

Date: February 24, 2020

JSPS US ALUMNI ASSOCIATION SEMINAR PROGRAM  
**REPORT**

Organizer (Awardee)

**Name:** Dr. Anthony Tosi (JSPS Alumnus), Dr. Metin Eren & Dr. Michelle Bebber (co-organizers)

**Position & Affiliation:** Tosi (Associate Professor), Eren & Bebber (Assistant Professors),

Department of Anthropology, Kent State University, USA

<b>1. TITLE OF SEMINAR</b> Stone Age Science: Insights into the Deep Human Past
<b>2. DATE(S)</b> February 14, 2020
<b>3. VENUE &amp; CITY, STATE</b> College of Architecture, Rm 120, Kent State University, Ohio, USA
<b>4. TARGETED RESEARCH AREAS</b> (1) Archaeology                      (2) Ancient DNA & Genetics                      (3) Materials Science & Design
<b>5. NUMBERS OF PARTICIPANTS</b>  TOTAL: <u>~200</u> persons including <u>6</u> US Alumni Association members -US: <u>198</u> persons -FROM OVERSEAS: <u>2</u> person(s) including <u>2</u> person(s) from Japan

**NOTES FOR REPORT**

\*Please be sure to include the following contents. (Maximum 5 pages)

- Executive Summary
- Topics Discussed with Outcomes & Future Challenges
- Workshop/Seminar Agenda

## Executive Summary

The seminar “Stone Age Science: Insights into the Deep Human Past” brought together five leading Paleolithic (Stone Age) archaeologists: Drs. Metin I. Eren, Michelle R. Bebber, and Linda Spurlock from Kent State University; Dr. Seiji Kadowaki from Nagoya University; and Dr. David J. Meltzer from Southern Methodist University and the U.S.A. National Academy of Sciences. In essence, the seminar was a public lecture series that educated citizens of Ohio, Indiana, Michigan, and Pennsylvania on cutting edge discoveries from the field.

Dr. Eren discussed experimental archaeology, the subfield that recreates and then reverse engineers ancient artifacts. Dr. Spurlock presented her fieldwork at the famous Stone Age site of Manot Cave, Israel. Dr. Bebber lectured on Stone Age art, and how modern artistic principles can be applied to ancient artifacts. Dr. Kadowaki discussed his spectacular excavations in the Middle East, particularly in Jordan, and how these shed light on the transition from Neanderthals to modern *Homo sapiens*. Finally, Dr. Meltzer concluded the evening with a master class on the Stone Age Peopling of North America, and his work integrating archaeology, geology, paleontology, climate science, modern genetics, and ancient DNA.

In addition to the lectures, food and other refreshments were provided to all attendees of the seminar. Dr. Eren also presented a flintknapping demonstration, i.e. the recreation of ancient stone tools. Every seminar attendee received a program commemorating the day. Every student attendee also received a copy of the brochure, “JSPS International Fellowships for Research in Japan 2020.”

The seminar was wildly successful. There were over 200 people who attended the seminar throughout the day, and a majority of attendees stayed for all five lectures. Attendees praised the lectures, the organization, the venue, and were extremely appreciative to JSPS for sponsoring an event the likes of which has never been seen in Northeast Ohio.

Some photos from the reception dinner (Thursday) and seminar (Friday):



**Left:** Reception dinner including Dr. Seiji Kadowaki (Nagoya University), Mr. Takefumi Yamaguchi (JSPS Tokyo), Ms. Yuki Abe (JSPS Washington), and the faculty of the Kent State University Anthropology Department. **Center:** Dr. Anthony Tosi describes JSPS support in building international collaborations. **Right:** Dr. Metin Eren demonstrates stone tool replication during the seminar intermission.

## Topics Discussed with Outcomes and Future Challenges

Drs. Eren and Bebber took the lead in discussions with Dr. Kadowaki, especially through their meetings on the Saturday following the seminar. These discussions were primarily about two subjects: experimental archaeology and collaborative fieldwork.

With respect to experimental archaeology, Kent State University currently possesses the world's premier experimental archaeology laboratory. However, science is based on the independent replication of results. Thus, Drs. Eren, Bebber, and Kadowaki discussed building a "sister" experimental archaeology laboratory in Japan. These discussions focused on whether to try to build such a laboratory all at once, with a large proposal (approximately \$300,000.00), or piecemeal. The latter course of action was deemed more promising. Thus, Dr. Kadowaki will very soon be building the first part of his own Experimental Archaeology Laboratory at Nagoya University: the arrow ballistics range. Once the necessary equipment is purchased, Drs. Eren and Bebber will travel to Japan to help Dr. Kadowaki build the range, and then the three of them will conduct experiments involving prehistoric ballistics that will be tested in both labs at Kent State and Nagoya University.

With respect to collaborative fieldwork, Dr. Kadowaki invited Drs. Eren and Bebber to Jordan to participate on his excavations. In addition to collaborating on this fieldwork, some field experiments will also be conducted as Dr. Eren will attempt to recreate ancient Neanderthal stone tools with the rock sources near the archaeological sites. Applications for JSPS Summer Awards (for graduate students) and Postdoctoral and Invitational Fellowships (for faculty) were also discussed.

