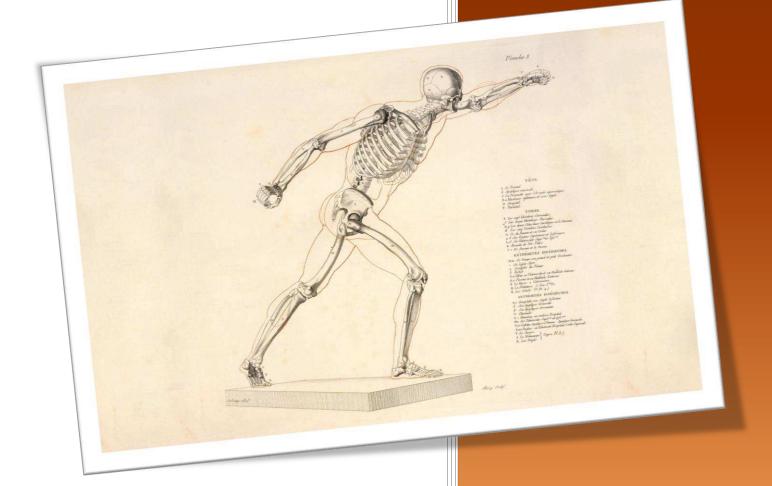
# 2013

## Internship Report: Profiling the Dead



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#### INTRODUCTION

I am currently an undergraduate student at Texas State University pursuing two Bachelor of Science degrees, one in Anthropology and the other in Geography-Geographic Information Systems, with less than a year left before graduation. I plan to continue on to graduate school (M.A. and Ph.D.) and become a bioarchaeologist<sup>†</sup>. To this end, I chose to pursue an internship at the Forensic Anthropology Center at Te

Bioarchaeology<sup>†</sup> "Field that combines skeletal analysis with archaeology, analyzing human remains in the context of material culture and environment."(DiGangi and Moore 2013)

pursue an internship at the Forensic Anthropology Center at Texas State (FACTS). The director of the facility, Dr. Wescott, has previously worked as a bioarchaeologist and I have learned much working with him.

My primary internship project was to perform full biological profiles on the remains of fourteen historic individuals uncovered during emergency archaeological excavations following the "Great USA Flood of 1993" (Larson 1996). These remains came from a previously forgotten cemetery located in Callaway County, Missouri and are currently housed at the Grady Early Forensic Anthropology Research Laboratory (GEFARL), brought by Dr. Wescott when he joined Texas State University. To date, there is no background information on any of the individuals buried in the cemetery, but regardless, our ultimate aim is to identify the individuals in this collection and return them to their descendants.

With this goal in mind, background research had to be performed to find any information that would help with this. Due to the length of time since the excavations, much of the original documentation has been lost. The only items available from that excavation is a very short and

uninformative survey report with missing pages, a number of pictures without a photo log or any other associated documentation other than an occasional photo board within the photograph itself, and a handful of local newspaper articles that covered the excavations.

The basic story that has been gathered from that meager supply of information is that the cemetery was associated with Shiloh Methodist Church (SMC1) and was used for burial from approximately 1838 (Walsh 1993a) to 1871, when the church was moved to within the limits of Cedar City. The church was then renamed to Cedar City Methodist Church (SMC2) and no longer utilized the cemetery (Gaarde 1993). Over time, knowledge of the cemetery and its remains was lost until the flood (Walsh 1993a), which destroyed Cedar City, including the church, exposed the remains near the banks of the Missouri River. The church was then rebuilt further north, in a small town called Holts Summit, and renamed Shiloh United Methodist Church (SMC3) (Walsh 1993b).

The previously mentioned biological profiles include an inventory (described in detail below) and close-up cranial and dental photographs, used to assist with age and sex assessment, as well as photographs of any pathology (indicators of disease) evident on the remains. The existing forms used by FACTS to record inventories of donated remains (Appendix A) do not include any of the additional information required for a biological profile, so I created a new packet (Appendix B). This new packet contains thirteen forms – versus three in the original – and includes several that are specific to deciduous dentition (baby teeth) and sub-adult skeletal elements. A number of individuals in this collection are sub-adults and, as such, contain bones not listed on the adult forms, such as unfused epiphyses and deciduous teeth.

This report will describe my working environment, how the work was accomplished, and what will be done with the information once gathered.

#### FORENSIC ANTHROPOLOGY CENTER AT TEXAS STATE (FACTS)

GEFARL is one of three labs that make up FACTS. There is also the Forensic Anthropology Research Facility (FARF) and the Osteological Research and Processing Laboratory (ORPL). FARF is the location where donated human remains are placed for observed decomposition research, while ORPL is where forensic casework and processing of remains is performed. Lastly, GEFARL is where the Texas State Donated Skeletal Collection is curated. Both FARF and ORPL are located at Freeman Ranch, which is located about 15 minutes northwest of campus. GEFARL is located less than 5 minutes from campus on Old Ranch Road 12.

The FACTS staff include: Dr. Daniel Wescott, Director; Drs. Kate Spradley and Michelle Hamilton, Faculty; and Ms. Sophia Mavroudas, Coordinator. Interns typically work most directly with the lab coordinator, Ms. Mavroudas, who assigns tasks, performs all required training, and provides assistance, though Dr. Wescott is always willing to help if she is not available.

My work was specific to skeletal remains, so I was housed at GEFARL, which is a mixture of office suite and warehouse. This environment has a very unique layout, which can be slightly distracting at times.

The front lobby area contains the offices of Dr. Wescott, Dr. Spradley, and Ms. Mavroudas, as well as a kitchen, through which the donated skeletal collection is accessed. The back area, where most work is performed, is bounded by a set of bookshelves containing a local faunal skeletal collection, though their primary function is to block the view into the rest of the building

for privacy reasons. This area is broken down into various sections; stations for photography, casting, histological sampling, and cranial measurements. This is also the typical "hang-out" spot for students. There are a number of large tables in the center where, at any given time, students can be found laying out skeletons, performing presentations, receiving training, or eating lunch.

The distraction comes from the fact that the walls of the office areas, including the donation room, do not extend fully to the fourteen foot ceilings of the building. This allows all conversations to be heard from any location and it is not uncommon for conversations to be held between people on opposite sides of the building.

