

Tiffany B. Fracchia
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EDUCATION

2013-2017 PhD, Anthropology, University of Tennessee, Knoxville (August 12, 2017)
2010-2013 MS, Biology, Middle Tennessee State University
1998-2002 BS, Anthropology, Middle Tennessee State University

ACADEMIC APPOINTMENTS

2024- present Associate Professor of the Practice of Anthropology, Vanderbilt University
2021-2023 Lecturer, Vanderbilt University (Department of Anthropology)
2022-2023 Research Associate Professor, Middle Tennessee State University (Department of Sociology and Anthropology)
2017-2022 Research Assistant Professor, Middle Tennessee State University (Department of Sociology and Anthropology)
2015-2017 Graduate Research Assistant, University of Tennessee (Anthropology)
2014-2015 Graduate Teaching Assistant, University of Tennessee (Anthropology & Biology)
2013 Graduate Research Assistant, University of Tennessee (Anthropology)
2012-2013 Graduate Research Assistant, Forensic Institute for Research and Education
2010-2012 NSF Graduate Fellow, Middle Tennessee State University

FORENSIC AND ARCHAEOLOGICAL EXPERIENCE

2017-present Davidson County Medical Examiner's Office, Forensic Anthropology Consultant
2021-2023 Forensic Aviation Archaeology International Field School, Project Director
2017-2020 MTSU FIRE Mexican-American War project (H. Berryman, PI), Anthropology and Isotope Analysis Consultant
2014 Forensic Anthropology Center Field Recovery Methods Course, Field Assistant
2013 Association for the Recovery of Historic Memory (Ponferrada, Spain), Lab Assistant/Volunteer
2012, 2015 Forensic Skeletal Search and Recovery Course (MTSU), Field Assistant
2009-2013 Forensic Anthropology Search and Recovery (FASR) Team (MTSU), Member
2010 Bioarchaeological Research in Ayachucho Peru (T. Tung, PI), Team Member
2010 Expedition Peleliu (D. Frisby, PI), Biological Anthropologist
2010 Skeletal Inventories for David Davis Farm Site (40HA301), Volunteer
2009 Castalian Springs Archaeological Project (40SU14)(K. Smith, PI), Crew Member

FUNDED PROJECTS

2024 Department of Defense Award to support: Stable Light Isotopes Study for the Defense POW/MIA Accounting Agency (DPAA) (\$39,249.36), PI*

- 2024 American Academy of Forensic Sciences Humanitarian and Human Rights Resources Center Award to support: *Capacity Building for Tanzania Police Officers on the Potential of Stable Isotopes for Human Identification* (\$9,995), Co-PI (ongoing)
- 2023 Henry Jackson Foundation Award to support: *Terrestrial Recovery and Field School at a World War II Site in France in Partnership with the Defense POW/MIA Accounting Agency* (\$175,011), PI*
- 2022 American Academy of Forensic Sciences Humanitarian and Human Rights Resources Center Award to support: *Construction of a national baseline for hydrogen, oxygen, carbon, nitrogen, and strontium in hair stable isotopes to identify the region of origin of unidentified victims of the internal armed conflict in Colombia* (\$5,650), Advisor (ongoing)
- 2022 Henry Jackson Foundation Award to support: *Terrestrial Recovery and Field School at a World War II Site in France in Partnership with the Defense POW/MIA Accounting Agency* (\$138,876), PI*
- 2021 Henry Jackson Foundation Award to support: *Terrestrial Recovery and Field School at a World War II Site in France in Partnership with the Defense POW/MIA Accounting Agency* (\$275,343), PI*
- 2020 American Academy of Forensic Sciences Humanitarian and Human Rights Resources Center Award to support: *Construction of a National Hydrogen and Oxygen Isoscape for Colombia as a Baseline for the Identification of Region of Origin of Unidentified Victims of the Internal Armed Conflict* with EQUITAS, Colombia (\$19,998), Co-PI (ongoing)
- 2018 National Institute of Justice Research and Development in Forensic Science for Criminal Justice Purposes: *Stable Isotope Analysis as a Geospatial Tool for Identification: Intra-individual Isotopic Variability* 2018-DU-BX-0217 (\$570,624), Co-PI*