## Workshop/Seminar Agenda.

The seminar schedule and research abstracts are listed below.

Speaker	Time	Title
Mr. Takefumi Yamaguchi	1:00pm	JSPS Informational Session
Dr. Anthony Tosi	1:20pm	The Japan Society for the Promotion of Science: An invaluable partner for building international research programs
Dr. Metin Eren	1:30pm	Reverse engineering the Stone Age through experiments
Dr. Linda Spurlock	2:30pm	Manot Cave: A Middle and Upper Paleolithic site in Western Galilee, Israel
Dr. Michelle Bebber	3:30pm	Design principles in Stone Age art and tools
Intermission	4:30pm	STONE TOOL REPLICATION (Knapping demonstration by Dr. Eren)
Dr. Seiji Kadowaki	6:00pm	News from the desert: Stone Age behaviors and population changes from Neanderthals to modern humans in the Levant
Dr. David Meltzer	7:00pm	Archaeology, ancient DNA, and the Ice Age peopling of the Americas

**1:30pm, Dr. Metin Eren:** The future of archaeology is largely an experimental one. Experimental archaeology is the process of recreating artifacts to figure out how they were made, how they work, and why certain designs work better than others. Dr. Eren will be talking about the role of experimental archaeology in modern science, and how flintknapping and other artifact re-creation processes can reveal information about Paleoindians, Old World Paleolithic peoples, and ethnographic foragers. From the Neanderthals, to the Clovis people, to arctic hunter-gatherers, this lecture will discuss the incredible -- and not so incredible -- technologies of past peoples, all accurately recreated and robustly tested in the laboratory.

**2:30pm, Dr. Linda Spurlock:** The Levant is the only permanent land bridge between Africa and Eurasia. The expansion of modern humans of African origin across Eurasia, the movement of Neanderthal populations into the eastern Mediterranean, and the transition from Middle Paleolithic to Upper Paleolithic here are all important events. Manot Cave, in the Western Galilee of Israel, has abundant evidence for human occupation during the Early Upper Paleolithic period during the Early Ahmarian (46 – 42 ka) and Levantine Aurignacian (38 – 34 ka). This very large, active karstic cave has yielded human remains (cranial, dental and pedal) that exhibit a complex mixture of mostly modern *Homo sapiens* and some Neanderthal traits. One of the metatarsals shows a debilitating injury (Lisfranc's fracture) which healed well. This suggests the individual was cared for during recovery, within a supportive community.

**3:30pm, Dr. Michelle Bebber:** What is art? How do we know it when we see it? For millennia, scholars have contemplated the nature of aesthetic experience—and more recently neuroscientists have begun to explain how we experience and process art in the brain. A central question is understanding when, in our evolution, did we begin to appreciate beauty? And when did we first create something that could be considered “art”. Although most people envision the caves of Upper Paleolithic Europe (ca. 40,000 BP) as the earliest evidence for human art, the archaeological record shows that our appreciation for and creation of beautiful objects extends well beyond this period. Dr. Bebber will discuss evidence for the earliest artistic expression and provide a case study illustrating how the “Principles of Design”—used in the analysis of fine art, architecture, and product design—can also be used to understand the aesthetic appeal of North America's late Pleistocene Clovis culture.

**6:00pm, Dr. Seiji Kadowaki:** This talk presents new results of Dr. Kadowaki's archaeological investigations at several Paleolithic sites in south Jordan, focusing on behavioral changes among Paleolithic hunter-gatherers from the Middle Paleolithic to Upper Paleolithic period in the arid inland zone of the Levant. The Middle-to-Upper Paleolithic transition has been one of the major research topics in prehistoric archaeology because this cultural transition is known to have involved several clear changes in human behaviors (e.g., tool production, hunting, and ornaments) and broadly corresponds to widespread dispersals of modern humans in Eurasia and concomitant extinctions of archaic humans, such as Neanderthals. However, it is not fully understood how the Middle-to-Upper Paleolithic cultural changes contributed to the demographic increase in modern humans and the demise of Neanderthals. Clear changes in archaeological records at the transition from the Middle to Upper Paleolithic occurred in stone tool technology and resource procurement distance. Dr. Kadowaki will discuss the meaning of these changes, and their implications for

Neanderthals and modern humans in the Levant.

**7:00pm, Dr. David Meltzer:** It's quite certain people reached the Americas in Ice Age times. Yet, questions remain about who the first Americans were, where they came from, how and when they made it here, whether there was one or more migratory pulses, what they did once they reached this vast, diverse and then-unfamiliar landscape, how they responded to geologically-rapid climate changes then taking place, and what impact they may have had on the native fauna as they dispersed rapidly across the hemisphere. The good news is we have plenty of answers to those questions. The bad news is we can't say which answers are right. But thanks to new developments, particularly in genetics and especially ancient DNA, we can clarify certain issues, remove ambiguity in others, and point the way toward resolution of some still-disputed matters.