

COUNCIL FOR MINNESOTA ARCHAEOLOGY PROGRAM

Virtual Conference
February 26-27, 2021

Elden Johnson Lecture given by:
Dr. Rob Mann | St. Cloud State Uni.

Welcome All!

Welcome presenters and attendees alike to the 2021 CMA Conference! While it certainly is not the CMA's first conference, it is, like many organizations this past year, the group's first ever online conference. The virtual venue will come with some new challenges, but these are far outweighed by the fact we can now use this platform to provide a means for archaeologists not only in Minnesota, but across the broader Midwest and Canada to come together and share their work from this unique past year.

We are humbled to see so many of you participating: CMA members and non-members, the public, students and professionals alike. And we are excited to engage with the research everyone has come together to share. Hopefully our organization can continue bringing archaeologists together from across the greater Midwest in the years to come.

Thank you for joining us, and we can't wait to see you online!

2021 CMA Conference Committee

Chair: Jennifer Rankin, Minnesota Historical Society

Bruce Koenen, Office of the State Archaeologist

Jennifer Tworzyanski, Office of the State Archaeologist

Amy Ollila, Minnesota Historical Society

Laura Koski, Zooarchaeo Consulting, CMA Vice President

Special Thanks to our Hosts and Technical Support:

Laura Koski, Zooarchaeo Consulting, CMA Vice President

Bruce Koenen, Office of the State Archaeologist

Jennifer Tworzyanski, Office of the State Archaeologist

Scott Tooker, Minnesota Historical Society

Amy Ollila, Minnesota Historical Society

Matt Finneman, Minnesota Historical Society

Engage with the Council for Minnesota Archaeology

Website: mnarcheology.org

Facebook: [@CouncilforMinnesotaArchaeology](https://www.facebook.com/CouncilforMinnesotaArchaeology)

Questions: Contact Jeremy Nienow, President, at jeremy.nienow@gmail.com

Interested in Membership: Contact Laura Koski, Vice President, at ljoreenl@gmail.com

Virtual Meeting Logistics

How to Join

The conference will take place **entirely on Zoom**.

Click on the links for respective days below and follow the on-screen instructions.

Additional Zoom Log-in Details:

You do not need a paid Zoom account to participate in the meeting. You can make a **free account** day-of by clicking the meeting link, or make a free account prior to the meeting start at zoom.us/freesignup/.

Please use your full name when joining the meeting. This enables meeting hosts to easily locate presenters and field questions from attendees during Q&A.

When:

Friday, February 26th from 11am to 6:30pm CST

Saturday, February 27th from 9am to 2:00pm CST

Conference Details and Link for Friday, February 26:

Join Meeting Here:

<https://us02web.zoom.us/j/86901639966?pwd=eStvUVozd3ljckNIcjZkbDNjNnhXUT09>

Meeting ID: 869 0163 9966

Passcode: 743267

Dial by your location

+1 301 715 8592 US (Washington DC)

+1 312 626 6799 US (Chicago)

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+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

+1 669 900 6833 US (San Jose)

Find your local number: <https://us02web.zoom.us/u/k1unn6Ofc>

Conference Details and Link for Saturday, February 27:

Join Meeting Here:

<https://us02web.zoom.us/j/81811080419?pwd=bW8rdGJacWVYOUd5ajRYNzFtUWpBdz09>

Meeting ID: **818 1108 0419**

Passcode: **322239**

Dial by your location

+1 312 626 6799 US (Chicago)

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+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

Find your local number: <https://us02web.zoom.us/j/81811080419?pwd=bW8rdGJacWVYOUd5ajRYNzFtUWpBdz09>

Conference Procedure

Presentations will be 15 minutes in length with 5 minutes following for Q&A with the audience. Moderators will field questions to the presenters. If you have questions you can write them via direct chat to the announced moderator during or immediately following the presentation, and the moderator will do their best to fit all questions in within the time allowed.

Posters (and/or digital media presentations) will be made available to all registered conference attendees at the beginning of the conference on Friday, February 26th via email and through access granted to the CMA Google Drive folder. In addition, posters will be shared on screen during scheduled 20-minute breaks throughout the day. This open discussion format during poster sessions is designed to be engaging. The hosts will change the security settings during presentations to allow the option for all participants to unmute, ask questions and engage researchers, and have an open discussion.

Throughout the conference, the moderators will be sharing links through chat, including the links to the CMA Google Drive folder for those who have missed the email and any associated digital media that the posters or presentations may wish to share.

Posters and recorded presentations will be made available to registered conference attendees following the conference via the CMA Google Drive folder and the CMA YouTube account. A post-conference statement and links will be provided following the conference with additional details and access instructions.

Instructions for Presenters

Presenters will be made co-hosts when their slot comes up and will be sharing their presentation from their screen.

All presenters should join the call **at least 20 minutes prior to their time slot** so we can ensure they are set up in time for their talk.