*Indicates funding with facilities and administrative overhead costs

**Recent name change due to marriage- prior work acknowledged under "Tiffany B. Saul"

PUBLICATIONS**

2021. **Saul TB**, Chesson LA, Steadman DW, Gordon GW. Considerations for stable isotope analysis of human hair: the impact of postmortem environmental exposure. *Forensic Anthropology* 4(23): 35-46.

2018. Gordon GW, **Saul TB**, Steadman DW, Wescott DJ, Knudson KJ. Preservation of hair stable isotope signatures during freezing and law enforcement evidence packaging. *Forensic Chemistry* 11:108-119.

2018. Berryman HE, Berryman JF, **Saul TB**. Bone trauma analysis in a forensic setting: theoretical basis and a practical approach for evaluation. In Boyd C and Boyd D, eds. *Forensic Anthropology: Theoretical Framework and Scientific Basis*. West Sussex: Wiley.
2017. Sauerwein KA, **Saul TB**, Steadman DW, Boehnen C. The effects of decomposition on the efficacy of biometrics for positive identification. *Journal of Forensic Sciences* 62(6):1599-1602.
2016. Berryman HE, Dunkley MP, **Saul TB**. William M. Bass. In Jackson J, ed. *Oxford Bibliographies in Anthropology*. New York: Oxford University Press.
2015. Berryman HE, **Saul TB**. Skeletal evidence of violent sexual assault in remains with excessive evidence of scavenging. In Passalacqua NV, Rainwater C, eds. *Skeletal trauma analysis: case studies in context*. Oxford: John Wiley and Sons, Ltd.
2014. Berryman HE, Dunkley MP, **Saul TB**. Forensic science in community service, teaching, and research as a catalyst for student success. *Critical Conversations: An Interdisciplinary Journal*; Journal of the Tennessee Board of Regents State University & Community College System of Tennessee; Fall 2014: 38-53.
2013. **Saul TB**. Say yes! *CLA College of Liberal Arts Magazine*, Middle Tennessee State University 2: 28-32.

CONFERENCE PRESENTATIONS**

2024. **Saul TB** and Camacho N. Forensic Isotope Analysis in Colombia: Capacity Building Through Research and Education. Presented at the 76th Annual Meeting of the American Academy of Forensic Sciences in Denver, CO.
2023. **Saul TB**, Fracchia A, Merian E, and Lauerhass A. Representing Past and Present: Archaeology, Community, and Collective Memory of a World War II Aircraft Crash Site. Presented at the 29th Annual Meeting of the European Association of Archaeologists in Belfast, Ireland.
2023. Ramelli DO, **Saul TB**, Guatame García AC, Drake J, Castaño Osorio EA. Construction of a National Hydrogen and Oxygen Isoscape for Colombia as a Baseline for the Identification of Region of Origin of Unidentified Victims of the Internal Armed Conflict. Presented at the 75th Annual Meeting of the American Academy of Forensic Sciences in Orlando, FL.
2022. Wadford TY, Buffalini C, Morin M, **Saul TB**, Fracchia AD. For the Living and the Dead: Building Collaboration and Partnerships in a Forensic Recovery Mission to France. Presented at the 87th Annual Meeting of the Society for American Archaeology in Chicago, IL.
2021. Tyner T, Wescott DJ, Herrmann NP, **Saul TB**. Validating isoscoping methods: A study of oxygen, strontium, and sulfur. Poster presented at the 73rd Annual Meeting of the American Academy of Forensic Sciences (virtual).

