Welcome to the 4th Annual!

Welcome to the fourth annual Northwest Evolution, Ecology, and Human Behavior Symposium! We are excited to continue the tradition of interesting talks, discussions, and posters. This year we are also looking forward to a special session on Households and the Evolutionary Process with speakers from across the country. This conference offers a unique opportunity to meet some of the best researchers in the field, in a less formal, more intimate setting. As we enter our fourth year of the NWEEHB conference, we hope it continues to promote greater interaction between departments, scholars, and students in the region and further afield. We envision this conference as an event where undergraduates can learn more about graduate programs and meet potential advisors, and where graduate students can present and solicit feedback on their own research from other scholars. We hope you enjoy the conference, have the opportunity to get to know someone new, and leave with innovative research ideas!

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Participating institutions 2016

Arizona State University, Boise State University, Bureau of Land Management, Canyon County Parks, City of Albuquerque, College of Western Idaho, US Department of Agriculture, SUNY - Albany, University of Michigan, University of Montana, University of Nevada at Reno, University of New Mexico, University of Utah, Washington State University
Symposium events will take place in the Boise State Downtown Location at the corner of Front and Capitol, April 22nd-24th.

Friday Evening
6:00 - 8:30 pm
Poster Session
Opening remarks (7:00 pm)
Meet and Greet

Saturday
8:30 - 9:00 am
Breakfast
9:00 - 10:00 am (P)
Hillard Kaplan
Advances and new directions in research on the natural history of human aging

10:00 - 10:30 am
Luke Premo
Taking transmission to task: Mobility, taskscape visibility, and cultural diversity in central place foragers

*(P) Plenary session

Sunday - Households and the Evolutionary Process
8:30 - 9:00 am
Breakfast
9:00 - 9:25 am
Raven Garvey
Archaeological patterns of within- versus extra-household cultural learning: A case study from Southeastern New Mexico

9:25 - 9:50 am
Matthew Schmader
Evolutionary trajectories in household architecture, settlement patterns, technology, and subsistence: A 4000 year-long record from the middle Rio Grande valley

9:50 - 10:15
Anna Prentiss
Demography, cooperation, and inequality in a complex fisher-forager household: The housepit 54 project at Bridge River, British Columbia

10:15 - 10:45 am
Coffee Break

10:45 - 11:10 am
John Ziker
Secondary and tertiary food distributions in stochastic environments: Investigation of evolutionary hypotheses

11:10 - 11:35 am
Michelle Grocke
The first road in Humla, Nepal and its impact on diet and nutrition at the household level

11:35 - 12:15 pm
Pei-Lin Yu
Remarks and Moderated discussion

PRESENTATION ABSTRACTS

Hunting, signaling, and the Aché
Andrew Bishop (Arizona State University)
It has been argued that hunter gatherers target and pursue particular prey species as a way to signal information about themselves. This claim has inspired intense debate because of its controversial implications about the sexual division of labor in humans. If the purpose of male hunting is to signal, do men prefer to target prey based on their value as a signal or their value for provisioning a family? Are provisioning value and signaling value the same? Do men and women share the same preferences about what men should hunt? These questions have been asked among the Northern Aché, a well studied hunter-gatherer group at the heart of this controversy. Data from 54 structured interviews were assessed for inter-informant agreement about the value of different species as signals, what hunter characteristics were being signaled, what prey characteristics predict signaling value, and how sex and marital status affect preferences about hunting. These analyses suggest that hunting is used as a form of signaling among the Aché, but that the economic importance of animals predicts their signaling value, and that men and women both prefer strategies that maximize provisioning.