If presenters wish to test out their Zoom abilities beforehand, please email us as soon as possible and we can organize a test run (Laura Koski at ljoreenl@gmail.com)

We do ask presenters to also **send a copy of their presentation to Jennifer Rankin (jennifer.rankin@mnhs.org) by 9pm on Thursday, February 25th**. This way, if there are technical issues during the live event, we can share your presentation for you.

Be aware the **audience may include members from the public**. Please be sure you do not share any information not suitable for all potential audience members. You may decide what is and is not suitable at your discretion.

Also be aware we plan to record all presentations for later public accessibility. If you prefer we do not record and share your presentation, or make your poster accessible to viewers after the conference, please contact Jennifer Rankin (email above).

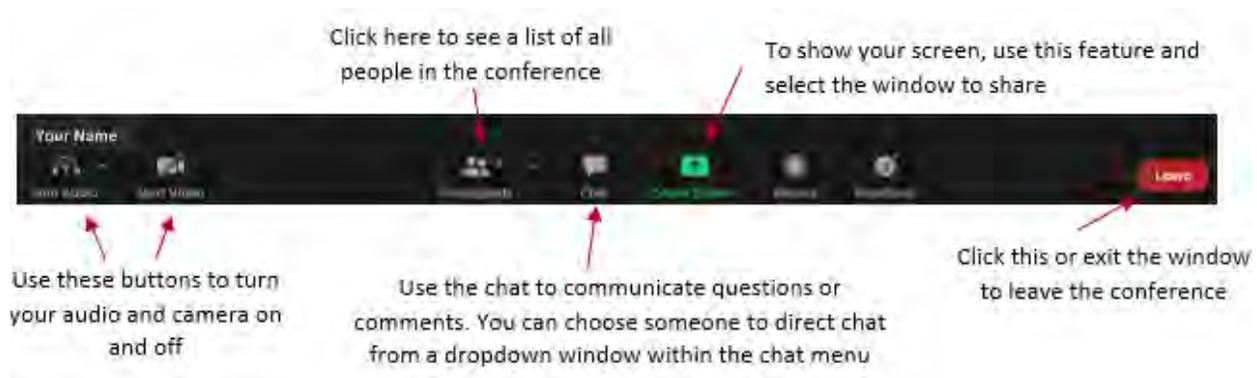
Instructions for Participants:

Audience members are free to enter and exit of the conference as they please. When joining the meeting, please use your full name.

If there are any presentations you are unable to attend, recordings of most presentations will be made available soon after the conference.

All audience members should keep their microphones on mute and deactivate their cameras during the presentations to save on bandwidth and prevent visual and audible distractions during presentations. Audience members may turn their microphones and cameras back on during poster sessions.

Questions are encouraged! If you have questions during or immediately after presentations, use the chat function to direct-chat the announced moderator, and they will ensure as many questions are addressed as possible within the time allowed.



If any participants require extra help learning Zoom prior to the conference, contact Laura Koski (ljoreen1@gmail.com) for a more detailed guide to Zoom.

Conference Schedule (CST)

Friday, February 26, 2021 (AM)

Minnesota Statewide Updates

11:00 *State Historic Preservation Office*
Amy Spong

11:20 *Office of the State Archaeologist*
Bruce Koenen

11:40 *Minnesota Historical Society*
Jennifer Rankin

Lunch Break: 12:00 – 1:00

During Break:

Poster Presentation (12:40-1:00): *Fossil Clues in Windrow Formation Associated Residual Cherts of Western Wisconsin and Southern Minnesota* (Dan Wendt, Minnesota Archaeological Society)

Friday, February 26, 2021 (PM)

1:00 *Greetings by the President of the Council for Minnesota Archaeology*
Jeremy Nienow (Nienow Cultural Consultants LLC)

1:05 *2021 CMA Virtual Conference: Friday Overview and Meeting Format*
Jennifer Rankin (Minnesota Historical Society)

1:20 *Interpreting Style in Midwestern and Plains Ceramic Artifacts*
Michael G. Michlovic (Minnesota State University-Moorhead, Emeritus)

1:40 *The Kent Site (21WL71): Net-Impressed Ceramics, Winter Occupations, and the Initial Woodland Period in the Red River Valley*
Jackson Carr (Minnesota State University-Moorhead)

2:00 *Progress on the Handbook of Minnesota Precontact Ceramics, Part 1*
George Holley (Minnesota State University-Moorhead)

2:20 *Progress on the Handbook of Minnesota Precontact Ceramics, Part 2*
Edward Fleming (Science Museum of Minnesota)

2:40 Break

During Break:

Poster Presentation: *Evidence of Middle Woodland Maize Cultivation from Lake Sediment Cores, Lake of the Woods, Ontario, Canada* (Matthew Boyd and Kira Birch, Lakehead University)

3:00 *Galena Group Chert Resources of Forestville / Mystery Cave State Park and Wykoff Balsam Fir Scientific and Natural Area*
Dan Wendt (Minnesota Archaeological Society)

3:20 *Identifying the Unidentifiable: Using ZooMS to Advance Zooarchaeology in the Midwest*
Laura Koski (Zooarchaeo Consulting LLC, University of York BioArch)