#### **BIOLOGICAL PROFILE: SKELETAL INVENTORY**

The initial step in a biological profile is to take an inventory of the remains. This skeletal inventory comprises three forms. The first page is a list of all of the bones in the human body, where the status of each bone is notated. The second is a drawing of the human skeleton, front and back, where any missing bones are marked. In the biological profile packet, there are three of these forms, one each for an adult, juvenile, or infant skeleton. Only one will be used depending on the

Enamel Hypoplasia<sup>†</sup> A line or groove in the crown of a tooth that indicates a stress event such as a disease or malnutrition that typically occurred during childhood (DiGangi and Moore 2013).

remains. The third page is a dental inventory that has a list of all of the teeth as well as a diagram, where anything that needs to be documented such as caries (cavities), missing pieces, missing teeth, staining, or hypoplasia<sup>†</sup>, are drawn on the teeth. There are two of these forms, one each for adult or deciduous dentition. Only one will be used depending on the remains.

At the top of each page (Figure 1, highlighted) is a block that asks for the Feature ID, name of person performing the inventory, date of the inventory, and the location where the inventory is being performed. This should be filled in before starting any work.



Figure 1. Biological Profile Skeletal Inventory Forms.

Inside the donation room is a large table in the center where the inventory is performed. This table is glossy black and will produce reflections when pictures are taken, so it needs to be covered with a piece of cloth on which the skeleton will be laid. So far, all of the bones in the collection have been light in color, so a piece of black velvet is used. However, if there is an instance where the bones are dark in color, then a light background cloth would be required instead. The goal is to provide good contrast, so the bones are highly visible in photographs.

At the head of the table, a beanbag is placed beneath the cloth to hold the skull. Once all is in place, the bones can be laid out. While there is no particular order in which this must be done, the final layout must be precise. The aim is to lay out the remains in anatomical position (Figure 3) presented as if they are standing, face and feet pointing forward, and the palms of the hands also facing forward with thumbs pointed to the outside (White and Folkens 2005).

This requires a thorough knowledge of every bone in the human body, even when fragmentary, and where it should be placed. Putting a left radius on the right arm is not acceptable. The White and Folken's *Human Bone Manual* is a handy reference to keep on hand while performing inventories. Even when the bone has been identified, sometimes determining if it is a "left" or a "right" can be tricky, particularly if fragmentary.

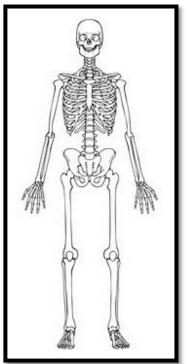


Figure 3. Image of a skeleton in anatomical position (DO Applicants 2010).

Keeping in mind that an inventory is performed in order to

document all of the bones currently associated with an individual, each must all be laid out in such a way that it is clearly visible. To this end, there must be enough space around each bone so they are distinct.

There are a few general exceptions to be noted about the bone layout. As this individual will

be lying flat on a table, the mandible will not stay in place at the base of the skull with the

required space surrounding it, so it is placed on the table to the side of the skull. Second, the feet are laid out flat, pointed toward the bottom of the table. Lastly, the patellae – knee caps – are placed *medially* to the *distal* femora and *proximal* 

*Medial* – towards the center *Distal* – away from the trunk *Proximal* – towards the trunk

tibiae. This means that each patella will be placed just to the inside of the leg, at the juncture where the bottom of the femur and the top of the tibia meet.

Once the entire skeleton is laid out properly, each bone is inspected and marked on the Skeletal Inventory Form (page 1) using the codes provided at the top of the form (Figure 4). For example, if the frontal bone is present and intact, it would be marked with a 1. If the left temporal bone is there, but is broken, then it would be marked with a 2. The coccyx is notorious

CODES:	1 – Present Complete	3 - Absent (Postmortem)
	2 - Present Fragmentary	4 - Antemortem Loss

Figure 4. Key from page 1 of the Biological Profile Skeletal Inventory Form.

for its absence, so it typically gets a 3. If

there is a bone missing, but it was

obviously lost before the individual died,

such as with a successful amputation, it would receive a 4. This is done for every single bone. If anything out of the ordinary is found, it should be mentioned in the "Notes" section at the bottom of the form. If in doubt about something, note it. Everything must be thoroughly documented.

After all of the bones have been accounted for, the Visual Skeletal Inventory Form (page 2) of

the packet should be filled in. There is a key (Figure 5) which indicates that present bones are left uncolored while the absent bones are colored in. Precision is important; many researchers will use this page to quickly glance through a number of remains to verify which contain their areas of interest.

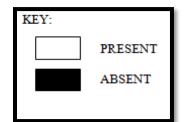


Figure 5. Key from page 2 of the Biological Profile Visiual Skeletal Inventory Form.

The Dentition Inventory Form (page 3) is handled in much the same way as the first and second forms. Every human adult typically has 32 teeth, 16 in the maxillae (top jaw) and 16 in

the mandible (bottom jaw), which are further split between left and right. The form has the teeth listed by bone (maxillary or mandibular) and the tooth number. These numbers, per quadrant, are: I1 (First Incisor), I2 (Second Incisor), C (Canine), P3 (First Pre-Molar), P4 (Second Pre-Molar), M1 (First Molar), M2 (Second Molar), M3 (Third Molar). Notice the strange numbering for the pre-molars. A distant primate human ancestor had a total of four pre-molars per quadrant, which have since been lost through evolutionary changes. These continue to be called the numbers three and four to indicate this loss (DiGangi and Moore 2013).

Using the codes at the top of the form (Figure 6), every tooth should be notated. This form also has a diagram for documenting areas of note on the teeth themselves. As mentioned

CODES:	1 – Present Complete	3 - Absent (Postmortem)	5 - Unerupted	ear
	2 – Present Fragmentary	4 – Antemortem Loss	6 – Congenitally Missing	
Figure 6	. Biological Profile Den	tition Inventory Form, pa	age 3.	cari

earlier, things such as caries, hypoplasia,

fragments, and stains would be drawn on the teeth. There is a blank area to the right of the diagram where a key is to be made to indicate the different items found. For example, if you are fully darkening in a tooth because it is missing, place a similar mark in the key area and label it "Missing." Perhaps for caries, a hollow circle is being used and would be drawn and labeled in the key. Use simple shapes and make sure it is clear in both the diagram and the key. This is another form that will be used by researchers to quickly glance at to determine if study areas are available on these remains, so it should be accurate and easy to understand. Lastly, anything out of the ordinary or questionable should be included in the "Notes" section.

