increased use of drone technology by law enforcement agencies across the country in upcoming years. However, previous research suggests that public perception of UAS use by the police is mixed, and in some cases there is considerable resistance to police departments adopting this technology. In the present research, we explore several personality factors related to public attitudes towards police UAS use. More specifically, we conducted a national survey examining the relationship between public perceptions of police legitimacy and effectiveness, as well as fear of crime and victimization, and police use of drone technology. The potential implications for public policy and law enforcement practices, particularly in terms of the introduction of UAS into local communities, are discussed.

Presentation: The American Society of Criminology
Annual Meeting, New Orleans, LA (November 2015)

Education
Poster Session A – Ballroom



Presentations

- 9:15 – 9:30am (#69) Michelle Dominguez,
Department of Educational
Psychology & Higher
Education
- 9:30 – 9:45am (#70) Cynthia Bezard,
Department of Teaching &
Learning
- 9:45 – 10:00am (#71) Rachel Part,
Department of Educational
Psychology & Higher
Education
- 10:30 – 10:45am (#72) Jessica Soria,
Department of Educational
Psychology & Higher
Education
- 10:45 – 11:00am (#73) Erdogan Kaya,
Department of Teaching &
Learning
- 11:00 – 11:15am (#74) Elena Nourrie and
Jennifer Heath, Department
of Educational Psychology &
Higher Education
- 11:15 – 11:30am (#75) Wynn Tashman,
Department of Educational
Psychology & Higher
Education and School of Law

69. Using Learning Management System to Predict STEM Achievement: Implications for Early Warning Systems

Michelle Dominguez, Phillip Merlin Uesbeck, Matthew L. Bernacki | Educational Psychology & Higher Education

Universities and the software companies they contract to support student learning have begun to develop early warning systems to address issues related to student retention and achievement. These systems rely on prediction models that identify students likely to obtain an outcome like course failure or departure from a university. The data utilized by these models varies and has implication for both the accuracy of the prediction and the opportunities it provides for intervention activities. This study examines models that predict student performance in a large lecture course in biology using only learning events logged by a learning management system (LMS), such as Blackboard Learn, prior to the first exam. Specifically, contrasting models are presented to examine: (1) whether it is valuable to employ inferences from learning theory to classify logged events and (2) whether the cross-validation approach used during model estimation has implications for predictions made in future data. Results indicated that data representation supervised by learning theory produced a more accurate logistic regression model than unsupervised modeling. This model predicted course grade better than chance, and accurately recalled 84% of students who ultimately failed to achieve the grade they needed to proceed in their STEM major. When logistic models were applied to a new semester of data, the models performed similarly despite differences in cross-validation, and accurately recalled 85% of students who failed to achieve a satisfactory grade. These results confirm that early-semester LMS data can provide useful predictions of student performance and inform early warning systems.

Projected Presentation: 3rd Annual ACM Conference on Learning at Scale (April 2016)

70. A Case Study Analysis of Career and Technical Instructor's Development of Multicultural Self-Awareness through Transformative Learning Experience

Cynthia Bezard | Teaching & Learning

As U.S. population becomes increasingly diverse; preparing 21st-century educators to teach children of diverse racial, ethnic, social class, and language backgrounds is a critical issue in teacher education. This study focused on Career and Technical Education (CTE) instructors with a business and industry teaching license and minimal or no previous exposure to multicultural education. As CTE is at the front line of preparing youth and adults to succeed in today's workforce it is imperative that CTE instructors meet the needs of the diverse student population.

The purpose of this qualitative case study was to explore the ways that a change in perspective can create a better understanding of cultural identity. This study addressed: (1) How does a self-awareness transformative learning experience develop critical cultural competence in CTE instructors? (2) How does the practice of a critical reflection transformative learning experience construct CTE instructors' ability to develop self-awareness of critical cultural competence? (3) How does involvement in a critical discourse transformative learning experience construct CTE instructors' ability to develop self-awareness of critical cultural competence? A three phase professional development experience rooted in multicultural education provided key elements of transformative learning. The transformative learning theory framework provided an opportunity to closely examine perceptions, beliefs, and values in order to develop cultural competence through self-awareness. Data sources included personal reflection notes, field notes during classroom discussions, and face-to-face interviews. Findings indicated changes in meaning perspectives after experiencing a transformative learning experience.

71. Motivation to Learn for Middle and High School Students

Rachel Part, Matthew L. Bernacki, Timothy J. Nokes-Malach, Vincent Alevan | Educational Psychology & Higher Education

Motivation to learn is known to decline during middle and high school. However, the data that support these conclusions is typically collected infrequently and measured apart from learning tasks. We assessed the motivation (i.e. achievement goals and efficacy) of middle and high school samples at greater frequency and at multiple levels of specificity within software used to learn math in order to better understand cross-sectional and longitudinal differences in motivation to learn mathematics. At the domain level, cross-sectional differences in goals and efficacy between middle and high school were observed. However, longitudinal change was observed for self-efficacy but not achievement goals. At the unit level, declines were observed but change was non-linear. We conclude that motivation indeed declines, but that features of a task may predict a greater proportion of variance than temporal factors.