3:40 *Digital Archaeology at MNHS: Creating an Online Reference Collection*
Steve Goranson (Minnesota Historical Society)

4:00 *How the Early Woodland Got the Shaft: Contracting-Stem Projectile Points Hafting Strategies and Atlatl Shaft Materials*
Ryan J. Howell (United States Army) and Virgil Hayes

4:20 *UNI Dig Central Hall: Brick Analysis Through Color Typology*
Dakota Maas (University of Northern Iowa)

4:40 *Makers Marks and Lake Names: Daylighting the Challenges and Opportunities Associated with a "Remarkable" Fur Trade Collection from the Border Lakes Region of Minnesota*
Lee R. Johnson (Superior National Forest)

5:00 Break

5:30-6:30 ***Elden Johnson Lecture:***

A Haunted Past and Haunting Presence: The Archaeology of Civilian and Military Forts Built during the Dakota-U.S. War of 1862
Rob Mann (St. Cloud State University)

Although relatively unknown outside of the state, the impacts of the Dakota-U.S. War of 1862 are far-reaching and ongoing in many Minnesota communities. Prior to the 1850s the kin-ordered social relations of the fur trade era governed the interaction between most Euro-Americans and Native peoples in Minnesota. Many early white immigrants arrived in Minnesota believing they would seamlessly integrate into this kin-ordered world. However, the relentless land grabbing of settler colonialism actually led to the hardening of racial categories and the disintegration of peaceful relations between Natives and newcomers. By August 1862 long-simmering tensions between the Dakota and Euro-Americans boiled over into open warfare. For nearly two months militant Dakota waged war against Euro-American settlements and military installations. In response, settlers across Minnesota either fled the war zone or attempted to fortify their settlements. The U.S. military responded by constructing a number of fortifications. Although remembered and commemorated in local and state historical narratives, both the so-called "settlers' forts" and military installations of the Dakota-U.S. War of 1862 are today a largely unexplored and haunting part of Minnesota's archaeological heritage.

Saturday, February 27, 2021 (AM)

9:00 *Greetings by the President of the Council for Minnesota Archaeology*
Jeremy Nienow (Nienow Cultural Consultants LLC)

9:05 *2021 CMA Virtual Conference: Saturday Overview and Meeting Format*
Jennifer Rankin (Minnesota Historical Society)

9:20 *Late Pre-Contact Plant Use at the Sheffield Site*
Jasmine Koncur (Science Museum of Minnesota)

9:40 *Christmas Lake Survey and Underwater Archaeology Project*
Ann Merriman and Christopher Olson (Maritime Heritage Minnesota)

10:00 *An Assemblage of Bone Hair Pipe Beads with Possible Connections to the Red River
Oxcart Trails*
David Mather (Minnesota State Historic Preservation Office)

10:20 Break

During Break:

Poster Presentation: *Preliminary Analysis of the Wanaki Logging Camp Excavation, Cass Lake, Minnesota* (Andrew Domine, St. Cloud State University and Sean Dunham, Chippewa National Forest)

10:40 *Fasten-ating Archaeology: Research and Documentation of the Fort Snelling Button Type Collection*
Laura Meier (University of Minnesota -Twin Cities)

11:00 *Primed: The Percussion Caps of Historic Fort Snelling*
Spencer Fehr (St. Cloud State University)

11:20 *Preserving the Past: Conservation of Archaeological Collections at the Science Museum of Minnesota*
Taylor Brehm (Science Museum of Minnesota)

11:40 *Protecting MN's Archaeological Heritage: Case Studies from the Charles A. Lindbergh House/State Park and Lake Bronson State Park*
Dave Radford, Jennifer Rankin, and Scott Tooker (Minnesota Historical Society)

Lunch Break: 12:00 – 1:00

During Break:

Poster Presentation (12:40-1:00): *Fire History on Windigoominis in Gaa-zagaskwaajimekaag as a Starting Point for Conversations on Resource Management and Cultural Exchange* (Kurt Kipfmüller¹, Daniel Brumm¹, Amy Burnette², Daniel DeVault³, Sean Dunham⁴, Marcie Gotchie⁴, Lane Johnson⁵, Evan Montpellier¹, Melinda Neville³, and Madison Pettersen¹)

¹Department of Geography, Environment, and Society, University of Minnesota, Minneapolis, MN

²Division of Resource Management, Leech Lake Band of Ojibwe, Cass Lake, MN

³Leech Lake Tribal College, Cass Lake, MN

⁴Chippewa National Forest, United States Forest Service, Cass Lake, MN

⁵Cloquet Forestry Center, University of Minnesota, Cloquet, MN

Saturday, February 27, 2021 (PM)

1:00 *Examining Environmental and Land Use Impacts: A Risk Assessment of Camp Coldwater*
Keyah Adams (University of Minnesota-Twin Cities)

1:20 *Using Matterport Technology to Document Archaeological Sites*
Jeremy L. Nienow (Nienow Cultural Consultants LLC)

1:40 *2020 Phase I Survey of the Munroe Logging Railroad Turntable Site 21CA0804*
Fred Sutherland (Sutherland Relics and Rust) and Jeremy Jackson (Historical Researcher)

2:00 *Closing Remarks*
Jennifer Rankin (Minnesota Historical Society)

- End of Attendee Content -

CMA Membership Only

2:30 *Council for Minnesota Archaeological Annual Meeting*
A separate CMA Zoom link will be distributed via email.

