

## Archaeology Day 2023: Face to Face

25 March 2023

UBC Anthropology and Sociology Building (ANSO 207) in person and online

Everyone welcome, but please [register online](#) in advance

### 9:30 - 9:45: Land Acknowledgement and Welcome

### 9:45 – 10:50: Session I – Living and working with bone and stone (Session Chair C. Speller)

- **Megan Harris** - A Tale of Two Rock Shelters: Preliminary Lithic Analysis from Two Rock Shelters in the Similkameen Valley, BC.
- **Aleksa Alaica** - To the Bone: Everyday Practices through the Lens of Worked Osseous Artifacts from 1st Millennium CE North Coastal Peru

#### *Lightning Talks:*

- **Pengpeng Chen and colleagues** - Reconstructing the bone craft industry in the Middle Shang dynasty through a biomolecular approach
- **Lindsey Paskulin and colleagues** Leave no stone unturned: Establishing a proteomic signature of beerstone for the identification of archaeological ale production

### 10:50– 11:10: Coffee break

### 11:10 – 12:40 Session II – Learning on land and sea (Session Chair A. Wylie)

- **Natasha Lyons and colleagues**- In Praise of Woodlands: A Meditation on Sustainable Indigenous and Agrarian Land Use Practices
- **Liz Campbell, Kevin Wilson, Aeli Black**- Teamwork Makes the GPR Work: Learning GPR Through Collaboration
- **Meaghan Efford and colleagues**- Collaborative community-driven archaeology serving Tsleil-Waututh Nation's Cumulative Effects Monitoring Initiative

#### *Lightning Talks:*

- **Jay Hilsden and colleagues** - The Problem with Pleuronectiformes: Developing a Reference Database for the Identification of Archaeologically Recovered Flatfish from the Pacific Northwest Coast Using ZooMS

### 12:40– 1:30 Lunch

### 1:30 – 2:40: Keynote Address

- **Aimée Little** (University of York, Department of Archaeology), “**Face-to-face: experimental archaeology, craft, and communities of practice**”

### 2:40 – 3:00: Coffee break

### 3:00 – 4:40: Session III - Learning through interactive practice (Session Chair A. Alaica)

- **Megan Daniels** - Engaging with Real People, Past and Present: The Peopling the Past Project
- **Max Miner and colleagues**- Learning through Lax Kwil Ts'it: a Multidisciplinary Field School at Clamstown
- **Nolan Thiffault & Mike Robertson**- Using Repositories as a Resource for Indigenous Communities

#### *Lightning Talks:*

- **Christine Perrier and colleagues**- Challenge accepted: Developing virtual school programs in Archaeology

### 4:50 – 5:00: Thanks!

## **Archaeology Day 2023: Face to Face ABSTRACTS**

**25 March 2023**

UBC Anthropology and Sociology Building (ANSO 207) in person and online

### **Keynote Address**

#### **Face-to-face: experimental archaeology, craft, and communities of practice**

**Aimée Little** (York Experimental Archaeological Research (YEAR) Centre; University of York, Department of Archaeology),

I have chosen the theme Face-to-Face for this talk because it represents the primary mode of knowledge exchange experienced by practitioners of Experimental Archaeology: an approach that draws heavily on Anthropological, Ethnographic, and experiential sensory observations. First, I will explore the impact of practice-based outdoor crafting on teaching, learning and student wellbeing, turning to current Experimental Archaeological research by my research team, showcasing new insights on the art, technologies and funerary behaviours of Northern Europe's prehistoric hunting and gathering societies. Finally, how outdoor heritage crafting is being used to explore mental health benefits for university students in York and displaced children in war torn Ukraine, will hopefully stimulate discussion on the essentialness of craft practice for our shared humanity and sense of wellbeing.

### **Presentations**

#### **Alphabetical by principal author surname**

#### **To the Bone: Everyday Practices through the Lens of Worked Osseous Artifacts from 1st Millennium CE North Coastal Peru**

**Aleksa Alaica** (Anthropology, UBC)

The Moche cultural period (200-850 CE) is commonly examined through the lens of elite activities and large-scale ritual events involving sacrificial acts. More work can illuminate the everyday, face-to-face experiences of communities under the influence of Moche leaders. One powerful approach to examining these daily practices is through the way that groups undertook food procurement, textile production and ceremonial practices. Worked bone artifacts are common among many of these activities, therefore bringing important attention to rhythms of everyday practices. This chapter focuses on the worked osseous artifacts recovered from the Late Moche (600-850 CE) centre of Huaca Colorada in the Jequetepeque Valley of northern Peru. Over 300 bone artifacts were collected from domestic, production and elite spaces that attest to the diverse ways that osseous tool technology formed part of quotidian activities. By undertaking a closer look at food procurement, textile production and ceremony through a zooarchaeological approach, this contribution advances the way that the field of animal bone analysis can move beyond species lists and conclusions on human subsistence. Instead, I will foreground the way that animal resources become key technological bridges in negotiations of power and identity in daily and ceremonial contexts.

