# 2017 Publications, Conference Presentations, Theses and Dissertations by FAC Faculty and Students and Research Involving FAC Resources

## Publications

Adserias-Garriga J, Quijada NM, Hernandez M, Lázaro DR, Steadman D, Garcia‐Gil J. 2017. Daily thanatomicrobiome changes in soil as an approach of postmortem interval estimation: an ecological perspective. *Forensic Science International*. 278:388-395.

Adserias-Garriga J, Quijada NM, Hernandez M, Lázaro DR, Steadman D, Garcia‐Gil J. 2017. Dynamics of the oral microbiota as a tool to estimate time since death. *Molecular Oral Microbiology*. 32(6):511-516.

Andronowski, Janna M., Amy Z. Mundorff, Isaac V. Pratt, Jon M. Davoren, and David ML Cooper. 2017. Evaluating differential nuclear DNA yield rates and osteocyte numbers among human bone tissue types: A synchrotron radiation micro-CT approach. *Forensic Science International: Genetics,* *28*:211-218.

Brennaman, Ashley L, Kim R. Love, Jonathan D. Bethard, James T. Pokines. 2017. A Bayesian approach to age-at-death estimation from osteoarthritis of the shoulder in modern North Americans. *Journal of Forensic Sciences* 62(3):573-584.

Byrnes, J. F., Kenyhercz, M. W. and Berg, G. E. 2017. Examining interobserver reliability of metric and morphoscopic characteristics of the mandible. *Journal of Forensic Sciences* 62: 981–985.

Casado, Ana M. 2017. Quantifying sexual dimorphism in ihe human cranium: A preliminary analysis of a novel method. *Journal of Forensic Sciences* 62(5):1259-1265.

Damann, Franklin E., and Miranda ME Jans. 2017. Microbes, anthropology, and bones. In: *Forensic Microbiology* David O. Carter, Jeffery K. Tomberlin, M. Eric Benbow, Jessica L. Metcalf, eds. New York: John Wiley & Sons.

DeBruyn JM, Hauther KA. 2017. Postmortem succession of gut microbial communities in deceased human subjects. PeerJ 5:e3437 <https://doi.org/10.7717/peerj.3437>

Emmons, Alexandra L., Jennifer M. DeBruyn, Amy Z. Mundorff, Kelly L. Cobaugh, and Graciela S. Cabana. 2017. The persistence of human DNA in soil following surface decomposition. *Science & Justice* 57(5): 341-348.

Godde, K. 2017. The use of informative priors in Bayesian modeling age-at-death; a quick look at chronological and biological age changes in the sacroiliac joint in American males. *AIM Public Health* 4: 278-288.

Jeong, Yangseung, Lee Meadows Jantz and Chang Seok Park. 2017. Generating equations to estimate body mass of Korean skeletal remains. *Anthropologischer Anzeiger* 74(3):213-219.

Kenyhercz, Michael W., Alexandra R. Klales, Kyra E. Stull, Kyle A. McCormick, and Stephanie J. Cole. 2017. Worldwide population variation in pelvic sexual dimorphism: A validation and recalibration of the Klales et al. Method. *Forensic Science International* *277*, 259.e1-259.e8.

Mahfouz, Mustafa, Abdel Fatah, Nicolas Herrmann, Natalie Langley. 2017. Computerized reconstruction of fragmentary skeletal remains. *Forensic Science International* *275*, 212-223.

Parr, Nicolette M., Nicholas V. Passalacqua, and Katie Skorpinski. 2017. Investigations into age‐related changes in the human mandible. *Journal of Forensic Sciences* 62 (6):1586–1591.

Petaros, Anja, Heather M. Garvin, Sabrina B. Sholts, Stefan Schlager, and Sebastian KTS Wärmländer. 2017. Sexual dimorphism and regional variation in human frontal bone inclination measured via digital 3D models. *Legal Medicine* 29: 53-61.