Projected Presentation: American Educational Research Association Conference, Washington, DC (April 2016)

72. Bilingual Education as a Vehicle for Peace Education

Jessica Soria | Teaching & Learning

With the rise in globalization and push for technological advancement, language diversity is not only necessary to combat post 9/11 xenophobic sentiments, but also crucial to the global economic market and international relations. At the same time, international educational authorities have placed a value on the need to teach tolerance in schools. Peace education precipitates open-minds imparted on respect, justness and sustainability. While literature adjoining a cross comparison of bilingual education and peace education is limited, bilingual education scholars have been making the argument for some time now that language learning inherently cultivates tolerance of diversity.

From April 8-12 the American Education Research Association will hold its annual meeting. At AERA scholars across the nation will gather to share current trends and obstacles in education as well as exchange purposeful dialogue. I plan to accumulate a review of case studies and research surrounding bilingual education efforts across the nation and around the world. Specifically, my interest is to explore the junction of language education and peace education in post-conflict ridden countries.

Education Poster Session A – Ballroom
10:45 – 11:00am

73. Introducing Educational Robotics to Ugandan Secondary Information Technology

Erdogan Kaya, Hasan Deniz, Anna Newley, Ezgi Yesilyurt, Farukh Khalilov | Teaching & Learning

This paper describes the details of an intensive one-day robotics workshop designed to introduce the basics of educational robotics to 10 Ugandan secondary information technology teachers from private, international, and public schools. Robotics workshop proved to be successful in encouraging teachers to start robotics programs in their own schools. Five out of 10 teachers participated in a regional robotics competition with their own school teams 5 months after participating in the workshop. The other 5 teachers planned to participate in the same regional robotics competition in the following year. We acknowledge that there is a need for more robotics workshops that are long term. However, it was encouraging to observe what these teachers were able to achieve with such limited introductory robotics training. Our workshop played a key motivational role in sparking teachers' interest in robotics and helping them seek additional robotics training. We think that robotics programs offer an opportunity for students in developing countries such as Uganda to become deeply involved in STEM activities and develop an interest in STEM careers. We also think that teacher professional development is a critical factor that mediates students to access to quality STEM education in developing countries.

Education Poster Session A – Ballroom
11:00 – 11:15am

74. Exploring Modes of Support and Impact upon First Year-First Generation Students' College Experience

Elena Nourrie, Jenna Heath | Educational Psychology & Higher Education

The purpose of this pilot study was to examine areas of support needed for first year-first generation college students to succeed in higher education. Utilizing a qualitative design, four first year- first generation students were interviewed for 30 minutes using 15 open-ended interview questions. Analysis of the data indicated several key findings regarding the unique perspectives on how student development occurs. Interviews were analyzed through the lens of Baxter Magolda's Self Authorship Theory and Nevitt Sanford's Challenge and Support Theory; through this analysis we created the Student Support Development Model (SSDM). Student interviews led us to conclude that there are three main areas of support for this particular student population: on-campus support, social support, and personal support (which refers to one's intrinsic motivation). Further, students may fall in one of three levels in regards to each area of support: inadequate, balanced, and excessive. This research highlights a gap in current student development literature. The SSDM allows student affairs professionals to better identify where students lie in regards to challenge/support and also recognize appropriate resources to support students holistically. The SSDM illustrates the need to ensure that students have encouragement from all three sources of support and fosters students toward success in both their collegiate and professional careers.

Presentation: American College Personnel Association (ACPA) Convention; Montreal, Quebec, Canada (March 2016)

**75. Harassment of LGBT Youth in School:
Educational Interventions on Reporting Procedure**

Wynn Tashman | Educational Psychology and Higher
Education and School of Law

The harassment, discrimination, and bullying of lesbian, gay, bisexual, and transgender (LGBT) youth in the United States education system will be examined in this research project's literature review and poster presentation. The goals of this study will be to (i) identify key issues; (ii) review demographic trends indicating types of harmful incidents LGBT youth are likely to be victimized in; (iii) design a 3-module educational intervention curriculum to be implemented in school settings; (iv) and create a model that can be evaluated and replicated in additional research settings. The researcher will combine educational psychology and legal research to develop an inter-disciplinary intervention model. Data will be collected using mixed research methods combining a qualitative component and quantitative multiple-case study replication design. Data will be analyzed using a Participatory Action Research (PAR) tool and Thematic Coding. The curriculum modules include identity education, dialogue, and a mock reporting session. Results will not be available for this current presentation, as a theoretical model is proposed. However, study outcomes are anticipated to make a significant contribution to the context discipline of educational psychology by (i) conducting unprecedented investigation into LGBT youth issues in the U.S. education system; (ii) providing a justification for use of empirically-based educational interventions to meet legal needs of under-served LGBT youth.