Archaeological patterns of within- versus extra-household cultural learning: A case study from Southeastern New Mexico
Raven Garvey (University of Michigan)
Aggregate data from a late prehistoric village in southeastern New Mexico indicate a higher degree of artifact standardization than might be expected if people acquired the relevant information primarily from members of their own households. Several lines of evidence indicate that both the economic importance of bison and (likely related) inter-group aggression increased ca. AD 1300 in this boundary zone between the Pueblos to the west and cultures of the southern High Plains to the east. This paper presents preliminary results of a study designed to test the hypothesis that model-based biased cultural transmission or heightened incentive to “advertise” group membership influenced the fidelity of projectile point manufacture in this context.
The first road in Humla, Nepal and its impact on diet and nutrition at the household level

Michelle Grocke (University of Montana)

The first road to ever be built into Humla, Nepal has connected this once-remote Himalayan region to a market in China. Due to easy accessibility and low costs, villagers now purchase almost all of their household goods and much of their food from across the border. A ten-month ethnographic study examines the microecological nuances behind the arrival of this new food source in an attempt to explain how and why the uptake of diet change varies at the household level and is manifesting itself in diverse biological outcomes.

Results of this research indicate that although this new road is providing villagers with increased quantity-of-food related food security, these caloric gains are coming at a steep price. The local diet, which historically was based on consumption of nutrient rich agricultural yields along with salt and whole grains obtained through trade, has evolved to include a higher percentage of enriched, processed, market-purchased foods. Nutrient composition analysis illustrates that abrupt increases of sugar and trans-fat consumption from these ‘new’, market-purchased foods has led to a decrease in nutrient density, and a consequential heightened risk of diabetes and high blood pressure for some. However, data also suggests that, primarily due to differences in cultural transmission via diverse prestige ascription and livelihood tasks, there is a high level of intra-household variability in both the quantity and rate of diet change, as well as in measured biological outcomes. This micro-level assessment into the reasons behind, and consequences of, this diet change highlight that consumption patterns are deeply embedded in a gendered socio-cultural complex, one that must be understood in order to accurately identify why alternative outcomes to increased food sourcing options exist.

Kinship core cognition

Doug Jones (University of Utah)

According to many cognitive scientists, human beings have several systems of “core cognition” which act as the scaffolding on which culture-specific explicit theories are built. These include systems for distinguishing and tracking physical objects in space, and for distinguishing animate from inanimate objects based on the way they move. Language – especially closed class forms like spatial prepositions, and pronouns – and experimental psychology – especially the study of elementary perceptual processes – provide windows onto core cognition.

Kinship is one potential domain of core cognition, relatively underexplored. Humans (and probably some other animals) don’t just form attachments to their kin, but recognize that one’s own and others’ kin belong to a common cognitive field. Language – especially kin terminology – provides one window onto kinship core cognition. This talk will summarize the linguistic evidence. The talk will also present preliminary results suggesting that elementary stimuli – shapes moving on a screen – can evoke kinship core cognition. In natural settings, this kinship core cognition constrains the acquisition of explicit theories of kinship.

Advances and new directions in research on the natural history of human aging

Hillard Kaplan (University of New Mexico)

This talk presents a brief overview of what we are learning about the aging process in traditional subsistence societies, with a focus on the last decade of focused research among Tsimane Native South Americans. The paper examines physiological changes with age, focusing on infection and immune function, cardiovascular disease and cancer. Compared to people living in western societies, rates of aging appear to be both slower and faster, depending on the domain. The evidence suggests that among the Tsimane, immuno-senescence proceeds more rapidly, perhaps as a result of a high infectious burden, but cardiovascular aging is much slower. The talk concludes with a discussion of the implications of these findings for our understanding of the evolution of human life histories, the changing prevalence of disease with modernization, and new directions for research and lifespan extension.
The ABC’s of MHC: What are major histocompatibility complex genes and why are they relevant in the study of ecology, evolution and behaviour?

Leslie Knapp (University of Utah)

Major histocompatibility complex (MHC) genes are highly variable in humans and other vertebrates and they play an important role in immune response to infectious disease. In humans, MHC heterozygosity is as high as 80-90% and this unparalleled finding has prompted many researchers to investigate the high degree of polymorphism in the context of natural selection and other evolutionary forces. Studies support the argument that MHC genes also influence individual odors used in mate choice. Since the MHC is used for cellular discrimination of “self” and “non-self”, this genetic system might even be useful for detecting related individuals that share unique combinations of MHC alleles. Although evidence for MHC-based kin recognition or mate attraction in any species is limited, it is possible that odor, color or some other phenotypic marker advertises clues about an individual’s MHC genotype. In this talk, I will briefly review some of the unique and most interesting properties of the MHC and will demonstrate how molecular studies of histocompatibility genes can contribute to research on human ecology, evolution and behavior.

