



GRADUATE & PROFESSIONAL STUDENT RESEARCH FORUM

CO-HOSTED BY THE GRADUATE COLLEGE AND
GRADUATE & PROFESSIONAL STUDENT ASSOCIATION
SATURDAY, MARCH 29, 2014: 8:00AM – 2:00PM
UNIVERSITY OF NEVADA, LAS VEGAS
STUDENT UNION

UNLV

The Graduate & Professional Student
Research Forum is co-hosted by the
Graduate & Professional Student Association
and the Graduate College

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



2014 Graduate & Professional Student Research Forum

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Luncheon and Awards Ceremony

Ballroom

2014 Graduate & Professional Student Research Forum *at a Glance*

Dental Medicine, Nursing and Science Platform Session A: Room 205

- 9:00 – 9:15am *Porphyromonas Gingivalis* Lipopolysaccharide Activates Human Macrophages. *Authors:* Michelle Farnoush, Katherine Howard and Jennifer Brown, School of Dental Medicine
- 9:15 – 9:30am Toward Understanding Cellular Migration: A Genomic Engineering Approach. *Authors:* Juan Carlos Duhart and Laurel Raftery, School of Life Sciences
- 9:30 – 9:45am Culture-Dependent Analysis of Microbial Communities Associated with Hydraulic Fracturing Waters. *Authors:* Anthony Harrington and Penny S. Amy, School of Life Sciences
- 9:45 – 10:00am Beryllium Inhibits Glycogen Synthase Kinase - β Mediated Phosphorylation of Glycogen Synthase Enzyme in Mouse Embryonic Cells. *Authors:* Ata Ur Rahman Mohammed Abdul, Carlos Atrian and Ronald K. Gary, Department of Chemistry
- 10:00 – 10:30am **Break**
- 10:30 – 10:45am An X-ray-Based Transducer to Measure Burrowing Biomechanics. *Authors:* Alexis Moore, Clint J. Barnes and David V. Lee, School of Life Sciences
- 10:45 – 11:00am Foot-Strike Kinetics in Running: Making an Impact via 3D Analysis. *Authors:* Andrew Nordin, Janet S. Dufek and John A. Mercer, Department of Kinesiology and Nutrition Sciences
- 11:00 – 11:15am Establishing the C-terminome: the PxP> Minmotif as a Case Study. *Authors:* Surhbi and Martin R. Schiller, School of Life Sciences
- 11:15 – 11:30am Activation of Mitogen-Activated Protein Kinases (MAPKs) in DU145 Human Prostate Cancer by a Novel [PtCl₂(4,4'-dialkoxy-2,2'-bipyridine)] Complex. *Authors:* Van Vo, Haesook Han, Pradip K. Bhowmik and Bryan L. Spangelo Department of Chemistry

Science and Engineering Platform Session B: Room 207

- 9:00 – 9:15am Reactive Transport Modeling of Phosphate Mineral Dissolution in High-P Martian Rocks. *Authors:* Christopher Adcock and Elisabeth Hausrath, Department of Geoscience

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Science and Engineering Platform Session B: Room 207 (cont.)

- 9:15 – 9:30am Testing Established Models of Hydrothermal Fluid Distribution Around Porphyry Deposits: The Application of Fluid Inclusion Research to Porphyry Deposit Exploration. *Author:* Wyatt Bain, Department of Geoscience
- 9:30 – 9:45am Monte Carlo Analysis of Neutron Multiplicity Detector System for WIMP Mass Measurement. *Authors:* Amber Guckes, Alexander Barzilov, Denis Beller and Thomas Ward Department of Mechanical Engineering
- 9:45 – 10:00am A Hazardous Ozone Disinfection Byproduct: NDMA Formation from Model Precursors. *Author:* Erica Marti, Department of Civil and Environmental Engineering and Construction Management
- 10:00 – 10:30am **Break**
- 10:30 – 10:45am Geomorphic Controls on the Morphology of Potentially Hazardous Fibrous Amphiboles, Clark County, Nevada, USA
Authors: Frederick Freudenberger, Brenda Buck and Rodney Metcalf, Department of Geoscience
- 10:45 – 11:00am Putting the Squeeze on Ceramic Materials: Diamonds, X-Rays and Lasers Help in Uncovering of Extreme Behaviors in Ceramic Materials. *Authors:* Pat Kalita, A. L. Cornelius, K. Lipinska and S. Sinogeikin, Department of Physics and Astronomy
- 11:00 – 11:15am Evaluation of Performance of Neutron Spectrum Unfolding Technique Based on Wavelets. *Authors:* Jessica Hartman and Alexander Barzilov, Department of Mechanical Engineering
- 11:15 – 11:30am Formation of Aqueous Minerals: Implications to the Past Habitability of Mars. *Authors:* Seth Gainey, Elisabeth Hausrath, Joel Hurowitz and Oliver Tschauner, Department of Geoscience
- 11:30 – 11:45am Geoscience Stable Isotope Paleoecology of an Ice Age Bison. *Authors:* Fabian Hardy and Stephen M. Rowland, Department of Geoscience

Science & Engineering Platform Session C: Room 208A

- 9:00 – 9:15am The Impact of Past and Future Climate Change on the Continental Interior of Western Eurasia. *Authors:* Jonathan Baker and Matthew S. Lachniet, Department of Geoscience

2014 Graduate & Professional Student Research Forum *at a Glance*

Science & Engineering Platform Session C: Room 208A (cont.)

- 9:15 – 9:30am Zircon and Apatite (U-Th)/He Evidence for Pre-Miocene Extension in the Southern Snake Range, NV. *Authors:* Sarah Evans and Andrew Hanson, Department of Geosciences
- 9:30 – 9:45am Desert Sol's HVAC Designing. *Author:* Mohsen Jahandardoost, Department of Mechanical Engineering
- 9:45 – 10:00am Early Eocene Tectonic Mode Switching in the Hinterland of the Sevier Mountain Belt: Analysis of Garnets in the Schist of Upper Narrows, Raft River Mountains, Northwestern Utah. *Author:* Alison Lacy, Department of Geoscience
- 10:00 – 10:30am **Break**
- 10:30 – 10:45am Reduced Denitrification During Early Mississippian Glacial Ocean. *Authors:* Dev K. Maharjan and Swapan K. Sahoo, Department of Geosciences
- 10:45 – 11:00am Variability in Continental U.S Streamflows and Teleconnections with Oceanic-Atmospheric Indices. *Authors:* Soumya Sagarika, Ajay Kalra and Sajjad Ahmad, Department of Civil and Environmental Engineering and Construction Management
- 11:00 – 11:15am The Riemann Problem in Gas Dynamics: Exact Solutions and Numerical Simulations with Heating and Cooling. *Author:* Tim Waters, Department of Physics and Astronomy
- 11:15 – 11:30am 2013 U.S. Department of Energy Solar Decathlon. *Author:* Zheng Zeng, Department of Mechanical Engineering

Fine Arts Platform Session A: Room 208B

- 10:00 – 10:15am National Opera Association Convention 2014. *Author:* Lindsay Cunningham, Department of Music
- 10:15 – 10:30am The Percussive Arts Society's Australian National Drum and Percussion Camp 2014. *Author:* Ryan Harrison, Department of Music
- 10:30 – 10:45am Australian Drum and Percussion Camp. *Author:* Caleb Pickering, Department of Music
- 10:45 – 11:00am **Break**

2014 Graduate & Professional Student Research Forum *at a Glance*

Fine Arts Platform Session A: Room 208B (cont.)

- 11:00 – 11:15am What We Don't Know Can't Hurt Us: A Work of Visual Art. *Author:* Camilla Oldenkamp, Department of Art
- 11:15 – 11:30am Creating Critical Editions of Music from the Seventeenth Century. *Author:* Justin Bland, Department of Music
- 11:30 – 11:45am Percussion Down Under. *Author:* Lucas Brust, Department of Music

Social Science Platform Session A: Room 208C

- 9:00 – 9:15am Developmental Alteration of GABAB Receptor Function Results in Behavioral Deficits in Adulthood. *Authors:* Monica Bolton, Chelcie Heaney, Andrew Murtishaw and Jefferson Kinney, Department of Psychology
- 9:15 – 9:30am The Effects of Human Maternal Placentophagy on Postpartum Iron Status. *Author:* Laura Gryder, Department of Anthropology
- 9:30 – 9:45am Ghosts in the Graveyard: A Bioarchaeological Investigation of Children's Personhood and Postmortem Agency at Non Nok Tha, Thailand. *Author:* Krystal Hammond, Department of Anthropology
- 9:45 – 10:00am The Effects of Baclofen and Phaclofen on Performance in the Morris Water Maze. *Authors:* Chelcie F. Heaney, Monica M. Bolton, Andrew S. Murtishaw and Jefferson W. Kinney, Department of Psychology
- 10:00 – 10:30am **Break**
- 10:30 – 10:45am The Effect of Early Life Stress on Methamphetamine Induced Damage in the Striatum. *Authors:* Emily Hensleigh, Kelly Abu Ali, Matt Eby, John Egan, Aisha Fowler and Laurel Pritchard, Department of Psychology
- 10:45 – 11:00am Intimate Identities: Meaning and Affect among Practitioners of Monogamy and Polyamory. *Author:* Antoinette Izzo, Department of Anthropology
- 11:00 – 11:15am Effects of Attention on Change Deafness Depend on the Task Relevance of the Attended Object. *Authors:* Vanessa Irsik, Christina Vanden Bosch Der Nederlanden, Joel Snyder and Melissa Gregg Department of Psychology

2014 Graduate & Professional Student Research Forum *at a Glance*

Social Science Platform Session A: Room 208C (cont.)

- 11:15 – 11:30am Beep Here Now: Descriptive Experience Sampling Provides a Structured Path Toward Mindfulness. *Authors:* Leiszle Lapping-Carr, Noelle Lefforge, Chris Heavey and Russ Hurlburt, Department of Psychology
- 11:30 – 11:45am Beef or Venison: The Great Debate on the Cattle Absence on Cyprus and the Role Played by Cultural Choice. *Author:* Katelyn DiBenedetto, Department of Anthropology

Social Science Platform Session B: Room 209

- 9:00 – 9:15am A Tale of Two Blade Caches. *Author:* Levi Keach, Department of Anthropology
- 9:15 – 9:30am An Acute LPS-induced Inflammatory Response in a Diabetic Model of Alzheimer's Disease. *Authors:* Andrew S. Murtishaw, Chelcie F. Heaney, Monica M. Bolton, Michael A. Langhardt, Krystal Courtney D. Belmonte and Jefferson W. Kinney, Department of Psychology
- 9:30 – 9:45am Negotiating Intersecting Identities in Korean Men's Observance of the Protestant Prohibition against Alcohol in South Korea. *Author:* Alex Nelson, Department of Anthropology
- 9:45 – 10:00am Posttraumatic Stress Disorder – Drastic Differences between Sexes. *Author:* Meghan Pierce, Department of Psychology
- 10:00 – 10:15am **Break**
- 10:30 – 10:45am Predictors of Body Image Dissatisfaction in Chronically Ill Older Adults. *Authors:* Liya Rakhkovskaya and Jason Holland, Department of Psychology
- 10:45 – 11:00am Effects of Human Maternal Placentophagy on Postpartum Maternal Affect, Health, and Recovery. *Author:* Sharon Young, Department of Anthropology
- 11:00 – 11:15am Hemispheric Asymmetries in the Perception of Musical Pitch Structure. *Author:* Matthew Rosenthal, Department of Psychology
- 11:15 – 11:30am Domestic dog (*Canis familiaris*). *Author:* Shelly Volsche, Department of Anthropology

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Social Science Platform Session B: Room 209 (cont.)

- 11:30 – 11:45am Preparation, Consumption, or Storage? Organic Residue Analysis of Archaeological Examining the Role of Semantic Knowledge on Change Deafness in Early Childhood. *Authors:* Christina M. Vanden Bosch der Nederlanden, Joel S. Snyder, and Erin E Hannon Department of Psychology

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

- 9:00 – 9:15am The Changing Composition of Urban and Suburban Demographics, and Its Economic Impact on Grant Policy Allocation. *Author:* Al Gourrier, School of Environmental and Public Affairs
- 9:15 – 9:30am "Know the Game: How the International Mass Media Influences Terrorist Groups". *Author:* Kate Eugenis, Department of Political Science
- 9:30 – 9:45am International Recruitment of Indian Nurses. *Authors:* Virgilio Longakit Jr., Robert Loftus and Brady Briggs, William S. Boyd School of Law
- 9:45 – 10:00am Exploring Virtual Events. *Authors:* Kristin Malek and Curtis Love, Department of Hotel Administration
- 10:00 – 10:30am **Break**
- 10:30 – 10:45am East Asian Regionalism: China's New Role? *Author:* Erika Masaki, Department of Political Science
- 10:45 – 11:00am The Human Rights Practicum in New Delhi, India. *Author:* Whitney Short, William S. Boyd School of Law
- 11:00 – 11:15am Regional Development Banks and the Millennium Development Goals. *Author:* Kenneth Retzl, Department of Political Science
- 11:15 – 11:30am International Human Rights Practicum. *Authors:* Silvia Villanueva and Oscar Peralta, William S. Boyd School of Law
- 11:30 – 11:45am Disney Princess Narratives. *Author:* Caitlin Saladino, Department of Communication Studies

Humanities and Social Science Platform Session D: Room 213

- 9:00 – 9:15am Philippines Study Abroad. *Author:* Marianne Chan, Department of English

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Humanities and Social Science Platform Session D: Room 213 (cont.)

- 9:15 – 9:30am Travels to India. Author: Dana Killmeyer, Department of English
- 9:30 – 9:45am Beyond the Mythical Auction; The True Origins of the Birth of Las Vegas. *Author:* Joseph Thomson, Department of History
- 9:45 – 10:00am The Preservation and Revitalization of the Irish Language. *Author:* Amy Mayo, Department of English
- 10:00 – 10:30am **Break**
- 10:30 – 10:45am The Will of the Father: Testamentary Manumission and Will Contests in Virginia, 1810-1860. *Author:* Kat Wisnosky, Department of History
- 10:45 – 11:00am They have made worms' meat of me': Gender Trouble in Baz Luhrmann's Romeo + Juliet. *Author:* Anthony Patricia, Department of English
- 11:00 – 11:15am Ronald Johnson's ARK and the Watts Towers of Simon Rodia. *Author:* Derek Pollard, Department of English
- 11:15 – 11:30am Intermarriage, Citizenship and Homestead: Impacts of Marital Expatriation on Native-Born Women in the U.S.-West. *Author:* Shiori Yamamoto, Department of History
- 11:30 – 11:45am Mary Russell Mitford and the Nineteenth-Century Tales Novel. *Author:* Molly O'Donnell, Department of English

Education Platform Session A: Room 218

- 9:30 – 9:45am The Application of iPad Apps in Middle and High School Mathematics Class. *Author:* Lina DeVaul, Department of Teaching & Learning
- 9:45 – 10:00am Perceptions of Mattering in the Doctoral Student and Advisor Relationship. *Author:* Holly Schneider, Department of Educational Psychology & Higher Education
- 10:00 – 10:30am **Break**

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Education Platform Session A: Room 218 (cont.)

- 10:30 – 10:45am Using da Vinci's Machines to Demonstrate Physics at a Planetarium. *Authors:* Pamela Maher, Janelle Bailey and Allan Tucka, Department of Teaching & Learning
- 10:45 – 11:00am Understanding the Power of Analytical Shifts in Intersectional Scholarship: A Focus on Race, as well as on Class, Gender, Religion, Sexuality, Dis/Ability and Family Configuration. *Authors:* Tarryn McGhie, Christine Clark, Mara Sapon-Shevin, Mark Brimhall-Vargas and Sonia Nieto, Department of Teaching & Learning
- 11:00 – 11:15am The Critical First Semester: Retaining At-Risk Students. *Authors:* Cheyenne Rogers, Maryann Orawczyk and Anne White, Department of Educational Psychology & Higher Education
- 11:15 – 11:30am The Influences of Teachers' Beliefs About Instruction on Teaching Practices Across Different Teaching Experience Groups. *Authors:* Qingmin Shi, Emily Lin, Shaoan Zhang and Jian Wang, Department of Teaching & Learning
- 11:30 – 11:45am Current Teacher Evaluation Reform. *Author:* Allison Smith, Department of Teaching & Learning

Science & Engineering Poster Session A: Ballroom

Posters 1 – 4: Judging at 9:00 – 10:00am

1. Sulfate Attack Resistance of Portland Cement Mortar with Nanosilica and Silica Fume. *Authors:* Iani Batilov and Nader Ghafoori, Department of Civil and Environmental Engineering and Construction Management
2. Galaxy Mass. *Author:* John Boisvert, Department of Physics & Astronomy
3. HVAC: Autonomous Control System. *Author:* Andrew Cross, Department of Mechanical Engineering
4. Reduction of Portland Cement Consumption by the Aid of Slag and Nano-Silica. *Author:* Mohammad Sajjadul Islam, Department of Civil and Environmental Engineering and Construction Management

Posters 5 – 8: Judging at 10:00 – 11:00am

5. A Novel Architecture for Environmental Monitoring using Restful Web Service on Arduino Sensor Networks. *Authors:* Sungchul Lee, Juyeon Jo, Yoohwan Kim and Haroon Stephen, Department of Computer Science

2014 Graduate & Professional Student Research Forum *at a Glance*

Science & Engineering Poster Session A: Ballroom (cont.)

6. Characterization of Gold and Related Mineralization at the North Bullion Deposit, Railroad Project, a Nevada Carlin-type Gold Prospect. *Authors:* Melanie Newton and Jean Cline, Department of Geosciences
7. Vulnerability of Old Reinforced Concrete Flat-Plate Buildings to Progressive Collapse. *Authors:* Jinrong Li and Ying Tian, Department of Civil and Environmental Engineering and Construction Management
8. Neutron Measurements Using EJ-299-33A Scintillator with Online Digital Pulse Shape Analysis. *Authors:* Norman Richardson and Alexander Barzilov, Department of Mechanical Engineering

Posters 9 – 12: Judging at 11:00am – 12:00pm

9. Dissolution of Nontronite in High Ionic Strength Solutions and Implications for the Habitability of Mars. *Authors:* Michael Steiner, Renee Schofield and Elisabeth Hausrath, Department of Geoscience
10. Properties of Alkali-Activated Fly Ash/Slag Mortars. *Authors:* Mohammadreza Sharbaf and Meysam Najimi and Nader Ghafoori, Department of Civil and Environmental Engineering and Construction Management
11. Carbon Isotope Variations Associated With a Late Ordovician Karstic Unconformity. *Authors:* Patricia Williams and Ganqing Jiang, Department of Geoscience
12. Fresh, Mechanical and Transport Properties of Alkali – Activated Fly Ash Mortars having Different Concentrations of Sodium Hydroxide. *Authors:* Kimberly Sierra, Nader Ghafoori and Meysam Najimi, Department of Civil and Environmental Engineering and Construction Management

Health Sciences Poster Session B: Ballroom

Posters 13 – 16: Judging at 9:00 – 10:00am

13. Assessment of Human Herpes Viruses and Oral Health Status. *Authors:* Shahriar H. Agahi, Ashkan Mahdavi, Arin Alexander, Karl Kingsley and Katherine Howard, School of Dental Medicine
14. Research Study: Concussions in Athletes. *Authors:* Lucas Bianco, Janet Dufek and Barbara St. Pierre Schneider, Department of Kinesiology and Nutrition Sciences

2014 Graduate & Professional Student Research Forum *at a Glance*

Health Sciences Poster Session B: Ballroom (cont.)

15. Anthropometric Measures and Dietary Habits of Dental Student Population. *Authors:* Arin Alexander, Shariar Agahi, Ashkan Mahdavi, Connie Mobley and Karl Kingsley, School of Dental Medicine
16. Test Types and Timeliness of Electronic Laboratory Reporting: An Evaluation of Four Gastrointestinal Illnesses in Southern Nevada. *Authors:* Jennifer Lucas, Brian Labus and Chris Cochran, School of Public Health

10:00 – 10:30am Break

Posters 17 – 20: Judging at 10:15 – 11:15am

17. Coupled Antiport LAT1 Receptor Expression in Oral Cancers. *Authors:* Vivi Baldwin, Samuel Oh, Matthew Thacker and Karl Kingsley, School of Dental Medicine
18. The Relationship among School Playground Design and Conditions and Physical Activity Levels in Children. *Author:* Ipuna Estavillo Black, School of Nursing
19. Growth Factor Modulation of Dental Pulp Stem Cell Differentiation. *Authors:* Marah Culpepper, Mehrnaz Khadiv, Kelcey Loveland, Aubrey Young and Karl Kingsley, School of Dental Medicine
20. No Racial Disparities in Stage at Diagnosis - Is Nevada doing better for Cervical Cancer? *Authors:* Sanae El Ibrahim, Paulo Pinheiro, Kira Morgan, Sheniz Moonie and Michelle Chino, School of Public Health

Posters 21 – 22: Judging at 11:15 – 11:45am

21. Activation of *de novo* DNA Methyltransferase in HPV-Infected Oral Cancers. *Authors:* Alexander Hall, Ladban Rabijahed and Karl Kingsley, School of Dental Medicine
22. Retirement and the Registered Nurse: The SAVER Study. *Author:* Shanna Keele, School of Nursing

Sciences and Health Sciences Poster Session C: Ballroom

Posters 23 – 26: Judging at 9:00 – 10:00am

23. Functional Modulation of Dental Pulp Stem Cell Phenotype Using Laminin-5. *Authors:* Mehrnaz Khadiv, Marah Culpepper, Kelcey Loveland, Aubrey Young and Karl Kingsley, School of Dental Medicine

2014 Graduate & Professional Student Research Forum *at a Glance*

Sciences and Health Sciences Poster Session C: Ballroom (cont.)

24. Growth Inhibition of *Paenibacillus larvae* Using Honeybee Antimicrobial Peptides. *Authors:* Jasmin C. Khilnani and Helen J. Wing, School of Life Sciences
25. Understanding How Honey Bee Flight and Senescence are Connected through Oxidative Stress. *Authors:* Joseph Margotta and Michelle Elekonich, School of Life Sciences
26. Hydroxyvitamin D, IGF-1, and Metabolic Syndrome: A Cross-Sectional Study. *Authors:* Damon McCune, Laura Kruskall, Richard Tandy, James Navalta and Sue Schuerman, Department of Kinesiology and Nutrition Sciences

10:00 – 10:30am Break

Posters 27 – 31: Judging at 10:30 – 11:45am

27. Investigating High Molecular-Mass Hyaluronan Inhibition of Human Oral Cancer Growth. *Authors:* Kevin Nowins, Lauren Ing, Paul Quinn, Karl Kingsley and Katherine Howard, School of Dental Medicine
28. Competence Development and Mutagenesis in Stressed *Bacillus subtilis* Cells. *Authors:* Amanda Prisbrey, John Creech, Carmen Vallin, Holly Martin, Keane Regner, and Eduardo A. Robleto, School of Life Sciences
29. GATE Monte Carlo Simulation in a Cloud Computing Environment. *Authors:* Blake Rowedder and Yu Kuang, Department of Health Physics Department
30. Further Improvements: The Rice Genome Annotation. *Authors:* Patricia Ringler, Kenneth Watanabe, Lingkun Gu and Jeff Q. Shen, School of Life Sciences
31. Receptors and Mechanisms of Folate-Induced Oral Cancer Modulation. *Authors:* John Silvaroli and Karl Kingsley, School of Dental Medicine

Social Science Poster Session A: Ballroom

Posters 32 – 35: Judging at 9:00 – 10:00am

32. Mortuary Ritual and Identity among the Ancestral Tarahumara. *Author:* Cheryl Anderson, Department of Anthropology
33. Mimbres Seated Burials: Indicators of Social Memory and Family Land Tenure. *Authors:* Kathryn Baustian and Barbara Roth, Department of Anthropology

2014 Graduate & Professional Student Research Forum *at a Glance*

Social Science Poster Session A: Ballroom (cont.)

34. The Influence of Perceived Pressures from the Media, Body Surveillance, Body Shame, and Body Self-Consciousness during Sexual Activities on Women's Sexual Satisfaction. *Authors:* Kimberly Claudat and Cortney S. Warren, Department of Psychology
35. The Sacred Sick: Illness Ideologies & Child Sacrifice in Ancient Mesoamerica. *Author:* John Crandall, Department of Anthropology

10:00 – 10:15am Break

Posters 36 – 39: Judging at 10:15 – 11:15am

36. Do Children with Selective Mutism have Friends? An Examination of the Quality of Peer Relationships among Children with Selective Mutism. *Authors:* Rachele Diliberto, Department of Psychology
37. Arctic Clothing Construction. *Author:* Diana R. Ewing, Department of Anthropology
38. Keeping in Touch: Exchange as an Adaptive Strategy in Southern Nevada, *Author:* Tim Ferguson, Department of Anthropology
39. Factors that Interfere with Sport Performance and Alcohol use among Collegiate Athletes. *Authors:* Yulia Gavrilova, Emma Diaz, Polly Kong, Emma Swarzman, Anna Holler, Arianna Gonzalez-Bueno, Travis Loughran, Kimberly Wrzeciona, Michelle Pitts, Violeta Murrieta, Rachel Dunn, Graig Chow, Lisa Kelleher and Brad Donohue Department of Psychology

Posters 40 – 41: Judging at 11:15 – 11:45am

40. The Function of Extramural Work Areas at the Harris Site. *Author:* Ashley Lauzon, Department of Anthropology
41. Psychiatric Illnesses: Emotion Regulation Deficits. *Author:* Bern Lee, Department of Psychology

Social Science Poster Session B: Ballroom

Posters 42 – 45: Judging at 9:00 – 10:00am

42. An Experimental Approach to Antler Working at Körtik Tepe (SE Turkey) during Pre-Pottery Neolithic A (PPNA). *Authors:* Sarah Raffae MacIntosh and Levent Atici, Department of Anthropology

2014 Graduate & Professional Student Research Forum *at a Glance*

Social Science Poster Session B: Ballroom (cont.)

- 43. A Cross-Cultural Examination of Voluntary Painful Religious Practices. *Author:* Matthew Martinez, Department of Anthropology
- 44. Effects of Male Juvenile Competition on Acute Hormonal Changes. *Author:* Timothy McHale, Department of Anthropology
- 45. The Sin of the City: Social Networking in Rural and Urban Environments. *Authors:* Michael Moncrieff, Pierre Lienard and Matthew Martinez, Department of Anthropology

10:00 – 10:15am Break

Posters 46 – 49: Judging at 10:15 – 11:15am

- 46. The Concordance among Three Measures of Depression in College Athletes. *Authors:* Michelle Pitts, Graig Chow, Kim Schubert, Arturo Soto-Nevarez and Brad Donohue, Department of Psychology
- 47. New Investigations at the Harris Site, Mimbres Valley, New Mexico. *Author:* Richard Reynolds, Department of Anthropology
- 48. Violence and Endemic Warfare at Casas Grandes and its Effect on Non-Combatants. *Author:* Caryn E. Tegtmeyer, Department of Anthropology
- 49. Research Study: Ability of Implicit Anxiety to Predict Performance of Skin Self-Examinations. *Authors:* R. Shane Westfall and Murray G. Millar, Department of Psychology

Posters 50 – 51: Judging at 11:15 – 11:45am

- 50. The Functional and Socio-Cultural Role of Small and Medium Pueblos in Mimbres Pueblo Communities. *Author:* Aaron Woods, Department of Anthropology
- 51. Enteseal Changes and Cross-Sectional Properties in the Humerus: Incorporating Biomechanics into Enteseal Analyses. *Author:* Kathleen N. Woods, Department of Anthropology

Law, Hotel and Social Science Poster Session C: Ballroom

Posters 52 – 55: Judging at 9:30 – 10:15am

- 52. Explaining Local Government Budgetary Practices In an Age of E-Government. *Authors:* Jonathan Birds, Leander Kellogg and E. Lee Bernick, School of Environmental and Public Affairs

2014 Graduate & Professional Student Research Forum *at a Glance*

Law, Hotel and Social Science Poster Session C: Ballroom (cont.)

