

# TAYLOR ANNE POLVADORE, PhD

Department of Anthropology, University of Arkansas  
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## Curriculum Vitae

### Education

- Doctor of Philosophy** in Anthropology at the University of Florida. August 2022  
Dissertation adviser: Dave Daegling, PhD
- Master of Arts** in Anthropology at the University of Florida. May 2016  
Masters adviser: Dave Daegling, PhD
- Bachelor of Arts** in Anthropology with Mathematics minor at University of Texas at Austin May 2014  
Overall GPA: 3.71/4.00 Major Specific GPA: 3.97/4.00. Graduated with honors.

### Research Interests

Computational anatomy; skeletal biomechanics and structural integrity; primate functional morphology of the limbs and masticatory apparatus; locomotor energetics and performance; kinetics and kinematics; human evolution; human embryology; forensic anthropology; ecology

### Employment History

- Postdoctoral Fellowship, Department of Anthropology, the University of Arkansas 2022 - Present
- Graduate Assistant, Dial Center for Written and Oral Communication, the University of Florida 2018 - 2021
- Graduate Assistant, Department of Anthropology, the University of Florida 2015 - 2018
- Student Assistant, The Office of Institutional Equity, the University of Texas at Austin 2011 - 2014

### Grants

- Kay Simpson Travel Award: \$1000 2023
- Elizabeth Eddy Doctoral Completion Award: \$5000 2022
- University of Florida Graduate School Doctoral Research Travel Award: \$4750 2019
- John Goggin Award: \$1500 2018
- James C. Waggoner Grant-in-Aid: \$800 2017
- Animal Behavior Society Student Research Grant: \$1000 2016

### Publications

- Polvadore, T. A.**, McGraw, W. S., & Daegling, D. J. (2023). Limb and hip morphology of two African colobine monkeys and its relationship to the mechanics of leaping and bounding locomotion. *American Journal of Biological Anthropology*. <http://doi.org/10.1002/ajpa.24839>
- Kane, E. E., **Polvadore, T. A.**, Bele, F. O., Bitty, E. A., Kamy, E., Mehon, F. G., Daegling, D. J., & McGraw, W. S. (2022). Oral Processing of Three Guenon Species in Taï National Park, Côte d'Ivoire. *Biology*, 11(12), 1850. <https://doi.org/10.3390/biology11121850>
- Geissler, E., Daegling, D. J., **Polvadore, T. A.**, & McGraw, W. S. (2021). Seed choice differs by sex in sooty mangabeys (*Cercocebus atys*). *Primates*, 62(2), 361-367. <https://doi.org/10.1007/s10329-020-00863-w>



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### Selected Peer-Reviewed Published Abstracts and Conference Presentations

- Polvadore, T. A.,** Yoakum, C. B., Taylor, P. M., Dutra Fogaça, M., Holmes, M. A., Laird, M. F., Chalk-Wilayto, J., Kanno, C. M., de Oliveira, J. A., Terhune, C. E., (2023). Ontogenetic biomechanics of tufted (*Sapajus*) and untufted (*Cebus*) capuchin mandibles. *Am J Biol Anthropol.* 180(S75):141.
- Fannin, L. D., Guatelli-Steinberg, D., Arft-Guatelli, J., Dunham, N. T., Traff, J. E., **Polvadore, T.A.** ... & McGraw, W. S. (2021). Oral processing, folivory, and premolar size in eight cercopithecoid monkeys. *Am J Biol Anthropol.* 174(S71):30.
- Polvadore, T. A.,** Calhoun, G. V., & Daegling, D. J. (2020). Effect of Thermal and Chemical Treatments on Elastic Modulus and Anisotropy of Bone. *Am J Biol Anthropol.* 171(S69):220.
- Polvadore, T.A.,** Ouoro, F., Daegling, D. J., & McGraw, W. S. (2018). Relationship of hip and knee joint angles to leaping in two African colobine species. *Am J Biol Anthropol.* 165(S66):211.
- Polvadore, T.A.,** Kane, E. E., Wilkins, M. A., Gnepa, F., Daegling, D. J., & McGraw, W. S. (2017). Niche partitioning, diet and oral processing behaviors in three sympatric guenons in the tai National Park, cote d'Ivoire. *Am J Phys Anthropol,* 162(S64): 319.
- Polvadore, T. A.,** McGraw, W. S., & Daegling, D. J. (2016). Relationship of proximal femoral morphology to leaping in two African colobine monkeys. *Am J Biol Anthropol.* 159(S62):254

### Teaching Experience

Introduction to Public Speaking- Instructor	Fall 2018-Fall 2021
X-Lab 1 (Biology, chemistry and physics integrated laboratory)- Teaching Assistant	Summer A 2018
Skeleton Keys: Introduction to Forensic Anthropology- Instructor	Spring 2018
Online Introduction to Biological Anthropology- Instructor	Fall 2017
Introduction to Biological Anthropology- Teaching Assistant	Summer A 2017
Introduction to Biological Anthropology- Instructor	Summer A 2016
Human Evolutionary Anatomy: Grader	Fall 2015
Introduction to Biological Anthropology- Teaching Assistant	Summer A 2015

### Undergraduate Level Course Creation

#### **Introduction to Biological Anthropology Online**

- Crafted 12 online lab assignments for topics including genetics, extant primate behavior/anatomy/taxonomy, and fossil hominoids.
- Created and managed online question banks for 3 exams and 12 quizzes.
- Organized the course schedule to accommodate a 6-week summer and 15 week fall/spring session.
- Created three assignments involving science, evolutionary theory, and hominin evolutionary trends.

