

Shelby Garza, Ph.D.
Assistant Professor, Forensic Science
College of Criminal Justice
Sam Houston State University

EDUCATION

Ph.D. in Applied Anthropology, Texas State University, San Marcos, TX, **2025**

- Dissertation: *Cortical and trabecular bone structural variation in association with known activity patterns*

M.A. in Anthropology, Texas State University, San Marcos, TX, **2019**

B.S. in Anthropology, Texas State University, San Marcos, TX, **2017**

WORK OR PROFESSIONAL EXPERIENCE

Assistant Professor, Forensic Science (2025 – present)

College of Criminal Justice, Sam Houston State University, Huntsville, TX

- Research interests include forensic anthropology, osteology, skeletal biology, human variation, bone biomechanics
- Instructor for graduate level courses including Fundamentals of Research Methods, Research Methods, and Seminar in Forensic Science
- Instructor for undergraduate level online course Introduction to Forensic Science

Doctoral Research Assistant (2022 – 2025)

Texas State University, San Marcos, TX

- National Institute of Justice grant: *Improving age-at-death estimates from human skeletal remains through spatial analysis of intracortical remodeling using geographic information systems software* under Dr. Timothy Gocha (PI)
- Prepare and mount undecalcified histological human femoral samples. Collect histomorphological data from bone microstructure in a BSL-2 laboratory.

Skeletal Analyst (2021 – 2022)

Operation Identification, Texas State University, San Marcos, TX

- Assist with the intake and skeletal analysis of individuals recovered from the Texas/Mexico border for the purpose of identification and repatriation.

Doctoral Instructional Assistant (2020 – 2022)

Texas State University, San Marcos, TX

- Instructor of record for undergraduate level Human Osteology
- Teaching assistant for graduate level course Skeletal Methods II and undergraduate level courses including Human Biological Variation, Human Osteology, and Forensic Anthropology.

Histology Technician Specialist (2019 – 2020)

Texas State University, San Marcos, TX

- National Science Foundation Major Research Instrumentation grant under Dr. Sophia Mavroudas (PI)
- Prepare and mount undecalcified histological bone samples. Collect data from histological slides and manage the Forensic Anthropology Center at Texas State Histological Database. Managed the Leica DM6M and Leica M205 C microscopes and the Leica Aperio Slide Scanner. Wrote guidelines on how to use each microscope and how to navigate the histological database.

Assistant Archaeologist (2019)

AR Consultants Inc, Richardson, TX

- Assist with completion of phase two survey for archaeological sites 41FN178 and 41FN244. Organize site paperwork and data, conduct research, and assist with report writing.

Graduate Research Assistant (2017 – 2019)

Forensic Anthropology Research Facility, Texas State University, San Marcos, TX

- Assist with management of the outdoor decomposition facility. Oversee student volunteers, organize paperwork and data, purchase/restock equipment, assist visiting researchers and media, and maintain department vehicles.

PEER-REVIEWED PUBLICATIONS

Articles

Lauren A. Meckel, Sophia R. Mavroudas, Justin Z. Goldstein, **Shelby L. Garza**, Timothy P. Gocha. Histotaphonomic signatures of thermally altered human skeletal remains: Implications for archaeological interpretation. *International Journal of Osteoarchaeology*. Feb 2025.

Sophia R. Mavroudas, Lauren A. Meckel, Timothy P. Gocha, Justin Z. Goldstein, **Shelby L. Garza**. The effects of experimental whole-body burning on histological age-at-death estimation from human cortical bone and dental cementum. *Biology (Basel)*. Oct 2022; 11(11) PubMed Central PMCID: PMC9687164

Peer-Reviewed Presentations

Shelby L. Garza. Histotaphonomic changes of experimentally burned bone and the application of confocal laser scanning microscopy. 10th International Bone Diagenesis Meeting. Athens, Greece. Accepted Poster Presentation. Sep 2025.

Shelby L. Garza. Evaluating cortical bone structural variation in association with activity level. Proceedings from the American Academy of Forensic Sciences, Baltimore, MD. Poster Presentation. Feb 2025.

Theresa De Cree, **Shelby Garza**, Emily Brooks, Emma Giacomello. Detecting peri-menopausal bone deposition in a forensic sample utilizing micro-CT. Proceedings from the American Academy of Forensic Sciences, Baltimore, MD. Poster Presentation. Feb 2025.

Shelby L. Garza. The applications of confocal laser scanning microscopy for imaging burned remains. Proceedings from the American Academy of Forensic Sciences. Orlando, FL. Poster Presentation. Feb 2023.

Shelby L. Garza, Justin Z. Goldstein. Comparing unidentified, missing persons, and county demographics in Texas. Proceedings from the American Academy of Forensic Sciences. Seattle, WA. Poster Presentation. 2022.