Poster Abstracts

In order of presentation

Friday, February 26th

Dan Wendt

Fossil Clues in Windrow Formation Associated Residual Cherts of Western Wisconsin and Southern Minnesota

The Windrow Formation is present in western Wisconsin and southeastern Minnesota and reflects a long duration weathering of local bedrock and the concentration of iron rich residual deposits, alluvial sand and gravel during the long interval between the deposition of Paleozoic bedrock and the last ice age. Many of these deposits have a mix of chert that is heavily iron stained and varied in color, texture, translucency (Gonsior 1996; Boszhardt 1998). Certain high quality and brightly colored varieties were utilized preferentially by Paleoindian people for their characteristic fluted points. No bedrock source for these cherts has ever been found and these cherts were either altered or formed within the Windrow regolith. New information is presented on the distribution, characteristics and fossil content of specific varieties of these cherts that indicate that some represent reworking of chert from weathered Paleozoic bedrock in Minnesota while other varieties in Wisconsin formed within the Windrow formation at a much later time after the Paleozoic. Many varieties and actually most samples lack diagnostic fossils but they can be classified by physical characteristics into varieties.

Matthew Boyd – Lakehead University

Kira Birch – Lakehead University

Evidence of Middle Woodland Maize Cultivation from Lake Sediment Cores, Lake of the Woods, Ontario, Canada

Three sediment cores were collected in June 2019 in northeastern Lake of the Woods (Ontario) in order to test for the presence of maize pollen during the precontact period. Two of these cores were obtained in the immediate vicinity of two multicomponent Woodland archaeological sites; results from only one core are discussed in this presentation. Recovery of maize pollen in sediment dated to ~2100 cal BP provides firm evidence for gardening in this region by at least the

beginning of the Middle (Initial) Woodland period. These results are contextualized using archival sources, including maps of 19th century Indigenous garden islands (*gitigaanan*) in Lake of the Woods, and carbonized food residue (starch/phytolith) analyses. The latter show a consistent pattern of consumption of maize (occasionally in combination with common bean [*Phaseolus vulgaris*] and squash [*Cucurbita* sp.] and wild rice (*Zizania* sp.) throughout the Middle and Late Woodland periods across the southern margin of the Boreal Forest. In combination, our data document an interesting, surprising, and long-standing, history of food production at the edge of subarctic North America.

Saturday, February 27th

Andrew Domine – St. Cloud State University

Sean Dunham – Chippewa National Forest

Preliminary Analysis of the Wanaki Logging Camp Excavation, Cass Lake, Minnesota

During the 2020 field season, archaeological investigations were carried out at the Wanaki Logging Camp, a ca. 1900 logging camp on the shore of Cass Lake in the Chippewa National Forest. The camp includes seven structural features, including a large “dingle-style” barracks/cookhouse, strikingly defined by large berms and ditches. The project's goals include identifying the function of the different buildings and exploring the lifeways of the loggers. Ultimately, we want to see if patterns associated with various aspects of identity can be found, such as ethnic preferences shown in foodways, and build a richer understanding of the people who operated this camp. Fieldwork included metal detector transects and shovel tests as well as excavation units. These efforts yielded a wealth of data to address these questions, including extensive material on foodways, tobacco use, and potential differences in worker class. Our proposed poster will provide an overview of these investigations as well as our preliminary results.

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Kurt Kipfmüller – University of Minnesota-Twin Cities

Daniel Brumm – University of Minnesota-Twin Cities

Amy Burnette – Leech Lake Band of Ojibwe

Daniel DeVault – Leech Lake Tribal College

Sean Dunham – Chippewa National Forest

Marcie Gotchie – Chippewa National Forest

Lane Johnson – Cloquet Forestry Center

Evan Montpellier – University of Minnesota-Twin Cities

Melinda Neville – Leech Lake Tribal College

Madison Petterson – University of Minnesota-Twin Cities

Fire History on Windigoominis in Gaa-zagaskwaajimekaag as a Starting Point for Conversations on Resource Management and Cultural Exchange

The Star Island Fire History Partnership has developed a fire history using samples collected from fire-scarred stumps and logs on Windigoominis (Star Island), in Gaa-zagaskwaajimekaag (Cass Lake), MN to initiate conversations surrounding the influence of Ojibwe land use on forest landscapes. Star Island holds an important place in Ojibwe tradition as a gathering place and former residence. We identified fire events on the island that were contemporaneous with Ojibwe use suggestive of cultural fire traditionally used to enhance resource availability and manage forest vegetation. We identified 12 fires between 1747–1902 that were largely synchronous across the entire island. A cluster of fires in the late 1700s and early 1800s suggest fires were too frequent to have been started by natural phenomenon. The last fire recorded in 1902 is contemporaneous with the establishment of the Minnesota Forest Reserve (the Chippewa National Forest), the removal of the Ojibwe from the island, and increased recreational use of the island by white tourists. This fire history is a means of opening broad dialogue among interdisciplinary groups to share eco-cultural perspectives on fire, land use, and environmental history.

