# Academic Year 2015-2016 Publications, Conference Presentations, Theses and Dissertations by FAC Faculty and Students and Research Involving FAC Resources

## Publications

Boldsen, Jesper L., George R. Milner, and Søren K. Boldsen. Sex estimation from modern American humeri and femora, accounting for sample variance structure. *American Journal of Physical Anthropology* 158.4 (2015): 745-750.

Bongiovanni, R. (2016), Effects of parturition on pelvic age indicators. *Journal of Forensic Sciences*, 61: 1034–1040.

Cobb, Charles R.,Anthony M. Krusand Dawnie W. Steadman. Bayesian modeling of the occupation span of the Averbuch site in the Middle Cumberland Drainage, Tennessee. *Southeastern Archaeology* (2015) 34(1):46-56.

Dudzik, Beatrix, and Natalie R. Langley. Estimating age from the pubic symphysis: A new component-based system. *Forensic Science International* (2015) 257:98-105.

Frank, Emilie M., Amy Z. Mundorff, and Jon M. Davoren. The effect of common imaging and hot water maceration on DNA recovery from skeletal remains. *Forensic Science International* 257 (2015): 189-195.

Godde, Kanya. Secular trends in cranial morphological traits: a socioeconomic perspective of change and sexual dimorphism in North Americans 1849–1960. *Annals of Human Biology* 42.3 (2015): 255-261.

Hadi, H., and C. Wilkinson. Estimation and reconstruction of facial creases based on skull crease morphology. *Australian Journal of Forensic Sciences* June 21 2016:1-15.

Hauther KA, Cobaugh KL, Jantz LM, Sparer TE, DeBruyn JM. Estimating time since death from postmortem human gut microbial communities. *Journal of Forensic Sciences*. 2015 Sep 1;60(5):1234-40.

Hayashi A, Emanovsky PD, Pietrusewsky M, Holland TD. A Procedure for calculating the vertical space height of the sacrum when determining skeletal height for use in the anatomical method of adult stature estimation. *Journal of Forensic Sciences*. 2016 61: 415–423.

Hefner JT, Pilloud MA, Black CJ, Anderson BE. Morphoscopic trait expression in “Hispanic” populations*. Journal of Forensic Sciences.* 2015 Sep 1;60(5):1135-9.

Hens, Samantha M., and Kanya Godde. Auricular surface aging: comparing two methods that assess morphological change in the ilium with Bayesian analyses. *Journal of Forensic Sciences* 61.S1 (2016).

Jeong, Yangseung, and Lee Meadows Jantz. Developing Korean-specific equations of stature estimation. *Forensic Science International* 260 (2016): 105-e1.

Jeong, Yangseung, Lee Meadows Jantz, and Jake Smith. Investigation into seasonal scavenging patterns of raccoons on human decomposition. *Journal of Forensic Sciences* (2015) 61(2):467–471

Jung, Hyunwoo, and Eun Jin Woo. Evaluation of mastoid process as sex indicator in modern white Americans using geometric morphometrics. *Journal of Forensic Sciences* (2016).

Junno, Juho‐Antti, Markus Paananen, Jaro Karppinen, Jaakko Niinimäki, Markku Niskanen, Heli Maijanen, Tiina Väre et al. Age‐related trends in vertebral dimensions. *Journal of Anatomy* 226, no. 5 (2015): 434-439. 6.

Klales, Alexandra R. Secular change in morphological pelvic traits used for sex estimation. *Journal of Forensic Sciences* Mar 2016 61(2):295-301.

Krishan, Kewal, Tanuj Kanchan, and Magdy A. Kharoshah. Advances in Forensic Anthropology–Creation of skeletal databases for forensic anthropology research and casework. *Egyptian Journal of Forensic Sciences* June 2016 6(2):29-30.

Langley, Natalie R., Lee Meadows Jantz, Stephen D. Ousley, and Richard L. Jantz. *Data Collection Procedures for Forensic Skeletal Material 2.0.* University of Tennessee, 2016.

Lesciotto, K. M., L. L. Cabo, and H. M. Garvin. A morphometric analysis of prognathism and evaluation of the gnathic index in modern humans. *HOMO-Journal of Comparative Human Biology* (2016). Homo 2016 Apr 21. Epub 2016 Apr 21.

