

Austin B. Lawrence

Department of Pathology and Anatomical Sciences
M263 Medical Sciences Building
University of Missouri School of Medicine
Columbia, MO 65212
austin.lawrence@mail.missouri.edu | austinblawrence.com
<https://orcid.org/0000-0001-5988-8495>

EDUCATION

- 2017- Ph.D. (in progress), Integrative Anatomy
 Department of Pathology and Anatomical Sciences
 University of Missouri School of Medicine (Columbia, MO)
 Advisor: Dr. Carol V. Ward
- 2013-2017 B.A. in Anthropology (Biological Anthropology), *summa cum laude*
 University of Colorado Boulder (Boulder, CO)
 Advisor: Dr. Matt Sponheimer

RESEARCH INTERESTS

Hominin Evolution	Hominin Pelvis & Lower Limb Evolution
Primate Locomotion	Early Hominin Paleoecology
Locomotor Biomechanics	Evolution of Hominin Diet
Bone Functional Adaptation	Ecological Morphology

PUBLICATIONS

Bergstrom K, **Lawrence AB**, Pelissero AJ, Hammond LJ, Maro E, Bunn HT, Musiba CM. (2019). Aerial map demonstrates erosional patterns and changing topography at Isimila, Tanzania. *South African Journal of Science* 115 (7/8), Art. #5911. DOI: 10.17159/sajs.2019/5911.

Paine OCC, Leichliter JN, Avenant NL, Codron DC, **Lawrence A**, Sponheimer M. (2019). The ecomorphology of southern African rodent incisors: Potential applications to the hominin fossil record. *PLoS ONE* 14(2): e0205476. <https://doi.org/10.1371/journal.pone.0205476>.

Lawrence AB, Sandberg PA, Van Gerven DP, Sponheimer M. (2018). Evidence for differences in activity between socioeconomic groups at Kulubnarti, Nubia (550-800 CE), from osseous modifications of the proximal femur. *International Journal of Osteoarchaeology* 28(6): 735-744. DOI: 10.1002/oa.2699.

Publications Submitted or In Prep

[in prep] **Lawrence AB**, Townsley S, Ward CV, Duren DL, Crist BD. Predicting symptomatic vs. asymptomatic femoroacetabular impingement using standard radiographic measurements. To be submitted to the *Journal of Bone and Joint Surgery*.

[in prep] **Lawrence AB**, Townsley S, Ward CV, Crist BD, Duren DL. Hip skeletal variation and implications for femoroacetabular impingement. To be submitted to *The Anatomical Record*.

GRANTS & FUNDING

- 2019 University of Missouri Graduate Professional Council Conference Presentation Travel Award (\$300)
- 2017-2021 University of Missouri Life Sciences Fellowship (\$100,000 + tuition & fees)
- 2018 University of Missouri Life Sciences First-Year Travel Award (\$750)
- 2016 Norlin Enrichment Funding, University of Colorado Boulder (\$1730)
- 2015-2016 Individual Grant, UCB Undergraduate Research Opportunities Program (\$1125)

AWARDS & HONORS

- 2019 Outstanding Graduate Student in Outreach, Department of Pathology & Anatomical Sciences, University of Missouri School of Medicine
- 2017 Third Place, Postgraduate Basic Science Division, University of Missouri Health Sciences Research Day
- 2017 Alice M. Brues Award for the Outstanding Graduate (CU Boulder Anthropology)
- 2016 Sigma Xi Undergraduate Research Award (CU Boulder Chapter)
- 2013-2017 Norlin Scholarship Award, University of Colorado Boulder (\$19,000)
- 2013-2017 Joseph A. Sewall Scholarship Award, University of Colorado Boulder (\$20,000)
- 2015 University of Colorado Boulder Arts and Sciences Dean's Scholarship (\$500)
- 2014 Golden Key International Honor Society
- 2013-2017 Dean's List, University of Colorado Boulder (3 semesters)
- 2012 University of Colorado Boulder Outstanding Colorado Student Award (\$4000)

CITABLE DATASETS

UAV Map of Isimila, Tanzania. DOI: 10.5281/zenodo.1470770

Collaborative UAV-based Orthomosaic of Isimila, Tanzania. DOI: 10.5281/zenodo.1470781

REFEREED ABSTRACTS

***Lawrence AB**, Hammond AS, Ward CV. Acetabular orientation in hominins. Paleoanthropology Society 2020 Annual Meetings (*PaleoAnthropology*).

*[Conference cancelled due to COVID-19 pandemic].

Lawrence AB, Townsley S, Ward CV, Crist BD, Duren DL (2019). Modern evidence of femoroacetabular impingement: implications for interpretations in the archaeological record. *American Journal of Physical Anthropology* 168: 138.

Musiba CM, Pelissero AP, Bergstrom K, Magori CC, Maro E, Hammond LJ, **Lawrence AB**. The Use of UAV's in Forensic Anthropology: A technical note from Archaeological survey at Isimila, Tanzania. African Society of Forensic Medicine 8th Annual Meetings. Dar es Salaam, Tanzania, March 2019.