- 53. "Why'd You Post That": Family Conflict and Facebook. *Authors:* Carly Danielson, Josh Miller, Erin Sahlstein-Parcell and Theresa Boucher, Department of Communication Studies
- 54. The Decline in Atlantic City Gaming Volume. *Authors:* SoYeon Jung and Toni Repetti, Department of Hotel Administration

10:00 – 10:15am Break

Posters 55 – 57: Judging at 10:45 – 11:30am

- 55. Divorce: Communication Strategies used by Parents to Communicate Socioeconomic Impact. *Author:* Monique Makhoul, Department of Communication Studies
- 56. A Model of Hospitality Employee Engagement. *Author:* Hee Jung Kang, Department of Hotel Administration
- 57. Giving Visibility to the Invisible: Addressing the Socioeconomic Precarity of Domestic Workers. *Author:* Bryn Esplin, William S. Boyd School of Law

Education Poster Session A: Ballroom

Posters 58 – 60: Judging at 9:30 – 10:15am

- 58. I See You: Comparing the Effect of Asynchronous and Synchronous Video versus Text Based Communication in an Online Teacher Education Course. *Authors:* Cynthia Clark, Neal Strudler, Karen Grove and Karen Grove, Department of Teaching & Learning
- 59. Examination of Unprepared First Generation College Students Development of Personalized Autonomous Learning Strategies. *Authors:* Kimberly Florence and Doris Watson, Educational Psychology & Higher Education
- 60. UNLV GEAR UP Activities Year One: Addressing STEM Education in Nevada. *Authors:* Eshani Gandhi, Erica Marti, MaryKay Orgill and PG Schrader, Department of Chemistry

10:00 – 10:15am Break

Posters 61 – 63: Judging at 10:45 – 11:30am

- 61. Analyzing the Selection of Evidence-based Practices Used in School-based Teacher Professional Development: A Research Proposal. *Author:* Pamela Juniel, Department of Educational & Clinical Studies

2014 Graduate & Professional Student Research Forum *at a Glance*

Education Poster Session A: Ballroom (cont.)

- 62. Impact of User Interface for Online Assessment of Simultaneous Processing with Compressed Speech. *Authors:* Kristen Russler, Isabelle M. Sanchez, W. Paul Jones, Scott A. Loe, Tara Raines and Jacqueline S. Hart, Department of Educational Psychology & Higher Education
- 63. Student Teacher Perceptions and Initial habits for Grading Practice through 1st Year of Teaching: A Longitudinal Study. *Authors:* Brandon Yost and Jane McCarthy, Department of Teaching & Learning

Fine Arts Poster Session B: Ballroom

Posters 64 – 67: Judging at 9:00 – 10:00am

- 64. Take-Aways from Music Teacher National Association (MTNA). *Author:* Monique Arar, Department of Music
- 65. Thermocromic Materials. *Author:* Audrey Barcio, Department of Art
- 66. National Flute Association Annual Convention. *Author:* Carmella Cao, Department of Music
- 67. Fine Arts Exploration: Fluorescent Acrylic Panels Cut with Lasers. *Author:* Maureen Halligan, Department of Art

10:00 – 10:30am Break

Posters 68 – 71: Judging at 10:30 – 11:30am

- 68. My Experience: 2014 Sundance Film Festival. *Author:* Romana Guillotte, Department of Film
- 69. Expressing and Celebrating Queer Culture through Art. *Author:* Elizabeth Johnson, Department of Art
- 70. Transformations of Residual Materials. *Author:* Rebecca Pugh, Department of Art
- 71. Indefinite Obsession. *Author:* Shelbi Schroeder, Department of Art

Graduate & Professional Student Research Forum
Dental Medicine, Nursing and Science
Platform Session A
UNLV Student Union Room 205

9:00 – 9:15am	Michelle Farnoush, School of Dental Medicine
9:15 – 9:30am	Juan Carlos Duhart, School of Life Sciences
9:30 – 9:45am	Anthony Harrington, School of Life Sciences
9:45 – 10:00am	Ata Ur Rahman Mohammed Abdul, Department of Chemistry
<i>10:00 – 10:30am Break</i>	
10:30 – 10:45am	Alexis Moore, School of Life Sciences
10:45 – 11:00am	Andrew Nordin, Department of Kinesiology and Nutrition Sciences
11:00 – 11:15am	Surbhi Sharma, School of Life Sciences
11:15 – 11:30am	Van Vo, Department of Chemistry

Porphyromonas Gingivalis Lipopolysaccharide Activates Human Macrophages

Michelle Farnoush, Katherine Howard and Jennifer Brown, School of Dental Medicine

Objective: *Porphyromonas gingivalis* is an oral pathogen implicated in the instigation and progression of periodontal disease. Levels of platelet-activating factor (PAF), a potent lipid inflammatory mediator, increase during periodontal disease. Macrophages play an essential role in recruiting neutrophils to sites of inflammation and PAF is crucially involved in that recruitment. The goal of this study is to investigate whether human macrophages exposed to *P. gingivalis* lipopolysaccharide (LPS) respond by altering the expression levels of both pro- and anti-inflammatory molecules. An increased understanding of the production and degradation of PAF will provide insight into the mechanisms of periodontal disease.

Methods: Human monocyte/macrophages (MM6 cells) were cultured in RPMI media supplemented with 10% FBS and were grown at 37 degrees Celsius in a humidified 5% CO₂ incubator. 2 X 10⁵ cells/mL were seeded into 24-well tissue culture plates and then treated with *P. gingivalis* LPS (0-1000 ng/mL) or a synthetic ligand of Toll-like receptors 2 (PAM3CSK4, 10-1000 ng/ml). TLR2, TLR4, and PAF-AH RNA levels were examined by quantitative Real-Time PCR. Activation of intracellular signaling cascades implicated in TLR2 receptor activation was examined by using specific pharmacological inhibitors and by examining the phosphorylation status of downstream mediators by Western blotting.

Results: Treatment of MM6 cells with either *P. gingivalis* LPS or PAM3CSK4 resulted in a dose-dependent increase in PAF-AH expression which reached a maximum increase of 5-fold over control cells at 24-hours after administration. TLR2 receptor activation also resulted in a roughly 2-fold increase in TLR2 expression while TLR4 expression remained unchanged. The administration of pharmacological inhibitors of MAPK pathways demonstrated significant inhibition of PAF acetylhydrolase expression by blocking both the p38 and JNK MAPK pathways. Ongoing Western blot experiments should provide additional evidence of the role these two pathways during macrophage activation.

Conclusion: Human monocyte/macrophages exposed to *P. gingivalis* LPS increased TLR2 expression resulting in enhanced responsiveness to bacterial pathogens. The expression of the major PAF degradative enzyme, PAF-AH, also increased substantially. Up-regulation of PAF-AH by periodontal disease causing agents represents a compensatory mechanism to control local PAF levels in inflammatory situations.

Toward Understanding Cellular Migration: A Genomic Engineering Approach

Juan Carlos Duhart and Laurel Raftery, School of Life Sciences

Many of the cellular behaviors that drive tissue and organ formation during normal animal development are exploited and used inappropriately in cancer cells. Cellular migration, or the movement of cells from one place to another within a tissue, is part of many developmental processes. In metastatic cancer however, cell migration is misused. Our lab uses the common fruit fly (*Drosophila melanogaster*) as a model system to study the genetic regulation of cell migration.

We have identified a poorly understood gene, *mob2*, which is expressed in a group of migratory cells but not in their non-migrating neighbors. Our preliminary studies suggest that *mob2* may be important in coordinating cell migration by inducing changes to cell shape. Here, we describe our use of genomic engineering to generate a set of tools that will allow us to study *mob2* function on a cellular and molecular level.

Culture-Dependent Analysis of Microbial Communities Associated with Hydraulic Fracturing Waters

Anthony Harrington and Penny S. Amy, School of Life Sciences

The U.S Energy Information Administration projects a 44% increase in natural gas production in the U.S by 2040. This projected increase relies upon improvements in extraction from unconventional resources using hydraulic fracturing and horizontal drilling. Hydraulic fracturing extracts natural gas from unconventional resources by injecting fluids into the reservoir under high pressure. The fluids involved in hydraulic fracturing include: source water (water from a freshwater source), fracturing fluids (source water amended with chemicals), flowback water (excess fracturing fluids that come up to the surface during the first 2-3 weeks after injection), and produce water (water that comes to the surface throughout the life of the well starting about 3 weeks after injection that consists of fracturing fluids and formation water). Research on the extraction of oil from petroleum formations has identified certain groups of microorganisms that can interfere and damage the process. These microorganisms include sulfate-reducing bacteria (SRB), iron-oxidizing bacteria (FeOB), and extracellular polymeric substances producing bacteria (EPS). Studying the microbial presence and interactions among the different hydraulic fracturing water samples will help identify potential microbiological problems from the sample sites of this study and define where the most potential for microbial problems exists. This research project will be using culture-dependent methods to identify the microorganisms associated with the different hydraulic fracturing fluids from the Bakken, Niobrara, and Gammon Shale formations.

Beryllium Inhibits Glycogen Synthase Kinase - 3β Mediated Phosphorylation of Glycogen Synthase Enzyme in Mouse Embryonic Cells

Ata Ur Rahman Mohammed Abdul, Carlos Atrian and Ronald K. Gary, Department of Chemistry

According to the American Diabetes Association every year 1.9 million new diabetes cases are diagnosed and if the trend continues then by the year 2050, 1 in every 3 American adults will have diabetes. Type II diabetes also known as insulin resistance is a pathophysiological condition wherein the human body cannot produce adequate insulin or the cells have become unresponsive to insulin. One of the important functions of insulin is to activate the cellular enzyme glycogen synthase (GS), which is involved in the conversion of excess glucose to glycogen thereby reducing the blood glucose levels. The activity of glycogen synthase is down regulated by its inhibitory phosphorylation mediated by an important serine/threonine kinase called as Glycogen Synthase Kinase-3 Beta (Gsk- 3β). In the presence of insulin the activity of Gsk- 3β is inhibited resulting in the activation of glycogen synthase. In Type II diabetes Gsk- 3β is over activated due to the unresponsiveness of cells towards insulin, leading to inactive glycogen synthase. Beryllium is a potent small molecule inhibitor of Gsk- 3β which can regulate the activity of glycogen synthase via the inhibition of Gsk- 3β . The ability of beryllium to inhibit Gsk- 3β at low concentrations could potentially be exploited therapeutically in insulin-resistant cells. Our studies indicate that the inhibition of Gsk- 3β in the presence of beryllium leads to decrease in the phosphorylated glycogen synthase (inactive form) which might be helpful in relieving the cells from the harmful effects of Type II diabetes.

An X-ray-Based Transducer to Measure Burrowing Biomechanics

Alexis Moore, Clint J. Barnes and David V. Lee, School of Life Sciences

The study of burrowing biomechanics has been limited by the technical challenges of 1) tracking motions and 2) measuring forces during subterranean locomotion. We solve the first challenge by using X-ray motion analysis to track skeletal motions of animals as they burrow through a core of soil. We address the second challenge by introducing a device called a Tunnel-Tube that measures the interaction between the animal and the surrounding soil. One half of the Tunnel-Tube is made of a flexible rubber hose sealed inside a rigid outer tube. It measures soil compaction pressure using a pressure sensor mounted to the intertube space. Deflections of an array of ball bearings located at the perimeter of the rubber tube indicate the direction of the forces exerted by the animal. To measure net forces, this half of the Tunnel-Tube is mounted on a small 6-axis load cell. The Tunnel-Tube is calibrated with two pneumatic pistons instrumented with a load cell in each orthogonal axis, providing a known force per unit pressure and millimeter of tube deflection. Our calibrations are applied to burrowing locomotion of a pocket gopher (*Thomomys bottae*). The mechanics of burrowing are a function of anatomical specialization for chisel-tooth and/or scratch digging. Our results show substantial involvement of the hindlimbs in scratch digging behavior, along with several stereotypical burrowing behaviors. These digging behaviors correlate with pressure changes in the Tunnel-Tube, thus demonstrating the utility of the Tunnel-Tube as a soft force transducer.

Presentation: SICB meeting, January 3-7, 2014

Foot-Strike Kinetics in Running: Making an Impact via 3D Analysis

Andrew Nordin, Janet S. Dufek and John A. Mercer, Department of Kinesiology and Nutrition Sciences

Interactions among running mechanics, impact forces, and overuse injuries represent a significant area of scientific research, with particular attention directed toward foot-strike pattern, or the manner in which the foot contacts the ground during running. Foot-strike patterns have been classified into categories including forefoot, mid-foot, and rear-foot strikes; each demonstrating altered impact forces as evidenced through changes in the ground reaction force versus time plots. Particular attention has been paid to the high-frequency impact peak in the vertical ground reaction force, making associations to mechanisms of overuse running injuries. The purpose of this research was to examine changes in impact forces across foot-strike manipulations, including forefoot, mid-foot, subtle-heel, and obvious heel strikes during over-ground running. Impact peaks in ground reaction force versus time curves were identified from changes in loading rate via innovative three-dimensional analysis techniques. Inter-axis correlations, magnitudes, and temporal characteristics were examined among impact peaks in the X (side-to-side), Y (forward-backward), and Z (vertical) axes across foot-strike conditions. The results from this study identified changes in inter-axis associations and the relocation of impact peaks across axes as a result of foot-strike changes. The present research sheds light into complex interactions among impact forces and running mechanics, suggesting myopic focus on the vertical direction has ignored the emergence of impact peaks along the X and Y-axes during forefoot and mid-foot running. The implications of this research may lead to improved recommendation for alterations in foot-strike pattern as a potential means of reducing running injuries.

Presentation: Southwest Chapter of the American College of Sports Medicine (SWACSM) 32nd Annual Meeting, October 2013

Establishing the C-terminome: the PxP> Minimotif as a Case Study

Surbhi Sharma and Martin R. Schiller, School of Life Sciences

The C-termini of proteins play an important role in maintaining/regulating cellular processes because they often contain one or more functional minimotifs, which mediate protein-protein interactions, post-translational modifications, and or protein trafficking. Minimotifs are 2-15 amino acid long contiguous peptide sequences with a known function in at least one protein. Given the importance of C-termini minimotifs in cellular functions and that ~2,800 human proteins have known C-terminal minimotifs, we asked if there are more C-termini minimotifs that remain to be discovered. We computationally analyzed the human proteome and identified 100s of potential minimotif sequence patterns highly enriched at the C-termini of proteins when compared to a randomized proteome. As a case study, we are studying the biological relevance of PxP> minimotif found at the C-terminus of 111 human protein. We examined the PxP> motif on Synaptotagmin IX as proof of principle for the bioinformatic analysis. This protein is essential for stimulated exocytosis. We used affinity MS/MS MALDI to identify binding partners for the Synaptotagmin IX PxP> out of rat brain extracts and identified 3 proteins also involved in stimulated exocytosis. Stable cell lines generated with a wild type or mutated Synaptotagmin IX PxP> minimotif showed different localization in cells, supporting an important function for this minimotif.

Activation of Mitogen-Activated Protein Kinases (MAPKs) in DU145 Human Prostate Cancer by a Novel [PtCl₂(4,4'-dialkoxy-2,2'-bipyridine)] Complex

Van Vo, Haesook Han, Pradip K. Bhowmik and Bryan L. Spangelo Department of Chemistry

Mitogen-activated protein kinases (MAPKs) are proteins that are activated by various stimuli to regulate cellular processes such as proliferation, differentiation, movement, survival, and programmed death. Three major MAPK members, extracellular signal-regulated kinases (ERK), c-Jun N-terminal kinases (JNK), and p38 kinases, have been shown to be activated by cisplatin, a platinum(II) [Pt(II)]-containing chemotherapeutic drug frequently prescribed for the treatment of various cancers. We recently reported on the synthesis of a series of cisplatin analogues containing a 4,4'-dialkoxy-2,2'-bipyridine structure (with the alkoxy having 1-6 carbons) and demonstrated their high anti-proliferative activity against different types of human cancer cells. Prostate cancer is a commonly diagnosed malignancy and major cause of cancer death in men. Thus, to further study the effects of these new Pt(II)-complexes in prostate cancer, all six complexes were tested in DU145 human prostate cancer cells. Our data indicated that these Pt(II)-complexes reduced the viability of DU145 cells in a concentration-dependent manner. We hypothesized that similar to cisplatin, these Pt(II)-complexes will also induce activation of MAPKs. Indeed, one of the complexes, **Pt-4C**, induced activation of ERK, JNK, and p38 in DU145 cells. Moreover, co-treatment of **Pt-4C** with JNK and p38 inhibitors resulted in increased cell viability compared to **Pt-4C** treatment alone. This suggests that JNK and p38 may be involved in cell death signaling in DU145 cells in response to **Pt-4C** treatment.

Graduate & Professional Student Research Forum
Science and Engineering
Platform Session B
UNLV Student Union Room 207

9:00 – 9:15am Christopher Adcock, Department of
Geoscience

9:15 – 9:30am Wyatt Bain, Department of Geoscience

9:30 – 9:45am Amber Guckes, Department of Mechanical
Engineering

9:45 – 10:00am Erica Marti, Department of Civil and
Environmental Engineering and Construction
Management

10:00 – 10:30am Break

10:30 – 10:45am Frederick Freudenberger, Department of
Geoscience

10:45 – 11:00am Pat Kalita, Department of Physics and
Astronomy

11:00 – 11:15am Jessica Hartman, Department of Mechanical
Engineering

11:15 – 11:30am Seth Gainey, Department of Geoscience

11:30 – 11:45am Fabian Hardy, Department of Geoscience

Reactive Transport Modeling of Phosphate Mineral Dissolution in High-P Martian Rocks

Christopher Adcock and Elisabeth Hausrath, Department of Geoscience

Phosphate is a chemical nutrient required in both fundamental biologic reactions and reactions that led to the origin of life. The availability of phosphorus (as either phosphate or a more reduced species) in martian environments may have been a determining factor in the possible origin of life on Mars. Phosphorous availability within environments is tied to dissolution of primary phosphate minerals during aqueous interactions. Alpha Particle X-ray Spectroscopy (APXS) of high-P rocks encountered by Mars Exploration Rover (MER) Spirit at Gusev Crater, indicate dissolution profiles in these rocks in which only a Ca-phosphate mineral has been dissolved. These somewhat unusual dissolution profiles are not only indicators of past aqueous interactions, but also suggest phosphate release, and potential phosphate availability, in a past aqueous environment on Mars. In addition, the single mineral dissolution profiles can be indicative of specific aqueous characteristics, such as pH range, which have potential martian astrobiological implications. In previous studies we have synthesized chlorapatite and merrillite, the dominant primary phosphate minerals on Mars, and measured the dissolution rates and solubilities of these Mars-relevant minerals. We have also examined phosphate mobility in basalts of a Mars-analog environment, Craters of the Moon National Monument in Idaho. Here we use results of these previous studies to inform reactive transport modeling and investigate the dissolution and release of phosphate from phosphate-rich martian rocks (e.g. Wishstone class). Our results suggest that dissolution profiles in high-P martian rocks may be indicators of phosphate release into past near neutral pH waters on Mars.

Presentation: 2014 Lunar and Planetary Science Conference, The Woodlands, TX, March 17-21

Testing Established Models of Hydrothermal Fluid Distribution Around Porphyry Deposits: The Application of Fluid Inclusion Research to Porphyry Deposit Exploration

Wyatt Bain, Department of Geoscience

Northern Arizona contains several ore deposits formed from hot, aqueous, metal-bearing, fluids, derived from magmas in the shallow crust of the earth. These deposits are known as porphyry deposits, and mining and exploration of these mineral resources is an important part of the economy of the southwestern United States. Recent studies have analyzed the physical and chemical characteristics, and spatial distribution of ancient, ore-forming fluids trapped in tiny “fluid inclusions” in rocks found in productive porphyry deposits. These studies have provided an understanding of the fluids that form these deposits, and have established models of how fluid inclusions are distributed throughout porphyry systems. These fluid inclusion distribution models are important to our current understanding of porphyry deposits and could have predictive power that geologists can use to explore for new mineral resources.

This project will test the predictive power of the established fluid inclusion distribution models by using them to characterize the Kabba porphyry prospect in northwestern Arizona. This prospect contains two areas of porphyry style alteration and mineralization that may represent the root and intermediate depth zones of a single porphyry system that have been separated by a fault. If this is correct then the fluid inclusions found in these areas should have the physical and chemical characteristics of fluid inclusions found in the root and intermediate depth zones of other known deposits. If successful, this project will demonstrate the predictive power of established fluid inclusion distribution models and the application of fluid inclusion research to porphyry resource exploration.

Monte Carlo Analysis of Neutron Multiplicity Detector System for WIMP Mass Measurement

Amber Guckes, Alexander Barzilov, Denis Beller and Thomas Ward Department of Mechanical Engineering

To confirm recent and ongoing dark matter (DM) searches, it was proposed to measure the mass of DM and the reaction cross section by means of the total disintegration of the lead nucleus into neutrons and protons in a single weak-interaction event (WIMP). By stopping a WIMP in a lead (Pb) target, it is expected to produce a point source with a large neutron multiplicity of more than 100 fast neutrons per WIMP annihilation. The detection of this high-multiplicity neutron event is the unique signature of WIMP decay. The neutrons produced from WIMP annihilations can be detected and distinguished from other extraneous events (i.e. cosmic rays) via the Neutron Multiplicity Detector System (DM-NMDS). The DM-NMDS is modeled in the Monte Carlo neutron transport code MCNP6 providing a preliminary evaluation of the system performance to detect neutrons produced by the WIMP annihilation. The neutron detection efficiency values for the He-3 detector assemblies of the DM-NMDS were found to be between 20% and 35% for different source positions and energies. These results show that the DM-NMDS design enables an appropriate detector efficiency and overall system performance making the detection of dark matter tangible.

Presentation: 2014 American Nuclear Society Annual Student Conference

A Hazardous Ozone Disinfection Byproduct: NDMA Formation from Model Precursors

Erica Marti, Department of Civil and Environmental Engineering and Construction Management

N-nitrosodimethylamine (NDMA) is a harmful disinfection byproduct commonly associated with chloramination, but recent studies indicate that direct formation during wastewater ozonation is a possible pathway. NDMA was part of the U.S. EPA's Unregulated Contaminant Monitoring Rule 2 and was included on the most recent Contaminant Candidate List, which are steps to becoming a regulated contaminant. The formation of NDMA may be a significant barrier to the use of ozonation in water reuse applications, particularly for potable reuse. One way to prevent NDMA formation is to determine compounds (i.e., precursors) that lead to its formation and remove them prior to ozonation. Only a few studies have determined precursors for NDMA formation due to ozonation. In this work, thirteen compounds were chosen based on literature and chemical structure. Precursors were spiked into the water matrix and ozonated. Analysis was performed by liquid chromatography tandem mass spectrometry. Of the thirteen compounds, four had previously been reported to be NDMA precursors associated with ozonation and six new compounds resulted in NDMA formation. Other results include an assessment of bromide for enhancing NDMA formation, comparison of NDMA formation in water matrices, the effects of ozone dose and hydrogen peroxide addition on NDMA formation after ozonation, a comparison of NDMA formation by ozonation and chloramination, and steps toward understanding the reaction pathway.

Presentations: ACS National Meeting, April 2013 and Water Quality Technology Conference, November 2013

Geomorphic Controls on the Morphology of Potentially Hazardous Fibrous Amphiboles, Clark County, Nevada, USA

Frederick Freudenberger, Brenda Buck and Rodney Metcalf, Department of Geoscience

Asbestos minerals are known human carcinogens that are characterized by their affinity to form long, thin fibrous habits and their resistance to decomposition. There are six hazardous fibrous minerals including five amphiboles that are characterized and regulated as “asbestos”. Fiber morphology and chemistry directly relate to hazardous potential: longer and thinner fibers are thought to be more harmful. Fibrous asbestos was found in a 0.05km² outcrop in the McCullough Range in southern Clark County, Nevada. Particles from the outcrop erode out as part of an associated alluvial fan that spans at least 0.41km². This project collected samples in drainages to determine how the length and width of fibrous amphiboles vary with (a) geomorphic age and (b) distance from source. Fiber length, width, and mineral chemistry were measured and a detailed map of the relevant fan and area was made. In addition, spectroscopy was used to analyze amphibole samples to attempt to locate amphiboles using multispectral imagery. Amphibole particles and fibers have been found in both ancient and modern alluvium in varying shapes and sizes. However, results show no relationship with distance or time. So, research suggests these particles retain their size/shape with transport distance and time of weathering (in arid systems). These results could be used to better research potential sites that host amphibole fibers and improve land-use planning near these areas in the interest of public health.

Presentation: Geological Society of America Annual Meeting; Denver, Co; October 2013

Putting the Squeeze on Ceramic Materials: Diamonds, X-Rays and Lasers Help in Uncovering of Extreme Behaviors in Ceramic Materials

Pat Kalita, A. L. Cornelius, K. Lipinska and S. Sinogeikin, Department of Physics and Astronomy

Investigating materials at extreme pressures opens the door to observations of exciting and unusual physical and structural properties. Ceramic materials are investigated at very high pressures by squeezing a sample in between two diamonds and by shining powerful X-rays or lasers to extract in situ information, while pressure is being applied. The present work focuses on high-pressure investigations of the most important family of ceramic materials: mullites. Despite the fact that mullite occurs rarely in nature, it is perhaps one of the most important phases in both traditional and advanced ceramics and thus one of the most widely studied ceramic phases. Because of its technologically important properties, mullite has become a major compound not only in a large number of conventional ceramics (e.g., porcelains and alumino-silicate refractories), but also in various advanced ceramics (e.g.: heat exchangers, catalytic convertors, filters, optical devices, electronic packaging materials). We will present our latest results of high pressure behavior, compressibility and amorphization mechanisms of mullite ceramics.

Evaluation of Performance of Neutron Spectrum Unfolding Technique Based on Wavelets

Jessica Hartman and Alexander Barzilov, Department of Mechanical Engineering

Nonproliferation is gaining importance in the nuclear industry, fueling the need for quick and efficient methods capable of measuring, and assessing the neutron signatures of fission events. Since neutrons produced by fission are mainly fast (high energy), their energy becomes crucial for analysis. Since detector output is the superposition of the response functions of all neutrons entering the detector, the response to a poly-energetic flux can be unfolded to produce its neutron spectrum. This data can then be applied in remote sensing and search tasks to identify an unknown source.

In spectral unfolding, the detector response can be represented as a function with detector specific parameters. A variety of methods currently exist for spectrum unfolding, but none are ideal. A quick unfolding technique requires a reduced number of computer operations, suggesting that the use of only a few variables comparing to hundreds or thousands of data points of the discrete response function is ideal. Through the application of wavelets, the number of variables can be limited to two. The technique was evaluated for the unfolding of neutron spectrum computed by the MCNPX code from Los Alamos National Laboratories. This code was used to model and compute detector responses of the plastic scintillator EJ-299-33A to an isotropic, mono-energetic point source. The F8 tally was used to produce neutron pulse height distributions in MeVee. Computational results have indicated the wavelet-based spectrum unfolding method is feasible for use in a plastic scintillator detector with neutron / photon pulse shape discrimination properties.

Presentations: American Nuclear Society 2014 Student Conference, Pennsylvania State University and State College, Pennsylvania, USA, April 3-5, 2013

Formation of Aqueous Minerals: Implications to the Past Habitability of Mars

Seth Gainey, Elisabeth Hausrath, Joel Hurowitz and Oliver Tschauner, Department of Geoscience

Infrared reflectance data obtained from the; Thermal Emission Spectrometer (TES), Observatoire pour la Mineralogie, l'Eau, les Glaces, et l'Activite (OMEGA) and the Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) have revealed phyllosilicate bearing materials on the Martian surface and represents the strongest evidence for the sustained aqueous activity on Mars. A multitude of studies have suggested the presence of phyllosilicates at numerous locations on Mars. However, the mineralogy of these phyllosilicates is heterogeneously distributed both spatially and stratigraphically. Of these locations, Mawrth Vallis represents one of the largest exposures of phyllosilicates on Mars and is characterized by Al-rich clay minerals mixed with hydrated silica, which is underlain by a Fe, Mg-rich clay. Several hypothesis attempt to address the origin of the observed stratigraphy, which include the following; volcanic, sedimentary and pedogenic models. To further evaluate the stated hypotheses, a range of igneous rocks (mafic to felsic) were altered in alkaline solutions, under both oxidizing and reducing conditions. Results further support a pedogenic origin of the Mawrth Vallis stratigraphy. This is additionally supplemented by the lack of felsic volcanism and a spatial association of clay minerals and the Martian magnetic anomaly. The formation of phyllosilicates in the presence of a magnetic field may represent the most habitable environment during the history of Mars, as clay minerals form in near-neutral to alkaline environments where the produced H_2 and CH_4 may act as an energy source for chemosynthetic organisms, while the magnetic field may reduce atmospheric erosion, shielding prebiotic chemistry from cosmic radiation.

Presentation: Lunar and Planetary Science Conference, March 21, 2014

Geoscience Stable Isotope Paleoecology of an Ice Age Bison

Fabian Hardy and Stephen M. Rowland, Department of Geoscience

This study is focused on the Late Pleistocene distribution and diet of *Bison latifrons* in North America. These animals likely competed directly and indirectly for habitats and resources with other large mammals, such as *Mammuthus americanus* (American mastodon) and *Bison antiquus* (another species of large, ice age bison).