Molly A Kaplan, **Shelby L. Garza**, Jennifer A. Barron, Michelle D. Hamilton. Expanding lines of evidence: Contextualizing open forensic cases to enhance identification efforts in Texas. Proceedings from the American Academy of Forensic Sciences. Seattle, WA. Podium Presentation. 2022.

Mariah E. Moe, **Shelby L. Garza**, Nicholas P. Herrmann. Modeling Grave Depressions Using Open-Source LiDAR Data at the Forensic Anthropology Research Facility. Proceedings from the American Academy of Forensic Sciences. Seattle, WA. Poster Presentation. 2022.

Lauren A. Meckel, Sophia R. Mavroudas, Justin Z. Goldstein, **Shelby L. Garza**, Timothy P. Gocha. The Effects of Experimental Whole-Body Burning on the Cortical Bone Microstructure of Ribs, Femora, and Metatarsals. Proceedings from the American Academy of Forensic Sciences. Seattle, WA. Podium Presentation. 2022.

Shelby L. Garza, Emilie L. Wiedenmeyer, Kari E. Helgeson, M. Katherine Spradley. Assessing fluctuating asymmetry in the crania and lower limb bones of two modern populations. Proceedings from the American Academy of Forensic Sciences. Anaheim, CA. Poster Presentation. 2020.

Shelby L. Garza, Daniel J. Wescott. The effects of chemotherapy and/or radiotherapy treatment on decomposition. Proceedings from the American Academy of Forensic Sciences. Baltimore, MD. Poster Presentation. 2019.

Shelby L. Garza, Daniel J. Wescott. The “Buffalo Soldiers” of Fort Craig, New Mexico: Biomechanical properties of the femora and humeri. Proceedings from the American Association of Biological Anthropologists. Austin, TX. Poster Presentation. 2018.

Shelby L. Garza, Daniel J. Wescott. Reexamining differences in the rate of decomposition between previously frozen and never frozen human remains using the Accumulated Decomposition Score. Proceedings from the American Academy of Forensic Sciences. Seattle, WA. Poster Presentation. 2018.

Shelby L. Garza, Daniel J. Wescott. Seasonal differences in accumulated degree-days on the rate of human decomposition. Proceedings from the American Association of Biological Anthropologists. New Orleans, LA. Poster Presentation. 2017.

Shelby L. Garza, Daniel J. Wescott. Differences in the rate of decomposition between frozen and non-frozen human remains. Proceedings from the American Academy of Forensic Sciences. New Orleans, LA. Poster Presentation. 2017.

CERTIFICATIONS AND PROFESSIONAL DEVELOPMENT

Case Analysis Team (CAT) Member (2021 – 2025)

Forensic Anthropology Center, Texas State University, San Marcos, TX

- Permitted to single author case reports for submission and/or direct assistant members in coauthoring submitted case reports.

Full Search and Recovery Team (SRT) Member (2021 – 2025)

Forensic Anthropology Center, Texas State University, San Marcos, TX

- Permitted to lead FACTS search and recovery efforts in the command position; can excavate, record and recover human remains, and direct trainee and assistant members.

Applied Biostatistics using R (2023)

Forensic Anthropology Center, Texas State University, San Marcos, TX

- Short course that provided introduction to data science with the R language and environment.

Documenting Human Rights Abuses through Forensic Anthropology (2020)

University of Arizona, Tucson, AZ

- Online course that focused on the application of forensic anthropology in human rights investigations from a global perspective including guest speakers with experience working in these settings.

Macromorphoscopic Trait Analysis (2019)

Forensic Anthropology Center, Texas State University, San Marcos, TX

- Workshop that provided an updated review and hands-on instruction of the use of macromorphoscopic traits for ancestry estimation.

Subadult Biological Profile Estimation: KidStats (2019)

Forensic Anthropology Center, Texas State University, San Marcos, TX

- Workshop that provided training using a graphical user interface that assists in estimating components of the subadult biological profile using dental and skeletal indicators.

Adult Skeletal Age Estimation: Transition Analysis using the Entire Skeleton (2018)

Forensic Anthropology Center, Texas State University, San Marcos, TX

- Workshop that provided an updated and improved examination of transition analysis, aiming to utilize the entire skeleton to eliminate inaccurate, biased, and imprecise age estimations.