2021. Adcox DL and **Saul TB**. The utility of digital imaging technologies for the virtual curation and metric analysis of skeletal remains. Poster presented at the 73rd Annual Meeting of the American Academy of Forensic Sciences (virtual).
2020. **Saul TB**, Chesson LA, Steadman DW, Wescott DJ, Gordon GW. Considerations for isotope analysis of human hair: The impact of postmortem environmental exposure. Paper presented at the 72nd Annual Meeting of the American Academy of Forensic Sciences in Anaheim, CA. (presenting author)
2020. Cornett III DC, Bolme DS, Steadman DW, Sauerwein K, **Saul TB**. Effects of postmortem decomposition on face recognition. Paper presented at the 12th IEEE International Conference on Biometrics: Theory, Applications, and Systems (BTAS) in Houston, TX.
2019. **Saul TB**, Gordon GW, Tipple BJ, Chesson LA, Steadman DW, Wescott DJ. Postmortem preservation of isotope ratios of human hair. Paper presented at the Forensic Isotope Ratio Mass Spectrometry Network International Meeting in Italy. (presenting author)
2018. **Saul TB**, Gordon GW, Tipple BJ, Chesson LA, Steadman DW, Wescott DJ. Postmortem isotope ratio fidelity of human hair throughout outdoor decomposition. Paper presented at the Advances in Stable Isotope Techniques and Applications Annual Conference in Washington, D.C. (presenting author)
2018. **Saul TB**, Gordon GW, Tipple BJ, Chesson LA, Steadman DW, Wescott DJ. Taphonomic effects on isotope ratios of human hair. Paper presented at the 70th Annual Meeting of the American Academy of Forensic Sciences in Seattle, WA. (presenting author)
2018. Yan W, Mockus A, **Saul TB**, Steadman DW. Curating forensic image collection using machine learning. Paper presented at the 70th Annual Meeting of the American Academy of Forensic Sciences in Seattle, WA.
2017. Gordon GW, **Saul TB**, Steadman DW, Knudson K, Wescott DJ. Preservation of hair stable isotope signatures during freezing. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences in New Orleans, LA. (presenting author)
2017. Gordon GW, **Saul TB**, Steadman DW, Wescott DJ, Knudson K, Anbar A. The isotopic taphonomy of human remains. The 12th International Symposium on Applied Isotope Geochemistry in Copper Mountain, CO.
2016. **Saul TB**, Sauerwein KA, Steadman DW, Boehnen C. Postmortem identification from physiological biometrics: a study of fingerprints, irises, and facial images. Poster presented at the 68th Annual Meeting of the American Academy of Forensic Sciences in Las Vegas, NV. (presenting author)
2016. Bolme DS, Tokola RA, Boehnen CB, **Saul TB**, Sauerwein KA, and Steadman DW. Environmental effects on biometrics during natural human decomposition. Paper presented at the 8th IEEE International Conference on Biometrics: Theory, Applications and Systems (BTAS) in Buffalo, NY.