High altitude settlement as evolutionary process

Christopher Morgan (University of Nevada, Reno)

The peopling of high altitude settings and altitude’s ecological analog, high latitude, is critical to understanding worldwide human dispersals and the diversity of human adaptation but is still quite poorly understood. In this talk, I present model for the initiation, establishment, and maintenance of permanent high altitude settlements. This model takes into account the limiting factors found in such settings, the costs and benefits of different ways of coping with these limitations, and the contexts under which different behavioral strategies and physiological changes might be expected to be selected either for or against. The model is evaluated with archaeological data from the Tibetan Plateau, the Rockies and Intermountain West, and the Argentine Andes. This evaluation suggests that in most scenarios demographic packing triggers increasingly intensive high altitude use, that establishing semi-permanent or permanent settlements requires economic subsidization with lower-altitude resources and increasingly costly high altitude ones, and that maintenance of high altitude lifeways is tenuous and contingent upon both biological adaptation and/or articulation with larger regional economies.

The social world of the mother-infant dyad: Child development, behavior, and hearth in human cooperative breeding system

Courtney Meehan (Washington State University, Pullman)

The classification of humans as cooperative breeders has been widely accepted for the last several decades. Nevertheless, debate continues regarding who is essential and what roles non-maternal caregivers serve in successful child development and human reproduction. In part, this lack of clarity is due to cross-cultural variation in developmental and reproductive niches. However, such variation offers valuable clues to the diversity and flexibility of cooperative childrearing systems in human populations. Using cross-cultural quantitative data from hunter-gatherers and horticulturalists in the Central African Republic and agro-pastoralists in Ethiopia, I examine the depth and breadth of allomaternal care and care networks. I argue that human cooperative breeding is not only unique in its extent and length of investment, but also because of its flexible nature. Additionally, I explore the significance of cooperative breeding networks on child development, maternal behavior, and present preliminary data on how such networks may influence human breast milk composition (specifically, the human milk microbiome) and maternal-infant health.

Plenary Speakers:

- Hillary Kaplan (University of New Mexico)
- Leslie Knapp (University of Utah)
- Courtney Meehan (Washington State University)
- Christopher Morgan (University of Nevada, Reno)
Taking cultural transmission to task: Mobility, taskscape visibility, and cultural diversity in central-place foragers

Luke Premo (Washington State University, Pullman)
Ethnoarchaeology has shown that culturally transmitted behavior can be structured in its performance both geographically and temporally, in terms of where and when implements are made and used on the landscape. Yet cultural transmission theory has not yet explored the population-level consequences of how behaviors of mobile foragers are transmitted differently due to their enactment at different locations on the "taskscape." Here, we explore how mobility affects the diversity of two selectively neutral cultural traits that differ only in their "taskscape visibility." Spatially explicit simulation results show that the trait that can be transmitted from residential bases only (lower taskscape visibility) shows greater diversity than the trait that can be transmitted from residential bases and logistical camps (higher taskscape visibility). In addition, increased logistical mobility has a positive effect on the diversity of the trait with the lower taskscape visibility while it generally shows little to no effect on the diversity of the trait with higher taskscape visibility. Without an appreciation for the ways in which mobility and taskscape structure cultural transmission in space and through time, the differences in the diversity of the two traits might be incorrectly interpreted as resulting from qualitatively different forms of biased cultural transmission rather than two different scales of taskscape visibility. The lessons learned from this study, when combined with appropriate middle-range predictions from archaeological theory, should help archaeologists select artifact attributes that will help improve reconstruction of cultural transmission mechanisms in the past.