#### **Reconstructing the bone craft industry in the Middle Shang dynasty through a biomolecular approach**

**Pengpeng Chen** (Anthropology, UBC), Yulin He, Anyang Field Station, Chinese Academy of Social Science; Dr. Zhichun Jing, Dr. Camilla Speller, University of British Columbia

Huanbei was the capital of the middle Shang Dynasty (3200 BP) during Bronze Age, located in Anyang, China. The site features a bone tool workshop, reflecting the craft industry of the Shang dynasty and the large demand for animal bone products. Within the workshop, the excavation of tomb M5 revealed layers

of fill containing a large number of fragmented animal bones (n=764) and bone tools (n=19). Although morphological analysis confirms the dominance of cattle bones, as well as sheep, dogs, pigs, and deer antlers, the majority of the fragmented bones cannot be identified, hindering the study of the raw material selection in tool production. Thus, this study aims to investigate whether a consistent pattern exists in each stage of bone tool production, and to explore the animal husbandry and hunting culture that took place at the site. Collagen peptide mass fingerprinting (ZooMS) was applied to the 79 samples of raw material, semi-finished, and finished products to identify their species based on differences in collagen amino acid sequences. Results show the majority of semi- and finished products were cattle, with a few deer bones and antlers, and exotic materials such as tortoise shells. Raw materials have a more diverse range of domestic and wild animals, including sheep, pigs, deer, and dog. Overall, this research will be the first study to apply the ZooMS method to Middle Shang samples, which will expand the method's feasibility on Chinese samples and provide new insight into craft production in Shang Dynasty China.

### **Engaging with Real People, Past and Present: The Peopling the Past Project**

**Megan Daniels** (Ancient Mediterranean and Near Eastern Studies, UBC)

This paper outlines the development and design of educational resources by the Peopling the Past project, a collaborative digital humanities initiative that produces and hosts open-access multimedia resources for teaching and learning about people in the ancient Mediterranean, West Asian, and North African worlds. Project resources include blogs, videos, and a podcast, which can be integrated into courses on ancient history and archaeology to promote authentic learning, allowing students to engage more deeply with peoples and histories that are chronologically and geographically distant. Research demonstrates that student engagement can be enriched through the engagement with media that target different modalities of learning, particularly interactive tools and rich-format content that can be incorporated into group work and active learning tasks. Student learning and engagement is further enhanced by the integration of media presenting the work of numerous diverse specialists, broadening the voices and perspectives presented to students. Peopling the Past resources aim to extend this multivocality to the peoples in the ancient world, whose voices and experiences are interpreted and conveyed by modern scholarship. Such multivocality is critical in the field of Ancient Mediterranean Studies, which remains deeply entangled with racist and exclusionary agendas which have impacted how scholars communicate knowledge.

### **Teamwork Makes the GPR Work: Learning GPR Through Collaboration**

**Liz Campbell** (Musqueam Archaeology Department), Kevin Wilson (Musqueam Indian Band; Intergovernmental Affairs GIS analyst), Aeli Black (Musqueam Indian Band; Heritage Permit Officer), Liz Campbell (Musqueam Archaeology Department; Operations Coordinator), Andrew Martindale (Anthropology, UBC)

Last year (2022), our team presented on Ground Penetrating Radar (GPR), and spoke to the UBC/LOA and xʷməθkʷəyəm partnership and how we worked together to develop an introductory GPR course. This course took place over 10 days, meeting weekly, between January and April 2022. The course had the involvement of roughly 30 participants and its goal was to build foundational GPR knowledge within Indigenous communities. With a focus on learning about how GPR works, what the results look like, how the results can be interpreted, and where this tool can be applied in both archaeological contexts and IRS settings. Our presentation for this year will briefly cover the basics of how GPR works, as well as the results of the 2022 GPR course, and the benefits of experiential learning from the course. We will then speak to how we used what we learned in the course and applied it to two contracted projects that we carried out collaboratively with UBC, the City of Vancouver, and Sk̓wx̓wú7mesh Úxwumixw, Tsleil-Waututh Nation community members who had participated in the 2022 GPR course. Working as a team and practicing what we learned in a field and project setting allowed us to continue to learn from each other, build relationships, and gain a better understanding of the workflows and processes required for GPR projects, and how the tool can be used. Finally, we will share what we plan for future projects and the look-ahead, and will provide resources for those who want to learn more.