Sauerwein Kelly, Tiffany B. Saul, Dawnie Wolfe Steadman and Christopher B. Boehnen. 2017. The effect of decomposition on the efficacy of biometrics for positive identification. *Journal of Forensic Sciences* 62(6):1599-1602.

Slocum, A.H., Reinitz, S.D., Jariwala, S.H. and Van Citters, D.W. 2017. Design, development, and validation of an intra-osseous needle placement guide. *Journal of Medical Devices* 11(4):041009-041009-8.

Steadman, Dawnie Wolfe, William Basler, Michael J. Hochrein, Dennis F. Klein, and Julia C. Goodin. 2017. Investigative and legal aspects of a U.S. Federal death penalty case. In *The Handbook of Forensic Anthropology and Archaeology, 2nd ed.* edited by Soren Blau and Douglas Ubelaker. Walnut Creek, CA: Left Coast Press. pp 447-462.

Stoyanova, Detelina K., Bridget F.B. Algee-Hewitt, Jieun Kim, Dennis E. Slice. 2017. A computational framework for age-at-death estimation from the skeleton: Surface and outline analysis of 3D laser scans of the adult pubic symphysis. *Journal of Forensic Sciences* November 2017, 62(6):1434-1444.

Tague, Robert G. 2017. Sacral variability in tailless species: *Homo sapiens* and *Ochotona pinceps*. *The Anatomical Record* 300:798-809.

Vidoli, Graciela M., Dawnie W. Steadman, Joanne Devlin, and Lee M. Jantz. 2017. [**History and development of the first Anthropology Research Facility, Knoxville, Tennessee.**](https://elements.utk.edu/viewobject.html?id=300660&cid=1)In *Taphonomy of Human Remains: Forensic Analysis of the Dead and the Depositional Environment.* Editors: Schotsmans EMJ, Marquez-Grant N, Forbes SL. West Sussex, UK: Wiley. pp 463-474.

Wallace, Ian J., Steven Worthington, David T. Felson, Robert D. Jurmain, Kimberly T. Wren, Heli Maijanen, Robert J. Woods, and Daniel E. Lieberman. 2017. Knee osteoarthritis has doubled in prevalence since the mid-20th century. *Proceedings of the National Academy of Sciences* 114, no. 35 (2017): 9332-9336.

## Conference Presentations

Adserias J., H. Maijanen, S.C. Zapico, and D.W. Steadman. 2017. The potential use of five cranial traits for sex assessment in forensic cases. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 15, 2017, New Orleans, Louisiana.

Algee-Hewitt, B.F.B., J. Kim, C. Figueroa-Soto, D. Stoyanova, and D.E. Slice. 2017. Workshop: A computational framework for skeletal age-at-death estimation using laser scans of the adult pubic symphysis: Theory, methods and software. Workshop presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 13, 2017, New Orleans, Louisiana.

Ammer, S. 2017. The Effect of Body Composition on Outdoor Human Decomposition- The University of Tennessee at Knoxville Data. Poster presented at the American Association for Physical Anthropologists 86th Annual Scientific Meeting, New Orleans, Louisiana.

Andronowski. J.M., A.Z. Mundorff, and D.M.L. Cooper. 2017. Evaluating differential nuclear DNA yield rates among human bone tissue types: a synchrotron micro-computed tomography (CT) approach. Proceedings of the American Academy of Forensic Sciences, 69th Annual Scientific Meeting, New Orleans, LA. p. 91-92.

Bailey, C.A., K.A. Broehl, A.C. Duncan, A.Z. Mundorff and R. Kosalka. 2017. Metric sex estimation using the sustenatculum tali. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Byrd, J.E. and C.B. LeGarde. 2017. Performance assessment for osteometric pair-matching. Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Bytheway, J.A., N. Miller, D.W. Steadman, K. Sauerwein, D.J. Wescott, C. Clemmons, D.S. Gleiber, C.P. McDaneld and L.A. Meckel. 2017. Validation of the Total Body Score/Accumulated degree days (TBS/ADD) equation at 100, 300, 500, and 1000 ADD on 30 human subjects with a known postmortem interval (PMI) from three human decomposition facilities. Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 17, 2017, New Orleans, Louisiana.