Paper Abstracts

In order of presentation

Friday, February 26th

Michael G. Michlovic

Interpreting Style in Midwestern and Plains Ceramic Artifacts

Ceramic styles are an important part of archaeological interpretation. Pottery types are used for chronology, for identifying prehistoric ethnic groups, and more recently, they have been used as a vehicle to reflect on past ideologies. This paper outlines some of the research directed to the use of ceramic style for insights into the belief systems of prehistoric cultures, and addresses the difficulty attendant on these efforts. The use of pottery styles to track intercultural associations is highlighted.

Jackson Carr – Minnesota State University – Moorhead, Undergraduate Student

The Kent Site (21WL71): Net-Impressed Ceramics, Winter Occupations, and the Initial Woodland Period in the Red River Valley

The Kent site (21WL71) was first documented during a Phase 1 reconnaissance survey of Whiskey Creek in Wilkin County, Minnesota. Associated with an undefined Initial Woodland phase titled “Dahnke” in the Red River Valley, this site demands a reassessment of the Initial Woodland period in the Valley. The Kent site was exposed by river action and yielded a large sample of artifacts on the surface, including net-impressed pottery and material suggestive of a winter occupation. This material will be discussed, followed by a brief regional comparison to other sites in the Red River Valley that have been identified as Dahnke Phase eligible. Though preliminary, the proposed Dahnke phase serves to clarify a previously ephemeral and often unrecognized Initial Woodland phase in the Red River Valley.

George Holley – Minnesota State University - Moorhead

Progress on the Handbook of Minnesota Precontact Ceramics, Part 1

The Phase I of the Handbook of Minnesota Precontact Ceramics is nearing an end and we have completed a first-run coverage of large areas of the state. Our attention focused on poorly known or problematical aspects of the ceramic story of Minnesota’s Native past. We have a first draft for the following regions and ceramic traditions: Fox Lake, Malmo, Dahnke (a newly created Initial

Woodland phase for the Red River Valley), Havanoid Middle Woodland, Cord Impressed Horizon, Central Minnesota Late Prehistory, and Southeast Late Woodland. A brief overview of the Malmo and Dahnke ceramics is presented along with the Cord Impressed horizon.

Edward Fleming – Science Museum of Minnesota

Progress on the Handbook of Minnesota Precontact Ceramics, Part 2

In an effort to grapple with the hopes and needs for a revised ceramic handbook for Minnesota, we worked with the Science Museum's Research and Evaluation team to generate a survey that compelled practitioners to reflect on the 1979 Ceramic Handbook and on their recommendations for the final product of the updated version. Results of the survey and recommendations will be summarized. In the spirit of our focus on addressing problematic or poorly known aspects of Minnesota ceramic traditions, a brief overview of Havanoid Middle Woodland ceramics in Minnesota with reference to their precursors and successors will also be presented.

Dan Wendt – Minnesota Archaeological Society

Galena Group Chert Resources of Forestville/Mystery Cave State Park and Wykoff Balsam Fir Scientific and Natural Area

Chert from the Middle Ordovician Galena Group was a widely utilized source of tool stone across four Midwestern States including Minnesota, Iowa, Wisconsin and Illinois. It occurs as an extensive lag deposit in the uplands south of Preston, Minnesota where it was heavily utilized for 10,000 years. Three new sources of Galena Chert have been identified in the middle stretches of the Root River Basin, including Forestville/Mystery Cave State Park (SP), Wykoff Balsam Fir Scientific and Natural Area (SNA), and the Fillmore area. Sampling of bedrock across these areas has clarified that chert occurs in both the Cummingsville Formation and the Prosser Formation of the Galena Group. The chert from the Cummingsville Formation tends to be coarser and has more moldic fossils while chert from the Prosser Formation tends to have a finer texture, more replacement fossils and less porosity. Both cherts share a consistent set of features that are diagnostic of the Galena Group across four states including characteristic crushed white chalky fossil fragments and trace fossil burrows. Local conditions and type of deposit can yield a wide range of color, from light yellow gray to dark brownish gray in Galena Chert of both formations.