Demography, cooperation, and inequality in a complex fisher-forager household: The housepit 54 project at Bridge River, British Columbia

Anna Prentiss (University of Montana)
The evolution of social inequality is a topic of extensive research and debate. A wide range of explanatory arguments have been proposed spanning effects of inherent human psychology (aggrandizers) to impacts of change in population-subistence resource relationships. Some recent research has suggested that changes in the nature of cooperation could be linked to variability in wealth-based inequality. Research into the history of the Bridge River housepit village has implicated a Malthusian demographic process that led to resource imbalance and inter-household competition and inequality. Until recently it has been impossible to evaluate details regarding inter-family cooperation and social change. New data from the deeply stratified Housepit 54 permits use of multiple data sets to explore change in household occupation density, subsistence change, inter-family cooperation, and wealth-based inequality. Results suggest that while the house persisted for several generations during a village-wide Malthusian crisis, organization of household work changed to reflect reduced inter-family cooperation. This opened the door to differentiation in access to trade goods, domesticated animals (dogs), and display items. The village was depopulated and abandoned shortly thereafter.

Evolutionary trajectories in household agriculture, settlement patterns, technology, and subsistence: A 4000 year-long record from the Middle Rio Grande Valley, New Mexico

Matthew Schmader (City of Albuquerque)
Evolutionary trajectories in settlement patterns, architecture, and technology can reveal long-term stability and rapid change. Several large scale data recovery projects in the middle Rio Grande valley of New Mexico document a record nearly 4,000 years long, from 3000 BC to AD 900. The architecture of middle to late Archaic structures, dated 3000 BC to about AD 250, displays very little change in form, size, and construction details. Settlement pattern changes begin to appear with the first appearance of midden deposits about 1000 BC. Middens may indicate greater occupational intensity, site reoccupation, or both. Numbers and locations of storage features appear to increase as numbers of structures increase. Some of the first investments in specific places, such as constructed milling features, appear before cultigens do.

Long-term architectural and technological stability gave way to very rapid change coinciding with the appearance of agricultural domesticates. The first multi-dwelling sites appear, as do architectural and structural investments such as formalized hearths, entryways, and roof supports. These attributes indicate decreased residential mobility. Simultaneously, the first distinctions in functionally specific spaces appear with the separation of cooking spaces from sleeping spaces. Sweeping changes occur in a broad suite of technological types: metates and manos reflect the shift from a seed-based diet to a corn-based diet. Cooking features changed from rock-lined pits to formalized hearths. Domesticated corn required the invention of ceramics for cooking and the size, shape, and location of storage features also changed rapidly.

However, corn agriculture was not a stable adaptation and people were subject to frequent failures in domestic plant supplies. Early Puebloans were marginal horticulturalists who retained a strong dependence on wild foods, as indicated by dietary breadth of plants and animals. The first domesticated animals—dogs and turkeys—co-occur at this time. Settlement patterns reflect the tenuous nature of early plant domestication. The landscape appears to have been "outfitted" with structures and facilities to hedge against agricultural failures. Fixed places were developed and intended to be used situationally depending on the need to abandon agricultural areas.
Do symptoms of illness serve signaling functions? (Hint: Yes)
Leonid Tiokhin (Arizona State University)
Do symptoms of illness serve signaling functions? (Hint: Yes)
Symptoms of illness provide information about an organism’s underlying state. This notion has inspired a burgeoning body of research on organisms’ adaptations for detecting and changing behavior towards ill individuals. However, little attention has been paid to a likely outcome of these dynamics. Once organisms’ fitness is affected by others’ responses to symptoms of illness, natural selection can favor individuals who alter symptom expression to influence others’ behavior. That is, many symptoms may originate as cues, but will evolve into signals. In this talk, I develop the hypothesis that symptoms of illness serve signaling functions, and provide an overview of relevant evidence from diverse disciplines. I also develop novel empirical predictions generated by this hypothesis and discuss its implications for public health. Signaling provides an ultimate explanation for otherwise opaque aspects of symptom expression, such as why symptoms fluctuate in social contexts, exist without underlying pathology, and why individuals deliberately generate symptoms of illness. This analysis suggests that signaling theory is a major organizing framework for understanding symptom etiology.