Lawrence AB, Townsley S, Ward CV, Duren DL, Crist BD (2019). Non-metric Skeletal Traits are Related to Cam-type Femoroacetabular Impingement. Orthopaedic Research Society Annual Meetings, Austin, TX.

Lawrence AB, Sandberg PA (2018). The Evolution of Femoroacetabular Impingement. *American Journal of Physical Anthropology* 165(S66): 154.

Pelissero AJ, Bergstrom K, Hammond LJ, **Lawrence AB**, Bunn HT, Musiba CM (2018). Drone mapping of Isimila, Tanzania: The Implications for Future Research into Mid-Pleistocene *Homo* Behavior. *PaleoAnthropology* 2018: A26.

Lawrence AB, Sandberg PA (2016). Femoroacetabular impingement: relationship to non-metric pathologies of the proximal femur. *American Journal of Physical Anthropology* 159(62): 204.

Lawrence AB, Sandberg PA (2015). Femoro-acetabular impingement in a skeletal assemblage from medieval Nubia. *American Journal of Physical Anthropology* 156(60): 199.

INVITED PRESENTATIONS

Research in Biological Anthropology. Anthropology Undergraduate Research Seminar Series, University of Colorado Boulder Anthropology Club. April 6, 2017.

The Evolution of Femoroacetabular Impingement. Boettcher Scholarship Finalist Day. Office of Undergraduate Admissions, University of Colorado Boulder. February 20, 2017.

Paleoanthropology Fieldwork as an International Experience. President's Leadership Class (Recitation), University of Colorado Boulder. Nov. 3, 2016.

Keynote Address: Outstanding Colorado Student Day. Office of Undergraduate Admissions, University of Colorado Boulder. Aug. 6, 2016

OTHER PRESENTATIONS

Lawrence AB, Townsley S, Ward CV, Crist BD, Duren DL (2019). Modern evidence of femoroacetabular impingement: implications for interpretations in the archaeological record. University of Missouri Life Sciences Week, April 2019.

Lawrence AB, Townsley S, Ward CV, Duren DL, Crist BD. Non-metric Skeletal Traits are Related to Cam-type Femoroacetabular Impingement. University of Missouri Health Sciences Research Day, Nov. 15, 2018.

Lawrence AB, Sandberg PA. The Evolution of Femoroacetabular Impingement. Poster Presentation, Society for Integrative and Comparative Biology, Division of Vertebrate Morphology, Midwest Regional Meeting. Oct. 6, 2018.

Lawrence AB, Sandberg PA. The Evolution of Femoroacetabular Impingement. Poster Presentation, University of Missouri School of Medicine Health Sciences Research Day. Nov. 9, 2017. (Awarded Third Place in Postgraduate Basic Science Division).

Lawrence AB. Quantifying Pathologies of the Hip in the Archaeological Record: Applying Clinical Diagnostics to Ancient Human Activity. Podium Presentation, Special Undergraduate Enrichment Programs Research Conference, University of Colorado Boulder. April 2016.

Lawrence AB. Femoroacetabular impingement in a skeletal assemblage from medieval Nubia. Podium Presentation, Special Undergraduate Enrichment Programs Research Conference, University of Colorado Boulder. April 2015.

RESEARCH & LABORATORY EXPERIENCE

- 2018- **Skeletal Morphology Laboratory, Missouri Orthopaedic Institute
Department of Orthopaedic Surgery, University of Missouri School of Medicine**
Research rotation with Dr. Dana Duren and Dr. Brett Crist studying anatomical correlates of femoroacetabular impingement in a clinical sample.
PI: Dr. Dana Duren
- 2017- **Ward Lab, Department of Pathology and Anatomical Sciences
University of Missouri School of Medicine**
Primate and Hominin Functional Morphology & Evolution
PI: Dr. Carol V. Ward
- 2015-2017 **Nutritional and Isotopic Ecology Lab (NIEL)
Department of Anthropology, University of Colorado Boulder**
Stable isotope analysis of human and faunal remains (sample prep); digital microscopy; modern & fossil micromammal ecomorphology for hominin paleoenvironmental reconstruction.
PI: Dr. Matt Sponheimer
- 2016-2017 **Human Anatomy Laboratory, Department of Integrative Physiology,
University of Colorado Boulder**
Dissecting intern (2016) then volunteer dissector (2017). Dissected human cadavers for undergraduate anatomy teaching labs.
Supervisor: Ruth Heisler
- 2015-2016 **Río Verde Regional Isotope Project
Department of Anthropology, University of Colorado Boulder**
Prepared human & faunal skeletal samples for stable isotope analysis.
Directors: Dr. Art Joyce (Río Verde), Dr. Guy Hepp (La Constentida)
- 2014-2017 **Skeletal Biology Laboratory
Department of Anthropology, University of Colorado Boulder**
Student Curator of Skeletal Biology (2016-2017) and undergraduate researcher.
Supervisors: Dr. Dennis Van Gerven, Dr. Paul A. Sandberg
- 2014 **Independent Study
Department of Anthropology, University of Colorado Boulder**
Cleaned, sorted, and analyzed ceramic, lithic, and faunal material from flotation samples taken from the Woodrow Ruin site in southwestern New Mexico under the supervision of Dr. Catherine Cameron & Dr. Jakob Sedig

