

Building a Career in Bioarchaeology

Bioarchaeology, a subfield of archaeology, applies methods from both archaeology and biological anthropology to the study of human remains. Historically, the discipline has focused on what can be learned about societies and individuals from macro and microscopic examination of human skeletal and mummified remains. In recent decades, the field has expanded to include research on biomolecules (e.g., DNA, stable isotopes, proteins) derived from these remains.

The goals of bioarchaeologists depend on whether their work is applied (e.g., repatriation of human remains) or research based. Bioarchaeologists in applied fields may work to identify individuals in repatriation efforts or conduct surveys to ensure projects comply with cultural resource protection laws. Researchers may conduct field and lab work to reconstruct ancient diets or activity patterns, or study practices of care in the past. Bioarchaeologists in all fields increasingly work with descendant and local communities to ensure that their research meets appropriate ethical standards that acknowledge the past harms of the discipline and the ongoing connection and importance of ancestors to many modern groups.



What can you do as a bioarchaeologist?

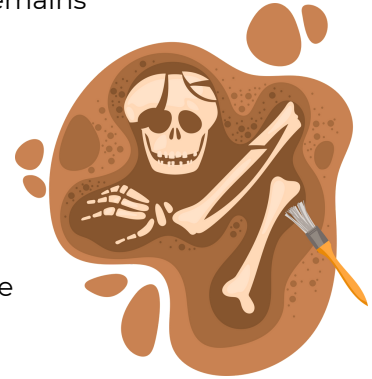
BA/BS – Individuals with a bachelor's degree may be qualified for basic bioarchaeology positions such as working as an archaeological technician in an osteology lab at a [Cultural Resource Management](#) (CRM) firm, as a Native American Graves Protection and Repatriation Act (NAGPRA) assistant, or as an archaeological lab technician. These positions are often under the supervision of someone with a master's or doctoral degree.

MA/MS – Most bioarchaeology jobs require a minimum of a master's degree. Many positions in compliance and government work follow the U.S. Secretary of the Interior (SOI) standards for a "qualified archaeologist" which require that an individual hold a graduate degree in archaeology, anthropology, or a related field.

PhD – A doctoral degree is preferred for many bioarchaeology job positions. Those requiring a doctorate include academic research and teaching positions, as well as positions involving complex project management and supervisory responsibilities.

Core Skills

- Knowledge of human variation and skeletal anatomy (i.e., osteology)
- Experience with archaeological recovery methods and techniques
- Ability to estimate age, sex, stature, and biogeographical ancestry from skeletal remains
- Understanding of the impacts of various taphonomic processes (e.g. burning, water exposure, animal gnawing) and pathological conditions on human skeletal remains
- Strong communication skills and ability to engage and work with diverse groups (e.g., archaeologists, law enforcement, cultural experts, descendant communities)
- Awareness and sensitivity to ethical issues, recognizing that these issues vary considerably cross-culturally
- Data analysis and management
- Project and budget management
- Understanding of federal and state laws and regulations around the protection, recovery, and repatriation of human remains
- Scientific writing
- Grant writing



Recommended Coursework

- **Human osteology and anatomy** – A robust understanding of human osteology is fundamental to bioarchaeological expertise, even for those specializing in biomolecular methods. Human anatomy contributes to a deeper understanding of topics such as pathology, functional biomechanics, and others that impact skeletal morphology.
- **Zooarchaeology/faunal analysis** – Bioarchaeologists often encounter faunal remains in the field and in collections. It is valuable to have knowledge of the skeletal anatomy of other species, especially when remains are highly fragmented and identification is difficult.
- **Forensic Anthropology** – These courses are complementary to osteology courses, offering additional training in methods of estimation of age, sex, ancestry, and other identifying aspects, as well as analyses related to reconstructing taphonomic conditions.
- **Biomolecular archaeology/anthropology** – These courses include the study of various biomolecules (e.g., stable isotopes, proteins, DNA) that can be extracted from human remains and studied to reconstruct a range of traits such as diet, mobility, and ancestry. Such methods may be used by bioarchaeologists in both research and identification contexts.
- **Regional histories** – Bioarchaeologists work with people, both their deceased ancestors and descendants. To engage ethically, it is crucial to understand the histories and cultures of the area and people with whom you work.
- **Tribal history, relations, and law** – An understanding of the relationships that the U.S. has with sovereign Tribal Nations provides essential contextual insight into current NAGPRA work and facilitates respectful interaction with Tribes.