Secondary and tertiary food distributions in a stochastic environment: Integration of evolutionary hypotheses
John Ziker and Karen Fulk (Boise State University)
This paper considers informal social networks by which tundra foods are distributed in Ust’-Avam, Taimyr Region, Russia. The majority of families in Ust’-Avam rely upon subsistence hunting, fishing, and trapping for their livelihood. Variation in hunting ability and interest in hunting create inequalities in local food production. Interhousehold food sharing is widespread and likely helps buffer consumption risk among particularly vulnerable categories.

In the paper, I will review relevant evolutionary hypotheses for food sharing and two previous studies of food sharing in the study community. The first study about the initial phase of food distribution (interhousehold food sharing after the hunt), and a second published in Human Nature in 2005 about the final phase of food distribution (interhousehold food sharing at meals). This paper will then present an analysis of previously unpublished data on the food sharing that occurs between those bookends: secondary and tertiary distributions. After hunters (or their family members) share with other households the initial recipients oftentimes divide what they receive and share with other households (secondary distribution) and those recipients may also share (tertiary distributions). Such extended networks may be subject to different pressures than primary distributions or interhousehold consumption events and provide yet another opportunity to examine the effects of variables that relate back to the explanatory hypotheses of food sharing.

Traditional systems for dealing with inequality are important to socio-ecological resilience and health in northern Eurasia, and thought should be applied to how these could change with continuing development. Social inequality is one of the major issues of our time. Within Western nation-states inequalities divide neighborhoods, regions, and ethnic affiliations, and contribute to social and political conflicts of interest. Inequalities between countries and world-regions arguably drive larger scale problems, such as renewable resource consumption and pollution. Inequalities are likely to differentially impact health and livelihoods in the Arctic as climate change and industrial development intensify. Therefore, it is important to understand how indigenous peoples in the Arctic today deal with economic inequalities in their own subsistence activities, so that measures can be taken to build on and foster existing traditional strategies.

Organization Team:
Kathryn Demps - Assistant Professor, Anthropology
Kristin Snopkowski - Assistant Professor, Anthropology
Pei-Lin Yu - Assistant Professor, Anthropology
John Ziker - Professor and Chair, Anthropology
Caleb Thom - President, Boise State Anthropology Club
Phil Daily - Director, Boise State Archaeological Students Association
Cooperative Learning Groups and the Evolution of Human Adaptability: (Another Reason) Why Hermits are Rare in Tonga and Elsewhere

Adrian Bell (University of Utah)

Understanding the prevalence of adaptive culture in part requires understanding the dynamics of learning. Here we explore the adaptive value of social learning in groups and how formal social groups function as effective mediums of information exchange. We discuss the education literature on Cooperative Learning Groups (CLGs) which have outlined the potential of group learning for enhancing learning outcomes. Four qualities appear essential for CLGs to enhance learning: 1) extended conversations, 2) regular interactions, 3) gathering of experts, and 4) incentives for sharing knowledge. We analyze these four qualities within the context of a small-scale agricultural society using data we collected in 2010 and 2012. Through an analysis of surveys, interviews, and observations in the Tongan islands, we describe the role CLGs likely play in facilitating individuals to learn adaptive information. Our analysis of group affiliation, membership, and topics of conversation suggest that the first three CLG qualities reflect conditions for adaptive learning in groups. We utilize ethnographic anecdotes to suggest the forth quality is also conducive to adaptive group learning. Using an evolutionary model, we further explore the scope for CLGs outside the Tongan socioecological context. Model analysis shows that environmental volatility and migration rates among human groups mediate the scope for CLGs. We call for wider attention to how group structure facilitates learning in informal settings, which may be key to assessing the contribution of groups to the evolution of complex, adaptive culture.