Leshner, Alan I, Buikstra Jane E, Clear Todd R, Holton J. Jerome, Isenschmid Daniel S., Petrosino Joseph F, Piquero Alex R, Spohn Cassia, Steadman Dawnie Wolfe, Stern Hal, Wagner Jarrad, Walsh Kelly A. National Academies of Sciences, Engineering, and Medicine. *Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice*. Committee on Strengthening Forensic Science at the National Institute of Justice. Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press (2015).

Listi, Ginesse A. The Use of Entheseal Changes in the Femur and Os Coxa for Age Assessment. *Journal of Forensic Sciences* 61.1 (2016): 12-18.

Maijanen, Heli, Rebecca J. Wilson‐Taylor, and Lee Meadows Jantz. Storm‐Related Postmortem Damage to Skeletal Remains. *Journal of Forensic Sciences* May 2016 61(3):832-837.

Meeusen, Rebecca A., Angi M. Christensen, and Joseph T. Hefner. The use of femoral neck axis length to estimate sex and ancestry. *Journal of Forensic Sciences* 60.5 (2015): 1300-1304.

Milner GR, Boldsen JL, Weise S, Lauritsen JM, Freund UH. Sex-related risks of trauma in medieval to early modern Denmark, and its relationship to change in interpersonal violence over time. *International Journal of Paleopathology*. 2015 Jun 30; 9:59-68.

Miranker, Molly. A comparison of different age estimation methods of the adult pelvis. *Journal of Forensic Sciences* 27 June 2016.

Reeves, Nicole. Beyond Biomechanics: Bone strength properties of obese adults. *The FASEB Journal* 29.1 Supplement (2015): 866-7.

Reinitz SD, Slocum AH, Magoon CJ, Van Citters DW. A device for enabling placement of intra-osseous infusion tools. *Journal of Medical Devices*. 2016 Jun 1;10(2):020943.

Slice, Dennis E., and Bridget FB Algee‐Hewitt. Modeling bone surface morphology: a fully quantitative method for age‐at‐death estimation using the pubic symphysis. *Journal of Forensic Sciences* 60.4 (2015): 835-843.

Spradley, Katherine M., and Richard L. Jantz. Ancestry estimation in forensic anthropology: geometric morphometric versus standard and nonstandard interlandmark distances. *Journal of Forensic Sciences* July 2016 61(4):892-897.

Weiss, Elizabeth. Can we create ethnically diverse skeletal collection from donated bodies? *Anthropologischer Anzeiger* 72.1 (2015): 43-53.

Wescott, Daniel J., and Jessica L. Drew. Effect of obesity on the reliability of age‐at‐death indicators of the pelvis. *American Journal of Physical Anthropology* 156.4 (2015): 595-605.

Wheeler, Rachel L., Aaron D. Hampton, and Natalie R. Langley. The effects of body mass index and age on cross‐sectional properties of the femoral neck. *Clinical Anatomy* 28.8 (2015): 1048-1057.

Wood, Paul L., and Natalie R. Shirley. Lipidomics analysis of postmortem interval: Preliminary evaluation of human skeletal muscle. *Metabolomics: Open Access* 2013 (2014).

Worne, Heather, Giovanna M. Vidoli, and Dawnie Wolfe Steadman. Bioarchaeological Analysis of WPA Mound Bottom Skeletal Sample.  In *New Deal Archaeology in the Tennessee Valley: 1933-1942*, edited by David A. Dye.  Tuscaloosa: University of Alabama Press.

Wu, Jing, Emam E. Abdel Fatah, and Mohamed R. Mahfouz. Fully automatic initialization of two-dimensional–three-dimensional medical image registration using hybrid classifier. *Journal of Medical Imaging* 2.2 Published online 2015 Jun 2. doi:  10.1117/1.JMI.2.2.024007.

## Conference Presentations and Workshops

Andronowski, Janna. Normal variation in osteocyte lacunar parameters between human skeletal elements in cortical and cancellous bone from adult males - a synchrotron micro-CT approach. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 14, 2016.

Bailey, Christine, Kristen A. Broehl and Amy Z. Mundorff. The use of the sustentaculum tali in estimating sex. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Brown, Michael A., Charles Froome, Shawn Hennessy, Rebecca Gerling, Jeffrey Ellison and Ann W. Bunch. An external validation of the citrate content postmortem interval (PMI) method. Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 26, 2016.