Laura Koski – Zooarchaeo Consulting, LLC and University of York BioArch

Identifying the Unidentifiable: Using ZooMS to Advance Zooarchaeology in the Midwest

Zooarchaeology by Mass Spectrometry, or ZooMS, was first proposed and developed by Michael Buckley, Matthew Collins, and colleagues in 2009 at the University of York as a method for

identifying the taxonomic association of bone fragments with no useful morphological indicators. Using surviving Type I collagen in organic tissues, ZooMS utilizes peptide mass-fingerprinting to identify the species of namely heavily fragmented bone and modified bone artifacts but also fur, egg shell, and hides. Now over ten years since its introduction, this method, more affordable and less destructive than aDNA sequencing, has begun to be widely used in Europe and eastern Canada while still little heard of in the U.S. The use of paleoproteomics is typically overlooked by archaeologists in the Midwest as a costly and lengthy procedure not worth the results. With the continual improvement of the ZooMS process and the potential for a regional lab space, it is time the method be given a chance as a regular means of zooarchaeological identification when the bones otherwise give us no clues. This potential will be discussed in the most practical sense through a general discussion of methods and materials, case study examples, and how the ZooMS method could prove an invaluable tool in better understanding the zooarchaeology of Minnesota and neighboring states.

Steve Goranson – Minnesota Historical Society

Digital Archeology at MNHS: Creating an Online Reference Collection

The Minnesota Historical Society Archaeology department has over 1500 historical artifacts in their comparative collection. Being a repository for various archaeological collections, we need to preserve these artifacts while also making them accessible. The goal of this project has been to create an online reference collection with high-quality photographs, associated artifact information, and creating an accessible website for all. With creating research materials for archaeologists professional and amateur, museum staff, and the public we are able to allow these artifacts to be preserved longer, in addition to creating accessible information for exhibit and curriculum development, publications, and websites. By providing an online reference collection for researchers, this can cut down on unnecessary trips to the repository, saving time and money. While at the same time allowing the reference collection to be easily accessible and usable to a broader audience. This project can lead to long-term results of creating an online reference collection for all comparative collection artifacts at MNHS.

Ryan J. Howell – United States Army

Virgil Haynes

How the Early Woodland Got the Shaft: Contracting-Stem Projectile Points Hafting Strategies and Atlatl Shaft Materials

The projectile points of the Early Woodland period in the Upper Midwest (ca. 2500-2000 B.P) are dominated by two primary stemmed point types, Kramer and Waubesa-type points. These points feature two different stem types, a bladed flat base (Kramer) and a more rounded contracting-stem (Waubesa). This paper discusses possible reasons for the use of these two base styles and

presumed associated hafting techniques. The hypothesis is put forward that atlatl dart shaft material constraints were the primary factor in the use of these base styles. Preliminary data further suggests that the use of river cane versus hard/soft wood shafts can be recognized archaeology by proxy from the presence of these points.

Dakota Maas – University of Northern Iowa, Undergraduate Student

UNI Dig Central Hall: Brick Analysis Through Color Typology

In the Spring Semester of 2018, students of the University of Northern Iowa excavated the grounds of the former Central Hall. Central Hall served as a main building on campus that survived almost a century until it burned down in 1965. It was originally built in 1869 to be a shelter for children orphaned by the Civil War. In 1909, the building was transformed into the Iowa State Normal School and later, the Iowa State Teacher's College in 1961. In the decades following the fire, four buildings were erected and renovated in the vicinity of Central Hall. Fifty years after its destruction, archaeological interest in finding remnants came to fruition. Following the excavation, many contemporary artifacts were unearthed and were dated using historical research. However, many artifacts were non-diagnostic like bricks. In lieu of conventional methods to date the brick, the team employed strategies such as color typology as a means of sourcing brick to buildings near the site. This novel technique allowed researchers to potentially source the brick and indirectly dating it by matching it to buildings with known construction dates. This paper proposes that color sourcing holds potential for non-diagnostic artifacts to reveal information useful for archaeological interpretation.

Lee R. Johnson – Superior National Forest

Makers Marks and Lake Names: Daylighting the Challenges and Opportunities Associated with a “Remarkable” Fur Trade Collection from the Border Lakes Region of Minnesota

The attempt to reconstruct past human activity from static archaeological data is a difficult task, requiring careful reading of multiple lines of evidence and recognition that what is presented to the researcher is a mere fraction of what was. Components of the archaeological record at a given site-or a collection of temporally associated sites arranged across a landscape-can be described as pages in a book; some of which are legible, some partially legible, and some of which are missing entirely. This presentation will examine the return of some of these “missing pages” by way of a nearly 1000-piece Fur Trade-era assemblage that was recently donated to a public museum in Minnesota. The collection, which was amassed from public lands in the Border

Lakes Region in the 1960s-1970s by a private collector, was described by the late Doug Birk as “one of the best” with “great historical value”. However, questions remain as to how these pages can be best inserted into the existing narrative and what is the overall research value of artifacts, however significant, that have been disjoined from the archaeological record with insufficient context?

Saturday, February 27th

Jasmine Koncur – Science Museum of Minnesota

Late Pre-Contact Plant Use at the Sheffield Site

The Sheffield site, a 14th century Oneota village located along the lower St. Croix River was the focus for four field seasons for the Science Museum of Minnesota. During these excavations soil from twenty-seven cultural features was recovered. In 2013 and 2017, the Science Museum of Minnesota received Legacy grants to process the soil samples from these features and to analyze the botanical material. This information documents subsistence practices at the Sheffield site and also helps build our understanding of plant use practices during the Late Pre-Contact period.

