

Zachary S. Klukkert

Curriculum Vitae

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Department of Anatomy & Cell Biology
Oklahoma State University Center for Health Sciences
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EDUCATION

- Ph.D. Physical Anthropology, City University of New York Graduate Center, New York Consortium in Evolutionary Primatology (NYCEP), 2019.
M.A. Physical Anthropology, University of Arkansas, 2008.
B.S. Biological Anthropology, University of New Mexico, 2004.

PROFESSIONAL APPOINTMENTS

- 2023- Assistant Professor. Department of Anatomy of Anatomy and Cell Biology, Oklahoma State University Center for Health Sciences (OSU-CHS).
2020-23 Assistant Professor of Anatomy. Department of Foundational Sciences, Central Michigan University College of Medicine (CMED).
2019-20 Research Postdoctoral Fellow. The Johns Hopkins University School of Medicine Center for Functional Anatomy and Evolution (FAE).
2014-15 Adjunct Assistant Professor. Department of Anthropology, Tulane University.

PUBLICATIONS

- Submitted* Kuo I¹, Hunt B¹, Doyle DM¹, Fakhoury P¹, Ha H¹, Garmo L¹, Cardwell M¹, Gillenkirk M¹, Ridge E¹, Ren T¹, Sirhan N¹, Ireland N¹, Fegan T¹, McCollum K¹, Timmerman K¹, Root K¹, **Klukkert ZS**, and Pandey J. Growing medical educators from medical students by supporting self-directed learning opportunities born out of cadaveric dissection. *Medical Science Educator*. ¹*student*.
- 2023 Cooke SB and **Klukkert ZS**. Diet, dentition, and jaw shape in *Aotus*. In Fernandez-Duque, E (Ed). Owl Monkeys: Evolution, Behavioral Ecology and Conservation. Springer, New York, NY. [\[pdf\]](#)
- 2021 Godfrey LR, Crowley BE, Muldoon KM, Burns SJ, Scroxton N, **Klukkert ZS**, Ranivoharimanana L, Alumbaugh J, Borths M, Dart R, Faina P, Goodman SM, Gutierrez IJ, Hansford JP, Hekkala ER, Lehman P, Lewis ME, McGee D, Pérez VR, Rahantaharivao NJ, Rakotoarijaona M, Rasolonjatovo HAM, Samonds KE, Turvey ST, and Widmann P. Teasing apart impacts of human activity and regional drought on Madagascar's megafauna: insights from new excavations at Tsimanampesotse and Antsirafaly. *Frontiers in Ecology and Evolution*. DOI: [10.3389/fevo.2021.742203](https://doi.org/10.3389/fevo.2021.742203). [\[pdf\]](#)
- 2016 Cooke SB*, Gladman JT, Halenar LB, **Klukkert ZS**, and Rosenberger AL. The paleobiology of the recently extinct platyrrhines of Brazil and the Caribbean. In Ruiz-Garcia M and Shostell JM (Eds.) *Phylogeny, Molecular Population Genetics, Evolutionary Biology and Conservation*

- of the Neotropical Primates. Nova Science Publishers, Inc., Hauppauge NY. pp. 41-89. [\[pdf\]](#)
**Subsequent author names alphabetical.*
- 2014 Tallman M*, Amenta N, Delson E, Frost SR, Ghosh D, **Klukkert ZS**, Morrow A, and Sawyer GJ. Evaluation of a new method of fossil retrodeformation by algorithmic symmetrization: crania of papionins (Primates, Cercopithecidae) as a test case. PLoS ONE, 9(7): e100833. DOI: [10.1371/journal.pone.0100833](https://doi.org/10.1371/journal.pone.0100833) [\[pdf\]](#) **Subsequent author names alphabetical.*
- 2013 Rosenberger AL, **Klukkert ZS**, Cooke SB, and Rímoli R. Rethinking *Antillothrix*: the mandible and its implications. American Journal of Primatology, 75(8): pp. 825-836. DOI: [10.1002/ajp.22144](https://doi.org/10.1002/ajp.22144). [\[pdf\]](#)
- 2012 **Klukkert ZS**, Teaford MF, and Ungar PS. A dental topographic analysis of chimpanzees. American Journal of Physical Anthropology 148: pp. 276-284. DOI: [10.1002/ajpa.21592](https://doi.org/10.1002/ajpa.21592). [\[pdf\]](#)
- 2012 **Klukkert ZS**, Dennis JC, M'Kirera F, and Ungar PS. Dental topographic analysis of the molar teeth of primates. In Bell LS (Ed.) Forensic Microscopy for Skeletal Tissues: Methods and Protocols. Humana Press, New York NY. pp. 145-152. DOI: [10.1007/978-1-61779-977-8_9](https://doi.org/10.1007/978-1-61779-977-8_9). [\[pdf\]](#)

