

A. Sky Heller

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Education

Ph.D. Candidate, Anthropology and Environmental Policy, 3.98 GPA
Anthropology Department, University of Maine
Dissertation (research in progress): *Archaeological evidence for past changes in fish ecology in the Gulf of Maine: Baseline data for future change under global warming*
Advisors: Dr. Daniel H. Sandweiss, Dr. Brian S. Robinson[†]

M.S. Quaternary and Climate Studies, focus in Prehistoric Archaeology, 3.96 GPA
Climate Change Institute, University of Maine
Thesis: *Histological Contributions to Species Identification of Calcined Bone from the Bull Brook and Morrill Point Mound Archaeological Sites*
Advisor: Dr. Brian S. Robinson

B.A. Anthropology/Religious Studies, 3.82 GPA
Robert E. Cook Honors College, Indiana University of Pennsylvania

Honors and Awards

1st Place, Pechakucha, Graduate Student Exposition, 2015
Chase Distinguished Research Assistantship, University of Maine Graduate School, 2015
IGERT Adaptation to Abrupt Climate Change (A2C2) Fellowship, University of Maine, 2013
Graduate Research Assistantship (Climate Change Institute, University of Maine), 2009 – 2011
Summa Cum Laude (Indiana University of Pennsylvania), 2007
Dean's List (Indiana University of Pennsylvania), 2002 – 2007
Board of Governors Scholarship (Indiana University of Pennsylvania), 2002 – 2006
Anthropology Honors Track (Indiana University of Pennsylvania), 2006
Phi Kappa Phi Study Abroad Grant, 2005
Phi Kappa Phi Honors Society Membership, 2005
Lambda Alpha Honors Society Membership, 2004
IUP Provost Scholar, 2004

Current Research Projects

Long-Term Fisheries Ecology along the Gulf of Maine Coast

- Recover and analyze fine-screen faunal remains from Nevin Shell Heap, Blue Hill, ME, Waterside Shell Midden, Sorrento, ME, and Seabrook Marsh Site, Seabrook, NH.
- Interpret findings within Late Archaic Period cultural history in the Gulf of Maine region, including expanding interpretations of ecological context of swordfish (*Xiphias gladius*) availability and hunting practices.
- Apply ecological interpretations to modern Gulf of Maine fisheries policy, especially in the context of planning for climate change scenarios.

Reanalysis of Symbolism at the Holmes Point West Site through DNA Identification of Key Samples

- Interdisciplinary project with Dr. Kristina Cammen, NSF Postdoctoral Fellow, Evolutionary Applications Lab, University of Maine
- Select, document, and sub-sample elements for DNA analysis to verify identifications.
- Expand and reanalyze phocid species temporal bone identifications used in interpretation of symbolic behavior in Ingraham et al. 2016 using DNA analysis.

Histological Analysis of Calcined Bone from Debert Archaeological Site, Nova Scotia, Canada

- International cooperative project with Dr. Leah Rosenmeier, Research and Interpretive Specialist, Mi'kmawey Debert Cultural Center.
- Section and perform histological analysis on rare calcined bone fragments from Debert Paleoindian site.

Faunal Analysis, Holmes Point West Site, University of Maine, September 2015 – Present

- Identify and catalog faunal remains from all years of the University of Maine Archaeological Field School at the Holmes Point West archaeological site with particular emphasis on phocid species.

Publications and Reports

Cammen, Kristina M., Sarah Vincze, Sky Heller, Brenna McLeod, Mike Kinnison, Tim Frasier
In process Genetic diversity from bottleneck to recovery in two sympatric pinniped species in the Northwest Atlantic. *Target Journal: Conservation Genetics*

Robinson, Brian S. & A. Sky Heller
2017 Maritime Culture Patterns and Animal Symbolism in Eastern Maine. *Journal of the North Atlantic*. 10(sp10):90-104.

Heller, Andrew R., A. Sky Heller, Brian S. Robinson
2016 *Report on mapping and excavations of Nevin Shell Heap (42-1), Blue Hill, ME*. In preparation for the Maine Historic Preservation Commission.

Ingraham, Robert C., Brian S. Robinson, Kristin D. Sobolik, and A. Sky Heller
2016 “Left for the Tide to Take Back”: Specialized Processing of Seals in the Late Ceramic Period on Machias Bay, Maine. *Journal of Island and Coastal Archaeology* 11(1):89-106.

Heller, A. Sky and Brian S. Robinson
2015 Currents of the Past: Archaeological evidence for past changes in fish ecology in the Gulf of Maine - Update. Born's Symposium Mini Paper.

2014 Currents of the Past: Archaeological evidence for past changes in fish ecology in the Gulf of Maine. Born's Symposium Mini Paper.