Now that all of the skeletal inventory forms have been completed, photographs must be taken and documented on the "Images & Histology" and "Close-Up Images of Sex/Age Assessing

Traits" forms (pages 12 and 13) in the biological profile packet. Several items are necessary before the pictures can be taken. A label must be printed and should contain the Feature ID in large, block letters that are easy to read at a distance. This should be placed anywhere it will fit on the table to the outside of the remains. A small, metric photographic scale should be placed on or near the label. To take a full-body photograph, align the yellow platform near the center of the remains and climb up the stairs. Once at the top, hold the camera out as far as possible over the table, center the remains, and take the photo. Since the viewfinder cannot be seen from this position, this will require some trial and error. After taking the picture, verify on the viewfinder that all of the skeletal elements are visible. It is not uncommon to have to repeat this process multiple times because skull or feet are cut off, or the picture is out of focus. Just repeat until a satisfactory picture has been achieved. Close-up photographs are then taken of the cranium (all sides), mandible (all sides), any visible pathology, and all available sex or age assessing traits on the pelvis (ex., ventral arc, greater sciatic notch, etc...) and cranium (ex., sutures, nuchal crest, etc...). This completes the overall inventory process.

#### BIOLOGICAL PROFILE: MEASUREMENTS, RADIOGRAPHS, CASTS, AND FUTURE ANALYSIS

Now that we know what bones are in the cemetery collection and their condition, the next step in the biological profile is to measure them. These measurements will be used for ancestry, sex, age, and stature assessment/estimation. I should note here that the different between assessment and estimation is simply that one is done visually – assessment – versus mathematically – estimation.

The metric traits are documented on forms 7, 8 and 9 of the packet. Haas' *Standards for Data Collection from Human Skeletal Remains* (1994), is very helpful when taking these measurements. The book includes detailed drawings and descriptions on how and where to take the various measurements. Tools such as osteoboards, measuring tapes, and various calipers are used for this purpose.

Non-metric traits are assessed and documented on forms 10 and 11 of the packet. *Standards* is also an excellent resource for this task. No tools are required for non-metric traits. These are given a score by the analyst, based on their size or shape and can, unfortunately, vary widely between observers.

After the measurements, Anterior-Posterior and Mediolateral radiographs (X-rays) should be taken of the femora, followed by casting the teeth, ribs, and femora. The radiographs and casts are taken to preserve as much information as possible because the bones will be altered or destroyed during destructive analysis such as histological sectioning, DNA analysis, or carbon dating. The radiographs are also used to determine bone strength by measuring the medullary cavity.

In order to perform radiographic imaging, you must be certified or under the supervision of someone who is certified. Ms. Mavroudas and at least one of the graduate students at FACTS have that required certification.

For the cemetery collection, histological samples will be taken of the femora, teeth, and the sixth rib. These samples will be used for a number of things including determining age-at-death. By using a number of variables, such as osteon count, in a regression formula, the age-at-death

can be calculated (Keough 2007). At the time of this writing, no samples have been taken and the proposed time to do so does not appear to be within a reasonable timeframe for inclusion in this report. No additional information will be provided about the samples.

There are several sets of remains left in the cemetery collection that still require a biological profile. Analysis will be performed and results compiled once all have been completed, so there will be no discussion of either at this time.

#### Shiloh Research

Given the limited details known about the cemetery remains noted at the beginning of this report, I was determined to find what I could about the individuals that were buried in Shiloh Cemetery. My initial hope was to contact someone at SMC3 and request their burial and membership records. I left several voicemails with the church, but did not receive a return call. I also had high hopes for several local historical societies that did not post their information on the web. I had already gone through a number of sites that did have such information available, but was not able to find anything of use. Fortunately, I was able to procure a grant from the University and drove to Jefferson City, Missouri to see what I could find.

After settling in, my first stop was the public library in Fulton, the county seat. I was able to find a number of interesting and useful documents there, however, most would only be beneficial for my research once I had put names to the individuals I was looking for. I took scans of what I thought would be most useful once that was accomplished and went to my next stop, the Jefferson City Public Library.

At this second library, a very helpful gentleman, Quentin Wade, saw me looking in the genealogy section and asked if there was anything he might be able to help me with as he was very familiar with most of the genealogical information for Cole (Jefferson City) and Callaway (Fulton and Cedar City) counties. I told him the basics of what I was looking for and he immediately said that he would contact his son. His son, according to Mr. Wade, worked for "The City" (Jefferson City), and was involved when the remains were first uncovered by flood waters. He stepped away to do just that and I continued searching through books, looking for anything that might contain information about old cemeteries or churches. I was unable to locate anything.

Mr. Wade eventually returned and said that his son could not provide any additional information about the graves because the entire enterprise was immediately turned over the Department of Natural Resources (DNR) with no further involvement from the City. He then proceeded to list a number of common family names associated with Cedar City and the surrounding areas. These may become useful later.

The next day, I went to the Missouri State Historical Society located at the University of Missouri in Columbia. I did not find anything of use here. All of the documentation they had related to my queries was information I had already found and scanned at the Fulton Public Library. I then went to the Kingdom of Callaway Historical Society in Fulton. The people here were extremely helpful and very interested my work. They were able to provide me with copies of additional newspaper articles that I had not previously located online. Beyond that, however, they did not have anything historical of use for my research. They did ask that I provide them

with a copy of my final report once it was completed. I found this both exciting and daunting. While the work I am doing will be published once Dr. Wescott and I complete the research, I had not thought about the far-reaching consequences of that publication. The individuals I was speaking with here at the historical society, and even Mr. Wade from the library, could easily be related to the individuals from the cemetery.

My next stop was SMC3. As previously mentioned, I had left messages for the church and learned from their greeting, the office hours were on Tuesday from 1:00 pm to 5:00 pm. I arrived at the church shortly before 1:00 pm and sat there for over an hour waiting with no one showing up. I called the church to obtain the phone numbers provided for Pastor Hartsfield in the greeting and called the home phone number given. I received a no longer in service message. At this point, I started to panic slightly. I was only in town for three days and this was already my second day. I called the mobile phone number given and, luckily, the pastor answered. I told him who I was and why I was calling. He mentioned that the days and times in the greeting were incorrect, but that he was more than happy to come by the church and meet with me.

After Pastor Hartsfield arrived, we spoke a little bit about the history of the church and what precisely I was looking for. He was relatively new to the position with this church, so he was not familiar with anything but the general history of SMC3. The pastor took me downstairs and showed me a document hanging on the wall. It was a history of the church written in 1963 by the pastor, Lochhead, at that time. While I was reading through it, he offered to search around and see what documents he was able to find regarding any burials. I took pictures and scans of the document and went back upstairs to see if he had found anything.

Pastor Hartsfield had found a small file folder that contained a few small paper items: a copy of a newspaper article about the flood, two additional copies of the Lochhead history, a program from SMC2, and a copy of the claim form sent to the United Methodist Conference with an attached narrative describing the flood and following clean-up events. He offered to let me take them with me back to my hotel that evening and make copies of everything. Pastor Hartsfield also gave me the phone number of two current church members who were also members of SMC2, Marion and Kenneth Gill. He said that they may have additional information about any burial records associated with SMC1. In the meantime, he would search for the membership records and see if anything historical was available in those. I have not heard anything back regarding those yet.