Byrnes, Jennifer F., Michael W. Kenyhercz, Samantha C. Torres and Gregory E. Berg. Examining inter-observer reliability of metric and morphoscopic characteristics of the mandible. Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Caple, Jodi M. and Carl N. Stephan. Texture mapped average skulls created from standardized photographs using the perception lab’s psychomorph. Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Cobaugh KL, KA Hauther, JM DeBruyn.  Postmortem succession of human gut microbial communities.  Poster presented at the American Society for Microbiology General Meeting, New Orleans, LA, May 30-Jun 2, 2015.

Congram, Derek and Kernyhercz, Michael. Thinking spatially: Human behavioral ecology and forensic anthropology. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 14, 2016.

Corcoran Katie, Amy Z. Mundorff, Devin White and Whitney Emch. Remote sensing of human burials. Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Costello, Amanda K. An analysis of sexual dimorphism using geometric morphometrics (GM) of the femur and tibia: The use of GM in assessing sex of fragmented remains. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 26, 2016.

Dautartas, Angela, Dawnie W. Steadman, Amy Z. Mundorff, Lee Meadows Jantz and Giovana M. Vidoli. A Comparison of seasonal decomposition patterns between human and non-human animal models. Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 26, 2016.

DeBruyn JM, KL Cobaugh, SM Schaeffer.  Succession of soil microbial communities below decomposing human cadavers.  Paper presented at the American Society for Microbiology General Meeting, New Orleans, LA, May 30-Jun 2, 2015.

[**Dudzik B, Maijanen H, Hauther K. The Mental Eminence as a Marker of Sexual Dimorphism in Dentate and Edentulous Individuals: An Analysis Using Geometric Morphometry**](http://meeting.physanth.org/program/2016/session45/dudzik-2016-the-mental-eminence-as-a-marker-of-sexual-dimorphism-in-dentate-and-edentulous-individuals-an-analysis-using-geometric-morphometry.html)**.** Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 14, 2016.

Eleazer, Courtney, Rebecca Skopa Kelso and Frankie West. Getting the shaft? Investigating midshaft location in immature femora. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 14, 2016.

Emmons, Alexandra, DeBruyn, Jennifer, Mundorff, Amy, Cobaugh, Kelly, and Cabana, Graciela. Cadaver Decomposition and the Persistence of Human DNA in the Underlying Soil. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 14, 2016.

Emmons A, DeBruyn JM, Mundorff AZ, Cobaugh KL, Cabana GS. Examining the persistence of human DNA in soil during cadaver decomposition. Poster presented at 68th annual meeting of the American Academy of Forensic Sciences, Las Vegas NV, February 25, 2016.

Fleming, Jamie N. Hilda S. Castillo, Ernest J. Drummond, Rabih Jabbour, Samir Deshpande, Dawnie W. Steadman, Lee Meadows Jantz, Kathleen Hauther, Jack Hieptas, Stephen D. Shaw, JoAnn Buscaglia, Brian Eckenrode, Joseph Donfack. *In Vitro* Experiments Using Human Cadaver Head Hairs to Investigate the Formation Mechanism of Postmortem Hair Root Bands (PMRBs). Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Fojas, Christina. Physiological stress in the Middle Cumberland Region of Tennessee: Mortality and survivorship differences during the Mississippian Period. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 15, 2016.

Garvin, Heather M, Kate M. Lesciotto, Heather M., and Luis L. Cabo. "The Influence of Sex and Allometry on Subnasal Prognathism in Modern Humans." Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 15, 2016.

Gooding, Alice, McClung M, Smith SK. Thoracic fracture patterning as a result of blast trauma. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 14, 2016.

Hepner, Tricia and Dawnie Steadman. Sowing the Dead: Massacres and the Missing in Northern Uganda. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 16, 2016.

Kenyhercz, Michael W. Molar morphometric variation within modern US Populations. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 16, 2016.

Kenyhercz, Michael W., Nicholas V. Passalacqua and Joseph T. Hefner. Missing data imputation methods using morphoscopic traits and their performance in the estimation of ancestry. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 26, 2016.

Kim, Jieun. Multiple population-specific age estimation methods or one-size-fits-all single age estimation method: which approach works best? Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 15, 2016.