B. latifrons was a large, long-horned herbivore that previous research has interpreted to have lived in forest openings and woodlands, taking advantage of browse and woody plants as food, similar to a modern moose. It is known from sites in California, Idaho, Nevada, Colorado, and Florida, among others. These sites represent diverse examples of conducive bison habitats, and the collection of data from multiple geographic locations helps characterize the paleoecology of the species. This study will test the hypothesis that *B. latifrons* was a consumer of browse plants and did not migrate long distances.

Stable isotopes of carbon and oxygen can be measured from tooth enamel to test hypotheses about the possible migration patterns and diet of these animals. Oxygen isotopes are determined by water consumed by an animal. Seasonal climatic variation in oxygen isotopes is seen among individuals, and variation greater than expected may indicate migration. Carbon isotopes yield information about diet, and are influenced by different photosynthetic pathways in plant material consumed.

Samples have thus far been collected from sites in Idaho and Colorado, with ongoing research being conducted on both data sets, including x-ray diffraction to determine whether material has been altered.

Presentations: UNLV Geosymposium 2013 and UNLV Geosymposium 2012

Graduate & Professional Student Research Forum
Science and Engineering
Platform Session C
UNLV Student Union Room 208A

9:00 – 9:15am Jonathan Baker, Department of Geoscience

9:15 – 9:30am Sarah Evans, Department of Geoscience

9:30 – 9:45am Mohsen Jahandardoost, Department of
Mechanical Engineering

9:45 – 10:00am Alison Lacy, Department of Geoscience

10:00 – 10:30am Break

10:30 – 10:45am Dev Maharjan, Department of Geoscience

10:45 – 11:00am Soumya Sagarika, Department of Civil and
Environmental Engineering and Construction
Management

11:00 – 11:15am Tim Waters, Department of Physics and
Astronomy

11:15 – 11:30am Zheng Zeng, Department of Mechanical
Engineering

The Impact of Past and Future Climate Change on the Continental Interior of Western Eurasia

Jonathan Baker and Matthew S. Lachniet, Department of Geoscience

To forecast the various impacts of anthropogenic global warming on regional scales, climatologists frequently rely on geological archives of past responses to climate change. Paleoclimate data for the continental interior of western Eurasia remain sparse, however, despite growing concerns over the future sustainability of its agricultural base. We present an 11,800-year record of climate change from three stalagmites, which grew in caves on the eastern margin of the Volga River Basin, Russia. The geochemistry of these stalagmites reflects that of snowmelt infiltrating the caves each spring, providing a nearly continuous record of winter climate since the end of the last ice age. Long-term climatic trends are attributed to the amount of incoming solar energy, a function of Earth's orbit, and the retreat of the Scandinavian Ice Sheet, which disappeared around 8,000 years ago. Winter temperature in the Volga Region has risen steadily since 11,500 years ago, with the exception of decadal- to centennial-scale cooling events associated with North Atlantic climate anomalies. Shorter term climate shifts are connected rather to oscillating patterns of atmospheric circulation, which direct moisture from the oceans onto the continent. This connection has more profound implications for easternmost Europe, as rapidly shifting ocean temperatures and Arctic sea ices direct consequences of global warmings are likely to cause more frequent droughts and extreme temperatures in both winter and summer.

Presentation: Geological Society of America Annual Meeting, Denver, Colorado, October 29, 2013

Zircon and Apatite (U-Th)/He Evidence for Pre-Miocene Extension in the Southern Snake Range, NV

Sarah Evans and Andrew Hanson, Department of Geosciences

The timing and rate of extension along the Southern Snake Range Detachment (SSRD) prior to well-documented extension at ~17 Ma is poorly constrained by current research. The Southern Snake Range (SSR), located in east-central Nevada, is a metamorphic core complex (MCC), a geologic feature first recognized in the Basin and Range, USA. MCCs only occur in highly extended or stretched regions of the Earth's crust. Although SSRD faulting is documented at ~17 Ma, less is known about an earlier period of extension. This earlier period of extension is an important component for understanding the processes that transformed Nevada from a mountain belt produced through compression of the Earth's crust into the present day highly extended region. In order to constrain the timing and rates of extension, ten granite samples were collected on an east-west transect in the footwall of the SSRD. The samples were dated using zircon and apatite (U-Th)/He thermochronology (ZHe and AHe), a technique that records when a rock cooled below 140°C and 55°C respectively. Sample ages range from 41.7 ± 2.6 Ma (ZHe, 2σ) and 15.1 ± 2.4 Ma (AHe, 2σ) in the west to 21.0 ± 3.3 Ma (ZHe, 2σ) and 13.6 ± 0.68 Ma (AHe, 2σ) closest to the SSRD in the east. The spatial distribution of cooling ages indicates ~25 Ma for onset of extension at a rate of ~0.57-2.85 mm/yr, older and slower than expected from previous research. These data require the revision of tectonic evolution models of east-central Nevada.

Desert Sol's HVAC Designing

Mohsen Jahandardoost, Department of Mechanical Engineering

Our project was designing and building a high efficient-sustainable home as a part of Department of Energy's (DOE) Solar Decathlon competition. This house, Desert Sol, was designed to take advantage of the Mojave Desert's renewable resources to produce a net-zero home that is self-reliant in the severe desert.

The team designing and building the house was an interdisciplinary collaboration of UNLV's talented students and faculty members from different departments, representing UNLV and the Silver State. The result of these efforts was second place in Department of Energy's competition on December 2013. UNLV was the only US team which placed in top three.

I was the leader for designing Heating, Ventilation, and Air Conditioner (HVAC) system for house as well as LEED analyzer. The HVAC system was one of the most important parts of the house because we needed it to provide a good and pleasant indoor air quality for occupants. Another goal of Desert Sol was earning a LEED certificate so I needed to consider the effect of HVAC system on different factors from efficiency and sustainably to affordability.

After some research, a high efficient ductless mini-split heat pump was selected. In an ordinary home, the HVAC system uses 70% of electricity but this consumption in our house was only 10%. Also the HVAC system performance was the main criteria for "Engineering" evaluation contest in Solar Decathlon competition, one of the ten categories. UNLV's team earned third place between 20 universities.

Early Eocene Tectonic Mode Switching in the Hinterland of the Sevier Mountain Belt: Analysis of Garnets in the Schist of Upper Narrows, Raft River Mountains, Northwestern Utah

Alison Lacy, Department of Geoscience

The Sevier-Laramide mountain belt experienced a fundamental transition from compression to extension during the Eocene. The timing of the transition has been well documented in the central part of the mountain belt between 50 and 48 Ma, but remains poorly constrained in the hinterland region to the west. Garnets from the schist of Upper Narrows in the western Raft River Mountains located in this hinterland region have been dated at 51.0 ± 2.0 and 53.3 ± 2.2 Ma thus provided an opportunity to constrain the timing of the transition from shortening to extension. Garnets effectively record deformational stresses which can be seen by examination of thin sections under a microscope. Microprobe analysis of these thin sections determines how the garnet changed chemically as it grew. This data is then used to determine specific pressures and temperature related to the changing chemical composition during growth.

Garnet growth indicates that both pressure and temperature increased during the majority of garnet growth. A switch in pressure from increasing to decreasing occurred near the rim of the garnet indicating the forces acting on the garnet effectively changed. Initial increase in pressure and temperature indicate these garnets are moving lower in the earth thus experiencing greater pressures and temperatures. This is accomplished by burial of these rocks by sediments above. A switch in pressure from increasing to decreasing occurs due to cessation of these compressive forces. Areas of high relief created in mountain building processes eventually become unstable resulting in gravitational collapse. This process causes extension which leads to exhumation of once buried rocks to shallower levels within the earth. The timing of this transitional process has been recorded in the Upper Narrows and aids in better understanding the processes occurring within the earth's subsurface.

Presentations: Geosymposium, April 2013 and GSA May 2013, Rocky Mountain Rendez-vous, September 2013

Reduced Denitrification During Early Mississippian Glacial Ocean

Dev K. Maharjan and Swapan K. Sahoo, Department of Geosciences

The Kinderhookian–Osagean (K–O) event is recorded globally as a large positive $\delta^{13}\text{C}$ shift of $>+5\text{‰}$ throughout Early Mississippian (~ 351 ma), primarily driven by enhanced organic–carbon burial under anoxic water–column. To mark the ecological and oceanographic changes associated with redox shift during K–O event, we present $\delta^{13}\text{C}_{\text{org}}$ and $\delta^{15}\text{N}_{\text{org}}$ from shelf to basin sections of the Great Basin (GB) in western USA. Our data shows higher $\delta^{15}\text{N}_{\text{org}}$ values during cooler periods than warmer interglacial times. We suggest that denitrification—process of removing nitrogen from the ocean, has been reduced during cooling time and provide ^{15}N -enriched waters to the phytoplankton growth relative to the warmer interglacials—during which phytoplankton growth was mitigated by N_2 fixing–bacterial biomass—the primary source of low $\delta^{15}\text{N}_{\text{org}}$ values induced by intense water–column denitrification. This switch in marine ecology and the source of nitrogen species could have been linked with the change in size of oxygen minimum zone in the water column of the K–O Ocean during glacial-interglacial periods. We also suggest that denitrification during K–O would have been more extensive than modern ocean.

Variability in Continental U.S Streamflows and Teleconnections with Oceanic-Atmospheric Indices

Soumya Sagarika, Ajay Kalra and Sajjad Ahmad, Department of Civil and Environmental Engineering and Construction Management

Streamflow variability presents a significant challenge for water resources planning and management. Understanding streamflow variability and improving the streamflow forecast have received lot of attention in hydrologic research community. Teleconnections between different oceanic-atmospheric indices and streamflow provide an opportunity to improve streamflow forecasting. In this study the long term (trend) and abrupt (step) changes in continental U.S. streamflows are investigated and the possible influences of two oceanic-atmospheric indicators i.e., sea surface temperatures (SST) and 500 mbar geopotential height index (Z500) on streamflow is investigated. Water-year streamflow volumes from 1951-2010 at 240 unimpaired streamflow stations in the continental United States were used in the study. Two non-parametric tests i.e. Mann-Kendall and Pettitt test were used to evaluate the changes. The change results indicated increasing streamflow patterns in the eastern U.S. and dominant decreasing streamflow trends in the Pacific Northwest and South Atlantic Gulf regions with statistically significant step changes occurring during the early 1970s and 1980s. This is the first study that explores the connection between geopotential height index and the continental U.S. streamflow. Singular Value Decomposition (SVD) was used to evaluate the association between oceanic-atmospheric indices and streamflows. SVD results showed the Pacific SSTs had strong correlations with the western streamflows, whereas Atlantic SSTs had stronger correlations with the eastern streamflow regions. The Pacific and Atlantic Z500 showed strong correlations with the northern Midwest regions of Missouri, Great Lakes and Souris-Red-Rainy. The findings from the current study can help in understanding the nature of streamflow variability and improve water management.

The Riemann Problem in Gas Dynamics: Exact Solutions and Numerical Simulations with Heating and Cooling

Tim Waters, Department of Physics and Astronomy

Many complexities that appear in the compressible fluid equations in one dimension are encapsulated in the solution to the Riemann problem. An experimental realization of this problem is a classic shock tube in which a glass tube, divided by a membrane in the center, is filled with gas of say high pressure on the left and low pressure on the right. The behavior the colliding gas once the membrane is removed is described by the solution to the Riemann problem. Today this solution is at the heart of many state of the art algorithms in computational fluid dynamics to capture shocks in supersonic fluid flow. We present a Python code that solves this problem analytically and using numerical simulations, we compare how the solution changes when the gas has sufficient time to cool upon colliding.

2013 U.S. Department of Energy Solar Decathlon

Zheng Zeng, Department of Mechanical Engineering

The U.S. Department of Energy Solar Decathlon is an award-winning biennial program that challenges collegiate teams around the world to design, build and operate net zero energy solar-powered houses. The winner of the competition is one that best blends affordability, consumer appeal, and design excellence with optimal energy production and maximum efficiency. The Solar Decathlon 2013 was hosted at Orange County Great Park in Irvine, California. DesertSol is University of Nevada Las Vegas's (UNLV) entry in the Solar Decathlon 2013. It won 2nd place overall in the Solar Decathlon 2013, behind Team Austria's home LISI by only 4 points. UNLV was the top ranked US school in the competition and for the individual contests, ranked No.1 in the Market Appeal contest, No. 2 in the Communications contest, and tied No. 3 in the Engineering contest. For Zero Energy Buildings, it is a challenge to combine a high performance building with efficient building technologies in an optimal manner. Therefore integrated design approaches are crucial for high energy performance buildings. DesertSol employed best practices for small space living and whole-house energy optimization. The house not only used extensive passive strategies to reduce demand-side load as much as possible, but employed a highly efficient active system to deliver project performance. The team learned to use energy modeling iteratively throughout the design and construction phase to help with decision making.

Presentation: Department of Energy Solar Decathlon, October 2013

Graduate & Professional Student Research Forum
Fine Arts
Platform Session A
UNLV Student Union Room 208B

10:00 – 10:15am Lindsay Cunningham, Department of Music

10:15 – 10:30am Ryan Harrison, Department of Music

10:30 – 10:45am Caleb Pickering, Department of Music

10:45 – 11:00am Break

11:00 – 11:15am Camilla Oldenkamp, Department of Art

11:15 – 11:30am Justin Bland, Department of Music

11:30 – 11:45am Lucas Brust, Department of Music

National Opera Association Convention 2014

Lindsay Cunningham, Department of Music

While attending the National Opera Association Convention, I introduced myself to members and strengthened old connections with opera directors, voice professors, coaches, and summer program directors, as well as attending and participating in masterclasses and competitions. The masterclasses emphasized a performer's ability to switch between an aria and a musical theatre piece in an audition and to find the similarities and differences in the preparation and performance of the two genres. After performing two contrasting 32-bar excerpts for a masterclass, Steven Gross reinforced my choice in audition attire and musical theatre excerpts and encouraged me to explore lesser known works to bring to auditions. Watching the competitions provided examples of strong opera scenes and of arias that I will learn for my audition package. The interview with composer Andrew Lippa introduced me to his compositions that I have since assigned to my students. I observed my first poster presentation session and began to understand how they are important as a venue for young scholars to present their research. In addition, my mentor and I attended a Handel-Jam which encouraged us to improvise freely in arias from the Baroque period. I immediately applied this to music that I am preparing for my final recital at UNLV. The conference introduced me to new compositions, to important figures in the field of singing, to the importance of being able to sing in both genres, and to new long-term goals in my quest to becoming a scholar, opera director, performer, and voice teacher.

The Percussive Arts Society's Australian National Drum and Percussion Camp 2014
Ryan Harrison, Department of Music

During the camp I had the opportunity to attend master classes and workshops by many world class percussionists, both from Australia and other parts of the world. The camp hosted a series of concerts giving attendees the opportunity to perform in front of other camp participants and of course the camp faculty. One of the most exciting opportunities was to participate in the large scale Marimba Orchestra to be formed at the camp. This was a rare chance to perform in such a setting as Marimba Orchestras present a logistical problem in terms of getting instruments to the one place, instruments are large and not easy to transport so as a result, Marimba Orchestras are not formed very often.

There are a number of great artists that presented at the camp. The headliner and most notable artist was the Serbian born percussionist/composer Nebojsa Zivkovic. Zivkovic has composed a large number of works for percussion, many of which have now become standard repertoire for percussion students at high school and college level all over the world. Percussion is one of the few instrument specializations that is still evolving, we have the unique opportunity to study with composers of our standard repertoire that other instruments do not have (eg, a violinist could not study with composers such as Bach and Mozart). I took every opportunity to study with such composers so their information can be passed on to the next generation of percussionists.

Finally the camp offered a setting to meet other percussionists from all over the world, a chance to talk and learn from a wide variety of percussionists I may not normally have the opportunity to meet.

I gained a lot of experience and knowledge from the camp that I hope to pass on to fellow UNLV students.

Australian Drum and Percussion Camp

Caleb Pickering, Department of Music

As a member of the University of Las Vegas - Nevada Percussion Department and Graduate College, I had the opportunity to travel with our director Dr. Timothy Jones, and fellow students, to Adelaide, Australia for the Percussive Arts Society Australian Drums and Percussion Camp. The event's course ran two weeks starting on January 1, 2014.

While we were there, we played and participated in concerts and master classes from world renowned artists in the world of classical percussion. These concerts included participation in a classical marimba band. This is a rare ensemble, and an opportunity that few individuals get to experience during their careers. We were able to perform as soloists during the events concert series throughout the day. A few artists led master classes on percussion performance and pedagogy, which included Ted Atkatz (former principal percussionist; Chicago Symphony Orchestra), Nebojsa Jovan Zivkovic (international percussion soloist), and Gary France (Percussive Arts Society - Australia President).

As a UNLV graduate student, the knowledge of percussion pedagogy, history, and performance that was acquired from these individuals proved to be a great asset to me as both an educator and performer. I was able to use this knowledge to bring back to the University to share with the other music students, and by using it to greatly enhance my teaching and playing abilities here at the university and in my future endeavors.

As an instrument family, percussion has made its greatest strides in the past fifty years. Getting to study first hand with these innovators of our instrument was truly an amazing experience.

Presentation: Australian Drum and Percussion, Adelaide, South Australia Camp 2014

What We Don't Know Can't Hurt Us: A Work of Visual Art

Camilla Oldenkamp, Department of Art

What we don't know can't hurt us is a work of visual art directly relating to our world and society today, in all its technological and developmental glory. There has been a revelation over the last two decades. Nearly every person in most developed countries is bombarded with information faster than they can process it. With such an array of information available to us without having to leave our bedroom where do we start? Most of us start by checking our current Facebook feed to see what our friends did with their Friday night. Has this rush of knowledge happened so abruptly we still don't realize the availability of this information or even what to do with it? Is our nature to be more engrossed in the lives of friends and celebrities than fascinated in the research conducted and facts concluded by brilliant minds? This video/text installation reflects on the availability of information in the digital age and what responsibilities we hold because of our accessibility to this information. What information is significant and who decides?

Creating Critical Editions of Music from the Seventeenth Century

Justin Bland, Department of Music

My D.M.A. project is focused on creating critical editions of music from the seventeenth century. As a doctoral student studying trumpet performance, the Academy is significant to my field of study because of the insight, both historical and technical, that students will gain from the program. While there are a number of opportunities in Las Vegas, early music is not one of them. A program such as this is valuable to me in particular because it helps strengthen an area of performance that is not emphasized much at UNLV. Early music, especially, in the United States is more of a specialized field, so having the chance to work with other students and emerging professionals from across the country (and in some cases from other countries) is invaluable.

Percussion Down Under

Lucas Brust, Department of Music

Members of the percussion studio had the opportunity to attend the PAS Australia Drum and Percussion Camp in Adelaide, South Australia at the beginning of this year. Four UNLV students, myself included, worked as the logistics team for this camp, ensuring that each presenter was provided with the materials and equipment needed for his/her clinic. This opportunity allowed us the unusual privilege to become acquainted with the Australian artists as well as the international artists at the camp (most of whom were Americans). The international presenters at this weeklong workshop were Ted Piltzecker (jazz vibraphonist), Ted Atkatz (orchestral percussionist), Ben Toth (frame drumming specialist), Jeff Moore (rudimental percussion authority), James Doyle (military percussionist), Frank Kumor (contemporary percussionist), and Nebosja Zivkovic (composer/percussionist). The Australian presenters were Tim Jones (6-mallet marimbist), Gary France (South Indian counting), Eugene Ughetti (contemporary improvisation), Jim Bailey (jazz improvisation), Damian Corniola (drum set virtuoso), Grant Collins (drum set independence), Mark Robinson (orchestral percussion), Amanda Grigg (memorization), and Graham Morgan (legendary drum set artist). Although the international artists (Americans) presented very compelling clinics on their respective fields of expertise, gaining the perspectives of the Australian percussionists was extremely valuable. After attending the presentations by the Australian performer/educators, it became quite apparent that percussionists worldwide tend to use much of the same materials for educational purposes. The only major difference between American and Australian percussion education is our focus on rudimental percussion. Confirming the fact that music is indeed a universal language was very rewarding in its own right.

Graduate & Professional Student Research Forum
Social Science
Platform Session A
UNLV Student Union Room 208C

9:00 – 9:15am	Monica Bolton, Department of Psychology
9:15 – 9:30am	Laura Gryder, Department of Anthropology
9:30 – 9:45am	Krystal Hammond, Department of Anthropology
9:45 – 10:00am	Chelcie Heaney, Department of Psychology
<i>10:00 – 10:30am Break</i>	
10:30 – 10:45am	Emily Hensleigh, Department of Psychology
10:45 – 11:00am	Antoinette Izzo, Department of Anthropology
11:00 – 11:15am	Vanessa Irsik, Department of Psychology
11:15 – 11:30am	Leiszle Lapping-Carr, Department of Psychology
11:30 – 11:45am	Katelyn DiBenedetto, Department of Anthropology

Developmental Alteration of GABAB Receptor Function Results in Behavioral Deficits in Adulthood

Monica Bolton, Chelcie Heaney, Andrew Murtishaw and Jefferson Kinney, Department of Psychology

Numerous tightly regulated processes throughout development are required for the establishment of coordinated activity within the brain. The GABA transmitter system plays a vital role in modulating synaptic formation and activity during development. The GABAB receptor subtype has specifically been implicated in cell migration, promotion of neuronal differentiation, control of neurite outgrowth, and synapse formation during development. Alterations in GABAB receptor function, number, or total protein in developmental may also be involved in neurological disorders that have been suggested to be a result of altered developmental processes, such as schizophrenia. We have previously demonstrated that changes in GABAB receptor function during a critical period in early brain development of rat pups (postnatal days 7, 9, and 12) produced changes in prepulse inhibition in adulthood and differences in GABAB receptor protein levels in the cortex. GABAB receptors are located both pre- and postsynaptically with only functional presynaptic receptors present at birth. It has been suggested that the onset of functional postsynaptic GABAB receptors occurs after the first week of life. In the current experiment, we investigated if behavioral changes in adulthood would result from alterations of GABAB receptor function during the limited window of only functional presynaptic GABAB receptors (postnatal days 3, 5, and 7). These findings demonstrate that small alterations in GABAB receptor function during a period when only presynaptic GABAB receptors are thought to be functional produce changes that persist into adulthood and alter behavior.

Presentations: Society of Neuroscience Annual Conference in San Diego, CA, November 2013 and the Annual Research Symposium for the Sierra Nevada Chapter of Society of Neuroscience in Reno, NV, December 2013

The Effects of Human Maternal Placentophagy on Postpartum Iron Status

Laura Gryder, Department of Anthropology

Human maternal placentophagy (the consumption of the placenta postpartum) is a practice of increasing popularity in Western industrialized countries. Las Vegas, Nevada is home to Placenta Benefits, one of the first placenta encapsulation service providers in the US. While the practice appears to be gaining traction in the general public, exceedingly few scientific studies have investigated potential benefits and/or risks in humans. Many pregnant women are prone to iron deficiency and iron deficiency anemia (IDA), and postpartum women may suffer from the same problems due to blood loss during labor. A more rapid rebound of physiological iron levels in postpartum women is an often-cited benefit of placenta ingestion, but like many of the other benefits (e.g. prevention of postpartum depression, lactation promotion, etc.), scientific research investigating such claims is lacking.

To address these issues, we will evaluate preliminary results from an ongoing double-blind placebo-controlled study to assess the physiological responses to the ingestion of encapsulated placenta. Currently we have completed measuring hemoglobin levels, used to aide in assessing iron status, from a small number of participants on four occasions over the course of late pregnancy and the early postpartum period. Study participants include women ingesting placenta supplements (Experimental Group, n=2), and women ingesting vegetable- or beef-based placebo supplements (Placebo Group, n=3). While the results of 5 participants prevent conclusions of statistical significance, we are granted a preliminary view into what future results of this study may look like, once concluded.

Ghosts in the Graveyard: A Bioarchaeological Investigation of Children's Personhood and Postmortem Agency at Non Nok Tha, Thailand

Krystal Hammond, Department of Anthropology

This study focuses on the relationship between biologically deceased children and the living. Age analyses were conducted upon subadults from the prehistoric cemetery site of Non Nok Tha, Thailand and compared with burial offerings and other contextual information to shed light on practices surrounding the deaths of individuals below the age of 16. Results showed that children's burials were similar to adult burials, although several age-linked burial items were identified. The bodies of children tend to be interspersed with those of adults throughout the cemetery. Additionally, both child and adult burials were interred within a landscape that was set apart and made distinct through the use of individual mortuary mounds, ceramic vessels placed on top of graves, and non-occupational structures. The ceramic vessels and mounds alike held various offerings, such as fish, animal bones, and even portions of other humans. This evidence is consistent with the idea that children were not only socially recognized members of their group, but that biological death by no means marked the end of their interaction with the living.

The Effects of Baclofen and Phaclofen on Performance in the Morris Water Maze

Chelcie F. Heaney, Monica M. Bolton, Andrew S. Murtishaw and Jefferson W. Kinney,
Department of Psychology

The primary inhibitory neurotransmitter, gamma-aminobutyric acid (GABA), has been implicated in regulating multiple neural processes including oscillations and long-term potentiation (LTP), as well as complex behavior such as learning and memory. Investigations have established that GABA is involved with neurons being entrained into oscillatory firing patterns, and these firing patterns have been shown to be beneficial for LTP and learning and memory. The metabotropic GABAB receptor has also been demonstrated to affect oscillations and LTP, however the role of this receptor in learning and memory tasks has not been as fully characterized as other GABA receptors. Limited data exist on the behavioral effects of altering GABAB receptor function in learning and memory tasks, and the results are varied. Utilizing male Sprague-Dawley rats, we tested the effects of the GABAB agonist, baclofen, and the GABAB antagonist, phaclofen, in the Morris water maze. Our results indicate that both ligands induced a change in learning and memory behavior in this task. We also analyzed hippocampal tissue for alterations to numerous protein markers and have found changes that may be related to the behavioral differences. These data indicate that alterations to GABAB receptor function may induce changes in learning and memory, and suggest a more prominent role for GABAB-mediated signaling in complex behavior.

Presentation: Society for Neuroscience Annual Conference, San Diego, November 2013

The Effect of Early Life Stress on Methamphetamine Induced Damage in the Striatum

Emily Hensleigh, Kelly Abu Ali, Matt Eby, John Egan, Aisha Fowler and Laurel Pritchard, Department of Psychology

Methamphetamine (METH) abuse impacts the global economy through costs associated with drug enforcement, emergency room visits, and treatment. Hyperthermia is a leading cause of METH induced emergency room visits and may lead to neural damage. Previous research has demonstrated early life stress, such as childhood abuse, increases the likelihood of developing a substance abuse disorder. However, the effects of early life stress on neuronal damage induced by chronic METH administration are unknown. We aimed to elucidate the effects of early life stress on METH induced dopamine damage in the striatum and the role of elevated body temperature in two experiments utilizing maternal separation, a model of early life stress. In adulthood, rats received either a subcutaneous 0.9% saline or 5.0 mg/kg METH injection every two hours for a total of four injections. Rectal temperatures were taken before the first injection and one hour after each subsequent injection. Experiment 2 placed animals under a standard (22-23C) or elevated (29C) temperature condition during drug dosing. Seven days after testing, rats were euthanized and striatum was collected for quantification of tyrosine hydroxylase (TH) and dopamine transporter (DAT) content by Western blot. METH significantly elevated core body temperature in males and decreased striatal DAT content and this effect was potentiated by early life stress. Females did not exhibit an effect of METH except in the elevated heat condition which significantly decreased DAT levels. These studies indicate maternal separation increases METH induced damage in males, and, females are less susceptible to METH induced damage.

Presentation: Society for Neuroscience, San Diego, November 9-13

Intimate Identities: Meaning and Affect among Practitioners of Monogamy and Polyamory

Antoinette Izzo, Department of Anthropology

Identity is a powerful construct that not only informs who we are as individuals, in relationships, and across cultures, but also influences behavior and affect. Until recently, “monogamous” has been the assumed identity for pair-bonded individuals in American culture; however, “polyamory” a lifestyle in which a person may have more than one concurrent romantic, sexual, or emotionally committed relationship, with the knowledge and consent of all parties involved (Weitzman, 2006) is garnering increased attention as an alternative to traditional relationship strategies (i.e. monogamy, serial monogamy, or cheating) and identity. In this study, we situate “polyamory” and “monogamy” as individually- and socially-constructed relationship-orientation identities in order to: 1) Explore what being polyamorous or monogamous means to those who assume each identity; 2) Investigate the relationship between identity and patterns of affect; and 3) Consider the function of identity-maintenance by polyamorous and monogamous individuals. Using an online survey, participants first self-reported their relationship-orientation identity (monogamous/polyamorous) and beliefs about that identity. They were then presented with descriptions of 14 hypothetical scenarios involving their partner(s), and their affective reactions to these scenarios were analyzed qualitatively and quantitatively. Our findings illuminate the diverse ways and factors that influence how individuals develop and maintain intimate relationships with each other, and also situate relationship-orientation identity as a primary factor in human pair-bonding strategies.