That evening, I contacted Marion Gill and she told me that all of the records from SMC2, which would have included everything from SMC1, if any existed, were lost during the 1993 flood. She also mentioned that no one was even aware that the cemetery existed until it was uncovered or who might have been buried there. Everything they know about SMC1 and the cemetery has been gathered since the flood and no historical records have been located to date. Mrs. Gill suggested I try the Secretary of State Records Archive as she has used them in the past for various family research and found them to be very useful. One last note of interest regarding Mrs. Gill, during our conversation it came up that she was the great-granddaughter of A. J. Tranbarger, who provided the original land for SMC1 and the cemetery. In the Lochhead history (1963), it also mentions that Mr. Tranbarger attended services at Shiloh. I was able to locate this gentleman on Ancestry.com and found that his given name is Andrew Jackson.

On my last day in town, I went to the Secretary of State Records Archive, but was unable to find anything but a couple of reference materials that I had already located at the Fulton Public Library. Since I had not gone through all of the newspaper microfiche collection on my first visit, I returned to the Fulton library and began to comb through the obituary indexes to see if there was anything of interest. These indexes are typically just a listing of all of the obituaries for a particular newspaper for a given date range. However, the particular set I had included a listing of newspaper articles that were somehow related. I was unable to determine that exact relationship, but I did find several references to SMC2. I pulled those reels and began to sift through the newspapers until I located those articles. The first two were irrelevant (the church was holding a picnic) but the third was definitely of use. It was the Day 4-7 Minutes of the Methodist Conference and mentioned the dedication of a new church in Cedar City (SMC2) in 1874.

When I returned the folder back to Pastor Hartsfield that afternoon, I asked him about those Conference Minutes and if there was a repository that may contain other information about the church, specifically SMC1. He said that the archives were kept at Central Methodist University near Fayette, Missouri and gave me directions. It was fairly late in the day and the University was located over an hour away, so I immediately began the drive. When I arrived, I found the correct building and then located the archivist, Mr. John Finley. I told him what I was looking for and he took me to a room filled floor to ceiling with books, some of which dated from the 1700's. Mr. Finley was extremely helpful and explained a number of things about the Methodist church to me for background. In general, the church split between North and South around 1860 and made two separate Conferences. Missouri became part of the Southern Conference and each

Conference was split into districts. Each district was then split into different circuits. Each circuit was made up of a number of churches. The circuits were manned by a single pastor who went to those different churches to preach, as there were usually no local pastors to do this job.

The Conference Minutes typically contained the names of the districts, the names of those who ran the districts, the names of the circuits under each district, and the pastor assigned to each circuit. Further along, there is usually a table that lists out the districts and circuits with a tabulation of several items such as the number of white members (adults and children separately), black members (adults and children combined), scholars, number of books in the library, number of various church officials and teachers, various fund amounts, and church value (Missouri Annual Conference 1876). Each set of minutes may contain different information, but usually along these same lines.

As it was near to closing time, Mr. Finley graciously offered to search through the stacks to locate any information regarding to SMC1 and email me scans of the relevant pages. So far, I have received two e-mail's from him containing scans of eight conference minutes that specifically mention the Cedar City Circuit. The difficulty is that the minutes do not list out each location on a circuit, typically only the "main" city, which the circuit is then named for. As Cedar City was an extremely small town, it rarely held the honor of being the "main" city on a circuit.

Additional information indicates that SMC1 was an interracial church (Lochhead 1963) though it is unclear at this point whether that means that freed blacks attended or if they were slaves of white members or perhaps both and the Conference Minutes usually only indicate "Black Members" without any designation one way or the other. The preliminary ancestry

assessments of the skeletal remains do indicate they are likely black individuals, but without more information it is difficult to say at this point whether they are freed or slaves.

This aspect of the project is difficult and time-consuming, but the trip to Missouri was definitely fruitful. Additionally, I was asked by three separate individuals for copies of my final report once it was complete. The research will continue long beyond the end of my internship and will definitely find a place among my graduate thesis work in a couple of years.

#### CONCLUSION

What I have learned just in the few months of working on the Shiloh project is going to help form my future research methods in a way that no regular academic paper has done yet. Though the Shiloh church and cemetery have proved to be a bit more elusive in history than I had hoped, working on a project that is based on a just a few grains of information and trying to turn those into large stores of information has helped show me how to dig deep and look at unexpected sources to find those hidden details. While the research aspect is definitely the largest piece of the entire project, I cannot leave out the bones themselves. Working on damaged, historic skeletons has increased my facility with fragmentary remains and understanding of taphonomy<sup>†</sup>.

All of the profiling techniques I mentioned earlier and the ability to actually perform them in a real situation will give me a step-up on others when I finally leave the world of academia and start my career as a bioarchaeologist.

Taphonomy<sup>†</sup> "The study of what happens to remains after death" (DiGangi and Moore 2013)

For anyone who is interested in an internship with FACTS, there are a couple of items that would be beneficial to have. First, an osteology course such as ANTH 3381 offered at Texas State

University. The information gained from this type of course is vital to being able to accurately lay out a skeleton. Texas State University has a teaching collection of real (not cast) skeletal remains both intact as well as fragmentary. The availability of being able to learn on real bones is something that is not available to everyone and makes a significant difference to what can be achieved later in your career. Even the most expensive and well-made casts cannot always accurately portray all the variation of different features on bone or the way they feel. Also, casts do not typically come in a fragmentary format and having that skill is of particular importance. Not all of the remains at GEFARL are intact and to perform an accurate inventory, each bone must be identified and correctly accounted for.

The second item is not particular to skeletal remains. Not all internships with FACTS are restricted to one particular lab or activity. Many will jump from one task to another, working in the various areas of FACTS. A desire to work with and learn from the dead in all aspects, from the recently deceased to their decomposed remains to processing those remains, is necessary.

#### References

DiGangi, Elizabeth A., and Megan K. Moore, eds.

2013 Research Methods in Human Skeletal Biology. Boston: Elsevier Academic Press.

#### **DO** Applicants

2010 Osteopathic Techniques. Electronic document, http://doapplicants.com/Pages/OMM.aspx, accessed March 30, 2013.

Gaarde III, Frederic William

1993 Archaeological Survey of Missouri. Survey Report, 23CY593. Columbia: Missouri Archaeology Society, University of Missouri.

Haas, J., J. E. Buikstra, D. H. Ubelaker, and D. Aftandilian, eds.

1994 Standards for Data Collection from Human Skeletal Remains: Proceedings of a Seminar at the Field Museum of Natural History. Vol. 44. Fayetteville: Arkansas Archaeological Survey Research Series.