GRANTS AND FELLOWSHIPS

Research Grants

- 2017 Exploration Fund Grant, The Explorers Club. CUNY Graduate Center.
 2015 Ralph W. Stone Fellowship, National Speleological Society. CUNY Graduate Center.
 2013 Provost's Digital Incubator Grant, CUNY Graduate Center.

Other Support

- 2019 American Association of Anatomists Conference Travel Grant. CUNY Graduate Center.
 2009 New York Consortium in Evolutionary Primatology (NYCEP) Integrated Graduate Education and Research Traineeship (IGERT) Fellowship, NSF IGERT grant DGE 0333415. CUNY Graduate Center.

INVITED TALKS

- 2021 Panelist, Anatomy Think-Tank Symposium (Remote) sponsored jointly by the American Association for Anatomy and the American Association of Clinical Anatomists.
 2020* Early-Career Panelist, AAPA Annual Student Meet and Greet Event, American Association of Physical Anthropologists, Los Angeles, CA. **Accepted invitation to participate but the conference was cancelled due to COVID-19 pandemic.*
 2019 Invited speaker, Biology Colloquium Series, Fordham University, New York, NY.
 2018 Keynote speaker, Midwest Meetings of the National Speleological Society Cave Diving Section, St. Robert, MO

CONFERENCE PARTICIPATION

Administration and Leadership

- 2023 Roundtable Discussion Leader, “The New Faces of Academia: A Skills Fair for the Modern Anatomist,” “Expanding Your Research: Ensuring Inclusivity in Survey Design.” Anatomy Connected conference, American Association for Anatomy, Washington, DC, April 2023.
- 2019 Co-founder and Co-organizer, “Baltimore Symposium on Caribbean Natural History,” Johns Hopkins University School of Medicine, Baltimore, MD, December 2019.