Campanacho V. 2017. The influence of body size in age estimation from the pelvis joints: Methodological considerations. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 20, 2017, New Orleans, Louisiana.

Caple, J.M., J.E. Byrd. and C.N. Stephan. 2017. Ancestry and sex estimation from the skull outline in *norma lateralis*. 17th Biennial Meeting of the International Association for Craniofacial Identification. Jul 15-19, 2017, Brisbane, Australia.

Caple, J.M. and C.N. Stephan. 2017. Photo-realistic statistical exemplars of skulls: visualizing average sex and ancestry in high-resolution for forensic anthropology. 8th International Symposium of Clinical and Applied Anatomy. Sep 1-3, 2016, Budapest, Hungary.

Castells Navarro L. and J. Buckberry. 2017. The relationship between pathology and age: Diffuse idiopathic skeletal hyperostosis (DISH) in known age individuals. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 20, 2017, New Orleans, Louisiana.

Cawley, William. 2017. Identity by the numbers: Cancerous lesions and likelihood ratios. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 15, 2017, New Orleans, Louisiana.

Cole, C. 2017. Sex estimation using relative pubis length. Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Cole, S.J., Cabo L.L., and Klales A.R. 2017. The effects of cranial and pelvic asymmetry on accurate sex classification. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Corcoran, K.A., A.Z. Mundorff, D.A. White, and W.L. Emch. 2017. Measuring Localized Elevation Change at Unmarked Human Burial Surfaces Using Terrestrial LIDAR. Imaging and Geospatial Technology Forum 2017, ASPRS Annual Conference.

DeBruyn, J.M., Stevens J.D., Menzer S., Bandopadhyay S., Dautartas A.M., Vidoli G.M., Mundorff A.Z., and Steadman D.W. 2017. Comparative surface decomposition of humans and pigs (Sus scrofa): Soil processes. Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 17, 2017, New Orleans, Louisiana.

Donfack J., Moini M., Carlson T.L., Steadman D.W., Jantz L.M., Castillo H.S., Vercruysse N.R., Hiepas J., Buscaglia J., Eckenrode B. 2017. Protein profiling of decedent scalp hairs to investigate the potential mechanisms for the formation of postmortem root bands. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 17, 2017, New Orleans, Louisiana.

Dudzik, B. 2017. Examining Japanese and Hispanic morphological similarities using geometric morphometrics. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Dudzik B, Langley NR, Kim J, Jian W, Mangel B. 2017. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 15, 2017, New Orleans, Louisiana.

Emmons A, Keenan SW, Mundorff AZ, Davoren J, DeBruyn JM. 2017. Skeletal DNA preservation and bone-associated microbes: The implications for DNA sampling strategies in forensic identification. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Figueroa-Soto, C, Stoyanova D, Kim J, Slice DE, Algee-Hewitt BFB. 2017. Testing computational age estimation methods using laser scans of the adult pubic symphysis on modern Hispanic populations. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Fojas CL. 2017. Heterogeneity in oral health in Middle Tennessee during the Mississippian period. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 20, 2017, New Orleans, Louisiana.

Getz SM, Milner GR, Boldsen JL. 2017. Rethinking adult skeletal age estimation: An expanded approach to transition analysis using binary traits. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Getz SM, Milner GR, Boldsen JL. 2017. Revised transition analysis: Vaalidation on a historical sample and the first archaeological application of the new procedure. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 21, 2017, New Orleans, Louisiana.

Gleiber DS, Wescott DJ. 2017. The effect of mobility impairment on femoral trabecular and cortical bone structure. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Gordon G, Saul T, Steadman DAW, WEscott D, Knudsen K. Anbar A. 2017. The isotopic taphonomy of human hair. Paper presented at the National Institute of Justice Forensic Science Research and Development Symposium, 69th Annual Meeting of the American Academy of Forensic Sciences, February 14, 2017, New Orleans, Louisiana.