Historical Demography of Todos Santos, California Baja Sur, Mexico: population growth and environmental constraints

Jessica Burns and Shane Macfarlan (University of Utah)

The Baja California Peninsula is ecologically defined by the presence of sporadic springs that provide small wetland oases in the harsh, arid desert. The fragility of the desert-oases habitats creates resource limitations and susceptibility to overconsumption. However, these desert-oases have supported a traditional ranching population, oasiana-rancheros, for over 300 years. Utilizing previously untapped historical documents stemming from parish records of marriage, births, and deaths, we created a demographic profile for Todos Santos, Baja California Sur, Mexico, a late 19th century oasiana community. We hypothesized that due to the resource constraints of desert-oases, 1) age at marriage would have been relatively high compared to other traditional groups, 2) age at first birth would be relatively high, and 3) inter-birth intervals would be relatively long. Utilizing the family reconstitution method and the software program Descent, we were able to calculate estimates of family size, marriage times, age at first birth, and inter-birth interval. Our analysis showed that age at first marriage was relatively high in Todos Santos. The age at first birth was relatively high and favorably correlated to age at marriage (usually within one year). Inter-birth interval was greater than expected for agricultural populations and was closer to the upper range of hunter-gathering populations. Our results confirm that changes in the life history of Todos Santos may have helped this population negotiate the constraints of their environment and avoid over consuming resources.

Conditioning and predicting technological variability in coastal Oregon: Utilizing Dr. Lewis Binford’s hunter-gatherer database

Phil Daily (Boise State University)

The aquatic resources available to prehistoric inhabitants of coastal Oregon undoubtedly played a major role in the evolution of diet breadth, in turn shaping technological adaptations along the coast and riverine areas of the interior. Extensive archaeological exploration along the coast, combined with insights from geologists, ecologists and other researchers, has created a fascinating picture of the variation existing among these prehistoric peoples. Providing a new approach to research, the hunter-gatherer database developed by the late Dr. Lewis Binford and his students offers large scale comparison of archaeological and ethnographic data in order to create frames of reference to assist in first-order pattern recognition and the development of conceptual models. This database has yet to be applied to the Oregon coast. Utilizing archaeological literature, site reports and Dr. Binford’s database, this poster will demonstrate the applications of the database to research questions regarding aquatic subsistence and technology in coastal Oregon.

Mean girls: A study of indirect aggression amongst college females

Chris Harper (Boise State University)

The purpose of the poster being presented is to look at the use of indirect aggression by females from both a life history theory and sexual selection perspective. The study performed to create the poster hopes to look at the reasoning behind the use of indirect aggression amongst females as well as to gain a more accurate time line of when this form of aggression first begins and in which years its use becomes more prevalent. This study also hoped to look at whether this form of aggression was used amongst females as a form of mating strategy by looking for an increase in the use of indirect aggression during years where dating is prevalent. To accomplish this female students at Boise State University ranging between the ages of 18-25 will have been given a survey to fill out as well as a select few will take part in personal interviews.

Endocrine stress responses in college students to solitary and group learning

Ross Griffiths, Kathryn Delps, Michaela Eugster, Scott May, Shane Scaggs, Kristin Sopokowski (Boise State University)

Stress can have positive and negative effects on learning and memory. We sampled undergraduates in an introductory lecture class during two learning and two evaluation activities for salivary cortisol and testosterone. These two hormones are used to indicate sociopsychological stress. We compare levels of cortisol and testosterone to two types of learning experiences (a group learning activity - POGIL, and traditional lecture) and to two types of evaluation (multiple-choice and short answer essays on a midterm exam). This research will provide much-needed data on physiological responses (and variation) to learning and examination methods.
Are There Evolutionary Explanations for Why Western Women Join ISL?
Annemarie Hasnain
(Boise State University)

One in seven of the estimated 4,500 westerners who have joined the Islamic State (ISL), is a woman. One of the most perplexing questions concerning ISL is why would young western women leave their families and friends to live under a harsh regime in a war zone? Most of the recruits are Muslim women, but Christian and Jewish women have also joined or attempted to join ISL. Young women are recruited mostly through social media and often by other women. Proximate explanations include the desire to help build a new utopian state where members can live according to the ISL interpretation of Islam, join a sisterhood of like-minded women, or fight against perceived western persecution of Muslims. Ultimate explanations are more difficult to study but Mate Selection, Life History Theory, or Group Selection as proposed by David O. Wilson, may offer a framework for study. One of the difficulties in addressing this question is that most of the data is anecdotal and largely based on information from social media accounts of the recruited/potential recruits, law enforcement interviews, or family accounts. Ethical and legal considerations making collecting data from potential recruits difficult.