Presentation: International Conference on the Future of Monogamy and Nonmonogamy, February 22, 2014

Effects of Attention on Change Deafness Depend on the Task Relevance of the Attended Object

Vanessa Irsik, Christina Vanden Bosch Der Nederlanden, Joel Snyder and Melissa Gregg
Department of Psychology

Reports on the phenomenon of Change Deafness suggest that listeners can have striking difficulty detecting changes between two groups of sounds. Causal factors such as limitations in memory capacity, impaired encoding of individual sounds, or attention have been implicated. Research on the effect of attention has suggested that change deafness is reduced when attention is directed towards the to-be-changed sound. It remains to be determined whether attention directed toward an unchanging sound increases Change Deafness, as a result of a poor representation for unattended sounds. In Experiment 1, change detection performance was compared when attention was directed towards the changing sound (valid cue), a stable sound (invalid cue), as well as in the absence of a cue (uncued trials). In Experiment 2, the role of sound encoding was addressed by testing whether listeners could identify the sounds presented during a detection trial. Experiment 1 confirmed prior reports of reduced change deafness when a valid cue is present compared to no cue, but also found significantly greater change deafness when an invalid cue was present. In Experiment 2, the presence of a task that required segregation and identification of individual sounds helped improve performance on all detection trial types (e.g., valid cue, invalid cue, no cue) as demonstrated by reduced error over all. These findings suggest that individuating sounds may be more beneficial in detecting changes versus perceiving a group of sounds as a whole.

Presentation: Meeting of the Association of Research in Otolaryngology, Winter 2014

Beep Here Now: Descriptive Experience Sampling Provides a Structured Path Toward Mindfulness

Leiszle Lapping-Carr, Noelle Lefforge, Chris Heavey and Russ Hurlburt, Department of Psychology

Mindfulness-based therapies (MBTs) are widely used to treat many psychological disorders (e.g., depression, substance abuse, anxiety, suicide and self-harm, and psychosis). Empirical support for MBTs is growing; however, therapists frequently encounter clients who are unable and/or unwilling to develop mindfulness. Mindfulness practices are based on Eastern practices and tend to assume an initial comfort level with inner experience and the ability to sit with stillness. Mindfulness is paying attention purposefully to the present moment without judgment, thereby increasing awareness, clarity, and acceptance of present moment reality. As this basic ability is not common in Western culture, many clients discontinue the treatment because they become frustrated, impatient, and experience imperturbable judgment when they attempt mindfulness practice. Unfortunately, researchers have not developed techniques to address these common barriers. Descriptive Experience Sampling (DES), a phenomenological research method to apprehend inner experience, shows promise for filling this gap. Specific DES properties that may contribute to mindfulness development include its concern with discrete moments of inner experience, iterative understanding of inner experience, valuing inner experience as it is lived without interference, promoting self-awareness and meta-awareness, and clearly distinguishing inner experience from personal narrative. DES may also offer value as an initial assessment and diagnostic tool prior to beginning MBT. By apprehending experience in its unaltered state, therapists may have enhanced insight for prescribing one mindfulness exercise (e.g., visualization for an inner seer) over another (e.g., mantra for an inner speaker).

Presentation projected: Toward a Science of Consciousness, April 21-24, 2014

Beef or Venison: The Great Debate on the Cattle Absence on Cyprus and the Role Played by Cultural Choice

Katelyn DiBenedetto, Department of Anthropology

The Neolithic process first began around 11,000 years ago in the Near East, resulting in significant economic, social, political and ecological changes. Cattle were a significant component of the Neolithic, both in economic and ritual terms. Despite the importance of cattle, however, their spread and adoption in many areas outside of their core domesticated zones was varied, with many scholars currently arguing for human decisions being a significant factor. Similar questions surrounding the spread and adoption of cattle are also relevant to the surrounding Mediterranean islands, in particular Cyprus, where recent research has documented domesticated cattle at early Neolithic sites. This is thus far the earliest evidence for cattle outside of the Levantine and Anatolian mainlands. Curiously, however, cattle disappear by the late Neolithic and are not reintroduced until some four thousand years later. This paper examines the issue of cattle on Cyprus focusing on one scenario that might explain their absence: disease (i.e., tuberculosis). In general, it is known that cattle transmit tuberculosis to humans. Other wild animals, such as deer, can also transmit this disease to cattle. Deer were heavily exploited by the inhabitants of Cyprus during the early Neolithic, thus this might be relevant to the cattle disappearance. In order to better understand whether this scenario was a significant factor in the cattle absence on Cyprus, other areas from the around the Mediterranean basin will also be reviewed. This will structure future research on the Neolithic on Cyprus, placing the island into a broader pan-Mediterranean context.

Social Science
Platform Session B
UNLV Student Union Room 209

9:00 – 9:15am Levi Keach, Department of Anthropology

9:15 – 9:30am Andrew Murtishaw, Department of
Psychology

9:30 – 9:45am Alex Nelson, Department of Anthropology

9:45 – 10:00am Meghan Pierce, Department of Psychology

10:00 – 10:30am Break

10:30 – 10:45am Liya Rakhkovskaya, Department of
Psychology

10:45 – 11:00am Sharon Young, Department of Anthropology

11:00 – 11:15am Mathew Rosenthal, Department of
Psychology

11:15 – 11:30am Shelly Volsche, Department of Anthropology

11:30 – 11:45am Christina Vanden Bosch der Nederlanden,
Department of Psychology

A Tale of Two Blade Caches

Levi Keach, Department of Anthropology

During the 2013 field season at Krittou Marottou '*Ais Giorkis* ('*Ais Giorkis*) two stone blade caches were discovered in the vicinity of the site's most prominent architectural feature, an enigmatic circular platform. The site of '*Ais Giorkis* was occupied during the Late Pre-Pottery Neolithic B phase of Cypriot prehistory, c. 9,800 years ago. It is uniquely located in the foothills of the western Troodos Mountains, near the Ezousa River. The first cache was composed of 58 blades and three core trimming elements, while the second cache was composed of 26 blades and two shell beads. Statistical analysis has been performed on both caches, and refit analysis has been conducted on the second. In this presentation I will demonstrate that the content of these caches are distinct from the standard blades of the site, and discuss what this might mean.

Presentation: Society for American Archaeology Annual Meeting, April 27, 2014

An Acute LPS-induced Inflammatory Response in a Diabetic Model of Alzheimer's Disease

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

Alzheimer's disease (AD) is a neurodegenerative disorder of unknown etiology. AD is characterized by cognitive and behavioral impairments in addition to pathological features including amyloid plaques, neurofibrillary tangles and neuronal loss. Only a small proportion of AD cases are due to genetic mutations whereas the vast majority of cases are late onset and sporadic in origin. The cause of sporadic AD (sAD) is likely multifactorial, with interactions of external factors, biological, and genetic susceptibilities that contribute to the onset and progression of AD. Diabetes Mellitus and neuroinflammation are two of the most common risk factors that have been implicated in sAD. Considerable progress has been made to understand the involvement of each of these risk factors in isolation but limited data exist on the combination of the two. Thus, we investigated the effects of an acute inflammatory in a diabetic-model of sAD. For the present study, we infused streptozotocin (STZ; a compound used to model sAD in animals) to dysregulate insulin signaling within the brain. Lipopolysaccharide was utilized to activate the immune system one week following the STZ infusion. Learning and memory was examined in the Morris water maze and hippocampal tissue was examined for pathological markers of AD. Results indicate that STZ induced deficits as well as an increase in oligomeric beta-amyloid consistent with AD. Interestingly, an acute inflammatory response significantly reduced both the behavioral deficits and the increase in oligomeric beta-amyloid. These data demonstrate a beneficial effect of an acute inflammatory response in this model.

Presentation: Society for Neuroscience 2014 Annual Conference, San Diego, CA

Negotiating Intersecting Identities in Korean Men's Observance of the Protestant Prohibition against Alcohol in South Korea

Alex Nelson, Department of Anthropology

This talk examines the contemporary practices and perceptions of the Protestant prohibition against alcohol consumption in South Korea. In particular, I focus on the repercussions for men who abstain from or limit their drinking because of their religious identity and the consequences of this behavior, specifically, and the adoption of a Christian identity, in general, has for perceptions of and stereotypes about the gender identity of Korean Christian men. Based on a two month Pilot study in the summer of 2013 in Seoul interviewing Korean Christians, My preliminary findings are that contemporary Korean Christian men who abstain from drinking perceive potential advantages and disadvantages to limiting their alcohol consumption. Perceived disadvantages include not being able to ask non-Christian coworkers for help or information and a lack of intimacy and solidarity with non-Christian coworkers. Perceived advantages include spending less time at work outings and more time with family and church friends as well as saving money. I also examine stereotypes of Korean Christian male gender identity and contrast my informants reports with hegemonic and “soft” masculinities introduced in the literature on masculinity in South Korea.

Presentation: American Anthropological Association Annual Meeting November 24, 2013

Posttraumatic Stress Disorder – Drastic Differences between Sexes

Meghan Pierce, Department of Psychology

The incidence of posttraumatic stress disorder (PTSD) differs dramatically between sexes within the United States population. It is currently estimated that 9.7% of females and 3.6% of males have current PTSD symptoms (APA, 2000). Current research has not yet elucidated the direct mechanisms involved in the biological underpinnings of PTSD. However, previous research suggests that a dysregulation in the hypothalamic-pituitary-adrenal axis plays a role in the development and maintenance of PTSD (Boscarino, 1996). Some studies have found that cortisol, the end product of hypothalamic-pituitary-adrenal axis activation, is significantly lower in individuals with PTSD as compared to healthy control (MacMillian et al., 2009). This study will examine three biological markers of hypothalamic-pituitary-adrenal axis dysregulation, the hormone cortisol, and two single nucleotide polymorphisms (SNPs) of the gene FK binding protein 51. We will measure salivary cortisol at three time points during the Trier Social Stress Test and twice to examine basal cortisol levels. The Trier Social Stress Test is a psychosocial stressor that consists of a five-minute speech and a five-minute mental arithmetic task. Genetic markers will be collected through a passive drool saliva sample and two buccal swabs. We expect individuals with PTSD to have lower cortisol levels at all time points compared to healthy controls. Moreover, we expect females to have lower cortisol compared to males regardless of PTSD diagnosis. Finally, we expect individuals with PTSD to overexpress the FKBP51 SNPs compared to healthy controls.

Predictors of Body Image Dissatisfaction in Chronically Ill Older Adults

Liya Rakhkovskaya and Jason Holland, Department of Psychology

Emerging research on body image across the lifespan indicates that older adults remain at risk for body dissatisfaction and eating pathology. Theoretically, chronically ill individuals are at particular risk, given their limited body functioning. Accordingly, this study examined predictors of body dissatisfaction in 274 chronically ill older adults. BMI, negative impact of health on appearance, perception of overweight, depressed mood and somatic complaints positively correlated with body dissatisfaction. Body dissatisfaction negatively correlated with age and health responsibility for women, and a preoccupation with a healthy diet for men. Women were more likely to maintain a healthier diet, but were also more likely to perceive themselves to be overweight. Women reported higher negative impact of health on appearance and scored higher on body dissatisfaction, depressed mood and somatic complaints. Perception of self as overweight and the negative impact of health on appearance were significant positive predictors of body dissatisfaction for all participants. A healthy diet was a significant positive predictor of body dissatisfaction for men. For women, depressed mood positively, and age and health responsibility negatively predicted body dissatisfaction. Results indicate that body dissatisfaction persists across the lifespan, although notable gender differences emerge. Specifically, women are at higher risk, but may report less body dissatisfaction with age. In addition, a preoccupation with a healthy diet may be a risk-factor for older men. Future directions include a more thorough assessment of body image disturbances and eating pathology in older chronically ill adults, as well as comparisons to healthy controls.

Presentation: Planning to present at the Association for Behavioral and Cognitive Therapies (ABCT) Annual Conference, November 2014

Effects of Human Maternal Placentophagy on Postpartum Maternal Affect, Health, and Recovery

Sharon Young, Department of Anthropology

Despite a lack of rigorous scientific evidence to support or refute the claims of advocates, a growing number of women in industrialized countries are opting to ingest their placentas postpartum, a practice called human maternal placentophagy. Proponents of this practice cite the ubiquity of the behavior among mammals and anecdotal evidence provided by women who have engaged in placentophagy to support their claims that the practice provides a host of benefits for postpartum recovery, including improvements in mood, lactation, and energy, among others. While extensive research has been conducted in non-human animals – particularly in experimental rodent models – little research is available regarding the physiological or psychological effects of the practice in human mothers. In order to investigate the purported benefits of placentophagy for postpartum affect, health, and recovery, a double-blind, placebo-controlled study was conducted in which participants received either their own dehydrated and encapsulated placenta or a beef placebo. A number of psychometric assessments were administered and samples of blood, saliva, urine, placenta, and hair were collected during 4 home visits across late pregnancy and early postpartum in order to evaluate participants' perceived effects of the postpartum supplement, and to assess any changes in hormonal biomarkers across the early postpartum period. This research not only provides insight into the efficacy of placenta supplementation and experiences of women who engage in this understudied yet growing practice, it can also help to better inform postpartum women of the potential effects of this practice in order to allow for more informed decisions to be made during this critical life history stage that could affect both their own and their infant's current or future health and wellbeing.

Hemispheric Asymmetries in the Perception of Musical Pitch Structure

Matthew Rosenthal, Department of Psychology

Each hemisphere of the brain contributes uniquely to our perception of speech and music. Various theories exist to explain the unique contributions of each hemisphere, but there has been little consensus. Virtually all theories either implicitly or explicitly assume that knowledge of music is right lateralized and that knowledge of speech is left lateralized. In this talk I will show that knowledge of musical pitch structure could emerge from two separate learning mechanisms, one that learns about pitch structure with respect to the orders and rhythms (i.e. temporal structures) in which pitches are embedded, and another that learns about pitch structure without respect to temporal structure. I will then present preliminary behavioral data from my dissertation that suggest that some aspects of musical pitch knowledge may dissociate across the hemispheres depending on whether the knowledge is temporal or non-temporal in nature. These findings challenge the common assumption that music is right lateralized.

Presentations: Aspects of this talk were presented at Society for Music Perception and Cognition, 2013 and Association for Psychological Science, 2013

Domestic dog (*Canis familiaris*)

Shelly Volsche, Department of Anthropology

The domestic dog (*Canis familiaris*) is the first animal domesticated by humans. With a history dating between 15,000-32,000 years ago, this relationship even predates agriculture. As a result, humans have a special relationship with the domestic dog. The purpose of this talk will be to discuss a brief history of that relationship, followed by how that relationship has influenced the cognition and behavior of dogs as a species. This will lead to a discussion of human-canine attachment, the implications and potential benefits of that attachment, and current and future research, including that being done at University of Nevada, Las Vegas in the Department of Anthropology.

**Preparation, Consumption, or Storage? Organic Residue Analysis of Archaeological
Examining the Role of Semantic Knowledge on Change Deafness in Early Childhood**

Christina M. Vanden Bosch der Nederlanden, Joel S. Snyder, and Erin E Hannon
Department of Psychology

The inability to detect changes in complex auditory scenes has been the topic of several recent research studies in adulthood. This phenomenon, known as change deafness, is related to a number of factors including memory capacity, memory decay, attention, the ability to stream concurrent sounds and semantic knowledge. Semantic knowledge can lead to greater change deafness when an auditory object changes from one exemplar to another (e.g. a sparrow chirp to a seagull). This type of change is acoustically different, but evokes the same semantic category, “bird”. Adults exhibit greater change deafness for within category changes than across category changes. Moreover, within category performance is significantly worse than trials that change from one sound to another acoustically similar, but semantically different object. Young children still constructing hierarchical knowledge structures may not be as affected by within category changes as adults. No studies have directly compared change deafness in childhood, making it unknown whether children will also fail to notice changes in the same manner as adults. Preliminary results suggest that children (8-year-olds) exhibit change deafness with greater error during different trials than same trials ($p < .01$). Children are also similarly disrupted by within category changes (within error: 56%, across error: 37%, $p < .05$), suggesting that children’s semantic knowledge interferes with change detection. These findings suggest that young children may process scenes in the same manner as adults, using semantic representations of auditory objects to determine the presence or absence of a change.

Graduate & Professional Student Research Forum
Law, Hotel and Social Science
Platform Session C
UNLV Student Union Room 211

9:00 – 9:15am	Al Gourrier, School of Environmental and Public Affairs
9:15 – 9:30am	Kate Eugenis, Department of Political Science
9:30 – 9:45am	Virgilio Longakit, Robert Loftus and Brady Briggs, School of Law
9:45 – 10:00am	Kristin Malek, Department of Department of Hotel Administration
<i>10:00 – 10:30am Break</i>	
10:30 – 10:45am	Erika Masaki, Department of Political Science
10:45 – 11:00am	Whitney Short, School of Law
11:00 – 11:15am	Kenneth Retzl, Department of Political Science
11:15 – 11:30am	Silvia Villanueva and Oscar Peralta, School of Law
11:30 – 11:45am	Caitlin Saladino, Department of Communication Studies

The Changing Composition of Urban and Suburban Demographics, and Its Economic Impact on Grant Policy Allocation

Al Gourrier, School of Environmental and Public Affairs

For decades now, major urban centers across the country have experienced significant demographic changes in the makeup of its population, the composition of its workforce and the industries that constitute its economic base. Previous studies have documented the shift in populations from the urban core to the inner and outer-ring suburbs. Coinciding with population shifts are increase jobs and employment opportunities in these ring communities, providing an increase population and economic base for these suburban areas. While economic growth is a key determinant in a local government's ability to increase revenues, local government's willingness is contingent on political factors. This study investigates the impact these changing demographics as well as political characteristics have on suburban communities, as it relates to policy decision on CDBG dollars over the past twenty years. Using a longitudinal research approach in tracking four major metropolitan areas (Counties n=60), and analyzing multiple data sets from 1990, 2000 and 2010 US Census Bureau and perspective CDBG Grant Allocations for Atlanta, GA; Chicago, IL; Denver, CO and San Antonio, TX. The study researches the causes of revenue changes in analyzing the implication of political and demographic changes over the twenty-year period. The purpose of the study is to be used for further development in policy for core urban cities.

"Know the Game: How the International Mass Media Influences Terrorist Groups"

Kate Eugenis, Department of Political Science

Terrorism feeds on an atmosphere of fear and uncertainty. In order for a terrorist group to achieve its purpose, its activities must be known to a mass audience. Due to the often isolated nature of the conflicts in which they are involved, terrorists groups must attract and maintain the attention of the mass media, through which they access a broader audience and gain salience. This relationship begs the question: will less media attention lead to less terrorism as groups lose their audience and are forced to use legitimate means of enacting change? This thesis analyzes the pattern of media trends and terrorist attacks over the lifespan of two distinct organizations and finds that periods of low media attention are often followed by periods of increased terrorism as the group tries to regain international relevance. Should the news media then continue to ignore the conflict, the terrorist group is forced to turn to legitimate means, or slowly die off. This study has implications for the news media as freedom of the press and the public's right to know are pitted against the potential for reduced casualties should the media be prohibited from reporting on terrorist activities.

International Recruitment of Indian Nurses

Virgilio Longakit Jr., Robert Loftus and Brady Briggs, William S. Boyd School of Law

This research, a product of the Boyd School of Law Human Rights Law Practicum in Delhi, India, a three-week program that integrated classroom learning and field experience, bringing together U.S. and Indian law students, as well as U.S. and Indian faculty, is important to us, law students, because it helped us not only expand our knowledge of substantive issues related to human rights in the classroom, but learn hands-on how to document human rights abuses, including interviewing victims, and how to write reports or prepare legal documents that will be useful in advocacy efforts.

The purpose of this research is to understand why Indian nurses migrate, how recruitment agencies in India operate, and understanding migration-related violations of the Indian nurses' population as a human rights issue.

Based on interviews conducted with Indian nurses in New Delhi and Las Vegas, as well as the team's synthesis of empirical research by other organizations, "dignity" is the primary reason that was cited for migrating because of their perception that nurses abroad are treated with more respect. They are not just looking for bare economic benefits, but an avenue where they are treated as healthcare professionals, not servants. Also, nurses in India, a moving population, lack organization and anti-retaliation measures. They are not familiar with the recruitment process and are easily exploited by unscrupulous recruiters. There is definitely a need to mobilize stakeholders and systematically redress grievances.

Exploring Virtual Events

Kristin Malek and Curtis Love, Department of Hotel Administration

Commanding over \$260 billion dollars during the great recession, the convention industry has demanded a growing focus in the job market and in academic literature. Despite this rise in literature, there are still many gaps that have not been explored. This qualitative exploratory research addresses the concept of hybrid events, a discussion on virtual events in the hotel industry, and examines the industry's current trends and future projections from the professionals analyzing current data and making the decisions. Three consistent trends were revealed: the importance of content, knowing the audience, and scalability.

Presentation: 19th Annual Graduate Education and Graduate Student Research Conference in Hospitality and Tourism, January 3-5, 2014

East Asian Regionalism: China's New Role?

Erika Masaki, Department of Political Science

The development of the Association of Southeast Asian Nations (ASEAN), has served as a catalyst for East Asian regionalism. In addition to this regional development, it appears that China and Japan have struggled for hegemonic control of the region. Consequently, this paper assesses the changes of influence of Japan and China with ASEAN members. One overlooked political measure of influence is bilateral voting affinity in the United Nations (UN) General Assembly.

The literature implies that China has exerted more influence while Japan has taken a backseat. This study uses descriptive statistics to assess whether the trends follow existing theories. The hypothesis is that trade and voting affinity should have a positive relationship. The results demonstrate that for each ASEAN nation, trade with China increased relative to trade with Japan, which supports claims that using trade as a proxy for power, China is increasing its economic power relative to Japan. However, the results suggest that rather than ASEAN countries voting more with China as a result (or as a cause) of increases in bilateral trade, ASEAN nations are voting less with China and more with Japan.

There are three main implications of this finding. First, economic influence does not necessarily equate to political influence. Second, with the debate about China's perceived increase of influence, it may be argued that China's influence is not as substantial as people assume. Third, because these results appear counterintuitive, it may be necessary to reevaluate the role of Japan in the region.

The Human Rights Practicum in New Delhi, India

Whitney Short, William S. Boyd School of Law

The Human Rights Practicum in New Delhi, India involved researching various aspects of human rights issues. One issue, in particular, was the implementation of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013. Examining how this law is being implemented is important to the law field, in general, because it showcases the relationships among labor, health, and human rights to the government, employers, and employees. The goal of this practicum was to provide the Society of Labour and Development in India with data relating to the implementation of the new law to further additional fieldwork. To do that, government officials, employers, and employees were interviewed. The results concluded that nearly no person knew of the law or of its implementation despite having the information readily available. This project supports the idea that brands, employers, and government officials need to directly be made aware of the law and its requirements.

Presentation: International & Comparative Human Rights Law Practicum - Delhi, January 10, 2014

Regional Development Banks and the Millennium Development Goals

Kenneth Retzl, Department of Political Science

The Millennium Development Goals (MDGs) were approved by the United Nations in 2000. The overall aim of the MDGs is to provide better social, economic, and environmental conditions for the world's population, with an initial deadline of 2015. To this end, regional development banks have committed to assisting member countries achieve their goals. Interestingly, previous to the MDGs, regional development banks provided only economic and financial assistance to member countries. This paper introduces a framework for how regional development banks incorporated the MDGs into their original mandate. This framework also provides for an understanding of why different regional development banks have differing levels of integration of the MDGs into their operations. To understand this situation, reports of the various regional development banks are analyzed to understand the assistance provided by the organizations. Ultimately, it is argued that most of the regional development banks have pursued a process of accommodation, whereby they provide vocal support for the MDGs, but they lack the knowledge and/or experience to assist further. The Asian Development Bank is the exception. They have integrated the MDGs into their organization due to an external shock (the Asian financial crisis). This external shock appears necessary to provide an impetus for policy norms to take hold within the organizations.

Presentation: International Studies Association Annual Convention, March 25, 2014

International Human Rights Practicum

Silvia Villanueva and Oscar Peralta, William S. Boyd School of Law

William S. Boyd School of Law's three-week long International Human Rights Practicum consisted of a week of information and research gathering as well as two-weeks of intensive fieldwork. Working in partnership with local Indian students, our research was conducted on behalf of the Society for Labour and Development, a non-profit organization based in New Delhi, India. Specifically, our work centers on investigating the employment conditions of laborers working in the garment factories that produce clothing for Tier 1 multinational corporations such as Urban Outfitters, Gap, American Eagle, and Macy's. Through the use of critical analysis, observation, evaluation, and personal interviews with Indian garment workers, management, and government officials we aimed our efforts at identifying and documenting health and safety issues and employment abuses occurring within these factories. The primary objective of our research is to promote safe and healthy employment conditions globally by raising awareness through advocacy and public policy changes. The final outcome of our research will serve as the basis for a letter to the International Labour Organization (ILO) in advance of its upcoming June 2014 session (ILOs 317th session) when the ILO will be considering possible standards related action. The letter will persuasively argue that forced overtime should be included in the definition of a new forced labor definition.

Disney Princess Narratives

Caitlin Saladino, Department of Communication Studies

This project is centered on the moral messages that are taught to young children through Disney princess narratives. The two films included in my project are *Tangled* (2010) and *Brave* (2012), which feature the most recently inducted princesses to the marketed “Disney Princess” line (Rapunzel and Merida, respectively). Using genre as a critical lens, I argue that Rapunzel and Merida are different from the past Disney princesses (Snow White, Cinderella, Ariel, Jasmine, etc.) because their narratives reflect what communication scholar; Julia Wood calls the “can-do discourse” of women in society. Wood suggests that through the “can-do discourse” today’s young women are encouraged to believe they can have a rewarding life as a home maker and achieve a fulfilling professional career, if only they are willing to work hard enough. The central tension appearing in both films is the opposition between the archetype of “woman” as traditional, domestic, and dependent and “woman” as progressive, motivated, and independent. This is reflective of changing views about woman’s role in society more generally. I find these moral messages appear most explicitly in the films’ song lyrics, which resonate most with young children who see Rapunzel and Merida as role models. My thesis is a valuable addition to current communication studies literature because while princesses have been analyzed rhetorically in the past, a scholarly investigation of Disney’s newest princesses has yet to be published. Finally, Disney’s prominence in American culture suggests that this research will appeal to a large readership beyond the walls of academia.

Graduate & Professional Student Research Forum
Humanities and Social Sciences
Platform Session D
UNLV Student Union Room 213

9:00 – 9:15am Marianne Chan, Department of English

9:15 – 9:30am Dana Killmeyer, Department of English

9:30 – 9:45am Joseph Thomson, Department of History

9:45 – 10:00am Amy Mayo, Department of English

10:00 – 10:30am Break

10:30 – 10:45am Kat Wisnosky, Department of History

10:45 – 11:00am Anthony Patricia, Department of English

11:00 – 11:15am Derek Pollard, Department of English

11:15 – 11:30am Shiori Yamamoto, Department of
History

11:30 – 11:45am Molly O'Donnell, Department of
English

Philippines Study Abroad

Marianne Chan, Department of English

The English word “translation” stems from the word “translatus,” meaning “to carry over or across.” In the Filipino dialect Bisaya, the word “pagbadbad” means “to translate” or “to interpret,” and also “to undo” or “untie.” While “translatus” suggests that translation is a generative process, in which meaning and language are charitably given away, “pagbadbad,” with its other implications, seems to convey a dismantling, the ways in which translation is a process of conquest, working to unmake what was already made. While in the Philippines, I hoped to gather Bisaya poems to translate into English, because Filipino poems are not studied in the literary mainstream. After spending ten weeks in the Philippines, not only did I find several untranslated poems in *Bisaya Magazine*, I was able to recognize the strangeness and versatility of Filipino languages and dialects, as a result of Spanish and American colonization. Therefore, I treated my process of translation as an act of literal, phonetic, and linguistic interpretation. At the GPSA Research Forum, I will share my Philippine experience (the abroad experience, required by my department), using pictures and poems. I also wish to read one of my translated poems and present the ways in which my experience abroad—in my parents’ birth country—greatly affected my creative writing in Las Vegas and my relationship with my heritage.

Travels to India

Dana Killmeyer, Department of English

I traveled to South India last summer (2013) to fulfill international study required for the completion of my MFA degree. While there, I visited temples, caves, and ancient ruins. I lived on several weeks on ashrams where I immersed myself in yoga and study Hindu philosophy and practices. During the last five weeks, I based in Chennai (formerly Madras) where I studied a classical form of dance known as Bharatanatyam as well as Tamil language and poetry and immersed myself in the culture. I will be sharing stories and photographs from my time abroad and discuss the influence this experience has exerted on my writing and future projects.