2015. **Saul TB** and Tuller H. Theory in the applied field: the forensic anthropologist as a technician or translator? Paper presented at the 2nd Conference of Disasters, Displacement, and Human Rights in Knoxville, TN. (presenting author)
2015. Sauerwein KA, **Saul TB**, Steadman DW, Boehnen C. The effects of decomposition upon the efficacy of biometrics for positive identification. Poster presented at the 67th Annual Meeting of the American Academy of Forensic Sciences in Orlando, FL. (presenting author)
2013. **Saul TB**, Peres TM. Data collection before reburial: making the most of modern technologies to virtually curate ancient artifacts. Poster presented at the 70th Annual Southeastern Archaeological Conference in Tampa, FL. (presenting author)
2013. Hodge SC, **Saul TB**. Bioarchaeological investigations at Fernvale, a Middle Tennessee Archaic site. Poster presented at Invited Symposium at 82nd Annual Meeting of the American Association of Physical Anthropologists in Knoxville, TN.
2012. **Saul TB**. The Late Archaic frontier: evaluating evidence for trophy taking at the Fernvale site (40WM51). Poster presented at the 39th Annual Meeting of the Paleopathology Association in Portland, OR. (presenting author)
2012. **Saul TB**, Berryman HE. The role of oral and labial devices in the identification of human skeletal remains. Poster presented at the 64th Annual Meeting of the American Academy of Forensic Sciences in Atlanta, GA. (presenting author)
2012. Hodge SC, **Saul TB**. Fernvale (40WM51): bioarchaeology on the Late Archaic frontier. Paper presented at 69th Annual Southeastern Archaeological Conference in Baton Rouge, LA.
2012. Deter-Wolf A, Hodge SC, **Saul TB**. The Henry County skull: skeletal, cross-cultural, and iconographic examinations of a unique Tennessee artifact. Paper presented at 24th Annual Meeting of Current Research in Tennessee Archaeology in Nashville, TN.
2011. **Saul TB**, Berryman HE. Forensic anthropology and the identification of human remains. Workshop presentation for the National Girls Collaborative Project Regional Conference. (presenting author)
2011. **Saul TB**, Hobbs V, Ustynov, S. Experiences as a visiting scientist through the NSF GK-12 program. Fifth Annual Mathematics and Science Research Conference. (presenting author)
2011. Carey AN, **Saul TB**, Vaden N, Nicholas C, Farone MB, Farone AL, Myles EL, Sadler KC. Engaging high school students in original scientific research. Poster presented at the National Science Foundation GK-12 Projects Annual Meeting in Washington, D.C.

INVITED LECTURES**

2024. **Saul, TB**. Forensic Anthropology in Middle Tennessee. Middle Tennessee State University Dames Club, Murfreesboro, TN.

2023. **Saul, TB**, Fracchia AD, Thompson, O. Community, Commemoration, and Forensic Aviation Archaeology. Rutherford County Archaeological Society, Murfreesboro, TN.
2022. **Saul, TB**. Forensic Aviation Archaeology: Excavating WWII Aircraft Crash Sites. Commemorative Air Force Airbase Arizona Flying Museum, Mesa, AZ.
2022. **Saul, TB**. The Utility of Isotope Analysis for Identification of Human Remains at Fire Death Scenes. Tennessee Advisory Committee on Arson, Nashville TN.
2017. **Saul TB**. Isotope Analysis for the Identification of Human Remains. TN-IAI Annual Conference, Nashville, TN.
2017. **Saul TB**. Forensic Anthropology and Isotope Analysis. Mesa Police Department Forensic Science Unit, Mesa, AZ.
2016. **Saul TB**. Biological Anthropology and Forensic Applications. Sewanee, The University of the South, Sewanee, TN.
2016. **Saul TB**. Forensic Anthropology and Research at the Body Farm. Invited lecture at Brentwood Public Library, Brentwood, TN.
2016. **Saul TB**. Forensic Anthropology at The University of Tennessee. Guest lecture at Volunteer State Community College, Nashville, TN.
2015. **Saul TB**. Becoming a Forensic Anthropologist. Keynote Address for the First Annual Expanding Your Horizons (EYH) Conference, Maryville College, Maryville, TN.
2013. **Saul TB**. On FIRE with Forensics: An Interactive Educational Symposium. HOSA 36th Annual National Leadership Conference, Nashville, TN.
2011. **Saul TB**, Frisby D. Expedition Peleliu: survey of a World War II battlefield in the Pacific theater. Invited lecture for the Middle Tennessee State University College of Liberal Arts, Murfreesboro, TN.

HONORS

- 2019 MTSU College of Liberal Arts Faculty Mentor Award
- 2018-2019 MTSU Faculty Fellow
- 2016 IEEE International Conference on Biometrics: Theory, Applications, and Systems Best Paper Award
- 2016 Simon Beckett Student Paper Prize
- 2014 Lambda Alpha National Collegiate Honor Society for Anthropology
- 2013 Sigma Xi Scientific Research Society
- 2012 MTSU Forensic Institute for Research and Education Special Service Award
- 2012 Phi Kappa Phi Honor Society
- 2012 MTSU Women in STEM Mentor Honoree