Ann Merriman – Maritime Heritage Minnesota

Christopher Olson – Maritime Heritage Minnesota

Christmas Lake Survey and Underwater Archaeology Project

Maritime Heritage Minnesota completed a remote-sensing side and down-imaging sonar survey of Christmas Lake in early May 2020, with supplemental scanning completed in mid-June. Prior to MHM's comprehensive remote sensing survey, there were no recognized nautical archaeological sites on the lake bottom, although 2 wrecks were known to sport divers. After sonar data analysis, MHM recognized 64 anomalies that have or will require investigation by SCUBA to determine their nature, or additional targeted sonar survey that would produce more detailed images for clarification purposes. SCUBA reconnaissance took place in June and July, 2020. Upon the completion of the 2020 Christmas Lake Sonar Survey and Nautical Archaeology Project, MHM identified 13 wrecks, 5 maritime sites/cultural resources, 7 'other' objects, 1 log, and 3 trees, with 35 anomalies awaiting identification. Twelve of the 13 wrecks have Minnesota Archaeological Site Numbers. Volunteers Kelly Nehowig and Josh Knutson assisted MHM with the dive reconnaissance portion of the project. The entire project was funded by MHM supporter and friend, Dr. Natalie Rosen. Without Natalie's generosity, this project would not have been undertaken. MHM's presentation will present our findings from the 2020 Project, showing the incredible visibility of Christmas Lake.

David Mather – Minnesota State Historic Preservation Office

An Assemblage of Bone Hair Pipe Beads with Possible Connections to the Red River Oxcart Trails

In the 1980s, 105 hair pipe beads were collected near the Canadian border in far northwestern Minnesota. The finder later gave them to someone else, who knew little of their origin and decided in 2017 to donate them to a museum. This was difficult with unknown provenience, so I conducted a brief analysis to facilitate transfer to the Kittson County Historical Society. The beads were industrially manufactured from cow bone. They are about 4 inches long, such as for a beaded breastplate or choker. They are remarkably uniform in appearance but have two slightly different forms. One has tapered ends with a drilled bore (46 beads). The others have blunt ends, with a smaller drilled bore (59 beads). These differences are further supported by statistical analysis of bead dimensions. Pink staining on some of the beads may be traces of vermilion. They do not appear to have been made into anything, suggesting that they were abandoned or lost during transport for trade, likely along the network of Red River trails that converged on Pembina. This idea is examined through consideration of historic contexts related to the fur trade, northwestern Minnesota, and the history of hair pipes and other beads.

Laura Meier – University of Minnesota - Twin Cities, Graduate Student

Fasten-ating Archaeology: Research and Documentation of the Fort Snelling Button Type Collection

In 2019, the Minnesota Historical Society transferred its comparative historical archaeology collection from its permanent location at Fort Snelling to the Kellogg Center in Downtown St. Paul. Noting the collection's low-visibility and inaccessibility at this time, the archaeology department decided to prepare the artifact records for upload to Collections Online and eventually develop a website to aid researchers in identification. In effort to properly document and describe the artifacts prior to upload, staff and interns alike researched various materials in-depth, with my focus being on one well-represented yet not-well documented artifact type in particular: buttons.

Given their ubiquitous nature, buttons are a common yet often overlooked find amongst archaeological sites around the world. With over 140 represented in the Fort Snelling Button Type Collection (a portion of the comparative collection) alone, Minnesota is no exception. Though their banality can, at times, deter archaeologists from taking a closer look, this research reveals the ways in which these mundane objects can, in fact, exhibit a number of diagnostic attributes that lend valuable insight into their manufacture, function, and age. Likewise, by tapping into the production history of bone and shell buttons in particular, I will demonstrate the common button's potential to expand interpretation and reveal stories much larger than itself.

Spencer Fehr – St. Cloud State University, Graduate Student

Primed: The Percussion Caps of Historic Fort Snelling

Invented in the early 1800's the percussion cap forever changed the world of firearms. At the height of their usage, they provided users with a reliability and durability that prior to that time had only been hoped for. Today percussion caps in the archaeological record are helping us to better understand weapon utilization, and availability. Research as part of a master's thesis takes a closer look at percussion caps recovered from Historic Fort Snelling, and their distribution across the historic fort. Additional, experimental archaeology utilizes the concept of "scar" marks that are imparted on caps during the firing process. Scar marks have previously been used to identify the movement and discharge of individual weapons across a battlefield. This research intends to carry those methods into a fort setting, where there have been few if any applications of these methods to date. While ongoing, final results are expected to be published no later than the fall of 2021 as a completed thesis project.