Beyond the Mythical Auction; the True Origins of the Birth of Las Vegas

Joseph Thomson, Department of History

May 15, 1905 is traditionally marked as the anniversary of the birth of Las Vegas. Historically this date has provided notable celebrations that often tied themselves to equally spectacular Helldorado events. Unfortunately these tall tales of origin from an auction sprinkled with fairy dust are untrue. Las Vegas was well established before the morning of May 15 and had steadily evolved from various stages of development for decades preceding the auction.

The overarching success of the promotion of this auction has concealed the true points of origin for the development of the Las Vegas Valley. This presentation focuses on the primary sources that prove an existence in the Las Vegas Valley long before the San Pedro Los Angeles and Salt Lake Railroad considered entering the landscape. Generations of journalists, historians and Las Vegas residents have perpetuated the myth surrounding the birth and development of the Las Vegas Valley. These new primary source findings are critical contributions to presenting a new, correct and complete history. Furthermore they advance a discussion that brings a better understanding to the process of historical reference and documentation.

The Preservation and Revitalization of the Irish Language

Amy Mayo, Department of English

I traveled to Ireland in the summer of 2013, visiting eleven locations in nine weeks, primarily in the Irish-speaking areas, referred to as An Gaeltacht. Through a one-week residential course in the Irish language, Gaeilge, followed by a self-guided tour through Ireland, I discovered the political and cultural significance of preserving this endangered language, as well as the challenges presented by increasing globalization and Ireland's participation in the European Union.

The Will of the Father: Testamentary Manumission and Will Contests in Virginia, 1810-1860

Kat Wisnosky, Department of History

This paper is an examination of probate records for wills in Virginia during the period of 1810 through 1860. This paper demonstrates that the outcomes of wills which seek to manumit slaves of the testator and were subsequently contested by whites (either heirs at law or creditors of the estate) will have significantly different outcomes based on not only prevailing political and social ideas of slavery, race and politics, but will also be affected by the sex and age of the potentially freed person.

I have selected will contest cases for this research because the nature of probate cases are such that people are very open about intimate details of their lives and relationships. This level of first-person detail is rare to find in other sources, with the possible exception of extremely close readings of diaries and letters between intimates.

Probate cases involve the words not only of “ordinary” people, but also the official pronouncements of judges and lawyers arguing not only for the clients but also for the rule of law, justice and civic stability as they saw it from their perspective. This perspective encompasses not only questions of law, but also questions of morality, social order, religion and politics. While judges are in the role of ruling on law, they are also people who have an enormous amount of power to enforce their own personal views on the litigants who appear before them. They are able to bring their own legal and moral theories to bear on the arguments brought to their court.

They have made worms' meat of me': Gender Trouble in Baz Luhrmann's *Romeo + Juliet*

Anthony Patricia, Department of English

The title of my project is, “‘They have made worms’ meat of me’: Gender Trouble in Baz Luhrmann’s *Romeo + Juliet*.” I will be delivering it as a paper in the Authorial Doubling: Collaboration, Appropriation, and Interpretation panel session at the 42nd Annual Meeting of the Shakespeare Association of America in St. Louis, MO, from 9 April 2014 to 12 April 2014. In the piece, I explore the notion that, while problematical and delightful on many different levels, if there is one thing that Baz Luhrmann surely stumbles over in his 1996 film, *Romeo + Juliet*, it is the simultaneous queering of the character of Mercutio and the homoeroticizing of Mercutio’s relationship with Romeo. The guiding argument is that gender trouble, as Judith Butler effectively deconstructed the concept as a social construct rather than a biological given in 1990, ultimately trumps the seemingly progressive nature of Luhrmann’s interpretation of Mercutio as a transvestite who suffers nothing but unrequited love for Romeo in *Romeo + Juliet*. Being neither as truly innovative, nor as truly subversive, as it pretends to be, Luhrmann’s representation of Mercutio as a drag queen serves to reinforce the strictest of binaries between straight men and gay men, with the former being truly masculine; the latter being parodies of effeminacy. Mercutio’s transvestite appearance in *Romeo + Juliet* thus also feeds into mainstream heterosexist society’s fears about its ability to differentiate itself from the Big Bad Wolf of the gay or homosexual other. It is, in addition, concluded that Mercutio’s homoerotic desire for Romeo is brought to the fore again and again in Luhrmann’s *Romeo + Juliet*, and every time that happens, that homoerotic desire is suppressed and, finally, it is snuffed out of existence entirely with Mercutio’s death and his subsequent transformation into “worms’ meat”. All of which serves to reify heterosexuality as the be all and end all of human relationships – with Shakespeare appropriated as the authorizing cultural agent that secures such exaltation.

Presentation projected: “Authorial Doubling: Collaboration, Appropriation, and Interpretation” panel session at the 42nd Annual Meeting of the Shakespeare Association of America in St. Louis, Missouri, April 10- 12, 2014

Ronald Johnson's ARK and the Watts Towers of Simon Rodia

Derek Pollard, Department of English

My presentation will focus on the ways in which the Twentieth Century American poet Ronald Johnson used the architecture and the history of the Watts Towers in Los Angeles, California, as analogues for his book-length poem ARK. Although Johnson acknowledged other source materials -- the folk art constructions of French artist Facticeur Cheval, the long poem *A* by Louis Zukofsky, *The Wizard of Oz* by L. Frank Baum, among others -- the Watts Towers, designed and built by Italian immigrant Simon Rodia out of nothing but found materials, serve as one of the most significant models for ARK's poetic structure, which stretches across ninety-nine poems divided equally into three sections, entitled "The Foundations," "The Spires," and "The Ramparts" respectively. I visited the Watts Towers in Los Angeles in November 2013 and captured the images included in this presentation as a way to better understand and articulate the connection between Johnson's poem -- and the other books by Johnson that surround it -- and Rodia's highly contested and much beloved folkloric monument. My goal is to incorporate this research into a series of essays on ARK and on Johnson's poetics that I am currently working on. As part of that project, I intend to highlight the ways in which cross-disciplinary studies inform the production of literary art, of poetry particularly, from the Modernist period into the Twenty-First Century.

Intermarriage, Citizenship and Homestead: Impacts of Marital Expatriation on Native-Born Women in the U.S.-West

Shiori Yamamoto, Department of History

This paper examines the impacts of the Expatriation Act of 1907 on native-born women in the U.S.-West in the 1910s, specifically focusing on women homesteaders. The Expatriation Act stipulated that any American woman who married foreigners had to take the nationality of her husband. As a consequence, quite a few native-born women in the early twentieth century lost U.S. citizenship by marriage. Through close reading of newspapers and legal documents, this paper demonstrates how native-born women in the West circumvented obstacles imposed on them due to the loss of U.S. citizenship and how they directly and indirectly challenged the practice of marital expatriation.

The Homestead Act of 1862 and subsequent similar land laws allowed both men and women to make a homestead entry, but required U.S. citizenship to receive a land patent. At the same time, beginning with Wyoming in 1869, many Western states achieved women's suffrage prior to the ratification of the Nineteenth Amendment in 1920. Therefore, the Expatriation Act most negatively affected women in the West in the 1910s.

Although newspapers in the West did not view the Expatriation Act as problematic at the time of its enactment in 1907, as they learned more about women's loss of citizenship throughout the 1910s, they frequently reported how widely the loss of U.S. citizenship affected native-born women's lives. Therefore, U.S.-born women's various challenges to the Expatriation Act compelled Western newspapers to report their cause, paving a way to the abolishment of marital naturalization/expatriation.

Presentation: Annual Western History Association Conference, October 12, 2013

Mary Russell Mitford and the Nineteenth-Century Tales Novel

Molly O'Donnell, Department of English

Comparisons between Mary Russell Mitford's *Our Village* and Elizabeth Gaskell's *Cranford* are as prevalent today as they were in Gaskell's own time. As early as 1853, reviewers identified Gaskell as taking part in a tradition whose last known popular author was Mitford. Throughout the nineteenth and into the twentieth century, the same illustrators were used for each. Editions of the novels-collections were set to mirror each other, with Macmillan attempting to capitalize on the association in 1893 with an edition of *Our Village* that was "uniform with *Cranford*." Anne Ritchie Thackeray was also asked to provide a preface for both, despite her disapproval for the Regency-style edition and illustrations.

Aside from compelling paratext imposed by publishers and contemporaneous reviewers' perhaps facile associations, there is still an absence of scholarship examining the works' relationship to each other. Although many critics now and then have cited both texts generally, few if any have examined the heavy influence of Mitford's most popular work on Gaskell's fashioned response to and critique of Dickens's *The Pickwick Papers*. My work on the tales novel of the nineteenth-century reveals that Gaskell's structural and substantive borrowing from Mitford was extensive and particular.

Despite the lack of diary evidence or correspondence, probably due to the author's own injunction that her letters be burned, Gaskell employed Mitford's work for very specific rhetorical and narrative purposes. Gaskell's invocation of *Our Village* allowed her to articulate women's homosocial speech in response to the Dickensian male equivalent. In using *Our Village* to counter Dickens, Gaskell elevates the feminine composite novel to the literary heights of its masculine counterpart. Further, she uses Mitford's celebrated collection to attempt to marry the masculine and feminine origins of the novel in the picaresque/romance and what Josephine Donovan identifies as the framed-novelle.

Presentation: North East Modern Languages Association convention, Harrisburg, PA, April 2-5, 2014

Graduate & Professional Student Research Forum
Education
Platform Session A
UNLV Student Union Room 218

9:30 – 9:45am Lina DeVaul, Department of Teaching & Learning

9:45 – 10:00am Holly Schneider, Department of Educational Psychology & Higher Education

10:00 – 10:30am Break

10:30 – 10:45am Pamela Maher, Department of Teaching & Learning

10:45 – 11:00am Tarryn McGhie, Department of Teaching & Learning

11:00 – 11:15am Maryann Orawczyk and Cheyenne Rogers,
Department of Educational Psychology & Higher Education

11:15 – 11:30am Qingmin Shi, Department of Teaching & Learning

11:30 – 11:45am Allison Smith, Department of Teaching & Learning

The Application of iPad Apps in Middle and High School Mathematics Class

Lina DeVaul, Department of Teaching & Learning

IPad APPs are developing fast in education while not enough research has been provided. This study analyzes the application of iPad mathematics APPs in middle and high school classrooms. By providing each teacher and each student iPad with mathematics APPs, the study aimed to answer the following questions: 1. How do middle/high school teachers integrate iPad mathematics APPs with teaching and learning? 2. What needs to be done on iPad Apps to assist teaching and learning effectively? IPads were provided to fifty-three middle/high school mathematics teachers and their students who were selected from Clark County School District. The IPads have been used every day for two semesters from 2012 to 2013. Teacher interviews that included teachers' reflection and opinions about iPad APPs application were analyzed. Results showed both advantages and disadvantages of iPad Apps application. Advantages: motivating, engaging, concrete, rich in resources, etc. Disadvantages: time consuming, distracting, technology issue, poor professional development, etc. The study showed that teachers use iPad Apps as a tool for teaching and learning or replacement of traditional instruction materials instead of treating iPad Apps as a necessary resource. The reasons maybe insufficient technology support and superficial professional development. The study calls for the technology integration among iPad, Apple TV, and smart-board, detailed professional development with specific iPad classroom application examples, and stable online educational resources.

Presentation: The Eighteenth Annual Conference of the Association of Mathematics Teacher Educators (AMTE), February 6-8, 2014

Perceptions of Mattering in the Doctoral Student and Advisor Relationship

Holly Schneider, Department of Educational Psychology & Higher Education

Doctoral attrition rates have remained relatively high, between 40-50%, over the past fifty years. Studies examining doctoral attrition, and conversely persistence, have revealed the importance of the doctoral student-adviser relationship. One measure of interpersonal relationships that has been accepted for its face validity in higher education is that of mattering. Mattering refers to the feeling that one has the attention of, is important to, and is depended upon by another individual significant to them. Empirical studies examining mattering in higher education are beginning to emerge; however, research on mattering has not extended to the doctoral student population.

This study seeks to fill the gap in the literature through a qualitative multiple case study approach. The purpose of this study is to examine doctoral students' perceptions of mattering to advisors within the context of their department, and determine how those perceptions influence integration to the department and commitment to degree completion. The unit of analysis for this study is the doctoral student-adviser relationship, bound within the context of college, e.g. College of Science, College of Liberal Arts, College of Engineering. Data collection will include semi-structured interviews with doctoral students, observations of department events structured for doctoral students, and document analysis of department handbooks and requirements. This study will contribute to the higher education literature on doctoral attrition and persistence, and may inform faculty serving in doctoral advising roles.

Using da Vinci's Machines to Demonstrate Physics at a Planetarium

Pamela Maher, Janelle Bailey and Allan Tucka, Department of Teaching & Learning

This study seeks to address the nation's science, technology, engineering and math (STEM) education needs by providing undergraduate students an opportunity to present physics concepts to patrons at a planetarium. Thirty (N=30) students taking a program of pre-engineering and calculus-based physics self-selected to participate in a grant funded study at a two-year college in the southwest. These student participants built a model of a da Vinci machine from a kit, designed an informational flyer aligned to state K-12 physical science standards, and presented informally to the general public attending a planetarium. Data were collected and qualitative research done to assess students' perceptions toward speaking about physics concepts. Additional data were collected from the general public to determine effectiveness of the presentations in communicating physics concepts. Results reveal the extent to which an opportunity to engage in scaffolded informal public speaking enhances confidence and creates links between theory and practice. These links can increase retention of information that leads to improved achievement by the students in their pre-engineering and physics courses. Ancillary benefits of this increased confidence in the presentation of technical information to laymen can make the transition from the two-year college to the four year university easier as well as giving these future scientists and engineers experience that will be used in their chosen career fields.

Presentation: The American Association of Physics Teachers Summer Conference in Portland, Oregon, July 13-17, 2013

Understanding the Power of Analytical Shifts in Intersectional Scholarship: A Focus on Race, as well as on Class, Gender, Religion, Sexuality, Dis/Ability and Family Configuration

Tarryn McGhie, Christine Clark, Mara Sapon-Shevin, Mark Brimhall-Vargas and Sonia Nieto, Department of Teaching & Learning

The “school-to-prison pipeline” refers to the formal and informal educational and law enforcement processes and policies (and the prejudices’ acknowledged, covert and denied that underlie both) that have the effect of pushing PK-12 students, predominantly Black and Latino males, out of school and into the juvenile and adult criminal justice systems (Clark, 2012). The research on the school-to-prison pipeline that this paper discusses is intentionally intersectional in examining the ways in which race, class, and gender reciprocally inform each other, at the same time prioritizing the issue of race, thus making it the primary research concern. The research at focus in this paper examines the school-to-prison pipeline through analysis of teacher disciplinary practices, broadly considered to include relationships with students, non/engagement with parents, pedagogical approaches, and classroom management techniques). The primary research questions examined in this paper are: What, if any, correlations between students’ race, class location, and gender and teacher disciplinary practices can be discerned? and, How do these correlations relate to the school-to-prison pipeline? Using a Critical Race Theory framework, this paper describes the ethnographic study of PK-12 teachers in a large school district in the urban Southwest that was undertaken to ascertain credible answers to the afore-referenced research questions. Ascribed with formal power in the classroom and lacking sociopolitically-located multicultural educational training, teachers, especially white teachers, often fail to recognize how their classroom disciplinary practices disproportionately erroneously target and, thus, negatively impact their minority students in their classrooms.

Presentation: American Educational Research Association, April 6, 2014

The Critical First Semester: Retaining At-Risk Students

Cheyenne Rogers, Maryann Orawczyk and Anne White, Department of Educational Psychology & Higher Education

Higher education institutions for several years have focused on the first year experience of entering students as a means of retention. As colleges strive to retain higher proportions of college freshmen through graduation, greater emphasis is placed on designing interventions to ensure it. With this in mind the University of Nevada Las Vegas implemented an Academic Success Coaching Program in the Fall 2010 semester. This program's primary focus is to work with the students who are admitted under alternate criteria.

Longitudinal findings will be presented on data analysis from the first year and the program's evolution as further data has been collected and incorporated. Information will be discussed to assist academic advisors in ensuring that at-risk students succeed in their critical first semester.

Presentation: NACADA Annual Conference, Salt Lake City, UT. October 2013

The Influences of Teachers’ Beliefs About Instruction on Teaching Practices Across Different Teaching Experience Groups

Qingmin Shi, Emily Lin, Shaoan Zhang and Jian Wang, Department of Teaching & Learning

Drawing on large-scale international teachers’ data from four countries of Hungary, Korean, Norway, and Turkey participated in the Teaching and Learning International Survey (TALIS) 2008 assessment, this study examined the relationship between teacher beliefs and instructional practices across different teaching experience groups. The quantitative research method with multiple regression approach was employed for the data analysis. The independent variables of this study were two types of teaching beliefs (Direct transmission and constructionist beliefs), and dependent variables were three types of instructional practices (enhanced, student-oriented, structuring practices). The descriptive statistics and multiple regressions were conducted for each teaching experience group to examine the patterns of the relationship between teacher beliefs and instructional practices within each country and across the four countries.

The results indicated that the patterns of the relationship between teachers’ beliefs on their instructional practices were not consistent across different teaching experience groups neither within each country or across countries. This study was significant in several ways. First, the finding revealed that the relationship between teachers’ beliefs and instructional practices is complex across different teaching experience groups in the context of cross-national comparative studies. Second, the findings of this study proposed challenges to the theoretical assumption of the positive relationship between teacher beliefs and instructional practices. Third, it suggested that other factors that may mediate the relationship between teachers’ beliefs and instructional practices need further examination in the future.

Presentation: Association of Teacher Educators, St Louis, MO, February 14-18, 2014

Current Teacher Evaluation Reform

Allison Smith, Department of Teaching & Learning

This study, as a work-in-progress, seeks to better understand current teacher evaluation reform and the potentially negative impacts that new methods of evaluation could have on teachers. Recently, federal policy has focused on teacher evaluation to address low student achievement. Many states have chosen to aggressively reform their previous ways of evaluating teachers to adhere to federal incentives and awards. However, current research on education does not indicate that teacher evaluation is the best means to address low student achievement.

Overall, there is an absence of existing research focused on teacher evaluation within the current political climate. Among the limited existing research, studies have only focused on the positive aspects of evaluation methods. This study utilizes a sequential transformative design (advanced mixed methods) and seeks to address the limited perspective by elucidating the negative experiences of teachers in the evaluation processes promoted by current political reform. This study utilizes multiple data sources, including: evaluation policy, existing surveys, district evaluation data, six individual interviews, and a focus group interview.

One may quickly assume that negative experiences with evaluation are a result of unsatisfactory teaching. However, this may not accurately explain the negative experiences. This study focuses on the negative experience to provide a broader understanding of the impacts of new evaluation policy reform.

Presentation: Hawaii International Conference on Education, January 5-8, 2014

Graduate & Professional Student Research Forum
Science and Engineering
Poster Session A
UNLV Student Union Ballroom

Posters 1 – 4: Judging at 9:00 – 10:00am

1. Iani Batilov, Department of Civil and Environmental Engineering and Construction Management
2. John Boisvert, Department of Physics and Astronomy
3. Andrew Cross, Department of Mechanical Engineering
4. Mohammad Sajjadul Islam, Department of Civil and Environmental Engineering and Construction Management

Posters 5 – 8: Judging at 10:00 – 11:00am

5. Sungchul Lee, Department of Computer Sciences
6. Melanie Newton, Department of Geoscience
7. Jinrong Liu, Department of Civil and Environmental Engineering and Construction Management
8. Norman Richardson, Department of Mechanical Engineering

Posters 9 – 12: Judging at 11:00am – Noon

9. Michael Steiner, Department of Geoscience
10. Mohammadreza Sharbaf, Department of Civil and Environmental Engineering and Construction Management Engineering
11. Patricia Williams, Department of Geoscience
12. Kimberly Sierra and Meysam Najimi, Department of Civil and Environmental Engineering and Construction Management Engineering

1. Sulfate Attack Resistance of Portland Cement Mortar with Nanosilica and Silica Fume

Iani Batilov and Nader Ghafoori, Department of Civil and Environmental Engineering and Construction Management

Concrete applications take place in a broad spectrum of environments many of which expose the material to conditions that can deteriorate the material and lead to costly repairs or replacement. The author's research is based on exploring the performance of concrete with partial cementitious replacement using silica fume and nanosilica in a variety of high-sulfate environments. Sulfate attack on concrete manifests itself in both a chemical and physical degradation of the exposed concrete. All testing is performed on mortar bars and cubes. Mortar is essentially concrete sans the coarse aggregate and allows for shorter testing cycles due to a more rapid observation of sulfate effects and the use of smaller samples.

The three different cement types provided from regional suppliers contain varying levels of Tricalcium Aluminate (C3A), a common compound in cement that correlates to the concrete's resistance to sulfate attack. These cement types have been paired with varying replacement of that cement with nanosilica, silica fume, or a combination of both. The measurements made in the three planned phases of testing are mortar bar length changes, strength of cubes under compression, mass loss, mortar porosity changes, and chemical composition using X-ray Diffraction and/or Spectral electron microscopy imaging.

The goals of the research is to identify and experimentally show the benefits of nanosilica in concrete sulfate resistance, measure if significant improvements are observed over the more widely implemented silica fume replacement and ultimately develop industry recommendations for beneficial nanosilica application in high sulfate environments.

2. Galaxy Mass

John Boisvert, Department of Physics & Astronomy

Galaxies can be weighed by measuring the rotation speed of stars and gas around their centers. This work looked into the details to determine the sources of uncertainty in the end result; the galaxy mass. The rotation velocity increases as one moves outward from the center until it remains constant at large radii. The visible matter in galaxies is insufficient to explain the rotation speed (the galaxy would fly apart), a substantial component of dark matter is required. The tilted-ring model was used to determine the rotation speeds and masses of six dwarf galaxies observed at radio wavelengths. The results were in good agreement with those in the literature. The goal of the project was to determine the accuracy with which we can measure gas rotation speeds in the centers of galaxies. This has broad implications because the details of the dynamics in the central regions of galaxies are a current hotbed of debate in the astronomical community. There are two competing models of dark matter distribution for galaxies; one is favored by theory and the other by observation. Using simulated galaxies, small errors in the determination of the dynamical center were found to change the shape of the rotation curve and lead to incorrect conclusions being drawn. This result must be taken into account when analyzing the rotation data. It is not clear that the Λ Cold Dark Matter Model of galaxy formation can be ruled out based on these data, as has been claimed.

3. HVAC: Autonomous Control System

Andrew Cross, Department of Mechanical Engineering

A unique autonomous control system was developed to manage the HVAC components of a residence built specifically for an ultra-efficient home competition. Some of the home's HVAC components that contribute to its ultra-efficiency (and necessitate such an autonomous controller) include multiple ductless mini-split heat pumps, multiple hydronic heated floor loops, multiple circulating ceiling fans, and a closed-loop solar thermal collection and storage system that not only provides hot water to the hydronic heated floors, but also supplies the home with domestic hot water.

The autonomous controller integrates all this equipment with a mixture of technology that includes power-line communications, both wired and wireless TCP/IP network signals, low-voltage wiring, and infrared signals. By utilizing these many different methods to communicate with equipment around the home, the controller is able to simultaneously regulate components and systems that are often considered “stand alone” or impractical to implement in residential buildings due to their need for constant manual operation. The result is an HVAC system that consumes very little energy while still providing an expected level of comfort.

4. Reduction of Portland Cement Consumption by the Aid of Slag and Nano-Silica

Mohammad Sajjadul Islam, Department of Civil and Environmental Engineering and Construction Management

Concrete with high percentage of Ground Granulated Blast Furnace Slag(GGBFS) can develop good strengths over time, exceeding those of similar concrete without GGBFS. However, such concretes have lower early strength than Portland cement concrete without slag. This paper presents an experimental study on six concrete mixtures in which three have 50% of the cement content replaced with GGBFS, while the others were normal cement concrete mixtures. Two ratios of colloidal nano-silica were added to concrete with and without GGBFS. Testing was conducted to assess the reactivity, mechanical properties and the durability of the studied mixtures, including adiabatic temperature test, compressive strength test, splitting tensile strength test, and rapid chloride penetration test. It was found that concrete mixture with GGBFS and nano-silica can enhance the reactivity and early age strength of concrete compare to normal concrete mixtures. Furthermore, the use of GGBFS with nano-silica also improved the mechanical properties and reduced the permeability of concrete. Colloidal nano-silica and recycling of industrial by product ground granulated blast furnace slag can help the construction move towards more sustainable solutions.

5. A Novel Architecture for Environmental Monitoring using Restful Web Service on Arduino Sensor Networks

Sungchul Lee, Juyeon Jo, Yoohwan Kim and Haroon Stephen Department of Computer Science

The Nevada Solar Energy-Water-Environment Nexus project generates a large amount of environmental monitoring data from variety of sensors. This data is valuable for all related research areas, such as soil, atmosphere, biology, and ecology. An important aspect of this project is promoting data sharing and analysis using a common platform. To support this effort, we developed a comprehensive architecture that can efficiently manage the data from various sensors, store them in a database, and allow intuitive user interface. We employed Arduino-based sensors due to its flexibility and cost-effectiveness. Restful Web Service is used for communication with the Arduino units, and Google chart has been used for data visualization. This architectural framework for sensor data monitoring with Web Service should allow the Nevada Nexus project to seamlessly integrate all types of sensor data and provide a common ground where researchers can easily share them.

Presentation: IEEE 2014 SCC, June27-July 2, 2014

6. Characterization of Gold and Related Mineralization at the North Bullion Deposit, Railroad Project, a Nevada Carlin-type Gold Prospect

Melanie Newton and Jean Cline, Department of Geosciences

The North Bullion deposit (NBD) is located five miles south of the Rain Mine, which is recognized by some as the southern end of the Carlin trend. The goal of this project is to contribute to the geologic knowledge base of the NBD, and aid in establishing that the Carlin trend, which contains the second largest concentration of gold in the world (Muntean et al., 2011), extends further south than is now generally accepted. The NBD contains two distinct zones of gold mineralization; the upper gold zone is hosted within Mississippian flysch facies, and the lower gold zone is within Devonian slope facies (Gold Standard Ventures Corp., 2013).

The objectives for this study are: 1) determine the mineralogy and paragenesis of ore and alteration, 2) determine the size and intensity of alteration haloes of both visible alteration minerals and stable isotope signatures, and 3) characterize fluid pathways and assess the intensity of fluid and rock interactions associated with minerals. Data collected from this study show: 1) the NBD ore pyrites have partial gold-bearing rims and the same trace element chemistry as known Carlin-type gold deposits (CTGD); 2) the host rocks of the NBD have been locally decarbonatized, argillized, dolomitized and silicified, exhibiting alteration similar to known CTGD; and 3) highest grades are found along lithologic contacts, in the upper zone, and within the lower collapse breccia zone. The NBD exhibits similar ore and alteration minerals, rock package and pyrite geochemistries, and paragenetic mineral sequences to known CTGD.

Presentations: 8th Annual UNLV Geosymposium 2013 and AME BC Roundup Conference 2014

7. Vulnerability of Old Reinforced Concrete Flat-Plate Buildings to Progressive Collapse

Jinrong Li and Ying Tian, Department of Civil and Environmental Engineering and Construction Management

Flat plate structure is prone to punching failure that may trigger large-scale failure. There is a large inventory of older flat plate building without continuous slab bottom reinforcement through columns. Limited knowledge exists regarding the vulnerability of disproportionate collapse in older flat plates under sudden column removal during abnormal events. This research develops analytical models and investigates the risk of dynamic disproportionate collapse of flat plate buildings under sudden column removal and the effects of critical parameters.

Presentation: ASCE Structural Congress, Pittsburgh, Pennsylvania, May 2, 2013

8. Neutron Measurements Using EJ-299-33A Scintillator with Online Digital Pulse Shape Analysis

Norman Richardson and Alexander Barzilov, Department of Mechanical Engineering

The accurate assessment of fissile materials is essential to achieve the nonproliferation goals of enhancing the safety and security of nuclear facilities. Currently, the methods to measure the neutron emission from the fission events of fissile materials rely on thermal neutron detectors equipped with a moderator, such as the common Helium-3 (^3He) gaseous detectors. However, these detectors are not rigid, have count rate limitations, and, due to a shortage of Helium supply, cost a fortune to fabricate. This poses a significant challenge for current detector technologies in adequately supporting the detection requirements of the community, and a new technology is required.