- **Qualitative and quantitative analysis** – Courses on qualitative (e.g., interpretive analysis, content analysis) and quantitative (e.g., statistical analysis, population genetics) methods help build an analytical foundation.

Recommended Laboratory and Field Experience

- Archaeological field school(s) or other fieldwork (e.g., volunteering with state, federal, or Tribal agencies, CRM internships) that minimally include training on:
 - ▶ Excavation
 - ▶ Survey
 - ▶ Site documentation
 - ▶ Local best practices around storage and curation
- Laboratory experience (e.g., museum internships, research assistantships with instructors) that includes working with and identifying:
 - ▶ Remains, rather than casts, of individuals from different populations, sexes, and ages
 - ▶ Fragmentary remains
 - ▶ Distinctive taphonomic processes (e.g. burning, pre vs. post mortem damage, burial)



Additional Trainings

- National Preservation Institute classes ([Trainings | National Preservation Institute](#)) would be valuable for any bioarchaeologist, especially those working in a compliance or government role:
 - ▶ *Section 106: An Introduction*
 - ▶ *Native American Cultural Property Law*
 - ▶ *Conflict Management and Negotiation Skills for Cultural and Natural Resources*
- Federal Emergency Management Agency's (FEMA) Incident Command System trainings are valuable for bioarchaeologists planning to work in disaster recovery contexts or government roles:
 - ▶ *IS 100, 200, 650, 700, 800, 300* ([Emergency Management Institute - Independent Study \(IS\) | Course List](#))

Potential Roles

- **NAGPRA Coordinator/Specialist.** These positions are primarily found within academic institutions and museums, although there are also private firms that help institutions with NAGPRA compliance.
- **State Physical Anthropologist/Bioarchaeologist.** These positions are rare but can be found in selected state agencies. State Physical Anthropologists help implement state burial protection and repatriation laws.
- **Osteologist for Cultural Resource Management (CRM) firms.** These firms often employ osteologists for projects that involve recovery/relocation of burials and cemeteries, or for projects in areas that are likely to have burials. Such positions usually require a combination of field and laboratory work and may be temporary.
- **Tribal archaeologist.** Many Tribes employ archaeologists with a variety of expertise, including bioarchaeology.
- **Defense POW/MIA Accounting Agency (DPAA) Forensic Anthropologist.** While the DPAA operates under forensic protocols, this agency employs many osteologists—including bioarchaeologists—who work to recover and identify the remains of American military personnel from historical conflicts.



Additional Resources and Information

- [Society for American Archaeology - Bioarchaeology Interest Group](#)
- [Society for American Archaeology](#)
- [NAGPRA Community of Practice](#)
- [Defense POW/MIA Accounting Agency](#)
- [American Association of Biological Anthropologists \(AABA\)](#)

Profiles of Current Bioarchaeologists (and people trained in Bioarchaeology)

These profiles are included to help illustrate how the information and advice above translates to practice in the workplace. The bioarchaeologists profiled here represent a range of professions and backgrounds and illustrate a variety of career paths.

Dawn Marie Alapisco – Director of the NAGPRA Office, Oregon State University

As the director of the NAGPRA Office at Oregon State University (OSU), Dawn Marie Alapisco works with lineal descendants, Tribes, and Native Hawaiian Organizations to help repatriate Tribal Ancestors and cultural objects in the temporary stewardship of OSU under NAGPRA. Her work requires engagement in frequent government-to-government consultation with Tribes to affiliate Ancestors and cultural objects to their culture as part of the NAGPRA repatriation process. Alapisco must be well versed in cultural resource management law, have expertise in human osteological analysis, be able to identify faunal remains, and be able to make individuation-level osteological trait estimations.