Klales, AR, Kenyhercz MW, Stull KE, McCormick KA, Call SJ. Worldwide population variation in pelvic sexual dimorphism. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 16, 2016.

L’Abbe. Ericka N., Steven A. Symes, Michael W. Kenyhercz, Kyra E. Stull, Gabriele C. Kruger, Marie Christine Dussault, Leandi Liebenberg, Erin Chapman and Jolandie Myburgh. Reliability of biomechanical descriptors to assess blunt force injuries in the cranium. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 26, 2016.

Langley, Natalie R. The transformation of data collection procedures for forensic skeletal material: Evaluating osteometric data in forensic anthropology. Paper presented at the National Institute of Justice Forensic Science Research and Development Symposium, Las Vegas, NV. February 23, 2016.

Langley, Natalie R., Alesia Cloutier, Cade Lampley and Beatrix Dudzik. Decision trees and non-metric traits: A more accurate approach for sex estimation of the skull. Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Langley, Natalie R., Lee Meadows Jantz, Shauna McNulty, Heli Maijanen, Stephen D. Ousley and Richard Jantz. DCP 2.0: Changes in data collection procedures for forensic skeletal material. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Maijanen, Heli, Beatrix Dudzik and Kathleen Hauther. Sexual dimorphism in mandibular morphology between dentate and edentate individuals – Implications for sex estimation. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 24, 2016.

McCormick, Kyle A. Osteometric reassociation through quantifying long bone size and shape and predicting using Bayesian regression via Hamiltonian Markov Chain Monte Carlo (MCMC). Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 25, 2016.

Milner, George R., Jesper L. Boldsen, Stephen D. Ousley, Svenja Weise, Sara M. Getz, and Peter Tarp. Improved adult age estimation using new skeletal traits and transition analysis. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 24, 2016.

Navarro, Laura Castells, and Jo Buckberry. Diagnosing Diffuse Idiopathic Skeletal Hyperostosis (DISH) before vertebral ankyloses. Poster presented at the Paleopathology Association, April 13, 2016.

Ousley, Stephen D., Richard Jantz, Natalie R. Langley, Kate Spradley and Beatrix Dudzik. Thirty years of the Forensic Data Bank and Data Collection Procedures (DCP) 2.0: Continuity and transformation. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 26, 2016.

Price, Meghan, James Pokines and Jonathan D. Bethard. Age estimation using the sternal end of the clavicle: A test of the Falys and Prangle archaeological method for forensic application. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 24, 2016.

Saul, Tiffany, Kelly Sauerwein, Dawnie W. Steadman and Chris Boehnen. Postmortem Identification from Physiological Biometrics: A Study of Fingerprints, Irises and Facial Images. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 24, 2016.

Steadman, Dawnie W., Angela M. Dautartas, Amy Z. Mundorff, Giovanna M. Vidoli, Lee Meadows Jantz. Differential Raccoon Scavenging Among Pig, Rabbit, and Human Subjects. Paper presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 27, 2016.

Steadman, Dawnie W., Angela Dautartas, Lee Jantz, Amy Mundorff, Giovanna Vidoli. A Multidisciplinary Validation Study of Non-Human Animal Models for Human Decomposition Research. Paper presented at the National Institute of Justice Forensic Science Research and Development Symposium, Las Vegas, NV. February 23, 2016.

Steadman, Dawnie W. Discussant, Toward a Holistic Forensic Anthropology. Discussion of invited poster session presented at the American Association of Physical Anthropologists, Atlanta, GA. April 14, 2016.

Steadman, Dawnie, and Heli Maijanen. Recidivism of Traumatic Injury in the Bass Donated Skeletal Collection. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 16, 2016.

Steadman, Dawnie Wolfe, Jennifer DeBruyn and Clayton Nolting. Anthropology, Entomology and Microbiology in Forensic Science. Judicial Institute of Maryland, Annapolis, MD. October 30, 2015.

Steadman, Dawnie Wolfe. The Role of Forensic Anthropology in Coroner Cases. Workshops presented at the Kentucky County Coroners Conference, Morehead, Kentucky. August 4, 2015.