Research Presented

- 2023* Hunt B¹, **Klukkert ZS**. Anatomical pattern identification of the temporal branches of CN VII using cadaveric dissection. Anatomy Connected conference, American Association for Anatomy, Washington, DC, April 2023. **Finalist, AAA graduate poster presentation award; ¹student.*
- 2023 Sirhan N¹, Ireland N¹, Fegan T¹, **Klukkert ZS**. A rare view of a rare condition: cadaveric dissection of thenar hypoplasia case involving congenital absence of two thenar muscles. American Association for Anatomy meetings, Washington, DC, April 2023. *¹student.*
- 2023 Kuo I¹, Hunt B¹, Doyle D, **Klukkert ZS**, Pandey J. Utilizing cadaveric dissection to understand Pathophysiology. American Association for Anatomy meetings, Washington, DC, April 2023. *¹student.*
- 2022 Halenar-Price LB, Cooke SB, **Klukkert ZS**, Sims Z, Almonte J, Lehman P, and Tallman L. Quantifying intraspecific variations in a Caribbean fossil primate. American Association of Physical Anthropologists, Los Angeles, CA, April 2020. [[abstract](#)]
- 2022 Khishen S¹, Kooienga B¹, Reitzel E¹, Srinageshwar B, Klukkert ZS, Kennedy J, Rossignol J, and Pandey J. Enhancing and promoting self-directed learning of pathology and disease progression using cadaveric dissections. CMU College of Medicine & CMU Medical Education Partners Research Symposium, [*Remote due to COVID-19 pandemic restrictions*] April 2022. *¹student.*
- 2020* Lewis ME, Godfrey LR, Rakotondramavo J, **Klukkert ZS**, Scroxtion N, Burns SJ, Crowley BE, McGee D, Muldoon KM, Meador LR, Lehman P, Rahantaharivao NJ, and Ranivoharimanana L. A new extinct large predator in Madagascar: predation pressure on large-bodied Malagasy lemurs through time. American Association of Physical Anthropologists, Los Angeles, CA, April 2020. [[abstract](#)] **Accepted for presentation but conference cancelled due to COVID-19 pandemic.*
- 2020* Godfrey LR, Muldoon KM, Burns SJ, Crowley BE, **Klukkert ZS**, Scroxtion N, and Ranivoharimanana L. Natural and human impacts on vertebrate megafauna in southwest Madagascar. [[abstract](#)] American Association of Physical Anthropologists, Los Angeles, CA, April 2020. **Accepted for presentation but conference cancelled due to COVID-19 pandemic.*
- 2019 **Klukkert ZS**. Flooded cave paleontology; promise and problems. Baltimore Symposium on Caribbean Natural History, Baltimore, MD, December 2019.
- 2019 **Klukkert ZS**, Halenar-Price LB, Almonte J, Shevchuk O, Lehman P, and Cooke SB. Newly discovered craniomandibular remains preserve the first known incisors of the extinct Dominican monkey *Antillothrix bernensis*. American Association for Anatomy, Orlando, FL, April 2019. [[abstract](#)]
- 2019 **Klukkert ZS**. Functional correlates of jaw shape diversity in platyrrhine sclerocarpic harvesters. American Association of Physical Anthropologists, Cleveland, OH, March 2019. [[abstract](#)]
- 2019 Godfrey LR, **Klukkert ZS**, Lewis ME, Rahantaharivao NJ, Ranivoharimanana L, Faina P, Scroxtion N, and Burns SJ. Night and day: Subfossil faunal representation in neighboring

- Malagasy caves illustrates interaction and exclusion by predator and prey. American Association of Physical Anthropologists, Cleveland, OH, March 2019. [\[abstract\]](#)
- 2018 **Klukkert ZS**. Jaw muscle positions facilitate gape-specific feeding strategies in platyrrhines. American Association of Physical Anthropologists, Austin, TX, April 2018. [\[abstract\]](#)
- 2017 **Klukkert ZS**. Canine tooth robusticity mitigates stress in the jaw. American Association of Physical Anthropologists, New Orleans, LA, April 2017. [\[abstract\]](#)
- 2016³ **Klukkert ZS**. Tooth size and diet among the extinct primates of the Caribbean. American Association of Physical Anthropologists, Atlanta, GA, April 2016. [\[abstract\]](#) ³*abstract accepted, did not attend.*
- 2016 Shearer BM, Halenar LB, **Klukkert ZS**, Pagano AS, Reidenberg JS, and Tang CY. New insights into *Alouatta* vocal tract anatomy and functional morphology via CT and MRI. American Association of Physical Anthropologists, Atlanta, GA, April 2016. [\[abstract\]](#)
- 2014 **Klukkert ZS**. Canine bending strength and fracture in durophagous platyrrhines. American Association of Physical Anthropologists, Calgary AB (CA), April 2014. [\[abstract\]](#)
- 2012 Rosenberger AL, **Klukkert ZS**, Cooke SB, and Rímoli R. Rethinking *Antillothrix*: the mandible and its implications. International Primatological Society Meetings. Cancun, QR (MX), August 2012.
- 2012 **Klukkert ZS** and Harrison T. Jaw shape diversity in platyrrhine sclerocarpic foragers. American Association of Physical Anthropologists, Minneapolis, MN, April 2012. [\[abstract\]](#)
- 2011 **Klukkert ZS** and Rosenberger AL. A new angle on the anterior dentition of platyrrhines: A preliminary report. American Association of Physical Anthropologists, Portland, OR, April 2011. [\[abstract\]](#)
- 2010 **Klukkert ZS**, Ungar PS, and Teaford MF. Dental topographic analysis of chimpanzees. American Association of Physical Anthropologists, Albuquerque, NM, April 2010. [\[abstract\]](#)
- 2010 Robinson C and **Klukkert ZS**. Revisiting shrinkage: A test of the long-term integrity of dental molds. American Association of Physical Anthropologists, Albuquerque, NM, April 2010.
- 2008 **Klukkert ZS**. Chimpanzee molar teeth from the outside in. University of Arkansas, Kansas, University in Missouri-Columbia and University of Kentucky (ARKUMOKY) annual paleoanthropology conference. University of Missouri-Columbia, Columbia, MO, October 2008.
- 2007 **Klukkert ZS**. Digitally “patching” surface anomalies in laser-scanned dental casts for topography studies. University of Arkansas, Kansas, and University of Missouri-Columbia (ARKUMO) annual paleoanthropology conference. University of Arkansas, Fayetteville, AR, October 2007.