#### Keough, Natalie

2007 Estimation of Age at Death from the Microscopic Structure of the Femur. M.Sc. thesis, School of Medicine, University of Pretoria.

#### Larson, Lee W.

1996 The Great USA Flood of 1993.

Lochhead, Glen H., ed.

1963 "The Road to 1963": The Historical Background of the Cedar City Methodist Church.

#### Missouri Annual Conference

1876 Minutes of the Missouri Annual Conference of the M.E. Church, South. Archives: Central Methodist University, Fayette, Missouri.

#### Wallchan

N.d. Anatomy Human Skeleton. Electronic document,

http://www.wallchan.com/images/sandbox/23145-anatomy-human-skeleton.jpg, accessed March 30, 2013.

#### Walsh, Tom

1993a Bare Bones. Columbia Daily Tribune, September 12.

#### Walsh, Tom

1993b Final Passage. Columbia Daily Tribune, October 17.

White, Tim D., and Pieter A. Folkens

2005 The Human Bone Manual. Boston: Elsevier Academic Press.

#### Appendix A

The follow pages are the three forms required for a skeletal inventory performed at GEFARL on donated remains. Note that the Skeletal Inventory Form, Page 1, is missing the hyoid, ossicles, and clavicles. These should be mentioned in the "Notes" section with the appropriate codes.





#### SKELETAL INVENTORY

CODES:       1- Present complete       3- Absent (Postmortem)         2- Present fragmentary       4- Antemortem loss         CRANIUM:       Left       Right         Prontal	DONATION:	RECORE	DER: DATE:	LOCATION:_
2- Present fragmentary 4- Antemortem loss          CRANUM:       Left       Right       Left       Right         Portical       Nasal				
Left     Right     Left     Right       Parietal				
Frontal       Nasil       O         Parietal       Nasal       O         Occipital       Ethmoid       I         Temporal       Lacrimal       O         Zygomatic       Sphenoid       I         Palate       Sphenoid       I         MANDIBLE:       I       Right       Left         Body       I       Right       Left       Right         POSTCRANIUM:       I       Left       Right       I         Radius       I       Intractic 1-12 (count)       IIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	<b>CRANIUM:</b>			
Parietal		Left		e
Occipital				
Temporal       Lacrimal         Zygomatic       Sphenoid         Palate       Sphenoid         MANDIBLE:       Left         Body       Right         Left       Right         Scapula       Left         Humerus       Left         Radius       Sacrum         Ulna       Body         Juna       Sternal Body         Steral Body       Ischium         Ribs       Coccyx         Axis       Penur         Cervical 3 to 7 (count)       Tibia         Hamate       Trapezioid         Capitate       Proximal Alages         Lunate       phalanges         Lunate       phalanges				
Zygomatic				
Palate				
MANDIBLE:     Left     Right     Left     Right       Body				
Left     Right     Left     Right       Body	Palate		Sphenoid	id
Body     Ramus       POSTCRANIUM:     Right       Left     Right       Scapula     Thoracic 1-12 (count)       Humerus     Lumbar 1-5 (count)       Radius     Sacrum       Uha     Ilium       Manubrium     Pubis       Sternal Body     Ischium       Ribs     Coccyx       Atlas     Permur       Axis     Patella       Cervical 3 to 7 (count)     Tibia       Hamate     Trapezoid       Capitate     Trapezoid       Pisiform     Metacarpals (count)       Triqueral     Intermediate       Lunate     phalanges       Scaphoid     Distal phalanges	MANDIBLE:			
POSTCRANIUM:       Left       Right       Left       Right         Scapula		Left		e
LeftRightLeftRightScapulaThoracic 1-12 (count)	Body		Ramus	·
LeftRightLeftRightScapulaThoracic 1-12 (count)	POSTCRANIU	И:		
Scapula        Thoracic 1-12 (count)	100101010101		Right	Left Right
Humerus        Lumbar 1-5 (count)	Scapula	2011		e
Radius				
Ulna       Ilium       Ilium       Ilium         Manubrium       Pubis       Image: Sternal Body       Image: Sternal Body       Image: Sternal Body         Sternal Body       Image: Scaphoid       Image: Scaphoid       Image: Scaphoid       Image: Sternal Body       Image: Sternal Body         Sternal Body       Image: Sternal Body				
Manubrium       Pubis				
Sternal Body       Ischium       Ischium         Ribs       Coccyx       Ischium         Atlas       Femur       Ischium         Axis       Patella       Ischium         Cervical 3 to 7 (count)       Tibia       Ischium         HANDS:       Fibula       Ischium       Ischium         Hamate       Trapezoid       Ischium       Ischium         Capitate       Trapezoid       Ischium       Ischium         Pisiform       Metacarpals (count)       Ischium       Ischium         Lunate       Intermediate       Ischium       Ischium       Ischium         FEET:       Ischium       Ischium       Ischium       Ischium	0			
Ribs				
Atlas				
Axis       Patella				
Cervical 3 to 7 (count)       Tibia         Fibula       Fibula         HANDS:			Detalla	
HANDS:				
LeftRightLeftRigHamateTrapeziumCapitateTrapezoidPisiformMetacarpals (count)TriquetralProximal phalangesLunatephalangesScaphoidDistal phalanges	Cervical 5			
LeftRightLeftRigHamateTrapeziumCapitateTrapezoidPisiformMetacarpals (count)TriquetralProximal phalangesLunatephalangesScaphoidDistal phalanges	HANDS:			
Hamate     Trapezium		Left	Right	Left Right
Capitate       Trapezoid         Pisiform       Metacarpals (count)         Triquetral       Proximal phalanges         Lunate       Intermediate         Scaphoid       Distal phalanges         FEET:	Hamate			
Pisiform       Metacarpals (count)         Triquetral       Proximal phalanges         Lunate       Intermediate         Scaphoid       Distal phalanges         FEET:				
Triquetral       Proximal phalanges				
Lunate     Intermediate       Scaphoid     phalanges       FEET:     Intermediate			Provimal pha	langes
Lunate      phalanges        Scaphoid      Distal phalanges        FEET:				
Scaphoid     FEET:	Lunate			
	Scaphoid			
	FEET:	Laft	Pight	Left Right
Calcaneus Navicular	Calcanaus	Leit		
Talus      Metatarsal (count)        Cuboid     Proximal phalanges				
	Cubola			
Lateral Cuneiform   Intermediate     phalanges		m		
Intermediate Distal phalanges			Distal nhala	anges
Cuneiform				
Medial Cuneiform	Medial Cuneifor	m		