FIELD EXPERIENCE

- 2020 **West Turkana Paleo Project**
Lomekwi, West Turkana, Kenya
Directors: Dr. Carol Ward, Dr. Fredrick Kyalo Manthi, Dr. J. Michael Plavcan

- 2017 **University of Colorado Denver Biological Anthropology Field School**
Isimila & Laetoli, Tanzania
Supervisors: Dr. Charles Musiba, Dr. Henry Bunn, Kersten Bergstrom.
- 2016 **Field Research Volunteer, South African Coastal Paleoclimate,
Paleoenvironment, Paleoecology, Paleoanthropology (SACP4) Project**
Pinnacle Point Cave 5-6 & Vleesbaai, Mossel Bay, Western Cape, South Africa
Supervisors: Dr. Curtis Marean, Dr. Jayne Wilkins, Dr. Erich Fisher

MUSEUM RESEARCH EXPERIENCE

- 2020 Department of Earth Sciences, National Museums of Kenya, Nairobi, Kenya
2016 Department of Zoology, Denver Museum of Nature & Science, Denver, CO

TEACHING EXPERIENCE

University of Missouri School of Medicine

- 2019 Teaching Assistant, Medical Gross Anatomy Block 4: Pelvis & Lower Limb
2019 Teaching Assistant, Medical Gross Anatomy Block 3: Head, Neck, Neuro
2018 Teaching Assistant, Medical Gross Anatomy Block 2: Thorax & Abdomen
2018 Teaching Assistant, Medical Gross Anatomy Block 1: Back & Upper Limb

University of Colorado Boulder

- 2015 Review Sessions for ANTH 2010 Introduction to Biological Anthropology I
Teaching Assistant, ANTH 4130/5130 Advanced Osteology

PROFESSIONAL DEVELOPMENT

- 2018-2019 Professional Development Workshop Series, Department of Pathology and
Anatomical Sciences, University of Missouri School of Medicine
2018 Inclusive Teaching Workshop, University of Missouri Division of Inclusion, Equity
& Diversity
2017 Active Learning Strategies Workshop, Dr. Cheryl Hill, University of Missouri
School of Medicine

SERVICE

- 2018- Secretary, Integrative Anatomy Students Association
2016-2017 Natural Science Editor, University of Colorado Boulder Honors Journal
2015-2016 CU Boulder Department of Anthropology Inclusive Excellence Committee
2014-2015 CU Boulder Department of Anthropology Student Oversight Committee
2014-2015 Student Programming Leader, Honors RAP, University of Colorado Boulder
2013-2017 Student Ambassador, Office of Undergraduate Admissions, CU Boulder

OUTREACH & EXTENSION

- 2020 Integrative Anatomy Open House, Columbia, MO
- 2019 Pen Pal, Letters to a Pre-Scientist (ongoing, 2019-2020 academic year)
Rock Bridge STEM Expo, Rock Bridge High School, Columbia, MO
Benton Elementary School STEM Showcase, Columbia, MO

Caleb Science Pre-College Group Fall Kickoff Event, Columbia, MO
Ask a Grad Student, MU Life Sciences Expo, University of Missouri, Columbia
(invited) Meet a Scientist, Soaring into Science, MU Div. of Biological Sciences
Science Tent, Art in the Park, Columbia, MO
Science Enrichment Presentation, West Middle School, Columbia, MO
Columbia Young Scientists Expo, MU Research Connector, Columbia, MO
Tours of gross anatomy laboratory for local high school students

- 2018 Rock Bridge STEM Expo, Rock Bridge HS, Columbia, MO
 SciFest, St. Louis Science Center, St. Louis, MO
 Caleb Science Pre-College Group Fall Kickoff Event, Columbia, MO
 Science Tent, Art in the Park, Columbia, MO
 Dinosaurs & Cavemen Science Expo, Columbia, MO (NSF supported)
 Caleb Science Pre-College Group, Columbia, MO
 2 tours of gross anatomy laboratory for local high school students
- 2017 Rock Bridge STEM Expo, Rock Bridge HS, Columbia, MO
 Benton Elementary School STEM Showcase, Columbia, MO
- 2016 “Nefertiti’s City” Bones Workshop, Boulder Public Library, Boulder, CO
 (Organizer & Presenter)

PROFESSIONAL ASSOCIATIONS

American Association of Physical Anthropologists (2014-present)
Paleoanthropology Society (intermittent, 2015-present)
American Association for Anatomy (2019-present)
Orthopaedic Research Society (2019)
Sigma Xi: The Scientific Research Honor Society (2016-present)
American Anthropological Association (2015)