## **Collaborative community-driven archaeology serving Tsleil-Waututh Nation's Cumulative Effects Monitoring Initiative**

**Meaghan Efford** (Institute for the Oceans and Fisheries, UBC), Dr. Villy Christensen (IOF, UBC); Spencer Taft (Tsleil-Waututh Nation); Dr. Jesse Morin (IOF, UBC); Dr. Camilla Speller (Anthropology, UBC); Dr. Andrea Reid (IOF, UBC); Patrick Lilley (Kerr Wood Leidal).

Tsleil-Waututh communities have lived in the watersheds of Burrard Inlet, British Columbia since time immemorial. Archaeology demonstrates that Tsleil-Waututh communities have sustainably fished, harvested, and hunted throughout the lands and waters in and around the Inlet for at least 3,000 years. This project combines archaeological research with fisheries and ecosystem sciences, Tsleil-Waututh community knowledge and traditional stewardship practices, and historical records to build a model of the Burrard Inlet ecosystem as it could have been before European contact and the following colonization and settlement of what is now also known as Vancouver, British Columbia, Canada in approximately 1792 CE. Archaeological investigations show abundances of mammals such as deer and seal, as well as birds like waterfowl and eagles, which balance out a wide array of fishes, including salmons and herring, and intertidal resources like clams. Our modelling demonstrates a diverse menu of foods that have been impacted by the urbanization of the City of Vancouver and the creation of the largest marine port in Canada, the Port of Vancouver. This project tracks changes and impacts over time and seeks to establish how much of the marine biota has been lost to or damaged by these long-lasting changes. We are using ecosystem modelling to test these questions and build a picture of the Inlet pre-colonization. This project is in collaboration with Tsleil-Waututh Nation as part of their Cumulative Effects Monitoring Initiative and ongoing stewardship and conservation work in their traditional territory.

## **A Tale of Two Rock Shelters: Preliminary Lithic Analysis from Two Rock Shelters in the Similkameen Valley, BC.**

**Megan Harris** (Anthropology, UBC)

The Similkameen Valley, British Columbia has long been an area of cultural exchange for Interior Salish (including Sylix and Nlaka'pamux) and Athabaskan (Stuwix) communities. Representing a unique physiographic and ethnographic transitional area between the Columbia and Fraser Plateaus, the Similkameen is characterized as a distinct, nuanced cultural landscape, separate from the two plateaus on either side. This paper presents preliminary results of the lithic analysis from the excavation as a part of the Chuchuwayha Research Project (CRP). As a part of this project, two sites have been excavated to date. Both sites are rock shelters with pictographs. However, the pictograph panels at each site depict different iconography. This paper presents the results of the preliminary lithic analysis from these two sites. Initial data suggests different occupational uses between these two sites.

## **The Problem with Pleuronectiformes: Developing a Reference Database for the Identification of Archaeologically Recovered Flatfish from the Pacific Northwest Coast Using ZooMS**

**Jay Hilsden** (Anthropology, UBC), Dylan Hillis (UVic Department of Anthropology), Denis E. St. Clair (Tseshah First Nation & Coast Heritage Consulting), Iain McKechnie (UVic Department of Anthropology); Camilla Speller (UBC Laboratory of Archaeology)