OTHER PROFESSIONAL EXPERIENCE

2018-2021 College of Liberal Arts Lifelong Learning Program, Instructor
2016 IsoForensics (Salt Lake City, UT), Researcher-in-Residence
2016 Office of Chief Medical Examiner-New York City, Visiting Scientist
2014-2015 Forensic Anthropology Center (UT Knoxville), Volunteer Coordinator
2014-2015 Forensic Anthropology Center (UT Knoxville), Donor Correspondence Assistant
2014 Forensic Anthropology Center Forensic Anthropology Course (DuPage), Lecturer
2012-2015 Forensic Institute for Research and Education, Community Liaison
2011 Forensic Institute for Research and Education Grant Writing, Grant Writer
2010 SERRI Research Grant Support (H. Berryman, PI), Graduate Research Assistant

TEACHING EXPERIENCE

2021-present Department of Anthropology (Vanderbilt University), Lecturer (2/2)
2017-2023 Department of Anthropology (MTSU), Instructor (1/1)
2016-2020 Basic Forensic Crime Scene Processing School (TBI), Lecturer
2016 Forensic Skeletal Search and Recovery Course (MTSU), Instructor
2016 Biometrics Field Training (FBI Fly Team), Instructor
2015 Human Origins (UTK), Instructor
2014-2015 Human Osteology Lab (UTK), Teaching Assistant
2014 General Biology for Non-majors Lab (UTK), Instructor
2013 Career and Technical Education (CTE) Workshop, Session Director
2012-2013 NSF TRIAD GK-12 Program, Program Master Fellow
2011-2012 Career and Technical Education (CTE) Workshop, Curriculum Developer
2011 Homicide Investigation Course (TBI), Instructor Assistant
2011-2014 CSI: Summer Camp (MTSU), Curriculum Developer and Instructor
2010-2012 TRIAD GK-12 Program (NSF), Visiting Scientist/Research Mentor

SERVICE ACTIVITIES

2024 American Academy of Forensic Sciences Anthropology Session Isotopes and Bone Chemistry, Session Moderator
2020-present NIST Organization of Scientific Area Committees (OSAC) for Forensic Science, Anthropology Subcommittee, Member
2021-2023 MTSU Internal Grant Opportunities (MT-IGO) Grant Proposal Review Committee, Member
2020 College of Liberal Arts Working Group for Strategic Planning, MTSU, Member
2018-2021 Radiation Safety Committee, MTSU, Member
2015-2017 Disasters, Displacement and Human Rights Working Paper Series, Editor
2015-2016 UT Anthropology Graduate Student Association, Treasurer
2015-2016 Tennessee Health Science Industry Advisory Council, Forensic Science Rep.
2015-2016 McClung Museum of Natural History and Culture, Special Project Volunteer
2015 HOSA National Leadership Conference Forensic Competition, Consultant
2014-2015 Disasters, Displacement and Human Rights (DDHR) Conference Steering Committee, Member
2014-2015 Anthropology Graduate Student Association, Graduate Student Senate Rep.
2014-2015 AAFS Young Forensic Scientists Forum (YFSF), Breakfast Committee Co-chair

- 2013 SWGANTH Student Glossary Committee, Member
- 2011-2014 MTSU Forensic Science Symposium, Coordinator
- 2009-2013 Middle Tennessee Forensic Science Society, President (2011-12), Vice President (2009-10)
- 2011-2012 Internal Board of the Forensic Institute for Research and Education, Student Rep.

OUTREACH

- 2016-2023 Expanding Your Horizons (EYH) program-MTSU, Workshop Presenter
- 2014-2016 Forensic Anthropology Center High School Intern Program, Coordinator
- 2014 MTSU Sampler Camp, Workshop Presenter
- 2014 Oak Ridge Associated Universities (ORAU), STARs program presenter
- 2014 National Girls Collaborative Project (NGCP) STEM Event, Presenter
- 2011 National Girls Collaborative Project, Workshop Presenter
- 2009-2011 Expanding Your Horizons (EYH) program-MTSU, Workshop Presenter
- 2009-present Local K-12 Visits, Classroom Guest Presenter