AWARDS, SCHOLARSHIPS, AND FELLOWSHIPS

- The Honor Society of Phi Kappa Phi Dissertation Fellowship, 2024 (\$10,000)
- John Michael Kilby Graduate Research Fellowship in Anthropology, 2023 (\$1,433)
- Forensic Science Foundation Student Affiliate Scholarship, 2023 (\$155)
- Graduate College Doctoral Research Support Fellowship, 2022 (\$4,733.73)
- Grady Early Endowment Fellowship, 2022 (\$10,451)
- Graduate College Scholarship, 2021 (\$1,000)
- Graduate College Scholarship, 2020 (\$2,000)
- Forensic Science Foundation Student Travel Grant, 2019 (\$1,500)
- Grant from Grady Early Endowment Fellowship, 2018 (\$2,000)
- Graduate Student Travel Award, 2018 (\$700)

FIELD EXPERIENCE

Forensic Anthropology Center at Texas State (2017 – 2025)

- Active participant in the Willd Body Donation Program by leading donation pick-ups, photographic documentation, tissue sampling, and placement of donations at the outdoor decomposition facility.
- Active part taking photos and notes for ongoing longitudinal decomposition research, participating in burials for various forensic recovery workshops, and the disarticulation of human remains for osteological processing. Work at the Osteological Research and Processing Lab processing and cleaning osseous material from donated remains. Work at the Grady Early Forensic Anthropology Research Lab includes skeletal inventories and photos for curation of donated remains.

Workshop Instruction (2017 – 2025)

- Worked as a small group instructor for various workshops covering human remains recovery, human osteology, forensic excavation, fire death investigation, and human remains detection.

Technical Report Writing (2018 – 2025)

- Active participant in forensic anthropological case reports. Served as the primary author on 21 reports, co-authored 14 reports, and peer reviewed 22 case reports.

Mass Casualty Disaster Relief (2025)

- Worked as the Forensic Anthropologist in the field to assist with identification of osseous material and human versus non-human identification of remains resulting from a flood event in Kerr County, TX.

Department of Defense POW/MIA Accounting Agency (DPAA) Mission (2025)

- Worked as a field technician assisting with excavation efforts of a World War II aircraft crash site in Rennes, France.

Disaster Victim Identification (2024)

- Worked as a team member with Operation Identification to assist with the documentation and fingerprinting of 19 unidentified presumed migrants in Maverick County, TX.

Forensic Exhumations (2017 – 2023)

- Worked as a team leader/member with Operation Identification to help coordinate and plan exhumation efforts of unidentified presumed migrants in cemeteries throughout various South Texas counties.

Forensic Geophysical Work (2023)

- Assisted with the use of Ground Penetrating Radar and shovel test pits to search for a potential clandestine burial in Converse, TX.

Records and Site Reconnaissance (2022)

- Worked as an Operation Identification Representative to speak with local county officials to obtain written and verbal documentation for burials of unidentified migrants in Eagle Pass, TX.

Georgian Recovery, Documentation, and Identification Project (2021)

- Worked as a field technician with the Georgian Association of Forensic Anthropology on the documentation and excavation of a mass grave related to Soviet-Era Terror in Batumi, Georgia resulting in the recovery of 29 individuals.

Archaeological Excavation (2018)

- Worked as a field technician to assist with the excavation of a single pre-contact burial exposed due to erosion in Frio County, TX.

Cemetery Survey (2018)

- Worked as a field technician to help with a systematic pedestrian survey of Sacred Heart Cemetery, Brooks County, TX, which included the identification of areas of interest and conducting ground penetrating radar.

Systemic Field Searches (2016 – 2018)

- Worked as a team member with Operation Identification to conduct pedestrian line searches for the remains of unidentified presumed migrants on private ranch land in South Texas.

Forensic Excavation (2017)

- Assisted in the excavation of human remains in Marble Falls, TX.

Forensic Search (2016-2017)

- Assisted with search efforts for human remains in Austin and Wimberley, TX.

COMMUNITY OUTREACH

- Speaker. Forensic Anthropology Lectures. Law enforcement groups or student groups. 2017 – 2025.
- Anthropology graduate student representative and volunteer. Girl Scouts Day. November 2023.
- Invited Speaker. Forensic Anthropology Lecture. Various High School Classes in Arizona. August 2022.
- Invited Speaker. Mississippi Coroner Retreat Workshop. January 2022.
- Anthropology graduate student representative and volunteer. Girl Scouts Day. April 2019.
- Anthropology graduate student representative and volunteer. San Marcos Steam Fair. February 2019.
- Anthropology graduate student representative and volunteer. New Braunfels Science Fest. October 2018.
- Tour Guide. Visiting Law Enforcement Officers. August 2017 – August 2019.
- Invited Speaker. Forensic Anthropology Lecture. 43rd Annual Arizona Career and Technical Education Summer Conference. July 2018.
- Speaker and Anthropology Graduate Student Representative and Volunteer. San Marcos Library Day. June 2018.
- Graduate Student Mentor to undergraduate interns at the Forensic Anthropology Center at Texas State. January 2018 – June 2018.
- Anthropology Graduate Student Representative and Volunteer. New Braunfels Science Fest. October 2017.
- FARF Assistant. Volunteer and intern training in osteology, disarticulation, note taking, and photography at the outdoor decomposition facility.

PROFESSIONAL MEMBERSHIPS

- American Academy of Forensic Sciences – Anthropology Section