Alapisco maintains records and documents associated with OSU's NAGPRA compliance, writes publications related to repatriation activities for inclusion in the Federal Register, and maintains a database of all NAGPRA-identified Ancestors and cultural objects in OSU's temporary stewardship. She also acts as a building manager for OSU's NAGPRA Facility, maintaining administrative, lab, and Ancestor spaces. Strong organizational and communication skills, both written and verbal, are important in her work. Alapisco has an Honors BS in Archaeology/Physical Anthropology from OSU's Honors College and an MA in Applied Biocultural Medical Anthropology with an applied emphasis on funerary and forensic bioarchaeology from OSU's Graduate School. She is currently a PhD student in Anthropology at OSU. In addition to her NAGPRA work, she teaches Human Osteology, Forensic Anthropology, Introduction to Medical Anthropology, and other courses as requested for OSU's Anthropology program.

Elissa Bullion, PhD – State Physical Anthropologist for Oregon

Elissa Bullion works as the State Physical Anthropologist at the [Oregon Legislative Commission on Indian Services](#). In her position, she facilitates the identification and repatriation of non-modern, non-forensic human remains under Oregon state laws. This work requires osteological expertise, including familiarity with faunal identification, and the ability to identify fragmentary remains, as well as estimate sex, age, and ancestry. At times, this work requires in-field recovery, during which her expertise in archaeological excavation is crucial. As part of her documentation process, Bullion maintains an Esri-based database (i.e., designed to store and manage data with spatial and non-spatial components) which requires skills in data management and Geographic Information Systems (GIS).

Clear and concise writing and communication skills are critical in Bullion's work that involves training government agency, law enforcement, and other personnel, as well as in her interactions with Tribal governments, staff, and members. She has a BA in Anthropology/Sociology, and an MA and PhD in Anthropology with a focus in archaeology and biological anthropology. Prior to her current position, she taught as a Visiting Professor at the University of Pittsburgh, and worked as a Cultural Resource Specialist for the [U.S. Forest Service](#) and [Natural Resources Conservation Service](#).



Alex Garcia-Putnam, PhD – Assistant Professor, University of New Hampshire

Alex Garcia-Putnam is an Assistant Professor of Anthropology at the University of New Hampshire (UNH). He is also the Assistant Director of the Forensic Anthropology Identification and Recovery (F.A.I.R.) Laboratory at UNH. The F.A.I.R. Lab houses all the unidentified human skeletal remains for the State of New Hampshire, both forensic (i.e., modern or involved in criminal or cold cases) and archaeological (e.g. pre-modern).

His research focuses on historic cemeteries in the American South and more recently in the Northeast. Much of his work is applied, meaning that he often works with legacy collections (i.e., remains often forgotten or relegated to university/museum/government facility shelves and storage) or skeletal remains that are disinterred in less-than-ideal circumstances. Garcia-Putnam has a BA in Anthropology from Skidmore College, an MA in Anthropology from East Carolina University, and a PhD in Anthropology from the University of Wyoming. Prior to his current position, he was a Postdoctoral Diversity and Innovation Scholar at UNH. He previously held positions in Cultural Resource Management and within state government as the Assistant State Physical Anthropologist for the State of Washington.



Lorraine Hu, PhD – Manager of Human Histories & Cultures, National Geographic Society

Lorraine Hu works at the National Geographic Society where she manages the research and conservation grant portfolio of the Human Histories & Cultures focus area; this area includes anthropology and other social sciences. Her work entails expertise in archaeological theory and methodologies, including bioarchaeology, to identify grant applications that are likely to receive strong external reviews. Other skills, such as communicating science to broad audiences of stakeholders both inside and outside of the organization, are also essential. In addition to her background in archaeology, Hu credits her time as a Graduate Writing Fellow at the Washington University in St. Louis Writing Center as an important experience that enabled her to develop key skills for this position, such as running one-on-one consultations and providing grant writing instruction and feedback for diverse audiences.