#### **How to Make a Baby (After the Fun Part)**

- Organized the course schedule to accommodate a one credit 15 week fall/spring course.
- Created 14 lectures to achieve an overview of human embryology, including the heart/vascular system, respiratory system, urogenital system, and gastrointestinal system as well as interesting abnormalities of development (e.g., conjoined twins, cyclopes, cleft palates, organ reversal).
- Generated and managed online question banks for 7 quizzes.
- Crafted 3 assignments and two exams.

### **Laboratory Experience**

**Postdoctoral Fellowship in Anthropology at the University of Arkansas (PI Claire Terhune) 2022 - Present**

- Examined the ontogeny of feeding behaviors in capuchin monkeys
  - Stained 14 capuchin heads in 7.5% buffered Lugol's iodine solution for DiceCT scanning.
  - Scanned over 40 capuchin heads via a MicroCT machine (Nikon X TH 225 ST  $\mu$ CT system).
  - Digested the temporalis, masseter, and medial pterygoid muscles of over 10 capuchin monkeys in 30-40% nitric acid to assess muscle fiber and sarcomere length.
  - Assessed the mandible cortical bone cross sectional properties (e.g., cross-sectional area, total area, moments of inertia) at the symphysis, P<sub>3</sub>, and M<sub>1</sub> of over 60 capuchin specimens across ontogeny.

**Skeletal Biomechanics and Morphometrics Lab (PI David Daegling at University of Florida) 2014 - 2022**

- Scanned 172 skeletal elements of six species of primates and three species of rodents as well as one intact head of *Cercocebus atys* using a GE v|tome|x m 240 Nano-CT machine.
- Extracted and evaluated trabecular bone architecture (i.e., anisotropy, trabecular thickness, connectivity, and bone volume fraction) from Nano-CT scans via 3D Slicer.
- Measured femoral head and humeral head trabecular bone density via CT scan grey scale values.
- Analyzed articular surface size and shape of the femoral head, femoral condyles, humeral head, humeral capitulum, and humeral trochlea.
- Assessed structural integrity via cross-sectional properties of femoral and humeral mid-shafts.
- Further assessed structural integrity by creating proximal femur models of *Colobus polykomos* and *Ptilocolobus badius* and running finite element analyses in a variety of locomotor positions in Abaqus.
- Assessed oral processing behaviors of three species of guenons from chewing frequency data collected in the Tai National Park, Côte d'Ivoire.
- Micro-indented and Nano-CT scanned 20 bovine specimens treated with four types of sterilization/decontamination techniques to evaluate the treatment's effect on bone material properties.
- Completed all statistical analyses and data visualization for the aforementioned analyses using R.

### **Forensic Case Work**

**Forensic Anthropologist in the C. A. Pound Human Identification Lab (CAPHIL) Fall 2014 – Spring 2019**

- Analyzed human skeletal remains for biological profile (age, biological sex, stature, ancestry, and individualizing characteristics), pathological conditions, and trauma to the skeleton.
- Drafted osteological case reports detailing the findings of the analyses described above for several Florida districts' Medical Examiner's Offices.
- Assisted law enforcement in search and recoveries for human remains including burials, exhumations, and surface scatter.
- Primary analyst: 8 cases
  - Primary analysts complete the analyses described above, are the point of contact between the CAPHIL and the Medical Examiner's Office, and author the osteological report.
- Peer Reviewer: 5 cases
  - Peer review at the CAPHIL involves an independent assessment of the skeletal remains associated with a medicolegal case but does not involve authoring the case report.



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### Internship Experience

#### **Lockheed Martin Missiles and Fire Control: Co-Op Technical (Manufacturing Engineering Intern)**

May 2012 - August 2012

May 2011 - August 2011

- Standardized planning for approximately 50 circuit board and missile harness parts for the PAC-3 Missile by enhancing the wording/illustrations for each instruction operation and incorporating the input of both operators and other engineers.
- Generated and maintained three Microsoft SharePoint sites for Manufacturing, Test, and Quality.
- Collaborated with the Change Incorporation group to enhance the efficiency and community of the Lufkin facility by standardizing 11 instruction documents for the PAC-3 Launcher, running 3 metrics to provided efficiency statistics on plant operations, and creating flyers and a banner to promote Health and Wellness.
- Integrated changes into the instruction documents for PAC-3 Missile suggested from an earlier audit.
- Developed and incorporated an operation for new procedures involving a Selective Solder machine.

### Service

#### **Graduate Assistants United**

August 2014 – December 2021

Grievance Chair

May 2015 - May 2016

Co-President

May 2016 - May 2018

United Faculty of Florida Senator

January 2015- August 2019

- Represented the entire bargaining unit (4,000 graduate assistants) during arbitration over the University of Florida allegedly unilaterally changing the healthcare plan for graduate assistants
- Represented 3 graduate assistants in personal grievances against the university of Florida
- Organized and ran trainings, membership meetings, and event planning meetings

#### **UF Precollegiate Education and Training: Explorations in Biomedical Research**

July 16 – July 28, 2017

- Lectured on embryology and conjoined twins for 30 high school students

#### **American Association of Physical Anthropologists**

- Chaired the Poster Session: Primate Nutrition/Foraging

April 20, 2017

### Skills

R, 3D Slicer, Avizo, DiceCT (MicroCT and Nano-CT scanning), Abaqus, ImageXd, Rhinoceros, SolidWorks, Scan Studio HD, Photoshop