Notes:\_\_\_\_\_

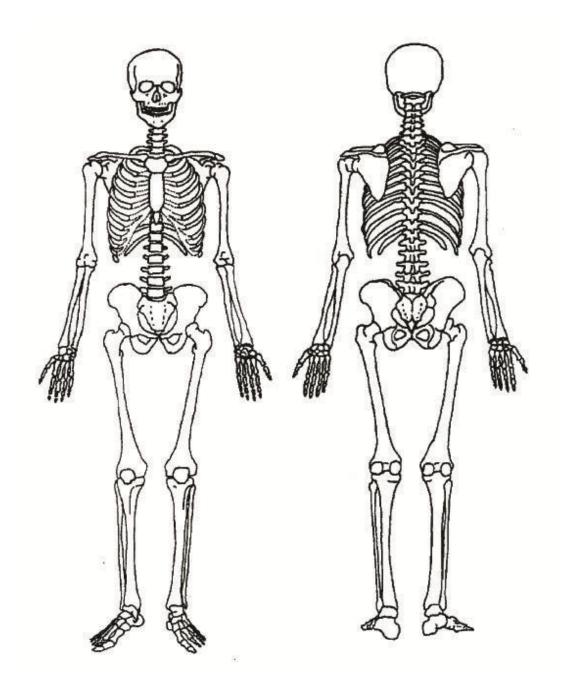


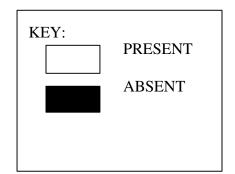
FORENSIC ANTHROPOLOGY CENTER AT TEXAS STATE UNIVERSITY

SKELETAL INVENTORY



DONATION:\_\_\_\_\_ RECORDER:\_\_\_\_\_DATE:\_\_\_\_\_LOCATION:\_\_\_\_\_





NOTES:



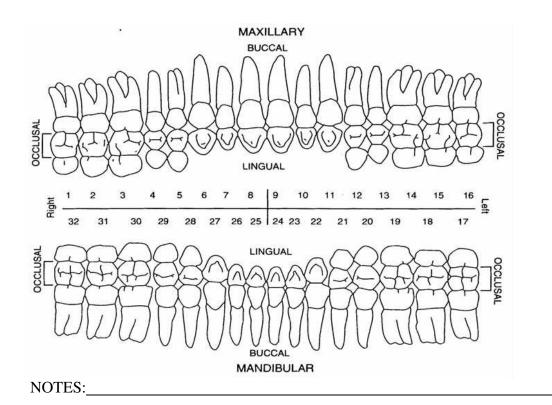
#### FORENSIC ANTHROPOLOGY CENTER AT TEXAS STATE UNIVERSITY

#### SKELETAL INVENTORY



#### DONATION: RECORDER: DATE: LOCATION: CODES: 1- Present complete 2- Present fragmentary 3- Absent (Postmortem) 4- Antemortem loss 5- Unerupted 6- Congenitally Missing

DENTITION:				
	Left	Right	Left	Right
Max. I1			Mand. I1	
Max. I2			Mand. I2	
Max. C			Mand. C	
Max. P3		]	Mand. P3	
Max. P4		]	Mand. P4	
Max. M1		N	Mand. M1	
Max. M2		N	Mand. M2	
Max. M3		N	Mand. M3	



KEY:

## Appendix B

The follow pages are the thirteen forms (fifteen total pages with cover/info sheets) I created for a full biological profile.



Feature ID|

The following forms were created using existing FACTS Donation Inventory forms and information/forms provided in *Standards for Data Collection from Human Skeletal Remains*<sup>†</sup>.

Not all forms may apply to the inventory being performed. If that is the case, please remove the form from your packet. For example, if you are working on a set of adult remains, you do not need the juvenile or infant skeletal visual inventory forms.

<sup>†</sup>Haas, J., Buikstra, J. E., Ubelaker, D. H., & Aftandilian, D. (1994). Standards for data collection from human skeletal remains: Proceedings of a seminar at the field





FEATURE ID:	RECORDER:		DATE:	LOCATION:	
	<u></u>	lotol Invo	ntory	·	
CODES: 1 – Present Complete 2 – Present Fragmentary	3 – Absent (Postmorte 4 – Antemortem Loss	eletal Inve	ntory		
CRANIUM:					
Frontal Parietal Occipital Temporal Zygomatic Palate MANDIBLE:	Left	Right	Maxilla Nasal Ethmoid Lacrimal Vomer Sphenoid Ossicles (count)	Left	Right
Body	Left	Right	Ramus	Left	Right
POSTCRANIUM:					
Scapula Clavicle Hyoid Humerus Radius Ulna Manubrium Sternal Body Ribs Atlas Axis Cervical 3 to 7 (count)	Left	Right	Thoracic 1-12 (count) Lumbar 1-5 (count) Sacrum Coccyx Ilium Pubis Ischium Femur Patella Tibia Fibula	Left	Right
HANDS: Scaphoid Lunate Trapezoid Pisiform Trapezium Triquetral FEET:	Left	Right	Capitate Hamate Metacarpals (count) Proximal Phalanges Intermediate Phalanges Distal Phalanges	Left	Right
Calcaneus Talus Cuboid Navicular Lateral Cuneiform Intermediate Cunieform Notes:	Left	Right	Medial Cuneiform Metatarsal (count) Proximal Phalanges Intermediate Phalanges Distal Phalanges	Left	Right





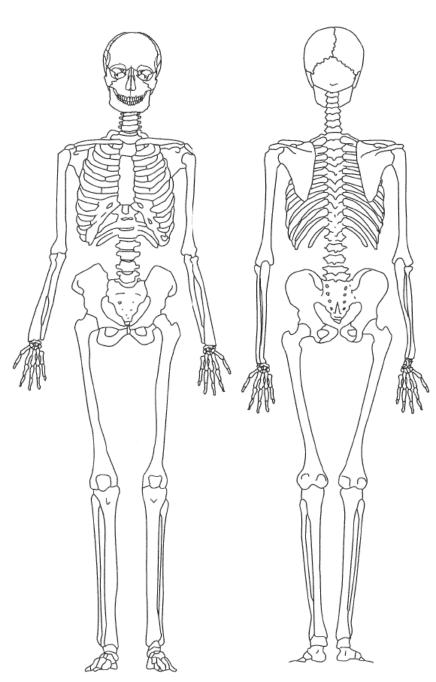
FEATURE ID:

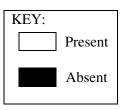
RECORDER:

DATE:

LOCATION:

## Adult Visual Skeletal Inventory









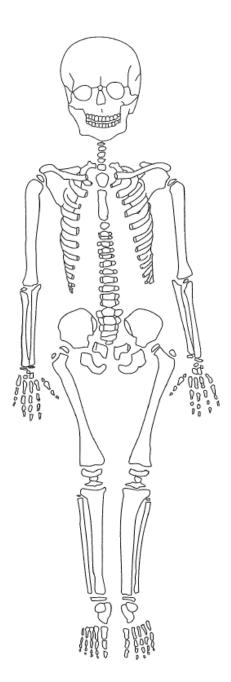
FEATURE ID:

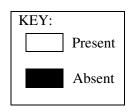
RECORDER:

DATE:

LOCATION:

## Juvenile Visual Skeletal Inventory









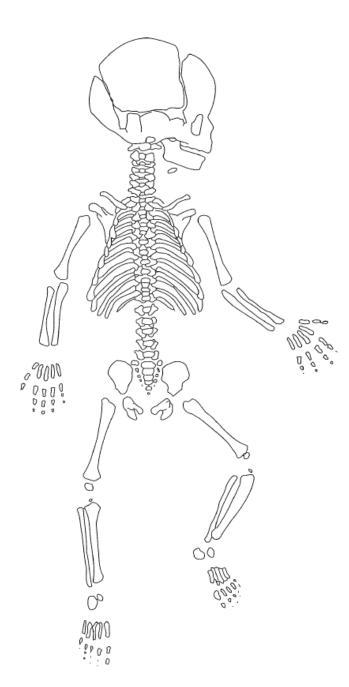
FEATURE ID:

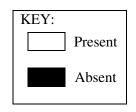
RECORDER:

DATE:

LOCATION:

## Infant Visual Skeletal Inventory







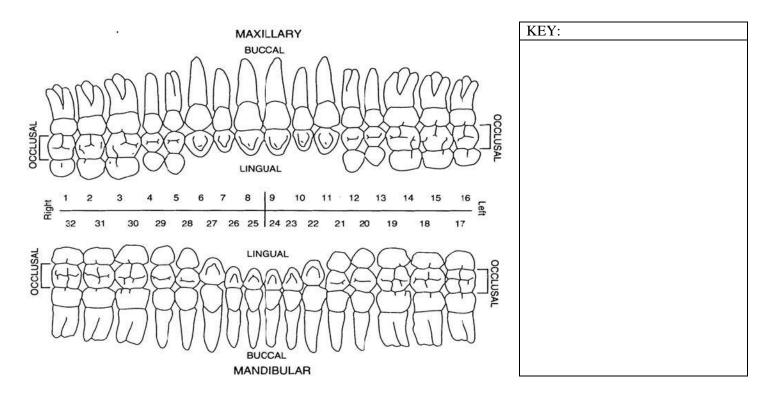


## FEATURE ID: \_\_\_\_\_\_ RECORDER: \_\_\_\_\_ DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ Adult Dentition<sup>†</sup>

CODES:	1 – Present Complete	3 – Absent (Postmortem)	5 – Unerupted
	2 – Present Fragmentary	4 – Antemortem Loss	6 – Congenitally Missing

#### ADULT DENTITION

Maxillary	Left	Right	Mandibular	Left	Right
I1			I1		
I2			I2		
С			С		
P3			P3		
P4			P4		
M1			M1		
M2			M2		
M3			M3		



<sup>&</sup>lt;sup>†</sup>Record all measurements to the nearest millimeter. If bones are fragmented, measurements should not be taken, but dimensions should be estimated for minor erosion or reconstruction; identify these with an asterisk "\*".



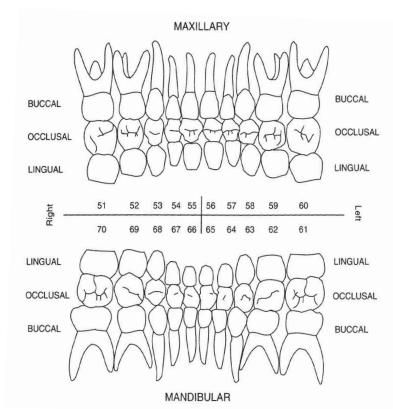


FEATURE ID: \_\_\_\_\_\_ RECORDER: \_\_\_\_\_ DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_ Deciduous Dentition<sup>†</sup>

CODES:	1 – Present Complete	3 – Absent (Postmortem)	5 – Unerupted
	2 – Present Fragmentary	4 – Antemortem Loss	6 – Congenitally Missing

#### **DECIDUOUS DENTITION**

Maxillary	Left	Right	Mandibular	Left	Right
I1			I1		
I2			I2		
С			С		
P3			P3		
P4			P4		
M1			M1		
M2			M2		



KEY:		

<sup>&</sup>lt;sup>†</sup>Record all measurements to the nearest millimeter. If bones are fragmented, measurements should not be taken, but dimensions should be estimated for minor erosion or reconstruction; identify these with an asterisk "\*".



## FORENSIC ANTHROPOLOGY CENTER AT TEXAS STATE UNIVERSITY



**BIOLOGICAL PROFILE** 

FEATURE ID:	RECORDER:	DATE:	LO	CATION:
	Sku	ll Metrics <sup>†</sup>		
		Left (mm)	Right (mm)	Date Taken
	Maximum Length			
Cranium -	Maximum Breadth			
Cranium -	Bizygomatic Diameter			
Cranium -	Basion-Bregma Height			
Cranium -	Base Length			
Cranium -	<b>Basion-Prosthion Length</b>			
Cranium -	Maxillo-Alveolar Breadth			
Cranium -	Maxillo-Alveolar Length			
Cranium -	Biauricular Breadth			
Cranium -	Upper Facial Height			
Cranium -	Minimum Frontal Breadth			
Cranium -	Upper Facial Breadth			
Cranium -	Nasal Height			
Cranium -	Nasal Breadth			
Cranium -	Orbital Breadth			
Cranium -	Orbital Height			
Cranium -	Biorbital Breadth			
Cranium -	Interorbital Breadth			
Cranium -	Frontal Chord			
Cranium -	Parietal Chord			
Cranium -	Occipital Chord			
Cranium -	Foramen Magnum Length			
Cranium -	Foramen Magnum Breadth			
Cranium -	Mastoid Length			
Mandible -	Chin Height			
Mandible -	Height of Mandibular Body			
Mandible -	Breadth of Mandibular Body			
Mandible -	Bigonial Width			
Mandible -	Bicondylar Breadth			
Mandible -	Minimum Ramus Breadth			
Mandible -	Maximum Ramus Breadth			
Mandible -	Maximum Ramus Height			
Mandible -	Length			
Mandible -	Angle			

Notes:\_\_\_\_\_

<sup>&</sup>lt;sup>†</sup>Record all measurements to the nearest millimeter. If bones are fragmented, measurements should not be taken, but dimensions should be estimated for minor erosion or reconstruction; identify these with an asterisk "\*".