TEACHING EXPERIENCE

Courses Taught

- 2020-23 **Central Michigan University College of Medicine**
 Cardiopulmonary & Respiratory Systems²
 Foundational Sciences of Medicine A & B²
 Gastrointestinal System²
 Musculoskeletal & Dermal Systems^{2,3}
 Neurosciences & Behavior²
 Renal & Endocrine Systems²
 Reproduction and Human Development^{2,3}
 Summer Anatomy Dissection Program (extracurricular)³
 Surgical Anatomy Elective
²*Anatomy faculty on multidisciplinary team;* ³*Contributed to course/program design*

- 2019 **Johns Hopkins University School of Medicine**
Scientific Foundations of Medicine: Human Gross Anatomy
- 2014-15 **Tulane University**
Primate Adaptation & Evolution
Primate Behavior & Ecology
- 2012-15 **Brooklyn College, City University of New York**
Caribbean Paleontology Field School – Dom. Republic
Forensic Science/Forensic Anthropology
Human Evolutionary Anatomy
Introduction to Physical Anthropology
- 2012 **Icahn School of Medicine at Mount Sinai**
Human Gross Anatomy – TA
- 2007-08 **University of Arkansas**
Introduction to Biological Anthropology Lab
- 2004 **El Estación Biológica de Ometepe (Nicaragua)**
Primate Behavior & Ecology Field School – TA

Student Mentorship

- 2023 Research Mentor, CMU College of Medicine & CMU Medical Education Partners Research Symposium. Saginaw, MI, April 2023. Presented works:
- Hunt B and Klukkert ZS. Cadaveric dissection of the temporomandibular joint to identify anatomical landmarks for CN VII branches to mitigate risks of single endaural incision TMJ replacement surgery.
 - Ireland N, Fegan T, Sirhan N, and Klukkert ZS. Beyond carpal tunnel syndrome: assessment of upper extremity manual disfunction symptoms.
 - Schneider J and Klukkert ZS. Axillary arch: An uncommon variant that mimics thoracic outlet syndrome.
 - Sirhan N, Ireland N, Fegan T, and Klukkert ZS. A rare view of a rare condition: cadaveric dissection of thenar hypoplasia case involving congenital absence of two thenar muscles.
- 2022-23 Research Mentor, “Summer Scholars Program” Awarded Research, CMU College of Medicine.
- 2021-23 Faculty Advisor, Ophthalmology Student Interest Group, CMU College of Medicine.
- 2022 Research Mentor, CMU College of Medicine & CMU Medical Education Partners Research Symposium. Presented works:
- Megaly M, Richardson G, and Versluis E. Anatomical variation: A case of reversed palmaris longus.
- 2021-22 Research Mentor, 7th Annual Medical Student Research Forum, CMU College of Medicine. Presented works:
- Kooienga B and Reitzel E. Multiple primary malignancies and rectovaginal fistula; a cadaveric case report.
 - Pham A and Payne L. Anatomical variations of the sciatic nerve bifurcation (Beaton and Anson classification type 2) and its clinical implications. **Awarded first place (tie) in Case Studies group.*
 - Schneider E and Wall R. Rare rectus abdominus skeletal muscle malignant melanoma metastasis found on post-mortem dissection.
- 2021 Faculty Advisor, Ear Nose Throat Student Interest Group, CMU College of Medicine.
- 2014-15 Mentoring Scientist, Animal Sciences, The Greater New Orleans Science and Engineering Fair, High School Senior Division. Presented work:
- McCall E. Locomotion and limb proportions of primates. *-Awarded first place in class at fair, second place in class in region.*