Research Presentations

Heller, A. Sky
2015 “Currents of the Past: Archaeological evidence for past changes in fish ecology in the Gulf of Maine - Update” 23rd Annual Harold W. Borns, Jr. Symposium, Climate Change Institute, University of Maine.

“Currents Past and Future: Archaeology, Fish, and the Gulf of Maine.” Graduate Research Exposition, University of Maine.

2014 “Currents of the Past: Archaeological evidence for past changes in fish ecology in the Gulf of Maine” 22nd Annual Harold W. Borns, Jr. Symposium, Climate Change Institute, University of Maine.

2011 “Fragments of the Past: Bone Histology and a Tool for Species Differentiation (Update).” 19th Annual Harold W. Borns, Jr. Symposium, Climate Change Institute, University of Maine.

2010 “Fragments of the Past: Bone Histology and a Tool for Species Differentiation.” 18th Annual Harold W. Borns, Jr. Symposium, Climate Change Institute, University of Maine.

- 2007 “Archaeology and the Bible: A Review of the Current Debate.” Undergraduate Scholars Conference, Indiana University of Pennsylvania.
- 2006 “Archaeology Outside the US: How Internships Enhance the Archaeological Student Experience.” Society for American Archaeology Conference

Outreach and Service

- Meet an Archaeologist, Glenburn Elementary 4th Grade Class, January 2017
- Zooarchaeology Block, University of Maine Archaeology Day, Spring 2015, 2016, 2017, 2018
- Graduate Student 3 Minute Thesis, University of Maine Board of Visitors Meeting, 2016
- Graduate Research Showcase, University of Maine Board of Trustees Meeting, January, 2016
“Currents Past and Future: Archaeology, Fish, and the Gulf of Maine”
- Treasurer, Graduate Student Government, University of Maine, Academic Years 2013-2014 and 2014-2015

Teaching Experience

Primary Instructor, Fundamentals of Archaeology (ANT 317), University of Maine, Spring 2016

This is a mid-level required course for Anthropology majors. The course covers theoretical bases of methods, fundamental principles, excavation and analysis techniques, application to specific case studies, and use of interdisciplinary tools in archaeological research.

Guest Lecture, ANT 101 – Intro to Anthropology: Human Origins and Prehistory, Spring 2017
“Archaeology of Maine”

Guest Lecture and Lab Tour, EES 117 – Intro to Ecology and Environmental Sciences, Fall 2016, 2017
“Ecological Applications of Zooarchaeology: What it is and current research”

Substitute Lecturer, ANT 101– Intro to Anthropology: Human Origins and Prehistory, Spring 2016, 2017
“Emergence of *Homo habilis* and tool making”

Guest Lecturer, ANT 478 – Zooarchaeology, University of Maine, Fall 2014
“Histological Methods of Analysis” and “Environmental Questions in Archaeology”

Assistant Lecturer, ANT 475 – Environmental Archaeology, University of Maine, Spring 2013
Various topics

Guest Lecturer, ANT 317 – Fundamentals of Archaeology, University of Maine, Spring 2011, 2012
“Introduction to Archaeobiology: Paleoethnobotany and Zooarchaeology”

Teaching Assistant, University of Maine Archaeological Field School, Holmes Point West Site, Maine, June 2010 and June 2012

Academic and Professional Experience

- Teaching Assistant, ANT 101, Anthropology Department, University of Maine, September – December 2018
- Write and deliver lecture on the archaeology of Maine.
 - Deliver multiple lectures during instructor absence.

- Hold regular office hours and manage student needs.
- Assist in basic class management and grading tasks.

Graduate Assistant, Hudson Museum, University of Maine, September 2017 – August 2018

- Conducted tours for academic groups from grade school through college level.
- Designed and installed multiple museum exhibits.
- Supervised undergraduate workers.
- Managed online presence including social media posts and website maintenance.

Supplementary Faunal Analysis, Holmes Point West site, University of Maine, January – May 2013

- Reviewed and supplemented previously completed faunal identifications
- Designed and implemented metric methods for species differentiation of seals from fragmentary skeletal materials
- Produced tables and figures for interpretation and publication

A2C2 IGERT Cooperative Immersion Project (CIP), December 2013 – September 2015

- Worked in an interdisciplinary setting to formulate and conduct cooperative research
- Mediated disciplinary gaps to ensure group cohesion and research progress