- CE 8 80.00		OTTLE		
FEATURE ID:	RECORDER:	DATE:	LOCATI	ON:
	Postcranial N	/letrics <sup>†</sup>		
		Left (mm)	Right (mm)	Date Taken
Clavicle	- Maximum Length	Lett (iiiii)	Right (iiiii)	Dute Tuken
	- AntPost. Diamter at Midshaft			
	- SupInf. Diamter at Midshaft			
	- Height			
-	- Breadth			
-	- Maximum Length			
	- Epicondylar Breadth			
	- Vertical Diameter of Head			
	- Maximum Diameter at Midshaft			
	- Minimum Diameter at Midshaft			
Radius	- Maximum Length			
	- Anterior-Posterior Diameter at Midshaft			
Radius	- Medial-Lateral Diameter at Midshaft			
Ulna	- Maximum Length			
	- Anterior-Posterior Diameter			
Ulna	- Medial-Lateral Diameter			
Ulna	- Physiological Length			
Ulna	- Minimum Circumference			
Sacrum	- Anterior Length			
Sacrum	- Anterior-Superior Breadth			
Sacrum	- Maximum Transverse Diameter of Base			
Os Coxae	- Height			
Os Coxae	- Iliac Breadth			
Os Coxae	- Pubis Length			
Os Coxae	- Ischium Length			
Femur	- Maximum Length			
	- Bicondylar Length			
Femur	- Epicondylar Breadth			
Femur	- Maximum Diameter of Head			
	- Anterior-Posterior Subtrochanteric Diameter			
	- Medial-Lateral Subtrochanteric Diameter			
	- Anterior-Posterior Diameter at Midshaft			
	- Medial-Lateral Diameter at Midshaft			
Femur	- Midshaft Circumference			
	- Length			
	- Maximum Proximal Epiphyseal Breadth			
	- Maximum Distal Epiphyseal Breadth			
	- Maximum Diameter at Nutrient Foramen			
	- Medial-Lateral Diameter at Nutrient Foramen			
	- Circumference at Nutrient Foramen			
	- Maximum Length			
	- Maximum Diameter at Midshaft			
Calcaneus	- Maximum Length			

<sup>†</sup>Record all measurements to the nearest millimeter. If bones are fragmented, measurements should not be taken, but dimensions should be estimated for minor erosion or reconstruction; identify these with an asterisk "\*".

Calcaneus - Middle Breadth





FEATURE ID:		RECORDER:			DATE:		LOCAT	TON:	
			De	ntal Me	trics <sup>†</sup>				
	Maxillary	I1	I2	С	<b>P3</b>	P4	<b>M1</b>	M2	M3
Adult Dentition	Mesiodistal Diameter								
	Buccolingual Diameter								
	Crown Height								
enti	Mandibular	I1	I2	С	<b>P3</b>	P4	<b>M1</b>	M2	M3
itio	Mesiodistal Diameter								
n	Buccolingual Diameter								
	Crown Height								

Maxillary	I1	I2	С	<b>P3</b>	P4	M1	M2
Mesiodistal Diameter							
Buccolingual Diameter							
Crown Height							
Mandibular	I1	I2	С	P3	<b>P4</b>	<b>M1</b>	M2
Mesiodistal Diameter							
Buccolingual Diameter							
Crown Height							

Notes:\_\_\_\_\_

 $\dagger$  Record left side of arcade only; substitute antimere when left not observable and identify these with an asterisk "\*".





FEATURE ID:	RECORDER:	DATE:	LOCATION:
	Sex Assess	sment	

Pelvis			Skull			
	L	R		L	Μ	R
Ventral Arc (1-3)			Nuchal Crest (1-5)			
Subpubic Concavity (1-3)			Mastoid Process (1-5)			
Ischiopubic Ramus Ridge (1-3)			Supraorbital Margin (1-5)			
Greater Sciatic Notch (1-5)			Glabella (1-5)			
Preauricular Sulcus (0-4)			Mental Eminence (1-5)			
Assessed Sex, Pelvis			Assessed Sex, Skull			





FEATURE ID:		RECORDE	R:	DATE:	LOCAT	TON:
			Age	Assessment		
	Sutur	e Closure Codes	: * – Unobs	ervable 0 – Open 2 – Significar	1 – Minimal nt 3 – Complete	
[		Cı	anial Sutu	re Closure (codes at	pove)	
	External Crania	l Vault		Palate		
		Midlan	ıbdoid		Incisive	
		La	ambda	Anterior M	Median Palatine	
		0	belion	Posterior N	Median Palatine	
		Anterior S	agittal	Tran	sverse Palatine	
		В	regma	Internal Cr	anial Vault	
		Midc	oronal		Sagittal	
		F	Iterion		Left Lambdoid	
		Sphenot	frontal		Left Coronal	
	Infe	erior Sphenoter	nporal			
	Sup	erior Sphenoter	nporal			
Pubio	c Symphysis	L	R	Auricular Su	rface L	R
	Todd (1-10)				(1-8)	
Such	hey-Brooks (1-6)					
Assess	ed Age (circle)	Old Adult (50+ years)	Middle Adu (35-50 years		Subadult Juvenile (~age)	Subadult Infant (~age)
otes:				· · ·	、	





FEATURE ID:

RECORDER: \_\_\_\_\_ DATE: \_\_\_\_\_ LOCATION:

## Images & Histology

	Initials	Date
Photographs		
Full Body		
Skull		
Teeth		
Pathology		
Histological Sections		
Rib		
Femur		
Tooth		
Dental Casts		
Tooth#		
Tooth#		
Tooth#		
Radiographs		
Type:		
Type:		





FEATURE ID: RECORDER:

DATE:

LOCATION:

## **Close-up Images of Sex/Age Assessing Traits**

SEX								
	Initials	Date		Initials	Date			
Pelvis			Skull					
Ventral Arc			Nuchal Crest					
Subpubic Concavity			Mastoid Process					
Ischiopubic Ramus Ridge			Supraorbital Margin					
Greater Sciatic Notch			Glabella					
Preauricular Sulcus			Mental Eminence					
		AC	<b>JE</b>					
	Initials	Date		Initials	Date			
<b>External Cranial Vault</b>			Palate					
Midlambdoid			Incisive					
Lambda			Anterior Median Palatine					
Obelion			Posterior Median Palatine					
Anterior Sagittal			Transverse Palatine					
Bregma			Internal Cranial Vault					
Midcoronal			Sagittal					
Pterion			Left Lambdoid					
Sphenofrontal			Left Coronal					
Inferior Sphenotemporal								
Superior Sphenotemporal								
Pubic Symphysis			Auricular Surface					
Notes:								