COURSES TAUGHT

- Death and the Body (Vanderbilt University)
- Human Osteology (Vanderbilt University)
- Forensic Anthropology (Vanderbilt University/MTSU)
- Forensic Science and Human Rights (Vanderbilt University/MTSU)
- Forensic Science in Popular Culture (MTSU)
- Forensic Aviation Archaeology International Field Program (MTSU)
- World Prehistory (MTSU)

STUDENT ADVISING

- 2021-present Natalia Camacho, University of Granada Doctoral Dissertation, Advisor
Project Title: *Construction of a national baseline for hydrogen, oxygen, carbon, nitrogen, and strontium in hair stable isotopes to identify the region of origin of unidentified victims of the internal armed conflict in Colombia.*
- 2021-2024 Emma Lloyd, MTSU Undergraduate Honors Thesis, Advisor
Project Title: *The Use of Isotopes by Forensic Anthropologists and Archaeologists for the Analysis of Human Remains: An Exploratory Study.* (Defended March 2024)
- 2022-2023 Audrey Lauerhass, MTSU Undergraduate Honors Thesis, Advisor
Project Title: *Examining the Utility of Spatial Analysis of Artifact Distribution at a World War II Aircraft Crash Site.* (Defended November 2023)
- 2021-2023 Everett Merian, MTSU Undergraduate Honors Thesis, Advisor
Project Title: *Archéologie et Patrimoine: Telling the story of a B-17 crash in France through visual display.*
- 2020-2022 Emily Deem, Western Carolina University Master’s Thesis, Committee Member

Project Title: *Combining massively-parallel sequencing techniques and investigative genetic genealogical approaches to unidentified human remains: a pilot study.*

- 2020-present Julianne Sarancha, Arizona State University Doctoral Dissertation, Committee Member
- 2018-2020 Tamara Tyner, Texas State University Master's Thesis, Committee Member
Project Title: *Validating isoscaping methods: A study of oxygen, strontium, and sulfur* (Defended July 2020)
- 2018-2019 Devin Adcox, MTSU Undergraduate Honors Thesis, Advisor
Project Title: *The Utility of Digital Imaging Technologies for the Virtual Curation and Metric Analysis of Skeletal Remains* (Defended November 2019)
- 2018 Regan Edwards, MTSU Undergraduate Research Experience and Creative Activity (URECA) Gold Scholar Project, Advisor

SPECIALIZED TRAINING

Defense POW/MIA Accounting Agency (DPAA) Partnership Orientation (Hickam Air Force Base, Oahu, HI), completed March 2020

Certificate in Disasters, Displacement and Human Rights (DDHR) (University of Tennessee, Anthropology), certificate received August 2017

Graduate Teaching Certification (University of Tennessee, Graduate Studies and TN Teaching and Learning Center), certificate received December 2015

Isotopes in Spatial Ecology and Biogeochemistry SPATIAL course (University of Utah), course completed June 2016

Stable Isotope Biogeochemistry and Ecology IsoCamp (University of Utah, Biology), course completed June 2015

Scanning Electron Microscopy (SEM), including sample preparation

Transmitting Electron Microscopy (TEM), including tissue fixation and sample preparation

Energy-dispersive X-ray Spectroscopy (EDX-A)

Portable X-ray Fluorescence (pXRF), certificate received

PROFESSIONAL MEMBERSHIP

American Academy of Forensic Sciences (AAFS), Member

Forensic Isotope Ratio Mass Spectrometry (FIRMS) Network, Member

Tennessee Division of the International Association for Identification (TN IAI), Member

CURRENT RESEARCH INTERESTS

Stable isotopes for predicting geographic residence histories used for forensic identification of human remains, memory and memorialization, issues related to social identity and cold case resolution, human rights and humanitarian anthropology practice and theory, disaster responses, and the role of forensic anthropology in transitional justice.

**Recent name change due to marriage- prior work acknowledged under "Tiffany B. Saul"