One such technology is the use of plastic scintillating material, which detects neutrons by detecting the light scintillation of the neutron's interaction with a solid crystal. Using this technology in a portable, handheld neutron detector system addresses the shortfalls of the current technologies. However, they do suffer from a high sensitivity to gamma rays. As such, analysis was done to determine if a detection event is a neutron or just a gamma ray. To accomplish this, the detection event is analyzed as the detections are taking place and, based on the properties of the waveform, the detected particle is labelled as a gamma ray or as a neutron in the detection software. The groups can then be separated such that only the neutrons are analyzed for the non-proliferation goals of the community. Thus, the plastic scintillator detector provides a reliable, safe alternative to the current technologies of the neutron detection industry.

Presentation: Planned to present at the American Nuclear Society's Annual Student Conference, Pennsylvania State University, April 4-5, 2014

9. Dissolution of Nontronite in High Ionic Strength Solutions and Implications for the Habitability of Mars

Michael Steiner, Renee Schofield and Elisabeth Hausrath, Department of Geoscience

Water is needed to support all life on Earth, and water is therefore a crucial consideration for habitability on other planets. While pure liquid is not stable on the surface of Mars, it is likely that brines may exist at least temporarily. Brines, which have been shown to host life at temperatures as low as -30°C and water activities above 0.60, have different implications for life than dilute waters. Studying the impact of brines on dissolution can therefore provide insight into the possible past and present habitability of Mars.

Nontronite is an iron-rich clay mineral that has been detected on the surface of Mars. Since nontronite is found in ancient terrains, it may provide a record of previous alteration on Mars, possibly including habitable environments. An alteration signature could be produced by brine dissolution which could shed light on past conditions on Mars.

In this work, we are measuring dissolution rates of nontronite as a function of activity of water ($a_{\text{H}_2\text{O}}$) and temperature to allow further interpretation of aqueous conditions on Mars. An alteration signature of past interaction with brines could therefore be important in providing insight into possibly habitable environments on Mars.

10. Properties of Alkali-Activated Fly Ash/Slag Mortars

Mohammadreza Sharbaf and Meysam Najimi and Nader Ghafoori, Department of Civil and Environmental Engineering and Construction Management

Portland cement (PC) production accounts for 5 to 7% of the global carbon dioxide emissions. Durability of Portland cement concrete is another important issue regarding its production and application. There are a number of structures which need to be replaced or repaired.

The desire to reduce carbon dioxide emissions, produce high performance concrete, and provide durable materials has given impetus to search for new binders. It is suggested that alkali-activated binders containing binary combinations of slag and fly ash can be used as sustainable and durable replacements for PC.

The current study presented herein evaluates strength and transport properties of alkali-activated fly ash/slag mortars, and compares their performances with those of control mixtures. To this aim, four mixtures were made including two alkali-activated and two control mortars. Alkali activated mortars contained 50% fly ash and 50% slag as binders, with two different combinations of sodium hydroxide and sodium silicate solutions as alkaline activators. The control mixtures included a similar mixture of slag and fly ash without alkali, and a standard PC mortar.

The experimental program used in this study included various evaluation methodologies to determine flow, setting time, compressive strength, modulus of elasticity, absorption, void content, chloride migration and penetration. The results of study revealed higher strength of alkali-activated mortars than those of the control mortars. The alkali-activated mixtures showed superior performance in RCPT, RMT, water absorption, and void content results compared to those of the control mixtures. However, their setting times were shorter than those of the control mixtures.

Presentation projected: Concrete Solutions 2014, 5th International Conference on Concrete Repair, Queen's University, Belfast, UK, September 1-3, 2014

11. Carbon Isotope Variations Associated With a Late Ordovician Karstic Unconformity

Patricia Williams and Ganqing Jiang, Department of Geoscience

Large negative carbon isotope ($\delta^{13}\text{C}$) excursions have been documented from late Neoproterozoic-Paleozoic successions. These $\delta^{13}\text{C}$ excursions have been widely used for regional and global stratigraphic correlation, particularly in strata with limited paleontological and radiometric age controls. Recent studies, however, argued that some negative $\delta^{13}\text{C}$ excursions from stratigraphic record may have been resulted from meteoric/burial diagenesis, which commonly shifts both carbon and oxygen isotopes toward lower values. Testing the diagenetic origin of $\delta^{13}\text{C}$ excursions in stratigraphic successions without independent stratigraphic framework has been difficult because it evolves into a circular argument about stratigraphic completeness vs. diagenetic imprints. To address this issue, we have conducted carbon isotope analyses on the biostratigraphically controlled Antelope Valley Limestone formation in the Arrow Canyon Range, Nevada, USA to document (1) the C-O isotope patterns of meter-scale cycles leading up to a well-known karstic unconformity and (2) isotope variability among carbonate components including bioclasts, cements, and fine-grained (micritic) matrix. The data are then compared with coeval isotope records globally to identify the maximum and minimum degree of isotope variations associated with meteoric/burial diagenesis below a karstic unconformity. The results may have implications for interpreting the origin of some negative $\delta^{13}\text{C}$ excursions, particularly those in the late Neoproterozoic.

Presentations: American Association of Petroleum Geologists October 2013,
American Association for the Advancement of Science June 2013,
Geosymposium April 2013

12. Fresh, Mechanical and Transport Properties of Alkali – Activated Fly Ash Mortars having Different Concentrations of Sodium Hydroxide

Kimberly Sierra, Nader Ghafoori and Meysam Najimi, Department of Civil and Environmental Engineering and Construction Management

Alkali-activated fly ash binders have been recognized as a promising solution in the development of a sustainable alternative binder to Ordinary Portland Cement (OPC). The goal of this study is to establish a correlation between the fresh, mechanical and transport properties of alkali-activated fly ash mortar and the alkaline activator concentration. Class F fly ash was used as the binder for this study, which was activated with sodium hydroxide solution with a consistent solution-to-fly ash ratio of 0.46 and fine aggregate-to-fly ash ratio of 2. The produced samples were sealed cured for 3 hours at 60°C, and then de-molded and cured at 85°C until testing. The sodium hydroxide concentrations tested were 5 M, 7.5 M, 10 M, and 12.5M. Various tests were conducted on the alkali-activated fly ash mortar samples including the workability, setting time, compressive strength, flexural strength, resistivity to rapid chloride ion penetration (RCPT), chloride migration (RMT), absorption, density, and void content. Preliminary results indicate that with an increase in alkaline activator concentration there is an increase in compressive and flexural strength. There is also an increase in the density of alkali-activated mortars with an increase in alkaline activator concentration, while contrary results were found for absorption, and void content. There is a decrease in average chloride depth and average amount of coulombs passed with an increase in alkaline activator concentration. These results indicate that a strong binder using fly ash and sodium hydroxide can be developed as a sustainable substitution for OPC binder.

Graduate & Professional Student Research Forum
Health Sciences
Poster Session B
UNLV Student Union Room Ballroom

Posters 13 – 16: Judging at 9:00 – 10:00am

- 13. Shahriar Agahi, School of Dental Medicine
- 14. Lucas Bianco, Department of Kinesiology and Nutrition Sciences
- 15. Arin Alexander, School of Dental Medicine
- 16. Jennifer Lucas, School of Public Health

10:00 – 10:15am Break

Posters 17 – 20: Judging at 10:15 – 11:15am

- 17. Vivi Baldwin, School of Dental Medicine
- 18. Ipuna Black, School of Nursing
- 19. Marah Culpepper, School of Dental Medicine
- 20. Sanae El Ibrahimy, School of Public Health

Posters 21 – 22: Judging at 11:15 – 11:45am

- 21. Alexander Hall, School of Dental Medicine
- 22. Shanna Keele, School of Nursing

13. Assessment of Human Herpes Viruses and Oral Health Status

Shahriar H. Agahi, Ashkan Mahdavi, Arin Alexander, Karl Kingsley and Katherine Howard, School of Dental Medicine

Objectives: The causative agents in periodontal disease are periopathogenic bacteria; however, viruses have also been implicated. Recent microbiological researches have revealed the possible role of human cytomegalovirus (HCMV), Epstein barr virus (EBV), and herpes simplex virus (HSV-1 and HSV-2) in the etiopathogenesis of periodontal diseases. These viruses may cause periodontal disease in different ways, including release of tissue-destructive cytokines, overgrowth of periodontal bacteria, suppressing immune factors, and initiation of other disease processes that lead to cell death. The aim of this study is to examine the prevalence of different Human Herpes Viruses (HHVs) in the saliva of randomized patient samples and to determine the relationship between these viruses and the oral health status of the patients as determined by the following clinical parameters: caries risk assessment (High, Moderate, low), Decayed Missing Filled Teeth (DMFT) score, and number of pockets greater than 5mm.

Methods: For each subject, 1 ml of unstimulated whole saliva is collected and mixed with 2 ml lysis buffer. HHVs assays will be performed using real-time PCR.

Expected Results: Higher prevalence of HHVs is expected in individuals with poor oral health status; high caries risk assessment, higher DMFT scores, and higher number of pockets greater than 5mms.

Conclusions: The higher prevalence of HHVs in the unstimulated saliva of the patients with poor oral health status suggests that these viruses may play a role in the pathogenesis of oral diseases.

14. Research Study: Concussions in Athletes

Lucas Bianco, Janet Dufek and Barbara St. Pierre Schneider, Department of Kinesiology and Nutrition Sciences

This research study was conducted to increase the knowledge of concussions in athletics. Specifically, experimental diagnosis biomarker levels were measured to determine whether or not a correlation between concussions and biomarker levels exist. The population that completed the study were division I college football athletes. After being recruited to participate athletes submitted pre-season, pre-practice and post-practice blood samples through a fingerstick blood draw. The practice used as the test practice was a full contact practice and occurred during the 2014 Spring season of football. The blood samples were processed and serum was tested using an ELISA kit to measure the amount of blood biomarker in each participant. A computerized concussion diagnosis test was completed by each subject to have a comparable objective number. Video recordings of the practice were used to count the number of hits each participant endured during the practice. The purpose of the study was to determine if there is a relationship between level of concussion-related biomarkers, head hits, and ImPACT test scores in college football athletes.

15. Anthropometric Measures and Dietary Habits of Dental Student Population

Arin Alexander, Shariar Agahi, Ashkan Mahdavi, Connie Mobley and Karl Kingsley,
School of Dental Medicine

Purpose: The purpose of the study is to assess the anthropometric measures and dietary habits of dental students during their academic experience at UNLV SDM.

Methods: Participants will be asked to take a survey regarding their eating habits, exercise patterns, and their vision of possible changes up to three times during the academic year. The measurements will also to be taken to calculate the participant's BMI, BAI and body fat percentage at various time points. A total sample size of current students will be recruited, n=313.

Expected results: Survey- The survey is expected to indicate a shift in the perspective of first year dental students regarding their expactations from the first year of dental school. Quantitative study- The BMI and Body fat percentage mesurements are expected to show a sudden increase after the first semester and stay steady for the rest of the first year. In addition, The study subjects are expected to return to their orginal BMI and body fat percentage during the remainder of the program.

Conclusion: There was a significant difference between what first year dental students expected from their first year life style and what actually they experienced, which was consistant with our hypothesis. Moreover, there was an increase in the mean BMI and body fat percentage at the end of the first semester. However, there was an additional slight increase in those variables at the end of the first year.

Presentation: Dean's Symposium and Student Research Day at UNLV, School of Dental Medicine, March 3, 2014

16. Test Types and Timeliness of Electronic Laboratory Reporting: An Evaluation of Four Gastrointestinal Illnesses in Southern Nevada

Jennifer Lucas, Brian Labus and Chris Cochran, School of Public Health

Background: Laboratory testing methods may influence the timeliness of disease reporting. Two commercial laboratories provide the Southern Nevada Health District with many disease results. Both laboratories use electronic laboratory reporting (ELR), and results are sent in batches. Four diseases, which are tested by two methods, were examined in this study. The goals of this study were to examine whether laboratory test methods influence reporting time when comparing ELR and traditional reporting, and to determine if these laboratories comply with Nevada State's legally mandated report times.

Methods: This retrospective analysis compares report times of campylobacteriosis, salmonellosis, shigellosis, and giardiasis from data collected between 1999 - 2012. A two-way analysis of variance (ANOVA) was conducted to test the interaction effects between disease and timeliness. One-way ANOVAs were conducted to determine how the diseases differed in timeliness between ELR and traditional reporting.

Results: Analysis revealed a significant interaction between report type and disease type, suggesting that one could influence the other. Also significant were differences in timeliness between disease types, and between reporting methods.

Conclusions: The differences between ELR and traditional laboratory reporting show that test type does influence timeliness of reporting. These results also suggest that batching could be affecting timeliness in disease reporting, and it is recommended that the laboratories in Southern Nevada implement a real-time ELR system to increase reporting timeliness. If diseases were to be reported in a timelier manner, disease outbreaks and cases could be reduced in the community.

Presentation: Council of State and Territorial Epidemiologists (CSTE) 2013 Annual Conference, June 9-13, 2013

17. Coupled Antiport LAT1 Receptor Expression in Oral Cancers

Vivi Baldwin, Samuel Oh, Matthew Thacker and Karl Kingsley, School of Dental Medicine

Objective: 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.

Method: 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.

Result: 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.

Conclusion: 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. Although these data are preliminary laboratory-based studies, they 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.

18. The Relationship among School Playground Design and Conditions and Physical Activity Levels in Children

Ipuna Estavillo Black, School of Nursing

Background: Almost 20% of children aged 6 to 11 years are obese in the United States, tripling over the last ten years. A decrease in physical activity (PA) levels has been associated with an increase in obesity.

Methodology: The purpose of this cross-sectional study was to determine which types of playground areas and Target Area conditions attract children and promote moderate to vigorous physical activity (MVPA) or sedentarism. The sample consisted of two Henderson, Nevada elementary school playgrounds that were each observed for two weeks before school using SOPLAY and SOPARC. School B offered a Jog and Walk Stars (JAWS) PA program every day but Wednesdays, and school K offered free play every morning. Descriptive statistics, paired-samples t-tests, and independent-samples t-tests were used to analyze the data using SPSS version 22.

Results: The highest populated areas for schools K and B on non-JAWS days were the general blacktops (35%), and 50% of the children in these areas were found sedentary. At school B on JAWS days, the highest populated area was the JAWS track (72%), and 99% of the children participated in MVPA.

Discussion: At school B, 385 children were found participating in MVPA on JAWS days compared to 135 children on non-JAWS days and 135 children at school K. A playground environment assessment to identify areas and conditions that promote MVPA, such as JAWS, may be one avenue to address the need for increasing MVPA levels in children in general, in addition to organized physical education classes.

Presentation: Western Institute of Nursing Research, Seattle, Washington, April 11, 2014

19. Growth Factor Modulation of Dental Pulp Stem Cell Differentiation

Marah Culpepper, Mehrnaz Khadiv, Kelcey Loveland, Aubrey Young and Karl Kingsley,
School of Dental Medicine

Objectives: Recent studies have demonstrated that dental pulp stem cells, found in both deciduous and permanent teeth, are promising sources of pluripotent mesenchymal stem cells. Most studies to date have concentrated on the extraction and isolation of dental pulp stem cells (DPSCs), however recent efforts have demonstrated the potential to induce differentiation using multiple methods, including growth factors (GFs). The primary objective of this study was to analyze the effect of specific GFs on undifferentiated DPSCs.

Methods: In vitro experiments were performed using two recently isolated DPSC lines (DPSC-9765, DPSC-11418) using Transforming Growth Factor Beta-1 (TGF-B1), Dexamethasone, and the cell cycle inhibitor PD98059, which have been demonstrated to influence differentiation in adipose-derived mesenchymal stem cells. Photomicroscopy was used to document phenotypic changes, while RNA extraction and Reverse Transcription – Polymerase Chain Reaction was used to assess molecular mechanisms associated with any phenotypic changes.

Results: Administration of TGF-B1 and Dexamethasone were sufficient to induce significant and similar changes in the rate of cellular proliferation, as well as overt changes to cellular morphology. RNA has been successfully extracted and is currently being evaluated for changes to key signaling molecules involved with differentiation, including Sox2, Oct4, and NANOG.

Conclusions: It is expected that as technology and research involving DPSC matures, the potential to isolate, store and subsequently manipulate these cells into useful cells and tissues will become evident. These studies will provide significant insight into the potential GFs and signaling mechanisms that may be the first steps towards understanding the process of in vitro DPSC GF-mediated differentiation.

20. No Racial Disparities in Stage at Diagnosis - Is Nevada doing better for Cervical Cancer

Sanae El Ibrahim, Paulo Pinheiro, Kira Morgan, Sheniz Moonie and Michelle Chino, School of Public Health

Cervical cancer (CC) is one of the most preventable cancers as a consequence of screening and early detection. Nonetheless, disparities in access to CC screening may result in a higher proportion of advanced stage at diagnosis and unfavorable prognosis in some minority groups. This study aims to assess if racial differences exist in CC stage at diagnosis among Black Nevadan females compared to Whites.

We identified 1,334 women who were diagnosed with CC between 1995 and 2008 from the Nevada Central Cancer Registry data. After adjustment for patient demographic and clinical characteristics, Blacks were not significantly more likely to be diagnosed at an advanced stage of cervical cancer than White women in Nevada. From the social justice stand point, this is a positive result; however, our findings suggest unfavorable patterns of early detection among White Nevadan females, rather than a favorable pattern for Black Nevadans.

Presentation: The 2013 North American Association of Cancer Central Registries (NAACCR) Meeting (1st prize) in Austin, TX, June 2013

21. Activation of *de novo* DNA Methyltransferase in HPV-Infected Oral Cancers

Alexander Hall, Ladban Rabijahed and Karl Kingsley, School of Dental Medicine

Objectives: Many factors are involved with maintaining tissue differentiation, including DNA methylase and DNA methyltransferase enzymes that function to recognize hemi-methylated DNA in mitotically active cells to retain active and repressive histone and DNA methylation states. Alterations in DNA methylation are characteristic among oral cancers, with intergenic, genome-wide hypomethylation leading to increased frequency of chromosomal transposition and inversion and concomitant CpG island promoter hypermethylation – often found in tumor suppressor genes. Recent evidence demonstrates that human papillomavirus (HPV) infection can mediate the growth of existing oral cancers, as well as a mechanism for oral carcinogenesis. The HPV genome also contains CpG-rich regions that can be methylated although few studies to date have examined this phenomenon specifically in oral cancers. The primary objective of this study was to examine the activity of *de novo* DNA methyltransferases in conjunction with HPV infection in oral cancers.

Methods: An experimental system using oral cancer cell lines (CAL27, SCC15) was utilized to assay RNA extracted from cells prior to, and following high-risk HPV16 strain infection, folic acid (FA) administration (the primary methyl donor for DNA methyltransferase) and both in combination. Relative Endpoint - Polymerase Chain Reaction (RE-PCR) amplification was used to determine relative mRNA expression.

Results: Analysis revealed both *de novo* DNA methyltransferases (DNMT3a, DNMT3b) are actively transcribed and their relative expression amplified following FA administration. However, the transfection of cell lines with HPV16 was associated with down-regulation in DNMT3a and DNMT3b expression.

Conclusions: Previous studies have suggested oral cancer activation of DNMT3a and DNMT3b may be associated with changes to DNA methylation during oral carcinogenesis and progression. This study provides new evidence that high-risk HPV infection may be sufficient to induce down-regulation in the activity of these genes raising concerns that FA sufficiency and diet may not mitigate the effects of HPV-mediated oral cancer phenotypes.

23. Retirement and the Registered Nurse: The SAVER Study

Shanna Keele, School of Nursing

Purpose: Sixty percent of U.S. registered nurses (RNs) age 45-60 have not participated in retirement planning. Further, in the next 10 to 15 years, this cohort of 1 million RNs will reach retirement age. Currently, no research investigates psychological influences in the RN retirement planning process; a concern since retirement benefits have been suggested as a retention strategy to improve patient care outcomes, satisfaction, and safety by reducing RN turnover. The purpose of this study was to identify predictors of future time perspective (FTP), retirement goal clarity (RGC), self-rated knowledge of financial planning for retirement (SKFPR), and retirement planning activity level (RPAL) in employed U.S. RNs.

Background: Previous RN retirement studies focus on RN retirement outlook, RN economic preparation for retirement, or retirement intent. No contemporary research explores the psychological influences in RN retirement preparation. The SAVER study is innovative because it investigates predictors of saving behaviors. Hershey's Conceptual Model of the Factors that Influence Investor Behavior served as the theoretical framework for this study.

Methods: This study utilized a cross sectional design with a convenience sample of employed RNs. Utilizing online survey methods, predictors were collected through a researcher-designed demographic questionnaire and the Retirement Planning Preparation Questionnaire was used to assess retirement preparation.

Results: Using multiple regression hierarchical analyses, the resulting sample ($n=706$) identified predictors of FTP (health/race), RGC (health/income/nurse specialty/race/vesting), SKFPR (gender/health/income/vesting), and RPAL (gender/health/part time work/income/vesting). The final models accounted for 9% of the variance in FTP, 20% of the variance in RGC, 22% of the variance in SKFPR, and 20% of the variance in RPAL. Future studies should address the relationship between physical, emotional, and financial health in RN retirement preparation.

Graduate & Professional Student Research Forum
Sciences and Health Sciences
Poster Session C
UNLV Student Union Ballroom

Posters 23 – 26: Judging at 9:00 – 10:00am

- 23. Mehrnaz Khadiv, School of Dental Medicine
- 24. Jasmin Khilnani, School of Life Sciences
- 25. Joseph Margotta, School of Life Sciences
- 26. Damon McCune, Department of Kinesiology and Nutrition Sciences

10:00 – 10:30am Break

Posters 27 – 31: Judging at 10:30 – 11:45am

- 27. Kevin Nowins, School of Dental Medicine
- 28. Amanda Prisbrey, School of Life Sciences
- 29. Blake Rowedder, Department of Health Physics
- 30. Patricia Ringler, School of Life Sciences
- 31. John Silvaroli, School of Dental Medicine

23. Functional Modulation of Dental Pulp Stem Cell Phenotype Using Laminin-5

Mehrnaz Khavid, Marah Culpepper, Kelcey Loveland, Aubrey Young and Karl Kingsley,
School of Dental Medicine

Objectives: Mesenchymal stem cells have been shown to be accessible from many different adult tissues, including adipose tissue and dental pulp derived from exfoliated or extracted teeth. Although the quality and quantity of dental pulp stem cells may be influenced by the age of the donor, as well as the tooth type, recent evidence suggests that isolation and storage can now be achieved with high fidelity and success. Moreover, research demonstrating the potential to functionally modify mesenchymal stem cells has been greatly expanded in recent years, with some evidence suggesting the use of extracellular matrix (ECM) molecules, may be an inexpensive and easily replicated method for inducing specific differentiation phenotypes in adipose-derived stem cells (ADSC).

Methods: To evaluate the potential for using these techniques in dental pulp stem cells (DPSC), specific ECM molecules, including Laminin-5, Fibronectin, Collagen, and Vitronectin, were tested in vitro for their potential to modulate the phenotype of previously characterized, undifferentiated DPSC lines (DPSC-3882, DPSC-5653). At specific time intervals during a three week time course assay, cellular phenotype was documented and RNA extracted for screening and analysis using Polymerase Chain Reaction (PCR).

Results: Confirming previous results using ADSC, Laminin-5 induced specific and characteristic changes to cellular morphology in both DPSC lines, suggesting this may represent one of the key ECM determinants of mesenchymal stem cell differentiation. Investigation involving key differentiation factors, such as CD133, Sox2, Oct-4, CD44, CD24, as well as cell cycle regulators is currently underway.

Conclusions: Established undifferentiated DPSC lines exhibit, to variable extents, functional and phenotypic changes upon exposure to pre-plated Laminin-5 ECM. These changes suggest the possibility that similar mechanisms and signaling processes may be involved to induce differentiation in DPSC as well as ADSC. These studies will provide some of the first conclusive evidence of these effects and their underlying mechanism in DPSC.

24. Growth Inhibition of *Paenibacillus larvae* Using Honeybee Antimicrobial Peptides

Jasmin C. Khilnani and Helen J. Wing, School of Life Sciences

American Foulbrood (AFB) disease is known to be the most devastating honeybee brood disease. Only the larvae are susceptible to infection. AFB is caused by the Gram-positive, spore-forming bacterium, *Paenibacillus larvae*, where the spore is the infectious agent. Once infected, the honeybee larvae succumb to the disease and more spores are released into the colony. Currently, the only accepted method to eradicate the disease from the infected hive is to burn the hive and all associated equipment, leading to substantial agricultural and economical losses. However, unlike the larvae, the adult honeybees are immune to infection, which could be due to the presence of naturally occurring, active antimicrobial peptides (AMPs). There are five AMPs found in adult honeybees: apidaecin, abaecin, hymenoptaecin and defensins 1 and 2. My research focuses on countering the growth of vegetative *P. larvae* cells in vitro using these AMP. The AMPs were tested individually and in combination pairs using growth inhibition assays. For the single AMP assays, defensin 2 exhibited growth inhibition upwards of 25% at varying time points. The knowledge gained from the resulting data can be applied to alternative treatment methods for AFB.

25. Understanding How Honey Bee Flight and Senescence are Connected through Oxidative Stress

Joseph Margotta and Michelle Elekonich, School of Life Sciences

Understanding the physiological and cellular mechanisms that determine the onset and duration of senescence and how these mechanisms are shaped by behavioral development and behavioral intensity is a key goal in ecological and evolutionary physiology. These relationships are important because they reveal how behavior can damage a cell and consequently limit lifespan. The goal of this study was to exploit the tractability of the honey bee (*Apis mellifera*) model system to understand specific factors that may limit lifespan of an organism living in its natural environment. The honey bee represents the ideal model to address these factors because age, behavior, functional senescence, and lifespan are easily manipulated independently of each other while in its natural environment. The main objectives of this work were to (a) determine if there is a cause-effect relationship between honey bee flight and oxidative stress by comparing damage accrued from intense flight bouts to damage accrued from galactose treatment, which is a known proxy of oxidative stress in other insects, and (b) experimentally manipulate the duration and intensity of honey bee flight along with age to determine their effects on ROS accumulation and the associated enzymatic antioxidant protective mechanisms. We show a marker of DNA damage (8-hydroxy-deoxyguanosine) is increased in flying bees with high amounts of flight experience. These data suggest flight-induced oxidative stress plays a significant role in functional senescence of foraging honey bees. We also show an imbalance between pro-oxidants and anti-oxidants in bees with high amounts of flight experience. This data suggests that an imbalance of pro- to antioxidants is implicated in flight-associated oxidative stress.

Presentation: Society for Integrative and Comparative Biology, Austin, Texas, January 2014

26. Hydroxyvitamin D, IGF-1, and Metabolic Syndrome: A Cross-Sectional Study

Damon McCune, Laura Kruskall, Richard Tandy, James Navalta and Sue Schuerman,
Department of Kinesiology and Nutrition Sciences

Purpose: To assess if there is a relationship with Vitamin D (25(OH)D) and IGF-1 levels and risk of metabolic syndrome.

Introduction: According to the Centers for Disease Control, cardiovascular disease (CVD) is the leading cause of death in the United States. People of all ages and backgrounds are at risk for developing the condition which is highly correlated to several factors including age, obesity, high total cholesterol, high LDL-C, high triglycerides, and hypertension which when collectively present cause metabolic syndrome. Several publications also correlate that serum 25(OH)D and IGF-1 are inversely related with metabolic syndrome. IGF-1 concentrations may be increased with 25(OH)D to an extent.

Methods: As part of a cross-sectional correlation study participants will be males and females (n=20-80), ages 25-65, who are students at UNLV and/or individuals enrolled in local corporate wellness programs as well as attendees of classes held by the UNLV Nutrition Center. Participants will have fasting blood drawn to obtain baseline metabolic panel as well as serum 25(OH)D and IGF-1 concentrations. Resting Blood Pressure, body weight, and anthropometrics will be taken. Participants will complete food frequency questionnaires asking about eating habits prior to study and surveys will be administered to determine level and type of physical activity. Data will be collected and evaluated when adjusted for confounding variables.

Expected Results: The study will reflect a relationship between 25(OH)D and IGF-1 levels and risk of metabolic syndrome in individuals age 25-65.

27. Investigating High Molecular-Mass Hyaluronan Inhibition of Human Oral Cancer Growth

Kevin Nowins, Lauren Ing, Paul Quinn, Karl Kingsley and Katherine Howard, School of Dental Medicine

Objectives: The naked mole rat (NMR) is the longest living rodent with a body span of nearly 30 years. It has a lifespan ten times longer than predicted by its average body mass of 35g. It has an array of anti-aging characteristics including never exhibiting spontaneous neoplasm. Naked mole rat fibroblasts secrete an extremely high molecular mass hyaluronan not found in any other mammals. Oncoproteins SV40 Large T and Ras, which are able to induce cancer in human and mouse cells, do not cause neoplastic growth in naked mole rat cells. However, once high molecular-mass hyaluronan is removed by either knocking down HAS2 or overexpressing the hyaluronan-degrading enzyme, HYAL2, naked mole rat cells become susceptible to malignant transformation and tumorigenic growth in mice. Based upon this information, the objective of this project is an in vitro analysis of phenotypic alterations in human oral squamous cell carcinomas (OSCC), cultured with high molecular-mass hyaluronan from naked mole rats.