Fish comprise key aspects of culture, diet, and spirituality for Indigenous peoples on the Pacific Northwest Coast, reflecting deep human and environmental histories. Archaeological investigations, however, have historically emphasized the significance of salmon and herring despite flatfish (including flounders, soles, and halibut) being among the most ubiquitous fish occurring in sites from Oregon to Alaska. Additionally, reliably documenting which flatfish species occur archaeologically is hindered by their fragmentation and the morphological similarities between each species' skeletal elements. To address these issues, we apply collagen peptide mass-fingerprinting (ZooMS), using MALDI-TOF-MS, to identify archaeologically

recovered Northwest Coast flatfish to the species level. By using ZooMS to characterize the unique collagen peptide mass fingerprint of twenty-six modern North Pacific flatfish species, we constructed a preliminary database of Northwest Coast flatfish collagen biomarkers. The database will subsequently be evaluated using a test sample of seventeen archaeological specimens from Tseshah First Nation territory in Barkley Sound, western Vancouver Island. Considering each species in the database has a distinct biomarker set, we expect the archaeological samples to be identifiable to the genus or species levels when compared against the biomarkers identified in the modern samples. If ZooMS successfully identifies these archaeological flatfish samples, additional flatfish assemblages could be investigated to supplement zooarchaeological analyses. By generating higher resolution data, interpretations of the importance of flatfish to the Northwest Coast Indigenous peoples' lifeways can be made, having relevance to modern contestations of land and title, while also supporting current efforts in marine conservation and fisheries management.

### **Leave no stone unturned: Establishing a proteomic signature of beerstone for the identification of archaeological ale production**

**Lindsey Paskulin** (Anthropology, UBC), **Krista McGrath** (Institute of Environmental Science and Technology, Universitat Autònoma de Barcelona), **Richard Hagan** (University of York), **Camilla Speller** (University of British Columbia), **Jessica Hendy** (University of York)

Ale, an alcoholic beverage of fermented barley malt, is characterized not only by the specific ingredients and process of its production, but by its role as a symbol imbued with cultural and social significance. In archaeological contexts, identifying processes of ale production and consumption has contributed to understandings of agriculture, labor mobilisation, economic surplus, feasting, gender dynamics, social structure, tribute, community, identity, and politics. Nevertheless, brewing activity is difficult to distinguish in the archaeological record, and the applied methods are often limited by constraints of preservation, and tissue and taxonomic specificity. A potential target for studies of ale production are residues formed during brewing activity, including beerstone, a residue composed primarily of calcium oxalate which binds to ceramic vessels used for ale fermentation and maturation. Due to its mineral structure, beerstone is likely to survive in the archaeological record and may serve as a reservoir for ancient biomolecules. Here, we apply shotgun proteomics to the analysis of modern beerstone with the aim of establishing a protein signature for beer production in archaeological contexts. Proteins matching to barley grain (*Hordeum vulgare*) and Baker's yeast (*Saccharomyces cerevisiae*) were successfully identified in the residue, supporting our hypothesis that beerstone entraps proteins reflective of the ale-making process during its formation.

### **Challenge accepted: Developing virtual school programs in Archaeology**

**Christine Perrier** (Laboratory of Archaeology, UBC), **Patricia Ormerod** (Laboratory of Archaeology, UBC),

In 2020, with school visit to MOA shut down, Archaeology volunteers decided to jump into action and developed 2 new virtual programs for grades 4-7 that successfully reached hundreds of students. With the return to normality, and more programs in their pockets, they are constantly challenging themselves to make the archaeology journey an even more exciting one for everyone.

## **In Praise of Woodlands: A Meditation on Sustainable Indigenous and Agrarian Land Use Practices**

**Natasha Lyons** (Ursus Heritage Consulting; Simon Fraser University) Chelsey Gerald Armstrong (Indigenous Studies, SFU), Michael Blake (Emeritus, UBC Anthropology), & Morgan Ritchie (Sts'ailes Nation, Rights and Title; UBC Anthropology)

This paper explores the concept of woodlands, defined as naturally-growing forests that are managed, often for great durations of time, by people who hold relationships to them. Woodlands are a generally under-appreciated component of different systems of cultivation and land use, created and maintained by cultural communities with various intended outcomes: to produce sustainable sources of timber, fuel, food and medicine, as well as to nurture the beauty, abundance and habitat of these places for many diverse beings. This paper forms a meditation on some of the principles and practices involved in the sustenance and care of woodlands, particularly those shared by Indigenous Nations of the Pacific Northwest and agrarian farmers of the American southeast. The ways of life and land use pursued by these respective groups employ highly skilled, iterative and dynamic set of processes that bind people to landscapes in enduring relationships that honour the laws and limits of Mother Nature. We explore teachings drawn from land users, practitioners, and knowledge-holders, including ideas about cultivating research relationships to woodland spaces, and apply these to our work in forest gardens of the Pacific Northwest. In a world where many are searching for ways to transform our relationships to nature, we offer one model of sustainable land use for a world in dramatic flux.