Presentation: International Conference on Education,
Hawaii (January 2016)

**Fine Arts
Poster Session A – Ballroom**



Presentations

- 9:45 – 10:00am (#76) Wendy Chambers,
Department of Art
- 10:00 – 10:15am (#77) Maureen Halligan,
Department of Art
- 10:15 – 10:30am (#78) Elizabeth Johnson,
Department of Art
- 10:30 – 10:45am (#79) Monique Arar,
Department of Music

Fine Arts Poster Session A – Ballroom
9:45 – 10:00am

76. Corporeality: Towards Finitude
Wendy Chambers | Art

Working from cadavers, I paint images that desubliminate the human figure and seek to reclaim the material body. Painting & drawing serves as a means for deconstructing and fragmenting the human form, which in effect emphasizes the fragile and finite qualities of the body. My paintings give credence to the post-mortem body and offer an opportunity for the viewer to push past discomfort to find gratification in the impermanence of corporeal existence.

Large canvases are hand-built to serve as the surface for my paintings, which allows for my artwork to have a commanding physical presence for the viewer. These canvases are accompanied by a booklet that serves as a means for unlocking the complex subject matter of my art. The booklet is comprised of select texts from the writings of psychoanalysts, philosophers, art historians, and art critics. Together, the paintings and booklet comprise my culminating experience.

Projected presentation: MFA thesis exhibition titled Corporeality: Towards Finitude, Donna Beam Fine Art Gallery, University of Nevada Las Vegas (March 2016)

Fine Arts Poster Session A – Ballroom
10:00 – 10:15am

77. Fine Arts Exploration of a Self-Perpetuating Series of Paintings
Maureen Halligan | Art

This project is a fine arts exploration of a self-perpetuating series of paintings using colored gesso (ground) and vinyl paint that will discuss the process of painting, the qualities of these materials, as well as the process of painting using a self-perpetuating image throughout the paintings. I specifically work with this subject matter as a means to explore the fine line between abstraction and representation, while engaging the public in process of painting and how it can be relatable via colors and process. I am exploring the use of Holbein Acryla Colored Gesso as well as a vinyl based paint, Flashe, on multiple panel paintings that will be visually addressing the masking and reveal process of painting and colors appropriated from the landscape to convey time of day, sense of place, or psychological space. The media chosen are well suited to paintings because of their highly pigmented composition, matte finish and retain visual qualities that are highly illustrative of the Las Vegas landscape- the highly saturated Strip and the subtleties of the desert alike. These works will be on view in various shows around Las Vegas, as well as being an integral part of an exhibition in the Winchester Cultural Center.

78. Erotic Sovereignty
Elizabeth Johnson | Art

Erotic Sovereignty is a photographic installation that explores individuals who live beyond the static binary of heterocentric and homocentric labeling. Through collaborations with these individuals, we explore sexual liberties to represent personal creative, professional, and spiritual potential.

As an activist, I encourage my subjects to manifest their authentic self that embraces sexuality and social beliefs to promote queer visibility. Through hardcore eroticism (as it is defined in the U.S.) I move beyond standard objectification. This push re-humanizes and re-defines erotic imagery as a form of power. Within this visual and text conversation, I use individualism, controversy and kitsch humor.

The combination of my images and their texts portray people coming to understand themselves with an authority that helps them arrive at their own personal Erotic Sovereignty. In our social setting, exacting equality or imagining it coincides with the rising above the heterocentric system. My work is visual advocacy for social equality and represents a glorification of biological reality meshed with queer realities and identities. The intention of my works is to continue to redefine Queer and Other into terms of power rather than labels placed upon us by a patriarchal society.

These representations of individuals' sexuality are about knowing oneself: learning, understanding and defining oneself. By fully claiming our sexuality and commanding an embodied authority of this aspect of our lives, our sexuality frees itself from being ruled or formed by external opinions, and instead becomes self-actualization, self-reflection and self-validation.

79. The Evolution of the Keyboard Instrument and its Consequent Impact on Repertoire
Monique Arar | Music

Last summer I had the privilege to visit the National Music Museum with world renowned harpsichordist Jacques Ogg and several esteemed international keyboardists and keyboard technicians. This multi-day visit included a thorough introduction to every keyboard instrument on display (the wealthiest such collection in the world) and an exclusive opportunity to play on each one. As a result, I became aware of the nuances in development that occurred between keyboard instruments through time (from the 16th to 20th century) as well as geographically (throughout various European countries).

As a Piano Performance DMA student, it was exceptionally interesting to not only experience these various instruments along with their unique inventions (some of which failed to survive), but also learn that many composers whose works are still performed today were inspired by these instruments and, as a result, their compositional output was influenced by them.

Following the museum visit, I participated in the Twin Cities Baroque Instrumental Program co-directed by Jacques Ogg. This was a 10-day intensive workshop on historical performance which afforded me the opportunity to research both solo and collaborative baroque period performance on harpsichords modeled after various European 17th and 18th century models.

This poster presentation offers a glimpse of the various instruments seen at the museum as well as an introduction to the developments that occurred in these instruments that influenced the composers we know and love today.

Presentation: Twin Cities Baroque Instrumental Program, University of Minnesota, Twin Cities (August 2015)

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