Gordon GW, Saul TB, Steadman DW, Knudson K, Wescott DJ. 2017. Preservation of hair stable isotope signatures during freezing. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Hauther, Kathleen A, McKeown Ashley H, Snow M, Spradley MK. 2017. Explaining distinct crania from Colonial Delaware using craniometrics and genetic analyses. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 21, 2017, New Orleans, Louisiana.

Hauther KA, McKeown AH, Snow M, Spradley MK. 2017. Explaining distinct crania from Colonial Delaware using craniometrics and genetic analyses. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 21, 2017, New Orleans, Louisiana.

Hayashi A, Emanovsky PD, Holland TD. 2017. Stature estimation from the calcaneus and talus in Japanese individuals. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Horbaly H. 2017. Influence of body size on sexual dimorphism. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Horbaly H. 2017. The influence of stature on sex estimation. Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 15, 2017, New Orleans, Louisiana.

Hughes CE, Dudzik B, Algee-Hewitt BF. 2017. Understanding (mis)classification trends of Hispanics in Fordisc 3.1: Incorporating cranial morphology, microgeographic origin, and admixture populations for interpretation. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 21, 2017, New Orleans, Louisiana.

Jeong Y, Maijanen H. 2017. What stature and weight do we actually estimate? Poster presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Kenyhercz MW, Steadman DW, Gundel AC, Vidoli GM. 2017. A new approach to estimating accumulated degree days (ADD): Using binary observations from various regions of the body with random forest modeling (RFM) and geographic information systems (GIS). Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 17, 2017, New Orleans, Louisiana.

Kim J. 2017. Understanding population-specific age estimation using documented Asian skeletal samples. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Langley, Natalie R., Paul Wood, Patrick Herling and Dawnie W. Steadman. Estimating the Postmortem Interval (PMI): A Metabolomics/Lipidomics Approach. Paper presented at the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana. [ABSTR Proceeding of the American Academy of Forensic Sciences 69th Annual Scientific Meeting. XXIII:102. Feb 2017]

Lents NH, Johnson HR, Trinidad D, Khan Z, DeBruyn JM. Development of a statistical model to determine the postmortem interval (PMI) using the human skin necro-microbiome. Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Maiers JR, Nawrocki SP. 2017. Elliptical fourier analysis of the human nasal aperture. Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

McCormick KA. 2017. Accuracy in osteometric reassociation: Comparing geometric morphometric landmark data and linear measurements. Paper presented at the 69th Annual Meeting of the American Academy of Forensic Sciences, February 16, 2017, New Orleans, Louisiana.

Merritt CE. 2017. Body size as a factor in skeletal age estimation: When size matters and how to deal with it. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 20, 2017, New Orleans, Louisiana.

Miranker M. 2017. Aging using adult human pelvis morphology: Effect of occupation or statistical method? Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 20, 2017, New Orleans, Louisiana.

Stoyanova DK, Algee-Hewitt BF, Kim J, Slice DE. 2017. Left or right pubic symphysis: Asymmetry analysis of age-at-death estimating using 3D laser scans and computational algorithms. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 20, 2017, New Orleans, Louisiana.

Tague, Robert G. 2017. Sacral variability in tailless species: *Homo sapiens* and *Ochotona pinceps*. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 21, 2017, New Orleans, Louisiana.

Tallman SD. 2017. Cranial and pelvic nonmetric sexual dimorphism in modern Japanese and Thai individuals. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Taylor LS, G Phillips, SW Keenan, EC Bernard, JM DeBruyn. 2017. Spatial nematode community distributions associated with human decomposition in a mass grave.  Society of Nematologists Annual Meeting, Williamsburg, VA, Aug 13-17, 2017.