## **Learning through Lax Kwil Ts'i'it: a Multidisciplinary Field School at Clamstown**

**Max Miner** (UBC Institute for the Oceans and Fisheries), Bryn Letham, Kim-Ly Thompson, Simone Reece, Johnston Reece, Dana Lepofsky, Brian Hunt, Camilla Speller.

The people of the Gitga'at First Nation have managed a sustainable bivalve fishery at Lax Kwil Ts'i'it (Clamstown) for thousands of years. In recent years, biotoxin monitoring has identified elevated levels of saxitoxin in butter clams at Clamstown, leading to the closure of the fishery. This fishery closure is set within the larger framework of anthropogenic climate change and the impacts of colonial resource management on First Nations resource use. In this presentation we discuss an ongoing research, education, and knowledge sharing project centered around Gitga'at resource use and efforts at revitalizing Gitga'at stewardship at Clamstown. We will review completed and ongoing archaeological field work and outline the collaborative development of an upcoming field school. This field school, hosted by the Gitga'at and Coast Mountain College and funded through UBC's Indigenous Strategic Initiative, pairs western and Indigenous methodologies in archaeology, resource management, and monitoring. Students will work with Gitga'at and settler instructors to discuss the history and culture of Indigenous Peoples of northwestern BC, with a focus on how deep-time connections to place and landscape inform cultural knowledge, practices, and traditions.

## **Using Repositories as a Resource for Indigenous Communities**

**Nolan Thiffault**, Mike Robertson, (Cheslatta Carrier Nation)

We will discuss how repositories can become helpful resources for Indigenous communities. Cheslatta Carrier Nation's recent engagement with the UBC Laboratory of Archaeology and Museum of Anthropology will be discussed as an example.

## **Posters**

### **Whales in Tseshah First Nation Territory: Investigating Species Occurrence in the Archaeological Record using ZooMS**

**Kara Ren** (Anthropology, UBC), Iain McKechnie (UVic Department of Anthropology), Dylan Hillis (UVic Department of Anthropology), Denis St. Claire (Tseshah First Nation & Coast Heritage Consulting), Camilla Speller (Anthropology, UBC)

Indigenous Nuu-chah-nulth communities on western Vancouver Island have significant relationships with toothed and baleen whales spanning millennia. While considerable archaeological and ethnographic evidence of these relationships exists, most archaeologically recovered whale remains are highly fragmentary, making it difficult to determine skeletal elements let alone species level identifications. Here, we describe a rapid and cost-effective biomolecular method of collagen peptide mass-fingerprinting (ZooMS) for identifying whale species from samples that are otherwise too fragmentary for morphological identification. By expanding the existing ZooMS reference database with 10 modern reference beaked whale samples, we processed 47 archaeological Cetacea samples collected from eight Tseshah First Nation village sites as part of an ongoing collaborative project between Tseshah First Nation, University of Victoria, and Pacific Rim National Park Reserve. The modern reference samples expanded the number of collagen fingerprints and provide further differentiation from other toothed and baleen whales, thereby improving the range of species possible for identification using ZooMS. For the archaeological samples, we expect the composition of whale species to largely parallel those seen in previous studies within Barkley Sound. Furthermore, these results will strengthen current understandings of whale species composition on the Pacific Coast of North America in ancient times.

### **The Trouble with Tar: Collagen Preservation in Asphalt Impregnated Bones**

**Kendra Leishman** (Anthropology, UBC)

The Rancho LaBrea (RLB) tar sand in Los Angeles California is known for its highly preserved megafauna. Researchers have been attempting collagen extraction on RLB faunal assemblages for over 50 years for the purpose of isotope and radiocarbon analyses. There has yet to be extensive research on the applications of Zoo-archaeology by Mass Spectrometry (ZooMS) to these materials. This research fills this gap, as a pilot attempt of ZooMS analysis on LaBrea Tar Sand faunal material. The project aims to answer if ZooMS taxonomic identification is possible on RLB materials. Analysis will be conducted on bone samples which have had tar removed, as well as on untreated bones, aiming to assess the relationship between visible asphalt saturation and total MALDI-TOF spectra peaks. As DNA analysis is costly and has not yet seen success in RLB materials, this research could provide great additional insight to fauna populations of RLB, as well as tar saturated faunal assemblages around the world (Cuba, Ecuador, Trinidad and Tobago etc.).