Methods: Well-characterized OSCC cell lines, including CAL27, SCC25, and SCC15, have been obtained and cultured and will be plated in 96-well tissue culture plates treated with the high molecular-mass hyaluronan. Any alterations in cellular growth, proliferation, and morphology will be analyzed.

Expected results: We expect that the introduction of high molecular-mass hyaluronan will inhibit OSCC growth in vitro, similar to the effects observed in naked mole rat cells.

Conclusions: The successful completion of these experiments will provide novel and significant information regarding the potential for high molecular-mass hyaluronan to induce phenotypic changes to existing, metastatic cancer cells. These results may provide the basis for new and previously untested chemotherapeutic models and agents, and we are hopeful that studying HMM-HA can lead to improved cancer treatment and prevention.

28. Competence Development and Mutagenesis in Stressed *Bacillus subtilis* Cells

Amanda Prisbrey, John Creech, Carmen Vallin, Holly Martin, Keane Regner, and Eduardo A. Robleto, School of Life Sciences

Stationary phase cultures of *Bacillus subtilis* develop subpopulations that exhibit different survival strategies. One of these subpopulations develops the ability to uptake DNA from the environment, this is also known as competence. A well-accepted view is that competence mediates the acquisition of new alleles through the process of recombination. My objective is to determine whether the development of competence promotes mutagenic events in *B. subtilis* cells. Published results from my research group have shown that i) defects in genetic factors that control competence result in decreases in mutagenesis in non-growing cells; and ii) the observed decrease is independent of recombination. My project seeks to bring together these separate observations into a coherent understanding of how competence leads to increases in mutagenesis. Here test the hypothesis that the population of cells that develops competence experiences increased levels of mutagenesis during stationary phase.

To test this hypothesis we use two strains in which the concentration of ComK is experimentally controlled by an IPTG-inducible promoter (pHyperspank) and used to modulate the fraction of cells that undergo competence. The development of competence is complex, but the last steps are controlled by ComK, which ultimately controls the proportion of cells that undergo competence. Cultures differing in the proportion of competent cells will be measured for stationary phase mutagenesis (SPM). SPM is assessed by reversion of nonsense and missense alleles in amino acid biosynthetic pathways. The gene markers used to determine competence and SPM phase mutagenesis are independent and therefore, separate competence from mutagenic events. Results indicating a positive correlation are supportive of the concept that the development of competence promotes mutagenic events.

Presentation: Wind River Conference on Prokaryotic Biology, Estes Park, Colorado, June 9 – 11, 2013

29. GATE Monte Carlo Simulation in a Cloud Computing Environment

Blake Rowedder and Yu Kuang, Department of Health Physics Department

Purpose: The GEANT4-based GATE is a unique and powerful Monte Carlo (MC) platform, which provides a single code library allowing the simulation of several specific applications, e.g. PET, SPECT, CT, internal and external radiotherapy, and hadron therapy. However, its lengthy computing time hinders its routine use in the clinic. Reducing its computing time is therefore of great importance. Thus, a commercial cloud compute service is well suited for GATE MC simulation, both in terms of cost and efficiency. This study achieves a reliable and efficient execution of GATE MC simulation and provides execution frameworks to end-users.

Methods: The GATE software was ported on a commercial compute cloud environment - Amazon Elastic Compute Cloud (EC2). Simulation data was split into various smaller files and distributed to each node in the cluster. The output files from each EC2 node were sent to a single master node and aggregated into a single file. The result was sent to a local computer for display and data analysis. The distributed implementation was executed using the PET benchmark packaged with GATE. This consists of a 100 kBq F-18 and O-15 sources interacting in a 20 cm diameter and 70 cm long cylindrical water phantom.

Results: A cloud computing environment led to increased calculation speed for the cases implemented in this study. The speed increase scaled approximately linearly with the number of nodes used for computing. The output of the cloud-based GATE MC simulation was identical to that produced by the single-threaded implementation, and was resilient to hardware failure, indicating the reliability of the cloud computing platform. The user-friendliness offered by the workflow implementation does not introduce significant overhead.

Presentations: American Association of Physicists in Medicine, Annual Conference, August 7, 2013

30. Further Improvements: The Rice Genome Annotation

Patricia Ringler, Kenneth Watanabe, Lingkun Gu And Jeff Q. Shen, School of Life Sciences

Since its publication in 2002, the rice genome annotation has been improved tremendously, largely due to the availability of the full length cDNA sequences derived from many tissues. Remaining to be studied are other tissues, such as the aleurone layer, which consists of terminally differentiated, homogenous cells responsible for production of hydrolases for mobilization of seed storage reserves during seed germination and post germination growth. Both of these processes are promoted by hormone gibberellins (GA), but inhibited by the GA-antagonizing hormone, abscisic acid (ABA). In this study, RNA-seq was used to analyze the transcriptomes of aleurone cells treated with one or both of these hormones. Using Cufflinks, a popular annotation program, and a novel algorithm developed in-house, we identified hundreds of novel genes. To minimize the number of false positives, only transcripts that did not overlap with existing annotations, had high level of expression, and showed a high level of uniqueness within the rice genome were considered to be novel genes. This approach led to the identification of 553 novel genes, of which 302 have a predicted protein product and 124 contain sequences that match known plant primary micro RNAs. In addition, 273 of the novel genes were induced, and 209 novel genes were repressed, at least 2 fold, by one or both of the hormone treatments. Because ABA also plays key roles in plant responses to environmental stresses, understanding the functions of these new genes will help us better understand not only seed germination, but also stress tolerance. Finally, the transcriptome data reported here have helped and will continue to help improve the annotation of the rice genome.

Presentation: Plant Biology 2013, July 20-24, 2013

31. Receptors and Mechanisms of Folate-Induced Oral Cancer Modulation

John Silvaroli and Karl Kingsley, School of Dental Medicine

Objectives: Dietary folate intake confers many positive health benefits, while folate deficiency is associated with increased risk of many health problems, including cancer. Recent evidence suggests mutations in genes related to folate metabolism increase oral cancer risk. Moreover, additional studies have demonstrated that established oral cancers respond differentially to folate administration, suggesting the preventive effects may be temporal in nature and may not extend to periods following oral carcinogenesis. The objective of this study is to evaluate the two primary pathways for folate uptake, anion exchange-mediated hRFC1 (human reduced folate carrier) and through the 21kD caveolin protein or potocytotic folate receptor (FR).

Methods: Using polymerase chain reaction (PCR) primers specific for FR and hRFC1 mRNA from oral cancer cell lines under conditions of folate depletion and folate administration will be evaluated. Folic acid concentrations approximating physiologic serum and tissue levels (0 – 400 ug/mL) were utilized.

Results: Initial results suggest that folate induced a dose-dependent increase in cell growth in all oral cancer cell lines evaluated. Moreover, no cell line harbored mutations for the most common polymorphism of methylenetetrahydrofolate reductase (MTHFR), which might reduce folate bioavailability. Ongoing assays are determining any change to hRFC1 or FR in response to folate administration.

Conclusions: Increased folate utilization and DNA hypermethylation are common features of many oral cancers, and in the oral cancer cell lines used in this study, more specifically. The preliminary results demonstrated dose-dependent proliferative responses to increasing folate concentrations, suggesting corresponding increases in folate uptake may be necessary. This study may provide the first conclusive evidence of the mechanisms used to increase folate bioavailability in oral cancers, which may provide new targets and mechanisms for oral cancer treatment.

Graduate & Professional Student Research Forum
Social Science
Poster Session A
UNLV Student Union Ballroom

Posters 32 – 35: Judging at 9:00 – 10:00am

- 32. Cheryl Anderson, Department of Anthropology
- 33. Kathryn Baustian, Department of Anthropology
- 34. Kimberly Claudat, Department of Psychology
- 35. John Crandall, Department of Anthropology

10:00 – 10:15am Break

Posters 36 – 39: Judging at 10:15 – 11:15am

- 36. Rachele Diliberto, Department of Psychology
- 37. Diana Ewing, Department of Anthropology
- 38. Timothy Ferguson, Department of Anthropology
- 39. Yulia Gavrilova, Department of Psychology

Posters 40 – 41: Judging at 11:15 – 11:45am

- 40. Ashley Lauzon, Department of Anthropology
- 41. Bern Lee, Department of Psychology

32. Mortuary Ritual and Identity among the Ancestral Tarahumara

Cheryl Anderson, Department of Anthropology

This research provides evidence that supports the idea that the ancestral Tarahumara had a distinct cultural identity in the precolonial period extending back at least 600 years. The idea of a precontact Tarahumara cultural identity is based on mortuary data from archaeological sites that are consistent with ethnohistoric accounts of Tarahumara burial rituals. These ritual behaviors are linked to Tarahumara ideology and are quite distinct from other groups in the region. The practices include the use of burial caves, multiple interments, wrapping bodies in mats and blankets, placement of fire next to the deceased and grave goods such as food and personal items. San Francisco de Borja (AD 1280-1400) is a mortuary cave site located in Chihuahua, Mexico and it was excavated in the 1950s by Richard and Sheilagh Brooks. A recent reanalysis of the human remains from this site has been performed and processes such as commingling, burning, and weathering were recorded. Additionally, grave items such as corn cobs, beads and pottery were located in the cave. The results of the analysis of the remains from this site show that the historic Tarahumara are descendants of these precolonial peoples.

Presentation: Presented at the 78th Annual Meeting of the Society for American Archaeology, April 3-7, 2013

33. Mimbres Seated Burials: Indicators of Social Memory and Family Land Tenure
Kathryn Baustian and Barbara Roth, Department of Anthropology

Bioarchaeological research has been plentiful in some areas of the American Southwest but is lacking in others. The Mimbres culture area of southwest New Mexico has had extensive archaeological excavation but little attention has been paid to burials or human skeletal remains. This research presents an examination of an atypical Mimbres burial pattern, that of an upright seated position within a formal grave pit. First depicted in a schematic by Fewkes in 1914, the seated burial position does not fit the typical flexed or semi-flexed position on the back of most excavated graves. After encountering the seated burial of an older adult female at the Harris Site, the context and significance of this mortuary treatment was investigated. Characteristics of the grave construction and body placement within the grave indicate social importance for the woman buried. In addition to this burial, two other seated burials were excavated. Analysis of burial records from excavation of the site in 1934 revealed four more seated burials. An examination of burial records from other Mimbres sites has demonstrated nearly 50 seated burials. To date, this mortuary pattern is unrecognized as important in terms of Mimbres cultural practices or social organization. The context of these burials and the individuals interred presents an opportunity to tease out information regarding Mimbres social structure and potentially ideology. The findings of this analysis suggest that these atypical mortuary contexts at Mimbres communities are indicative of family land tenure processes and social memory of important individuals.

34. The Influence of Perceived Pressures from the Media, Body Surveillance, Body Shame, and Body Self-Consciousness during Sexual Activities on Women's Sexual Satisfaction

Kimberly Claudat and Cortney S. Warren, Department of Psychology

Objectification theory is a social constructivist framework that aims to explain how sociocultural and intrapersonal variables impact women's mental health. To date, however, few studies have investigated how objectification experiences influence the sexual functioning of women. Consequently, the present study used the tenets of objectification theory to examine the influence of perceived media pressures to be thin and body image on women's sexual satisfaction. Specifically, this study investigated the relationships between perceived pressures from the media to be thin, body surveillance, body shame, body self-consciousness during sexual activities, and sexual satisfaction in American female college students ($N = 403$). Participants completed self-report measures of the variables of interest online. Bivariate correlations suggested that sexual satisfaction was negatively correlated with body surveillance, body shame, and body self-consciousness during sexual activity. Additionally, path analysis indicated that perceived media pressures predicted increased body surveillance and body shame, which in turn predicted increased body self-consciousness during sexual activity. Body self-consciousness, in turn, predicted decreased sexual satisfaction. These findings suggest that self-objectification has negative consequences for women's sexual health. Implications for intervention and prevention practices are discussed.

Presentation: Association for Behavioral and Cognitive Therapies Annual Convention, November 2013

35. The Sacred Sick: Illness Ideologies & Child Sacrifice in Ancient Mesoamerica

John Crandall, Department of Anthropology

Ancient disease scholars have increasingly advocated placing health data in both cultural and regional contexts in order to more fully interpret the broader social experience of disease. One way to achieve this is to use a life-course approach. This approach uses mortuary and skeletal data to examine the ways that illnesses accumulate on individuals, by age, in order to explore how persons of varying ages and health states were perceived and treated in the past. Moreover, research may also focus on variation in health/treatment of individuals within a particular age category. For example, are infants variably treated after death? Here this approach is applied to sites in Mesoamerica where a regional comparison of infant burial practices has yet to be synthesized.

Mortuary treatment and skeletal biology data are used to test the recent argument, based on archaeological evidence alone, that the ill and young (<1 year of age) were viewed as liminal persons across ancient Mesoamerica (Ardren, 2011). This analysis supports this hypothesis. For example, data from postclassic/historic Mayan and Loma San Gabriel Tepehuan sites demonstrate high rates of scurvy (58% and 37% respectively) (White et al., 2006; Crandall & Thompson, 2014), and other bony indicators of ill-health, in infants buried in ritual contexts. This research highlights the social consequences disease had for a particular age group: infants, and provides a more nuanced perspective of the social roles the ill played in prehistory.

Presentation: American Association of Physical Anthropologists, April 2013 (presented early draft with Dr. JL Thompson)

36. Do Children with Selective Mutism have Friends? An Examination of the Quality of Peer Relationships among Children with Selective Mutism

Rachele Diliberto, Department of Psychology

Selective mutism is classified in the Diagnostic and Statistical Manual of Mental Disorders, 5th edition as an anxiety disorder (American Psychiatric Association, 2013). The essential feature of selective mutism is a consistent failure to speak in specific social situations, most commonly school, despite speaking in other situations (APA, 2013). The presentation will examine peer relationships among children with selective mutism. Mute behaviors may cause long term problems with peer interaction and social functioning (Sharkey & McNicholas, 2008). Participants of our study included 54 youth with selective mutism aged 3-11 years ($M=6.83$; $SD= 2.014$) receiving treatment at the UNLV School Refusal and Anxiety Disorders Clinic. The sample was given specific measures to assess symptom severity. Traditionally, it would seem that if a child does not speak, they will have little to no friends and have poor peer relationships. However, our data demonstrates that children with selective mutism vary in the number of friends they have and the quality of those relationships. The data displays how their peer relationships may relate to treatment approach and outcome. Specifically, the data demonstrates the quality of peer relationships through number of friends, whether children with selective mutism are liked, etc. Data are derived from child, teacher and parent endorsed peer relationship items. When treating children with selective mutism, it may be effective for children to already have a comfortable social network. They may receive encouragement from peers to start talking, and treatment can utilize the child's friends to help generalize speech.

Presentation: Meeting of the Selective Mutism Group, Berkeley, CA, November 2, 2013

37. Arctic Clothing Construction

Diana R. Ewing, Department of Anthropology

During a pilot study in 2014 at the Smithsonian Institute National Museum of Natural History's Arctic Research Center I investigated Arctic clothing design, especially the cut and seam construction of clothing keeping in mind thermal processes, since the role of thermal processes has never been explored for indigenous clothing. This poster highlights the seam and stitch construction and patterning of Western Alaska Inupiaq clothing. It is the purpose of my research to determine how design choices by the women who created these garments affected the thermal and transpirative properties of the materials they used in garment construction.

The Arctic is a harsh and demanding environment, one in which humans cannot survive without adaptive technologies. Tailored clothing specifically designed to retain heat while allowing condensation and sweat to transpire away from the body are essential to arctic habitation. For precontact indigenous peoples this was achieved through bone (hide scrapers, awls, and needles), stone, and hide technology. It is through the engineering and creativity of indigenous women that humans not only made short summer forays into the arctic, but fully culturally adapted to year round habitation. Tailored clothing is integral to the survival of humans in this harsh environment and exploring the properties of indigenous design may inform modern garment construction. This study is a view of Arctic clothing as a technological adaptation by women to a harsh and marginal environment, which today is rapidly changing both environmentally and culturally.

38. Keeping in Touch: Exchange as an Adaptive Strategy in Southern Nevada

Tim Ferguson, Department of Anthropology

This research is specifically interested in investigating the changing interdependence of lowland households during the Pueblo II and the Pueblo III period in southern Nevada. Current research in the Virgin Branch Puebloan region indicates that during the middle Pueblo II period there existed strong socio-economic mechanisms linking the lowlands in southern Nevada to the uplands in the Arizona Strip. Ties between these two areas are demonstrated by the presence of large numbers of ceramics produced in the uplands that have been recovered from lowland sites. By the end of the early Pueblo III period (A.D. 1250), there was a clear and drastic reduction in the use of non-local ceramics suggesting that the ties with the uplands had collapsed. Coincident with the collapse of these networks there was an increase in the production of sand tempered ceramics, which were presumably local to the lowland Virgin area. This study used refiring experiments to investigate the clay composition and manufacturing areas for these sand tempered ceramics. Results suggest that during the Pueblo II period, there was more of an emphasis on local social networks in the Moapa Valley, whereas during the Pueblo III period, there was a higher emphasis on social connections with the St. George Basin. In other words, during the Pueblo III period, there seems to be a higher integration among the lowland region as a whole, rather than in either the Moapa Valley or St. George Basin alone.

39. Factors that Interfere with Sport Performance and Alcohol use among Collegiate Athletes

Yulia Gavrilova, Emma Diaz, Polly Kong, Emma Swarzman, Anna Holler, Arianna Gonzalez-Bueno, Travis Loughran, Kimberly Wrzeciona, Michelle Pitts, Violeta Murrieta, Rachel Dunn, Graig Chow, Lisa Kelleher and Brad Donohue, Department of Psychology

Student-athletes report more alcohol consumption, frequent binge drinking, and negative alcohol-related consequences than student non-athletes, and freshman athletes may be particularly at-risk. The purpose of this study was to assess the extent of alcohol use in freshman athletes, and examine the relationship between alcohol use and mental health-related factors that interfere with sport performance. Participants were 64 intercollegiate freshman athletes from nine sports. Age ranged from 18-23 years. Participants completed a demographic form, two questions about alcohol consumption during the past two months, the Alcohol Use Disorders Identification Test (AUDIT) and the Sport Interference Checklist (SIC). The AUDIT assesses symptoms consistent with alcohol consumption and alcohol-related consequences. Higher AUDIT Total Score corresponds to increased risk of alcohol-related problems. The SIC measures a wide range of cognitive and behavioral problems experienced by athletes in training and competition. Results showed that during the past two months, 57.8% of freshman athletes consumed alcohol at least one day and 35.9% engaged in binge drinking (i.e., six or more drinks on one occasion). Based on the AUDIT results, 84.4% of athletes were categorized as “low risk” drinkers, while 15.6% of athletes were categorized as “moderate-high risk” drinkers. Multiple regression analyses used to examine the relationship between the SIC (Training and Competition) and AUDIT revealed that the SIC Training subscales and gender explained 13.3% of the variance in alcohol consumption. Athletes who evidenced more dysfunctional thoughts and stress during training reported higher alcohol consumption, whereas athletes who experienced poorer team relationships during training consumed less alcohol.

40. The Function of Extramural Work Areas at the Harris Site

Ashley Lauzon, Department of Anthropology

This project will involve the analysis of part of an artifact assemblage from the Harris Site LA 1867, a Late Pithouse period site (A.D. 550 â 1000) in the Mimbres Valley of southwestern New Mexico previously inhabited by the Mimbres Mogollon. The specific questions addressed in this project relate to artifact types, artifact density, and the function of the artifacts in several large extramural features. Extramural work surfaces are important in archaeological research because the majority of activities took place outdoors. By using information and artifacts recovered from excavation and by using the questions asked above it is possible to suggest probable functions of these extramural work surfaces. Stone tools, groundstone, and ceramics found in extramural feature contexts such as work surfaces can provide significant information on the activities taking place in prehistoric contexts. The goal of this project is to therefore interpret the function of work surfaces by the inhabitants of the Harris Site. By analyzing and compiling data regarding the artifacts a significant amount of information can be learned. Based on available data these work surfaces served multiple purposes including storage, tool manufacture, and food preparation and processing.

Presentation: Anthropology Research Forum, May 2, 2013

41. Psychiatric Illnesses: Emotion Regulation Deficits

Bern Lee, Department of Psychology

Persons with a wide variety of psychiatric illnesses live with emotion regulation deficits. These deficits are debilitating and persistent aspects of such disorders, thus interventional strategies based upon empirical evidence may greatly benefit those with mental illness. A novel paradigm and pilot data are presented to elucidate the mechanisms of emotion regulation and the behavioral correlates of successful and unsuccessful emotion regulation. Participants viewed a series of unpleasant and neutral static image stimuli (e.g. a car crash, household objects). Negative stimuli were preceded by either a negativizing (e.g. “this dog is about to attack”) or neutralizing (e.g. “this dog was trained to show its teeth”) description. Neutral images were preceded by a description of the image content. Participants were asked to rate the negativity of each image on a 1 (not unpleasant) - 5 (highly unpleasant) likert-type scale. During stimulus presentation eye-tracking data were collected to examine the regions of the image attended to. Respiratory Sinus Arrhythmia (RSA) was calculated from heart rate and respiration to index parasympathetic nervous system response; Electrodermal Activity (EDA) data was collected to demonstrate sympathetic nervous system response. It is hypothesized that negative descriptors to negative stimuli will elicit high ratings for negativity, and concurrent elevations will be observed for EDA and RSA; looking at highly negative aspects of the image is hypothesized to mediate increased response to negative stimuli. We expect a similar but significantly attenuated pattern for neutrally described negative images, and significantly attenuated response to neutral images relative to neutrally described negative images.

Graduate & Professional Student Research Forum
Social Science
Poster Session B
UNLV Student Union Ballroom

Posters 42 – 45: Judging at 9:00 – 10:00am

- 42. Sarah MacIntosh, Department of Anthropology
- 43. Matthew Martinez, Department of Anthropology
- 44. Timothy McHale, Department of Anthropology
- 45. Michael Moncrieff, Department of Anthropology

10:00 – 10:15am Break

Posters 46 – 49: Judging at 10:15 – 11:15am

- 46. Michelle Pitts, Department of Psychology
- 47. Richard Reynolds, Department of Anthropology
- 48. Caryn Tegtmeyer, Department of Anthropology
- 49. R. Shane Westfall, Department of Psychology

Posters 50 – 51: Judging at 11:15 – 11:45am

- 50. Aaron Woods, Department of Anthropology
- 51. Kathleen Woods, Department of Anthropology

42. An Experimental Approach to Antler Working at Körtik Tepe (SE Turkey) during Pre-Pottery Neolithic A (PPNA)

Sarah Raffae MacIntosh and Levent Atici, Department of Anthropology

The recent archaeological projects in southeastern Anatolia (Turkey) have shed new light on the revolutionary socioeconomic transformation of human lifeways during the Terminal Pleistocene and Early Holocene. Körtik Tepe is an important Pre-Pottery Neolithic A (PPNA; 10th millennium BP) site excavated in the region due to its fascinating mortuary practices that contain rich and diverse grave goods and sophisticated symbolism as well as round architectural structures. This paper presents an experimental work and focuses on antler technology to add new data to ongoing zooarchaeological and archaeological research at Körtik Tepe. The experiments specifically probe blank production, antler reduction sequencing, and manufacturing strategies to gain insight into antler working. First, we replicated antler tools to test the validity of our previous morphological and functional categories for the Körtik Tepe antler assemblage. Second, we documented and investigated various manufacturing techniques more closely. Lastly, we contextualize antler work and technology during a period of rapid social, ideological, and economic change at the end of the Pleistocene.

Presentation projected: Society for American Archaeology 79th Annual Conference at Austin, Texas (April 23-27, 2014)

43. A Cross-Cultural Examination of Voluntary Painful Religious Practices

Matthew Martinez, Department of Anthropology

Much attention has been given to dangerous and extraordinary religious practices featuring religious adherents voluntarily harming themselves in public. Ethnographers have extensively described such painful practices. However, there has been no systematic cross-cultural study looking at why these practices are performed and why individuals would choose to participate. We will present sociological, demographic, and environmental correlates of painful, public and voluntary religious practices based on the data accessible in the Human Relation Area Files database. The practices studied typically involve painful risky behaviors (e.g.: land diving in Vanuatu), cutting and incisions (e.g.: Thaipusam and Nine Emperor Gods Festival in Southeast Asia), and other forms of self-inflicted physical pain such as flagellation and stabbing (e.g.: in the Catholic and Sufi Muslim world). Religious acts involving deliberate self-harm in public are typically observable in groups of moderate to larger size with specific socio-political characteristics both in traditional tribal and modern worlds. They are generally associated with closed social worlds, split between strong competing coalitional entities. By engaging in such displays individuals may at times succeed to goad others into considering the formers as respectable and resourceful agents, as potentially interesting social partners in specific situations that would demand the particular sets of skills advertised through such public practices: strength of will, fearlessness, fierceness, resoluteness and readiness to extreme actions if a situation were to call for it.

44. Effects of Male Juvenile Competition on Acute Hormonal Changes

Timothy McHale, Department of Anthropology

The purpose of this study is to investigate whether athletic competition triggers acute steroid hormonal changes in juvenile males, who are between the ages of 7-10. Research has shown acute changes in some steroid hormones, such as testosterone and cortisol, occur among adults who participate in male-male competition in a variety of different settings (i.e. soccer, tennis, judo). Increases in hormones, such as testosterone, are thought to be physiologically beneficial for the combatant by providing immediate enhanced muscle performance and distribution of leucocytes to peripheral tissue in preparation for injury. Additionally, Dehydroepiandrosterone (DHEA) is another hormone that has been speculated to serve a critical functional role during the juvenile period of development in different environmental contexts, but the role of this hormone in competition among adults and juveniles is less clear. The impacts of male-male competition on these aforementioned hormones have not previously been tested in juvenile males. This study aims to aid our understanding of the proximate mechanisms that mediate physiological and behavioral changes during the juvenile period of development in the context of competition. In conjunction with Downtown Las Vegas Soccer Club, I collected salivary samples from 5 different soccer teams before and after a soccer practice and before and after a soccer match to determine changes to their respective hormone profiles. Currently, this study is ongoing and as such I do not have any statistical data to report at this time.

45. The Sin of the City: Social Networking in Rural and Urban Environments

Michael Moncrieff, Pierre Lienard and Matthew Martinez, Department of Anthropology

It has been suggested that members of religious congregations participate for varying reasons. Allport (1967), for instance, described two types of orientation toward religion: intrinsic and extrinsic. He found that individuals, with an extrinsic orientation use religion as a means to achieve social ends such as gaining status and establishing a social network. In contrast, intrinsically oriented others attend religious services in accordance to their deep-seated beliefs.

Historically religious organizations have played an important role in rural America by acting as a locus of trust and social support within communities. An urban environment, with its large population, offers various means of socially connecting and the ease to shift networks. The competition driven by the ability to quickly change networks reduces the investment that networks can ask of their members since too great of demands may result in departure. In contrast, rural environments have a smaller population size and consequentially greater face-to-face interaction, social knowledge about other agents, and fewer competing social networks.

We hypothesize (1) in rural environments, given limitations in network availability, individuals both rating high in intrinsic or extrinsic orientations will be represented in the religious community. In urban environments, (2) we predict individuals rating high in extrinsic orientation will be less likely to invest in a religious network than individuals high in intrinsic orientation given greater access to competing networks. Using data collected from a university sample we examine the effects of community size on social network participation and use.

46. The Concordance among Three Measures of Depression in College Athletes

Michelle Pitts, Graig Chow, Kim Schubert, Arturo Soto-Nevarez and Brad Donohue,
Department of Psychology

The prevalence of depressive symptoms is relatively high in college students. However, few studies have examined the extent to which depressive symptoms or depressive disorders, have been found to occur in college student athlete samples. Therefore, this study examined concordance of scores on measures of depression in (N = 20) collegiate athletes. Participants were college athletes required to evidence negative consequences from substance use in their lifetime. A baseline assessment was administered within the context of the treatment outcome study. Symptoms of depression were measured utilizing the Beck Depression Inventory - II (BDI-II; measures symptoms in preceding two weeks), Depression subscale of Symptom Checklist 90 Revised (SCL-90-R DEP; measures symptoms in preceding seven days). Lifetime or current depressive disorders were measured utilizing the Structured Clinical Interview for DSM-IV. Results showed that 55% of the sample reported elevated symptoms of depression on the BDI-II or the SCL-90-R DEP (45% were elevated on both measures). As expected, the BDI-II and SCL-90-R DEP were highly correlated ($r = .80, p < .01$). Nineteen percent of participants with an elevated score (i.e., BDI-II > 13 and/or SCL-90-R T-score > 60) received a current diagnosis of depression. These findings have implications for interventions in student athletes reporting substance misuse. These results suggest relatively high concordance of scores on the depression scales, and approximately 20 percent of participants were concurrently diagnosed with both substance and depressive disorders. As this study is ongoing, analyses with an increased number of participants will be available for the forum.

