



Preparing people to lead extraordinary lives

Internship in Bioarchaeology & Forensic Anthropology: Bones!



Alicia M. Martinez, under the direction of Anne L. Grauer, Ph.D. Biological Anthropology
Department of Anthropology, Loyola University Chicago, Chicago, Illinois USA

Abstract

This internship focuses on how human remains and skeletal analysis can tell us a great deal about an individual, such as age at death, sex, stature, population affinity, trauma and disease. Techniques learned in Loyola's Human Osteology course have been key in my assisting at The Field Museum of Natural Science and Cook County Medical Examiner's Office. I discuss my experience in working with forensic anthropology cases as well as studying and obtaining metrics on individuals from The Rush Medical Collection of 1898.

Introduction

So much information can be obtained through skeletal analysis. Age at death can be determined through observing adult and deciduous (juvenile) dentition, the epiphyseal union of various parts of the skeleton, and the varying stages of the pubic symphysis of the pelvis. Determining sex is most thorough through varying aspects of the pelvis, but also can be factored through the morphology of the skull. Stature can be recorded through a series of cranial and post-cranial measurements, using spreading and sliding calipers, osteometric boards and mandibulometers. Population affinity is assessed through craniometrics and anthropscopy, using a research-based point scale to suggest ethnic origin. Trauma and disease also supply a vivid look into one's life. Through obtaining extensive knowledge on how to create a biological profile, I can practice these skills in the museum collections center, where the collection is available for repatriation, as well as in a forensic setting, which includes going into the field to assist law enforcement in finding additional remains in an open case.



Goals & Methods

My goals for this internship begin with the mastery of fragment identification, particularly being apt to identify which side each bone belongs to, as well as which bones mimic others. I aim to excel in accurately accounting for the inventory of bones in each case. Learning more about repatriation and laws surrounding the ethical protection of individual remains has been rewarding insight into the field. As a future forensic expert, it is a never-ending process investing in one's anatomical knowledge to ensure the remains are appropriately and accurately identified and the highest standards are maintained.



Cook County Medical Examiner's Office

Illinois supports a mixed Coroner/Medical Examiner system, with Cook County Medical Examiner's Office being the sole Medical Examiner's Office in the state. 16,000 deaths are reported annually, however, CCMEO averages 13.2 forensic anthropology cases per year (2012-2022) (Grauer & Waxenbaum, 2022). Requests for forensic anthropology evaluation peak in June and September, and most cases evaluated are fully or partially skeletonized remains (Grauer & Waxenbaum, 2022). Once a request for consultation has been placed by the pathologist, it is often unpredictable when the case will be ready if maceration was needed, based variables such as staffing. I have worked with four individuals, in a partially isolated room that stores histology samples. When working under Dr. Grauer and Dr. Waxenbaum, I place the remains in correct anatomical position, and we begin to take inventory and required metrics in order for them to write a report. Once finished, a forensic photographer comes in and takes photos for the case file.

Field Museum of Natural History: Rush Collection

In 1898, 25 Skeletons were brought into the Field Museum of Natural History by George A. Dorsey, Curator of Anthropology. They were assigned accession numbers and became a part of the permanent collection under the label "Rush Medical College". Curiously, information regarding the identity of the individuals and details pertaining to their acquisition are notable absent today, although records pertaining to thousands of material objects and skeletons in the museum's collection are present (Grauer & Doubek, 2019). One individual in the collection has the accession number "43855" and has the racial moniker "Chinaman" written on his bones. Why his bones became a part of the museum's collection as well as the way he lived and died reflects the social inequities of that time period. We are striving to contextualize their life and death, to provide a humanized and nuanced understanding of the existence and effects of marginalization (Grauer & Doubek, 2019). I have worked with four individuals during my time at the Field Museum, where the most challenging aspect was making sure the ribs were in the correct order, properly articulating with each vertebrae, comparing with discrepancies on our data sheet.



Suchey-Brooks standards for changes in the topography of the female and male pubic symphysis. Drawing by P. Walker (from Brooks and Suchey 1990)

References

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- Waxenbaum, E.B. and Grauer, A.L. (2022) "Forensic anthropology casework at the Cook County Illinois Medical Examiner's office, Chicago, il , 2012–2022," *Journal of Forensic Sciences*, 67(6), pp. 2165–2172. Available at: <https://doi.org/10.1111/1556-4029.15130>.