Participation and perception: Early exposure, environmental attitudes, and off-highway vehicle (OHV) recreation in the Boise metropolitan area
Michelle Kinney
(Boise State University)

Off-highway vehicle use has and is becoming an increasingly popular form of recreation in the Boise Metropolitan region. However, it also has the potential to impact the flora and fauna present on public lands. As OHV use increases, so does the likelihood of impacts on the environments where recreation takes place. In order to effectively manage the resources provided by the landscape, more must be known about the user population. This study sought to determine which elements affect the continued use of OHVs and how OHV recreationists differ in their environmental attitudes by categorizing them into groups according to their experience use history (EUH).

OHV recreationists were invited to participate in a survey through door-to-door solicitation within ten Treasure Valley communities and at the Ada and Canyon County DMVs. Distribution neighborhoods were randomly selected. In order to participate, individuals were required to be 18+ years of age have operated an OHV at least once in their lives. A total of 335 surveys were distributed from May to September 2015, with 58 surveys returned.

Comparing current and past users along with data on their initial exposure to OHV shows that neither early exposure nor demographic characteristics such as sex or current age was correlated with an individual’s current use status. Additionally, statistical analysis found the majority of users support environmental protection and management, but found no significant differences environmental attitudes across EUH groups.

Volunteering for the homeless and the influences of indirect reciprocity
Scott May (Boise State University)

Many individuals around the world often volunteer their time to help others in need, such as people who suffer from homelessness. However, understanding the motivation of these helpful and seemingly altruistic actions is complex and difficult to analyze. This study focuses on the potential influences of indirect reciprocity as the fundamental motivation behind volunteer work among Boise State University students with homeless persons, specifically whether it is fueled by individual motivations or group influences.

Four pathways to generosity
Shane Scaggs, Delaney Glass, John Ziker (Boise State University)

We investigate individuals’ propensity to donate to charitable organizations through four evolutionary mechanisms of cooperative behavior—inclusive fitness, reciprocal altruism, indirect reciprocity, and costly signaling—that influence such prosocial actions. We utilize two economic games in which subjects are asked to donate: a public goods game with four alternative social frames, and an allocation game. In the public goods game, we prime subjects with one of four social categories representing the relationships that the four evolutionary mechanisms hypothetically favor. In the allocation game, we investigate decision-making when subjects face donation requests by four types of social actors. We utilize four types of individuals simultaneously. In the allocation game, pay-off coefficients and risk factors for each social category vary, representing the assumed benefits and risks for engaging in these different types of relationships. A follow-up survey allows us to control for demographic variables, volunteer activity, and self-reported trust of others. The results are contextualized with other studies of generosity using such methodologies. This study has a variety of implications in public domains such as policy and non-profit organizations. Our results suggest helpful insight to the motivational factors leading to cooperative outcomes.

Douglass Skinner
(University of Montana)