Presentation projected: Western Psychological Association Annual Convention, Portland, Oregon, April 26, 2014

47. New Investigations at the Harris Site, Mimbres Valley, New Mexico

Richard Reynolds, Department of Anthropology

Emil Haury's name is synonymous with research conducted at the Harris Site in the 1930s and he contributed immensely in identifying the Mogollon culture as being distinct from other Southwestern populations. Contemporary excavations began at the Harris Site in the Summer of 2008 with research focusing on how households were organized, gaining a better understanding of agricultural dependency, and discovering the social strategies used in the Pithouse period (A.D. 550-1000). This poster will summarize the results of the current research taking place at the Harris Site. Consequently, I will highlight the exceptional finds concerning household organization and social differences at this Pithouse period settlement which have a vast impact on our current understanding of social dynamics within the Mimbres region.

Additionally, I will be delivering a brief introduction into my limited pilot study involving the possible use of alcoholic beverages at the Harris Site. The conceivable use of alcoholic drink offers a potential window into the power-relationship between individual families who produce the fermented beverages and those who consume the brew. To approach this question concerning social differences I have chosen to investigate ceramic data that exhibits surface erosion (pitting) on the internal side of undecorated sherds, reconstructible vessels, and whole vessels from the Harris Site. The goal is to ultimately associate ceramic artifacts with specific useware-traits (pitting) with time periods at the Harris Site that may indicate agricultural intensity which might include the fermentation of alcohol.

Presentation projected: Society for American Archaeology (SAA) 79th Annual Meeting, Austin, TX, April 23-27, 2014

48. Violence and Endemic Warfare at Casas Grandes and its Effect on Non-Combatants

Caryn E. Tegtmeier, Department of Anthropology

Casas Grandes (also known as PaquimÃ©) sits in the vast state of Chihuahua in Northern Mexico. It is considered of the greatest and most complex sites to ever have been built in the Greater American Southwest. Despite this, fairly little research has been done on the people who once inhabited this great city. During the main excavation, over 650 skeletal remains were recovered representing more than 700 years of history at Casas Grandes. Research on these remains has been limited, and a full analysis of the trauma that has been identified by previous researchers has not been conducted. The purpose of this study, to be conducted May 2014, is to collect a complete set of data on all of the individuals who once lived at Casas Grandes, and to identify any patterns that may exist. Perhaps most importantly, this study will examine differences in the presence and patterns of trauma between men, who were likely involved in extended periods of warfare throughout this city's history, and the women and children who were not involved in combat. Through this, this study will seek to understand the effect of warfare on non-combatants which can be applied to the ongoing conflicts around the world today. This study will supplement the literature that already exists on Casas Grandes, and seeks to expand the literature on the effects of warfare on non-combatants.

49. Research Study: Ability of Implicit Anxiety to Predict Performance of Skin Self-Examinations

R. Shane Westfall and Murray G. Millar, Department of Psychology

This study examined the ability of implicit anxiety to predict the performance of skin self-examinations. It was hypothesized that implicit anxiety would contribute to the prediction of skin self-examinations beyond the contributions of variables suggested by social-cognitive models of health behavior. In addition, it was hypothesized that implicit anxiety's impact on self-examinations would not be influenced by deliberative cognition about efficacy. To test these hypotheses 128 participants completed measures of explicit anxiety, self and task efficacy, and a single category implicit associations test designed to measure implicit anxiety. As expected, self-examination behavior was better predicted when implicit anxiety was added to models containing explicit anxiety and efficacy. Further, thoughts about efficacy did not moderate the effects of implicit anxiety on self-examination behavior.

Presentation: The Fifteenth Annual Meeting of the Society for Personality and Social Psychology, Austin, Texas, February 13-15, 2014

50. The Functional and Socio-Cultural Role of Small and Medium Pueblos in Mimbres Pueblo Communities

Aaron Woods, Department of Anthropology

The goal of this research is to better understand the role of small and medium sized pueblos, community systems, and related chronologies in the Mimbres Valley of New Mexico. It has been proposed that during the late AD 900s, emergent community systems developed in the Mimbres Valley. This poster highlights the continued results of a systematic reevaluation of the function of small and medium pueblos in the contexts of chronology and community systems in the Mimbres Valley. Improved understanding of the functional chronology of small and medium sites will provide additional explanations of why and when small and medium sites were created and maintained in the Mimbres Valley and contribute to previous work on community system formation in this region.

Presentation: The 14th Southwest Symposium, Las Vegas, NV, January 10-11

**51. Entheal Changes and Cross-Sectional Properties in the Humerus:
Incorporating Biomechanics into Entheal Analyses**

Kathleen N. Woods, Department of Anthropology

In the field of bioarchaeology scholars have sought ways of interpreting physical activities by analyzing bony changes to the skeleton. Researchers have used osteoarthritis, presence of trauma, thickness of bone, and robusticity of entheses as indicators of activity levels. Entheses refer to the attachments of muscles, ligaments, and joint capsules to the bone and have been adopted widely across bioarchaeology to make inferences about overall activity levels.

Recent studies have adopted a biomechanical approach to understand entheal changes, particularly by comparing entheses to overall bone robusticity. In this study the relationship between entheal scores and robusticity scores is explored using visual analysis and computed tomography (CT) scans. A sample of 34 left and 34 right humeri were analyzed from the William M. Bass Donated Skeletal Collection at the University of Tennessee. CT scans were analyzed at four cross-sections along the bone using ImageJ. From the cross-sections robusticity scores were calculated for each location and compared to entheal scores of four muscle attachment sites. A test of robusticity scores between the left and right humeri found significant differences ($p < 0.05$) between the cross-sectional properties at three locations. Entheal scores had fewer significant differences between sides, indicating that humeral cross-sections and entheses do not react with the same pattern.

This presentation emphasizes the importance of using biomechanical principles in order to understand how different ways of analyzing activity levels create different results. Understanding this helps us to review our methodology and seek standardization within this field.

Graduate & Professional Student Research Forum
Social Science, Hotel and Law
Poster Session C
UNLV Student Union Ballroom

Posters 52 – 55: Judging at 9:30 – 10:15am

- 52. Jonathan Birds, School of Environmental and Public Affairs
- 53. Carly Danielson, Department of Communication Studies
- 54. SoYeon Jung, Department of Hotel Administration

10:15 – 10:45am Break

Posters 55 – 57: Judging at 10:45 – 11:30am

- 55. Monique Makhoulf, Department of Communication Studies
- 56. Hee Jung Kang, Department of Hotel Administration
- 57. Bryn Esplin, School of Law

52. Explaining Local Government Budgetary Practices in an Age of E-Government

Jonathan Birds, Leander Kellogg and E. Lee Bernick, School of Environmental and Public Affairs

Budgets tell us much about the priorities of governments. Local government budget practices may provide insight into the "openness" of local government decision-making. This research seeks to explain what best budgetary practices individual US counties employ and how much of this information they are sharing with their constituents via their county website. We use a random sample of 400 of the more than 3,100 counties (or their equivalents) in the United States to examine budgetary practices. We create an index of best budgetary practices using information gleaned from county websites. Differences in county budget practices are then explained using several variables including county size, professionalism, board composition, federal dollars received, and state mandated practices.

Presentation projected: MPSA Annual Conference 2014

53. "Why'd You Post That": Family Conflict and Facebook

Carly Danielson, Josh Miller, Erin Sahlstein-Parcell and Theresa Boucher, Department of Communication Studies

While Facebook (FB) is a growing social networking site (SNS), the research seeking an understanding of its interpersonal dynamics among families has not kept up pace. To fill those voids, this study sought to address how families experience conflicts involving FB. There has not been a consistent theory applied to SNSs, so the data was gathered without a theoretical framework in mind. We used a conventional content analysis (Hsieh & Shannon, 2005) to inductively analyze two open-ended survey questions about how FB triggers family conflicts for users (n=80). Participants described three types of FB conflicts, involving tensions over privacy, disconnection, and misperceptions. We incorporated Petronio's (1991) communication privacy management theory to help elucidate conflicts about privacy. Another pattern emerged about how the family member(s) acquired the conflicting information on FB: participants directly posted information to FB that a "friended" family member saw, another family members' post was seen by another family member (i.e., the conflict did not directly involve the participant), and participants posted information to their FB that a "friend" showed to a family member who was not their "friend" on FB. The FB feature that triggered family conflict was also coded, revealing that user's personal photos and the wall posts of user's friends created family tensions. We offer proactive steps for users to better manage information on FB and reduce family conflict, such that users should analyze their disclosure and privacy decisions, as well as stipulate rules for how their information is to be safeguarded on FB.

Presentation: Western States Communication Association Conference, Anaheim, CA, February, 17, 2014

54. The Decline in Atlantic City Gaming Volume

SoYeon Jung and Toni Repetti, Department of Hotel Administration

The purpose of this study is to quantify how much of the decline in Atlantic City gaming volume is due to the economic recession and how much is due to the opening of new casinos in Pennsylvania. Time series ARIMA models were evaluated to test the effects the four casinos in Pennsylvania that are within 85 miles of Atlantic City and the Great Recession had on Atlantic City slot coin-in and table games drop. Monthly data for January 2001 through September 2012 was used for a total of 141 data points. Results of this study showed the opening of the first three Pennsylvania casinos significantly decreased slot coin-in in Atlantic City while the legalization of table games and the opening of the fourth casino significantly decreased table games drop. After taking into account the opening of the four individual casinos, the recession had no significant effect on Atlantic City gaming volume. To counteract decreased volumes, casino management needs to understand how much gaming volume they are losing to competition and how much to the recession. Management reaction to each should be different and business decisions need to be made based on what is causing the decline in business.

Presentation: 2013 International Council on Hotel, Restaurant and Institutional Education Conference, St. Louis, MO, July, 2013

55. Divorce: Communication Strategies used by Parents to Communicate Socioeconomic Impact

Monique Makhoul, Department of Communication Studies

Divorce can be a very stressful experience for a family. Among the many issues that confront families going through a divorce is a shift in socioeconomic status or a loss of financial stability during and after a divorce (Brown, Portes, & Christensen, 1989). Research has shown that parents talk about divorce-related financial stress with their children even ten years after the divorce occurs, yet there is little known about how parents communicate these issues (McManus & Donovan, 2012). The purpose of this study was to investigate the account strategies used by parents to communicate about divorce-related financial stress with their children. Transcripts of parent-child conversations were coded according to an a priori scheme of account types. Textual analysis followed by a frequency distribution revealed that justifications were used most frequently by parents followed by concessions, excuses, apologies, and refusals respectively. Justifications served to minimize the severity of the financial stressor the parent-child dyad was experiencing. The findings illustrate the relevance of studying account types as a commonly used strategy by parents as all but one conversation contained at least two account types.

Presentation: Western States Communication Association Conference February 16, 2014

56. A Model of Hospitality Employee Engagement

Hee Jung Kang, Department of Hotel Administration

This study focuses on employee's state-like psychological resources by investigating individual and organizational antecedents to employee engagement and valued human resource outcomes. The purpose of this study is to develop and test a theoretical model that explains the interrelationships among six constructs: psychological capital, service climate, work engagement, organizational citizenship behavior, employee satisfaction, and turnover intention. Furthermore, this research explores the mediating effects of employee engagement. After the pilot test, a convenience sample will be drawn from major casino hotels in the Southwestern, US during the month of February. To test the theoretical model, an online survey approach will be used. The survey will be developed and distributed through Qualtrics for data collection in two different languages: English and Spanish. Structure Equation Modeling (SEM) in EQS statistical software will be used to assess the research hypotheses.

The findings from conceptual modeling and empirical study of employee engagement may provide significant insights for managers who are challenged to retain employees, and foster organizational citizenship behaviors as well as being critical in the competition for talent (Boswell, Ren & Hinrichs, 2008). Moreover, this study would provide insights as to why it is important to select employees with high psychological capital, and create and maintain an optimal service climate for employees. The study findings would reveal that it is not only important, but also necessary to focus on positivity in the workplace through selection, training, and development of employees along with the education and training of current and future managers.

57. Giving Visibility to the Invisible: Addressing the Socioeconomic Precarity of Domestic Workers

Bryn Esplin, William S. Boyd School of Law

My primary research interests lie at the intersection of Human Rights, Health Law and Policy, and Bioethics. I examined the exploitation of domestic workers, who often remain legally and socially invisible. These workers have been and continue to be systematically excluded from basic legal safeguards, as well as marginalized through the unfortunate legacy of equating domestic work as “unskilled” labor and workers themselves as “help”. The Practicum, which took place in Delhi, India, provided an unparalleled opportunity to engage in participatory action research and engage in critical reflection to address Human Rights violations and strategize solutions to seemingly intractable discrimination. I conducted interviews with domestic workers and recruiters, identified gaps in legal protection, and engaged in legal research and advocacy to assist with a highly controversial case that strained U.S.-Indian relations. The case involved an Indian consular official based in New York who brought a domestic worker to the United States and then violated her rights in multiple ways. The various research methodologies provided an interdisciplinary lens to identify and unpack complex legal issues regarding consular and diplomatic immunity, while also exploring challenging strategic questions, such as when to invoke the offense of human trafficking. I concluded that domestic workers would benefit not only from new, inclusive labor legislation, but also through enforcement of existing legislative schemes. Moreover, these workers would benefit from a fundamental shift in social perception; in short, by giving socioeconomic visibility to the invisible.

Graduate & Professional Student Research Forum
Education
Poster Session A
UNLV Student Union Ballroom

Posters 58 – 60: Judging at 9:30 – 10:15am

- 58. Cynthia Clark, Department of Teaching & Learning
- 59. Kimberly Florence, Department of Educational Psychology & Higher Education
- 60. Eshani Gandhi, Department of Chemistry

10:15 – 10:45am Break

Posters 61 – 63: Judging at 10:45 – 11:30am

- 61. Pamela Juniel, Department of Educational & Clinical Studies
- 62. Kristen Russler, Department of Educational Psychology & Higher Education
- 63. Brandon Yost, Department of Teaching & Learning

58. I See You: Comparing the Effect of Asynchronous and Synchronous Video versus Text Based Communication in an Online Teacher Education Course

Cynthia Clark, Neal Strudler, Karen Grove and Karen Grove, Department of Teaching & Learning

The purpose of this study was to investigate whether the ability to create asynchronous video posts and conduct synchronous videoconferencing would more effectively help develop teaching and social presence when compared with the university's current text-based discussion platform. Undergraduate students in an online teacher education course were randomly assigned to either the text-based discussion platform or the video-based discussion platform. A switched replications design was used; halfway through the semester students switched platforms. Questionnaires administered at the end of the semester indicated feelings of social and teaching presence were significantly higher when using the video-enabled discussion site. These quantitative results were corroborated by student interviews. Implications of the added value of video, both in synchronous and asynchronous contexts, are discussed and recommendations for further study are provided.

Presentation: International Society for Technology in Education San Antonio, TX, June 2013

59. Examination of Unprepared First Generation College Students Development of Personalized Autonomous Learning Strategies

Kimberly Florence and Doris Watson, Educational Psychology & Higher Education

In the proposed study, unprepared first-generation college students (UFGCS) enrolled in their first-year of college will be examined using microanalytic protocols designed to assess self-regulation based on a cyclical process, which includes three different phases: Forethought, Performance, and Self-Reflection. Using the Cyclical Phase Model of Self-Regulation (CPMSRL), UFGCS currently participating in academic success coaching services, will be observed in order to reveal whether or not students can develop personalized autonomous learning strategies that successively increase academic attainment.

Presentation: ACPA 2014 Indianapolis Conference

60. UNLV GEAR UP Activities Year One: Addressing STEM Education in Nevada
Eshani Gandhi, Erica Marti, MaryKay Orgill and PG Schrader, Department of Chemistry

GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs) is a national program that offers state and partnership grants to increase the number of low-income students who are prepared to enter and succeed in postsecondary education. As a member of Nevada's GEAR UP project, the University of Nevada, Las Vegas (UNLV) is working with 18 high-poverty, underperforming middle schools throughout the state to 1.) develop and provide professional development experiences for STEM (Science, Technology, Engineering, and Mathematics) teachers and 2.) engage middle school students in STEM activities. For the latter, outreach activities are taking place both at the schools and as part of UNLV campus visits. For the former, we are conducting a needs assessment to identify the needs of STEM teachers, which will guide us in the creation of the teacher professional development experiences. In this presentation, we report our outreach activities; discuss the design of the needs assessment, and present preliminary results from the assessment.

61. Analyzing the Selection of Evidence-based Practices used in School-based Teacher Professional Development: A Research Proposal

Pamela Juniel, Department of Educational & Clinical Studies

Currently, no research has been conducted that explores the selection practices that lend themselves to the incorporation of evidence-based practices in school-based professional development for general education and special education teachers. The purpose of this proposed study will be to determine which of the quality indicators for research and which evidence-based practice criteria for special education are most prevalent when selecting/designing professional development for teachers at the district level.

62. Impact of User Interface for Online Assessment of Simultaneous Processing with Compressed Speech

Kristen Russler, Isabelle M. Sanchez, W. Paul Jones, Scott A. Loe, Tara Raines and Jacqueline S. Hart, Department of Educational Psychology & Higher Education

Continuing a project adapting neuropsychological screening scales for online administration, this study compared two user interface modes for administering a compressed speech (CS) measure of Luria's simultaneous processing function. Method: Data were provided by 82 university subject pool participants. Most were female (76%), between 18 and 35 (84%). Ethnicity was African American (8.6%), Asian American (9.9%), Hispanic (14.8%), Caucasian (55.6%), and Other (11.1%). Condition 1 (C1), $n = 35$, completed the CS online with traditional Perl script used in prior studies. Condition 2 (C2), $n = 47$, completed the CS online with software enabling future smart phones/tablets migration. Automated Neuropsychological Assessment Metrics (ANAM) scales were administered in a computer lab. There were no statistically significant differences in demographics or ANAM scores between C1 and C2. Results: CS accuracy in C2 ($m = 88.3\%$) was higher than C1 ($m = 75.1\%$), $p = .007$, $ES = 0.906$. Throughput (accuracy/response time) was markedly stronger in C2 ($m = 6.20$) than C1 ($m = 2.64$), $p = .000$, $ES = 4.674$. Both conditions had statistically significant correlations with ANAM scales for Matching to Sample ($r = .356$ and $.323$) and Spatial Processing ($r = .391$ and $.538$).

Conclusion: Both conditions resulted in the hypothesized relationship with ANAM scales associated with Simultaneous Processing. But marked differences in time required for stimulus presentation and response warrant concerns about viability of Perl script for online assessment of CS. Test time was more than twice as long in Perl script condition.

63. Student Teacher Perceptions and Initial habits for Grading Practice through 1st Year of Teaching: A Longitudinal Study

Brandon Yost and Jane McCarthy, Department of Teaching & Learning

This study is part of a longitudinal study that looks at 1st year teachers and their grading practice habits. It focuses on how these teachers formally assess their students and how they make judgments based on those assessments, i.e. final grades for grading periods. Data was collected through one-on-one interviews with these teachers and collecting evidence of their grading on their formal assessments over a period of two academic years, dating back to the beginning of their student-teaching internships, again at the end of student-teaching, and once more towards the end of their first-year of teaching. Data shows that these teachers grading practices largely reflect those of their mentor teachers during their student-teaching internships. This study has major implications in providing teacher educator programs with recommendations for criterion that might be followed when selecting cooperating/mentor teachers. Suggestions for grading practice instruction in teacher assessment curriculum and areas for future research are also addressed.

Presentation projected: AERA, Philadelphia, PA, April 3-7 2014

Graduate & Professional Student Research Forum
Fine Arts
Poster Session A
UNLV Student Union Ballroom

Posters 64 – 67: Judging at 9:00 – 10:00am

- 64. Monique Arar, Department of Music
- 65. Audrey Barcio, Department of Art
- 66. Carmella Cao, Department of Music
- 67. Maureen Halligan, Department of Art

10:00 – 10:30am Break

Posters 68 – 71: Judging at 10:30 – 11:30am

- 68. Romana Guillotte, Department of Film
- 69. Elizabeth Johnson, Department of Art
- 70. Rebecca Pugh, Department of Art
- 71. Shelbi Schroeder, Department of Art

64. Take-Aways from Music Teacher National Association (MTNA)

Monique Arar, Department of Music

I will be presenting on the various conferences and related seminars attended during my research in Chicago March 2014. I will summarize and present key points and resources in an approachable manner to all attendees, yet most useful to the aspiring professional music teacher and pianist. The conference divisions are listed below followed by intended key highlights:

- Music Teacher National Association (MTNA)/Performing Arts Medical Association (PAMA) pre-conference workshop (March 21, 2014):
 - “Health and Wellness of the Musician Course: From the Classroom to the Stage”
 - The topics for music will cover:
 - Hearing health.
 - General medical health and wellness for musicians.
 - Neuromusculoskeletal conditions
 - Music Performance Anxiety.
 - Environmental concerns for musicians.
- Piano Pedagogy Saturday (March 22, 2014)
 - “Young Professionals Track”
 - Best Business Practices
 - Building personal portfolios for a position in music performance or academia
 - Road to tenure
 - Strategies for job interviews
 - First Steps As A New Independent Teacher
 - Applying Innovative Curriculum Strategies
 - The Presenter’s Toolbox: Fresh Ideas For Engaging Audiences
- MTNA Annual National Conference (March 22-26, 2014):
 - Mental Wellness for Musicians
 - Improvisation techniques
 - Teaching “Recreational Music Making”
 - String and Vocal Pedagogy Basics
 - Technology in the private studio
 - Studio policies and organization
 - Practicing
 - Student Behavior
 - Piano Master Class and Performance

65. Thermochromic Materials

Audrey Barcio, Department of Art

The thermochromic materials funded by this GPSA grant are being used to make paintings and sculptures for my solo mid-way exhibition into candidacy for the MFA program. My exhibition will fill the gallery space with an interactive, multi-disciplinary installation using reflective and thermochromic materials. This installation will communicate ideas of power and interactivity through mediums of heat, touch, movement and light. It is my intention that the exhibition will explore and expand the link between science and art by creating an aesthetic experience utilizing methods and materials more commonly associated with science. I look to create an installation that pushes the limits of what an interdisciplinary studio art program looks like and to create links between departments.

66. National Flute Association Annual Convention

Carmella Cao, Department of Music

I attended the National Flute Association Annual Convention which took place August 8-11, 2013 in New Orleans, LA. As an aspiring university professor and professional flutist, attending conventions, masterclasses, and festivals are an integral part of my development as a musician and teacher. Constantly striving to improve my teaching techniques and performance level, I believe that taking an active role in the flute communities locally and nationally is essential. NFA Conventions are unique in that attendees participate in the majority of seminars, clinics, masterclasses, and performances available. In New Orleans, I was a featured performer in a masterclass with Hungarian flutist, Janos Balint. The opportunity to perform for world-class musicians is crucial to networking and creating my own musical and teaching style. As a doctoral student, I am building my skills to transition from student to a professor in higher education. To represent my work at UNLV I would like to submit my document, after its completion, to the PhD/DMA thesis competition. The opportunities offered at the NFA conventions assist me in preparing for my upcoming performances, doctoral recitals, and teaching. Being able to watch and listen to professionals perform and teach music gives me the skills to broaden as a teacher, musician, and person.

Presentation: National Flute Association Annual Convention, New Orleans, LA, August 8-11, 2013

67. Fine Arts Exploration: Fluorescent Acrylic Panels Cut with Lasers

Maureen Halligan, Department of Art

This project is a fine arts exploration of the materials traditionally used for signs and advertising. I am exploring the interface between fine art and signs using fluorescent acrylic panels cut with lasers. The design of the pieces is minimalistic and will question the nature of light, scale, and viewer experience in the modern advertisement space. This body of work is expanding my knowledge and familiarity of a material that has not largely been explored as medium for fine art.

Presentation: Life is Beautiful "Art Odyssey", Las Vegas, NV, October 25-27, 2013

68. My Experience: 2014 Sundance Film Festival

Romana Guillotte, Department of Film

The research in which I participated in was as a Full-Time Volunteer in the Industry Office for the 2014 Sundance Film Festival in Park City, Utah. As an MFA Screenwriting candidate, this is our equivalent of attending a conference. The Sundance Industry Office (SIO) provides services for the “business people” of the festival, including Sales Agents and Buyers for distribution companies, who bring the films to theatres or Video On Demand services, Talent Agencies, Entertainment Lawyers, Film Festival Programmers, and others who might be showing a film in some capacity or another (this would be The Museum of Modern Art in New York, for example). Every day, six other volunteers and I would assist these individuals at the festival with whatever questions they had, some as simple as, “do you know what bus takes me to this theatre” to “do you know who holds the International Rights to the film *Boyhood*?” (Don’t worry, I didn’t know that last one either). In our free time, we were able to attend screenings, which was valuable to me as a writer, because I could view new material in my field and listen to the Question and answer portions after to learn some of the filmmaker/screenwriter’s methodology. In all, I was able to see ten new films, some of which were inspiring and a few that showed me what not to do.

69. Expressing and Celebrating Queer Culture through Art

Elizabeth Johnson, Department of Art

Methods and Research: Researching transgender history as well as attending transgender events are necessary to create an art piece based upon a larger spectrum of transgendered society today. In my creation, my goals are to appealing to the emotional consciousness and perspective of the viewer through awareness. My data collection is through informal participant observation through community meetings at The Gay and Lesbian Community Center of Southern Las Vegas, Translation and transgender Veterans, as well as, researching historical information at the school and city libraries. This way I have been able to gain a breadth of knowledge, personal accounts and experience of people who are not well known; people who deserve to be treated equally and focused on in a positive light in this new progressive world.

Conclusion in creation: I am creating a figure. This figure has feminine and masculine body identifiers. Light will be used to reflect upon the figure as the idea of emanating from the human soul. With my research, I have planned to use acrylic paint to write words that express present accounts; this text (ambiguous words) will be presented as encompassing the figure. By doing so I will be able to express life about this portion of Queer Culture on a more intimate level than the usual generic perspective.

70. Transformations of Residual Materials

Rebecca Pugh, Department of Art

My paintings disrupt the conventions of the landscape genre through the use of unconventional materials, techniques, and references to environmental issues. The two mixed media paintings funded by the GPSA will incorporate acrylic paint, wire, canvas and fabric. The project will result in innovative paintings that ultimately expose and challenge the pre-existing and culturally constructed traditions of landscape painting.

An environmental perspective of material conservation drives my use of reclaimed bed linens salvaged from local second hand stores. The incorporation of disposed fabrics within the artwork is a means of reducing paint. Alternatives to traditional art media are productive in reducing the carbon footprint of art production. Environmentally conscious artwork is fundamental in establishing new standards for art that responds to the current environmental crisis faced worldwide.

The use of bed linens references domestic spaces that ultimately disguise the underlying natural landscape and true climate of Las Vegas. Domestic spaces provide safety, comfort, and modern conveniences fundamental to survival in the desert. The juxtaposition of desert imagery and comfort aims to bring attention to the natural conditions of the harsh and unsustainable Mojave Desert.

Unlike traditional paintings, a solid canvas support will be excluded; rather, canvas will be used in strips. Negative spaces between the strips of canvas, fabric, and wire allow viewers to see the wall behind it, disrupting conventions of painting surfaces and the picture plane. The innovative paintings will ultimately expose that landscape painting traditions are culturally constructed, as well will bring attention to environmental issues.

71. Indefinite Obsession

Shelbi Schroeder, Department of Art

The purpose of this project is to test my hypothesis that through the process of daily photographic documentation of the body one will become desensitized to the fear of seeing themselves nude. In a society that is overrun with imagery, there is a lot of pressure to look a certain way and I have been exploring the effects this has on the self-esteem of young adults. In March of 2012, I started testing my hypothesis using my own body. I am interested in testing several ways to disconnect the mind from being defined by body. I began my study by taking daily nude self-portraits. I saw my body so many times I was able to surrender my habit of defining “self” by my body. I saw and felt positive results from this test. I will send participants a camera along with enough film for three months of documentation. I am asking 6 people to write the date on each image and to jot down two words daily that describe how they feel about themselves, one before they take the image and after. I will evaluate the project through a dialog with each of the subjects as well as evaluation of the Polaroid’s and their coinciding words. The project will be successful if more than half of the participates yield results that prove daily documentation of the body lessens the fear of seeing oneself nude.

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