Steadman, Dawnie Wolfe. Recovery Practices in Forensic Casework. Kentucky Coroners Association, Louisville, KY. April 27, 2016

Upson-Taboas, Charity F. Musculoskeletal manifestations of diabetes mellitus in the William M. Bass Donated Skeletal Collection. Poster presented at the American Association of Physical Anthropologists, Atlanta, Georgia, April 15, 2016.

Villareal, Margarita M. Estimation of stature from the foramen magnum region in an American population: A validation study. Poster presented at the American Academy of Forensic Sciences, Las Vegas, NV. February 26, 2016.

## Dissertations and Theses

Andronowski, Janna. Evaluating Differential Nuclear DNA Yield Rates Among Human Bone Tissue Types: A Synchrotron micro-CT Approach. Ph.D. Dissertation, University of Tennessee, 2016.

Aurigemma, Tracy Ann. The height of the pubic tubercle as an indicator of partuition. MA Thesis. Boston University, 2015.

Campanacho, Vanessa. The influence of skeletal size on age-related criteria from the pelvic joints in Portuguese and North American samples. PhD Dissertation, University of Sheffield, 2016.

Cloven, Jasmine M. Validation study of the proposed seventh phase of the Suchey-Brooks age estimation method for the pubic symphysis. MA thesis, Boston University. 2015.

Costello, Amanda Kathryn. An analysis of sexual dimorphism using geometric morphometrics of the femur and tibia: the use of GM in assessing sex of fragmented remains. MA Thesis, Boston University. 2015

Dudzik, Beatrix. Investigating Cranial Variation in Japanese Populations Using Geometric Morphometrics. Ph.D. Dissertation, University of Tennessee, 2015.

Emmons, Alexandra L. The Preservation and Persistence of Human DNA in Soil during Cadaver Decomposition. MA Thesis, University of Tennessee, 2015.

Forman, Barbara. The greenhouse effect: decomposition rates in human remains wrapped in plastic. MA Thesis, University of Tennessee, 2015.

George, Karen R. The estimation of body mass from human skeletal remains. MA Thesis, Boston University, 2015.

Hailey, Kelsey Jo. A Comparative Evaluation of Auricular Surface Aging Methods Using the William M. Bass Donated Skeletal Collection. Honors thesis, Department of Anthropology, University of Tennessee, 2015.

Hufnagl, Kevin Benjamin Dominic. Age Estimation with Decision Trees: Testing the Relevance of 94 Aging Indicators on the William M. Bass Donated Collection. PhD Dissertation, Department of Anthropology, University of Tennessee, 2015

Jones, Arleigh. Examination of Age Estimation of the Sternal Rib Ends in the Third and Fourth Left Ribs. Honors thesis, Department of Anthropology, University of Tennessee, 2016.

Kearns, Aisling. An evaluation of a metric method for sex estimation using the clavicle, humerus, radius, and ulna. MA thesis. Boston University, 2015.

Kolatorowicz, Adam. Patterns of Morphological Integration in Modern Human Crania: Evaluating Hypotheses of Modularity using Geometric Morphometrics. PhD Dissertation, Ohio State University, 2015.

McCormick, Kyle. A Biologically Informed Structure to Accuracy in Osteometric Reassociation. Ph.D. Dissertation, University of Tennessee, 2016.

Mincer, Sarah. Skeletons in the Closet: The History and Ethics of Human Skeletal Collections in the United States with an Example from the Vassar College Collection. BA Thesis, Vassar College, 2015.

Schultz, Nichole Theresa. Trends and Patterns in the Ossification of Thyroid Cartilage. Honors Thesis, Department of Anthropology, University of Tennessee, 2015.

Smith, Jacob K. Raccoon Scavenging and the Taphonomic Effects on Early Human Decomposition and PMI Estimation. MA Thesis, University of Tennessee, 2015.

Synstelien, Jennifer Ann. Studies in taphonomy: Bone and soft tissue modifications by postmortem scavengers. PhD Dissertation, Department of Anthropology, University of Tennessee, 2015.

Watson, Ashleigh. The Efficacy of Carpal Bones in Sex Estimation of American Whites. Honors Thesis, Department of Anthropology, University of Tennessee, 2016

Wolff, Brittany M. A review of ‘body farm’ research facilities across America with a focus on policy and the impacts when dealing with decompositional changes in human remains. MA thesis, University of Texas at Arlington, 2015.