Taylor Brehm – Science Museum of Minnesota

Preserving the Past: Conservation of Archaeological Collections at the Science Museum of Minnesota

Artifact preservation is one of the most important considerations when planning an excavation or managing a collection. Objects can deteriorate through a variety of means, such as being exposed to air while digging, prior treatments, and improper storage methods. At the Science Museum of Minnesota, we implement different care needs based upon the artifact type and use conservation approved materials. Developing a plan for these circumstances will ensure future archaeologists are able to reexamine the material as meaningful sources of information of the past.

Dave Radford – Minnesota Historical Society

Jennifer Rankin – Minnesota Historical Society

Scott Tooker – Minnesota Historical Society

Protecting MN's Archaeological Heritage: Case Studies from the Charles A. Lindbergh House/State Park and Lake Bronson State Park

In 2020, Minnesota Historical Society and Department of Natural Resources archaeologists rushed to protect archaeological resources impacted and/or destroyed by severe rain events at several of our Historic Sites and State Parks. This trend has been identified across Minnesota over the last decade and it is predicted that the impacts of these weather events will increase in their frequency and severity in the coming decades, resulting in compromised integrity or destruction of our heritage resources. Such threats in Minnesota (e.g., severe weather events, wildfires, lake

and riverine shoreline erosion) are of concern, as they can be devastating to the past in which community's value and rely on or wish to preserve and bring into the future.

To set future archaeological research, education, and preservation priorities, the vulnerability of resources to climate change impacts and their importance to those priorities needs to be better understood. Our goal is to study, document, and mitigate immediate and long-term climate threats to the archaeological and heritage resources in Minnesota. Specifically, this work will identify vulnerable archaeological sites at MNHS Historic Sites and DNR State Parks; identify archaeological resources at risk in the future by modeling current trends, understand resource value and impact to economic value (such as tourism); and prioritize research, education, and preservation options based on these assessments. During this presentation, we will review the impact to historic properties over the last 10 years and review our recent case studies that resulted from severe rainfall events in 2020 at the Charles A. Lindbergh House and State Park and Lake Bronson State Park.

Keyah Adams – University of Minnesota – Twin Cities, Graduate Student

Examining Environmental and Land Use Impacts: A Risk Assessment of Camp Coldwater

Archaeological resources are being rapidly damaged by the environmental impacts of climate change, historic and modern land use, often resulting in their cultural and scientific value being destroyed forever. A 2016 statewide survey conducted by Two Pines Resource Group, LLC identified several archaeological features recommending future monitoring and potential mitigation at Camp Coldwater near Historic Fort Snelling.

Based on their survey, a site visit was conducted in October 2020 to monitor the status of the identified features and to evaluate any new impacts and further erosion from the original 2016 survey. A prototype site monitoring form was used to assess the condition of the archaeological features and implemented as part of a future monitoring program at Minnesota Historical Society.

Through comparative analysis between the 2016 survey and the 2020 site visit, three main issues were observed; active erosion, pedestrian foot traffic, and vegetation overgrowth. The result of this work was the development of a management and monitoring plan with recommendations for future investigations at at-risk archaeological loci. This subject will also be the basis of a master's capstone project with continued historical background research, imagery analysis of the site, and continued research of archaeological and traditional cultural properties by engaging with interested communities and partners.

Jeremy L. Nienow – Nienow Cultural Consultants, LLC

Using Matterport Technology to Document Archaeological Sites

Archaeologists have used cameras as long as they have been available to document their endeavors. As the technology improved, they moved from black and white, to color slide, to digital images. Today, digital cameras are able to stitch together and create 3D composite images. One such camera technology is available from a company called Matterport. The presenter has been experimenting with a Matterport Pro1 camera for the past five years in a variety of archaeological settings. This paper will give a brief overview of the technology, followed by examples of the work it can produce, as well as the pros and cons to using this particular type of 3D imagery.

Fred Sutherland – Sutherland Relics and Rust

Jeremy Jackson – Historical Researcher

2020 Phase I Survey of the Munroe Logging Railroad Turntable Site 21CA0804

In 2020, the Cass County Land Managers received a Minnesota Legacy Grant to allow Fred Sutherland and Jeremy Jackson to identify and map features related to the 1890s railroad facilities on their property. This was done in order to prevent any additional impacts from scheduled logging activity. Basing their work upon the studies conducted by Doug Birk and Jeremy Jackson, a team of volunteers including Collin Swift, Bryan and Becky Johnson, Kurt Haubrich, Lynda Weiss, and Reggie Silbaugh worked with Fred Sutherland and Jeremy Jackson to locate and map all historic cultural features near the turntable's location. The survey documented the turntable and engine shed, along with the extents of artifact scatters using metal detectors. Any objects related to the site that were located in this survey were photo documented, GPS marked, and returned to their find location. Originally known as Camp 8 in 1892, the outpost was renamed "Munroe" that same year. The abandoned grade, logging camps, and rail service sites via Gull Lake to Spider Lake were quickly forgotten. The records, photos and maps of the earlier B&NM were destroyed in a disastrous fire in Brainerd in 1917 ensuring that the B&NM would become the "lost railroad".