The Togiak Archeological and Paleoeocological Project (TAPP) is an initiative to learn about the ancient life-ways of the Yup’ik indigenous people of Togiak, Alaska. TAPP is a collaborative project driven by the Togiak community and their interests in understanding and documenting their own past lifeways. Thirty-two core samples were collected from a series of pre-colonial house structures at the Old Togiak Site in the summer of 2015, and analyzed at the University of Montana. Faunal remains from the cores were examined during this time along with stone tools, botanical remains, pollen, and a variety of other items. The fauna represents one aspect of the relationship between indigenous tradition and decision-making and ecological variables. My research will draw from a combination of faunal analysis and localized Yup’ik perspective. The fauna recovered to date from the Old Togiak Site include shellfish (blue mussel and native little neck clam), fish (char and sockeye salmon), birds (snowy owls and mergansers), and land and sea mammals (lemmings and sea otters). Previous investigations identified a variety of larger terrestrial (caribou and bear) and marine (walrus, seal, and sea lion) mammals. I will use the faunal analysis to create a picture of the environment at the Old Togiak Village during the last thousand years, and seek to understand the interactions between the people and environment. This research is vital to increasing the understanding of indigenous life-ways and economic decision-making in a dynamic environment.
The Impact of Mycobacterium leprae: A Comprehensive Meta-Analysis of the Paleopathological Literature
Mallory Schreier
(Boise State University)
Leprosy, caused by the bacteria Mycobacterium leprae and Mycobacterium lepromatosis, is a chronic, infectious disease that eventually causes disfiguring skin lesions, nerve damage, and muscle weakness. The literature traces leprosy back to 1550 BCE although there is possible skeletal evidence of leprosy in Rajasthan, India from 2000 BCE, suggesting it originated there and spread on a larger scale, but leprosy’s dissemination remains uncertain.

Presently, numerous scientific articles exist on the paleopathology of leprosy, but no meta-analysis of leprosy has ever been done. In this paper, a meta-analysis was conducted on 1,645 paleopathological cases of leprosy found in 102 sites ranging from 3125 BCE to 1905 CE. This meta-analysis statistically tested the prevalence of leprosy based on the paleopathological literature to chart the pathogen’s occurrence. Results suggest that the frequency and distribution of bone lesions did change over time, contrary to the null hypotheses.

This is the first meta-analysis examining leprosy’s global imprint in the archaeological record and provides evidence for how bone lesion frequency and distribution changed across time and space.

The Persistence of Paleoindian Occupations in Northwest Nevada: a Comparison between Long Valley and Massacre Basin
Dallin Webb
(University of Nevada, Reno)
Two basins in northwest Nevada – Long Valley and Massacre Basin – contained pluvial Lake Meinzer during the Pleistocene. Situated between them is a high sill at Painted Point. Long Valley is much larger than Massacre Basin in terms of basin floor and watershed area. It is therefore likely that after Lake Meinzer dropped below the elevation of Painted Point sill during the terminal Pleistocene/early Holocene the pluvial lake in Massacre Basin would have desiccated more quickly than its counterpart in Long Valley. I used several academic studies from nearby regions to construct a projectile point chronology for Long Valley and Massacre Basin; this was then used to ascertain the temporal context of identifiable components found in cultural resource reports. The raw data acquired through this method show that Paleoindian occupations were greater in Massacre Basin than in Long Valley. After controlling for two factors – percentage of area surveyed in each region and the differing basin sizes – this trend became more pronounced. Due to its small size it is possible that Massacre Basin refilled and contained water periodically throughout the early Holocene; such an ephemeral wetland system may explain the greater evidence of Paleoindian occupations found in Massacre Basin.
Boise State Downtown
This year we will be using the Boise State downtown location at the corner of Front St. and Capitol Blvd. Street parking is free on nights and weekends, but can be crowded on Saturday morning. Public parking structures are plentiful and cost $12/day. Many lines of public busses run downtown on Saturdays (free to BSU students).

This location is just around the corner from the Hampton Inn, or a pleasant walk down Capitol Blvd. (~1 mi.) from the Residence Inn (or ask them for a complimentary shuttle).

Angell’s Bar and Grill
Our Saturday night dinner will be catered at Angell’s Bar and Grill at the corner of Main and 9th St. Look for the lights and patio sunken below street level. Bring your ID if you would like to drink alcohol.

Driving from Points West to Downtown location
Take I-84E to I-184. Continue on I-184 until it ends downtown and becomes Myrtle St. Take a left on Capitol Blvd., the location is on the next left-hand corner at Front St.

Driving from Points East to Downtown location
Take I-84 W to Exit 53, S. Vista Ave. At the top of the exit ramp turn right onto Vista Ave. Follow Vista for about 2.5 miles, until it goes over the river and turns into Capitol. The location will be on the left-hand side at the intersection with Front St.

NWEEHB Sponsors:
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