Traynor, S., Hawks, J. 2017. The limb proportions of *Homo naledi*. Program of the 86th Annual Meeting of the American Association of Physical Anthropologists. *American Journal of Physical Anthropology*, 162, 385. New Orleans, Louisiana.

Torres S, Garcia-Martinez D, Eyre, J, Williams SA, Hawks J, Vansickle C, Bastir M. 2017. Allometry, sexual dimorphism in human ossa coxae, and its relevance for understanding human torso variation. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Wallace IJ, Worthington S, Felson DT, Jurmain RD, Wren KT, Maijanen H, Woods RJ, Lieberman DE. 2017. Osteoarthritis as an evolutionary mismatch disease. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Winburn A. 2017. Effects of age, activity and obesity on osteoarthritis in a modern European-American skeletal sample. Poster presented at the 86th Annual Meeting of the American Association of Physical Anthropologists, April 22, 2017, New Orleans, Louisiana.

Winburn A. 2017. Osteoarthritis in Modern European-American Females and Males:  Patterning, Etiology, and Medical Implications.  Oral presentation at the 81st annual meeting of the Florida Academy of Sciences, March 11, 2017, Lakeland, FL

## Theses and Dissertations

Alexandria C Ferguson. Osteoarthritis and Associated Risk Factors: An Assessment of the Relationship between Body Mass Index and Osteoarthritis of the Knee Joint. MA Thesis, Wichita State University, 2017.

Brandt, Helen. An Examination of Pelvic Scarring as a Determinant of Parturition Status. MS Thesis, University of Indianapolis, 2017.

Cawley, William D. Identity by the Numbers: Cancerous Lesions and Likelihood Ratios. MA Thesis, Department of Anthropology, University of Tennessee, 2017.

Chapman, Erin N. A Study of Biological Sex Estimation across Populations using Measurements of the Cementoenamel Junction and Dental Arcade. Ph.D. Dissertation, State University of New York at Buffalo, 2017. Available from ProQuest Dissertations Publishing (1925959827).

Flamson, Robyn. Field-Based Identification of Human Remains using the ParaDNA® Intelligence System for Disaster Victim Identification (DVI). MSc Thesis submitted to Liverpool John Mores University, 2017.

Floyd, Erin N. Sex Estimation Utilizing Dimensions from the Occipital Bone, Atlas, and Axis. MS Thesis, Middle Tennessee State University, 2017.

Gleiber, Devora S. The Effect of Mobility Impairment on Femoral Cortical and Trabecular Structure. MA Thesis, Texas State University, 2017.

Gooding, Alice. Variation in Cortical Bone Distribution in the Aging Adult Appendicular Skeleton. Ph.D. Dissertation, Department of Anthropology, University of Tennessee, 2017.

Gundel, AnneMarie. Geographic Information Systems (GIS) and Predictive Modeling of Body Disposal Sites. MA Thesis, Department of Anthropology, University of Tennessee, 2017.

Horbaly, Haley. The Influence of Body Size on Sexual Dimorphism. MA Thesis, Department of Anthropology, University of Tennessee, 2017.

Pedersen, D.D. The Presence of Tuberculosis in Danish Skeletons 800 – 1800 – From Skeletal Data to Paleoepidemiological Analysis*,* Ph.D. Dissertation, Faculty of Health Sciences, University of Southern Denmark, 2017.

Saul, Tiffany. Taphonomic Effects upon Isotopic Analysis of Human Hair. Ph.D. Dissertation, Department of Anthropology, University of Tennessee, 2017.

SE Traynor “An evaluation of resampling methods applied to unassociated fossil assemblages and a quantitative assessment of the limb proportions of *Homo naledi*”  ProQuest Dissertation, University of Wisconsin-Madison, 2017.

Winburn Allysha.  Skeletal Age Estimation in Modern European-American Adults:  The Effects of Activity, Obesity, and Osteoarthritis on Age-Related Changes in the Acetabulum. PhD Dissertation, University of Florida, August 2017.