Archaeological Laboratory Manager, University of Maine, July 2011 – August 2013

- Managed employees and volunteers in laboratory techniques, including prehistoric and historic artifact processing and identification, fine-screen and flotation sample processing and analysis, and cataloging.
- Assisted visitors and researchers accessing the archaeological laboratory or collections.
- Managed laboratory resources, including employee administration, archaeological collections, and laboratory supplies.
- Managed laboratory logistics for space and efficiency.
- Designed, create, and maintain archaeological materials databases and digital catalogs.
- Assisted in ongoing research, including locating and providing necessary materials and collections, analyzing and cataloging research materials, and producing tables and spreadsheets for interpretation and publication.
- Processed, identified, restored, and cataloged pre- and post-contact period artifacts recovered from the Holmes Point (62-8) archaeological site in Machias, ME.
- Processed fine-screen samples, including developing and implementing a method for water screening and flotation and subsequent microscopic processing of samples.

Archaeological Field Technician, Wigwam Rapids Site, Maine, July 2012

- Field work was undertaken at the Wigwam Rapids site in consultation with the Passamaquoddy Nation and informed a planned public outreach and involvement initiative.
- Investigated and surveyed a known archaeological site to determine site extent, content, and history prior to conservation and reconstruction of an eroding riverbank.
- Rapidly excavated and mapped shovel-test pits and 1m x 50cm units to explore deposition history and site context within a limited survey period.
- Instructed and supervised volunteers in survey, excavation, and data recording techniques.
- Analyzed site content and logistics for use as a public archaeology project for the Passamaquoddy Nation.

Data Analyst, Fish and Wildlife Cultural Resource Management Project, University of Maine, February 2012

- Performed stratigraphic analysis and interpretation of lithic tool and debitage concentration data for the Mackowski Farm site in Milford, ME.
- Produced graphics for final project report.

Graduate Research Assistant, University of Maine, September 2009 – May 2011

- Developed and implemented a methodology for identifying calcined archaeological faunal remains from the Bull Brook and Morrill Point Mound archaeological sites using histological characteristics.
- Identified faunal remains (mainly fish) recovered from fine-screen samples from the Seabrook Marsh (NH-47-22) and Nevin archaeological sites, including processing fine-screen samples and identifying species-specific characteristics for differentiation of osseous fish remains.

Laboratory Technician, Arkansas Archaeological Survey, February 2008 – September 2009

- Conducted inventories of archaeological assemblages collected from dry bluff shelter sites throughout northwest Arkansas during the 1930s and 1960s, including properly handling and identifying fragile perishable materials rarely preserved in an archaeological context.
- Rectified inconsistencies in site assemblages using incomplete and partial records.

Independent Consultant, IUP Archaeological Services, June – July 2007

- Processed analytical soil samples from the Johnston (36 IN 2) site in Pennsylvania including water screening and flotation of samples and sorting and cataloging samples following flotation.

Curation Project Student Supervisor, IUP Archaeological Services, 2006 – 2007

- Managed and assisted student tasks while completing independent projects.
- Processed and curated archaeological collections acquired through Pennsylvania Department of Transportation (PennDOT) projects.
- Brought unfinished projects into compliance with Pennsylvania Historic and Museum Commission (PHMC) curatorial standards.
- Tasks included cleaning, labeling, cataloging, and properly storing artifacts as well as preserving, organizing, cataloging, and managing site and project documentation and completing paperwork for the proper submission of collections to the Pennsylvania State Museum for final curation and storage.

Curation Project Intern, Pennsylvania Department of Transportation, 2006

- Assisted in cleaning, labeling, and organizing archaeological collections as well as creating and managing artifact inventories and preserving and managing project documentation for archaeological projects lacking compliance with PHMC Curatorial Guidelines standards.
- Curated archaeological collections for twelve sites and three separate archaeological projects.

Research Assistant, Indiana University of Pennsylvania, 2006

- Assisted in identifying, analyzing, cataloging, and organizing the faunal assemblage from the 1980 excavations at the Ripley (NYSM 2490) archaeological site.

Research Assistant, Indiana University of Pennsylvania, 2005

- Performed analytic coding for the lithic collection from the 1980 excavations at the Ripley (NYSM 2490) archaeological site.

Archaeological Internship, Tel Rehov, Israel, 2005

- Performed field duties such as excavation, mapping and profile creation, and artifact processing.
- Produced detailed artifact illustrations.
- Expanded knowledge of field techniques beyond northeastern North America.

Archaeological Services Laboratory Technician, IUP Archaeological Services, 2003 – 2006

- Processed artifacts (including cleaning, cataloging, and labeling) from ongoing Archaeological Services projects.
- Assisted in producing site and project reports.
- Assisted in organizing and running the annual Byways to the Past Conference, which is aimed at

fostering education and cooperation between archaeologists, historic preservationists, construction contractors, and PennDOT employees.