Formal Pedagogical Training

- 2022-23 Associate Member, Central Michigan University Academy of Medical Educators.
- CMED Faculty Development Teaching Observation Program, Observation by Assistant Dean of the Office of Medical Education, Gastrointestinal Course Anatomy Lab, November 2022. [\[report\]](#)
 - Peer-Feedback from Course Director, Foundational Sciences of Medicine B Course Anatomy Labs, October - December 2022. [\[pdf\]](#)
- 2019-20 Postdoctoral Trainee, Johns Hopkins University Teaching Academy.

SERVICE & OUTREACH

Service in Express Support of Diversity, Equity, and Inclusion

- 2022-24 Member, Anatomy Scholar Program (ASP) Development Committee, American Association for Anatomy.
- 2021-24 Member, Diversity, Equity and Inclusion Committee, American Association for Anatomy.
- Head, Demographics Data Taskforce (DEI-DDT)
 - Member, Outreach Subcommittee
 - Roundtable Discussion Leader, “The New Faces of Academia: A Skills Fair for the Modern Anatomist,” “Expanding Your Research: Ensuring Inclusivity in Survey Design.” Anatomy Connected conference, American Association for Anatomy, Washington, DC, April 2023.
- 2022 Workshop Host, 17th Annual North American Indigenous Summer Enrichment Camp (NAISEC). Central Michigan University, Mount Pleasant, MI.
- 2022 Facilitator, Student Critical Consciousness Workshop – Implicit Bias. Central Michigan University College of Medicine, Mount Pleasant, MI.
- 2021 Facilitator, Student Critical Consciousness Workshop – Social Identity. Central Michigan University College of Medicine, Mount Pleasant, MI.

Administrative Service to Home Institution

- 2022-23 Member, Admission Committee, CMU College of Medicine.
- 2022-23 Member, Curriculum Segment Review Phase 2 Working Group: Discrete Course Blocks subgroup, CMU College of Medicine.
- 2022 Member, LCME Self-Study Task Force – Curriculum Content working group, CMU College of Medicine.
- 2022 Student Admissions Multiple Mini Interview (MMI) Interviewer, CMU College of Medicine.
- 2021-22 Member, Curriculum Segment Review Phase 1 Working Group: Instructional Modality Review subgroup; Course Content/Structure Placement subgroup, CMU College of Medicine.
- 2021-22 Member, Faculty Search Committee: Open-Rank Anatomy Faculty search, CMU College of Medicine.
- 2021-22 Secondary Student Application Screener, CMU College of Medicine.
- 2021 Member, Faculty Search Committee: Open-Rank Pathology Faculty, CMU College of Medicine.
- 2020,22 Member, Staff Search Committee: Anatomy Lab Coordinator, CMU College of Medicine.

Service to Profession

- 2019, 21 Peer Reviewer, Journal Manuscript, American Journal of Primatology.
- 2016 Peer Reviewer, Journal Manuscript, American Journal of Physical Anthropology.

Volunteer Service for Education & Community Support

- 2020 Judge, Maryland History Day State Competition (*Remote*), Breaking Boundaries, Website Presentations, High School Senior Division. University of Maryland, Baltimore, MD.
- 2020 Invited Guest Speaker (*Remote*):
- Ms. Jaramillo's mixed 3rd/4th Grade Class, Dixon Elementary, Española NM.
- 2020 Visiting Scientist (*Remote*), "Skype a Scientist" Outreach Program. Classrooms:
- Mr. Rassi's 4th Grade Class, Akron Elementary, Akron, IN.
 - Ms. Harper's 3rd Grade STEM Class, Putnam County Elementary, Eatonton, GA.
- 2017-19 Member, Science Committee, National Speleological Society-Cave Diving Section.
- 2016-17 Chair, Board Nomination Committee, National Speleological Society-Cave Diving Section.
- 2005 Disaster Relief Volunteer, American Red Cross. General purpose volunteer staff in the wake of hurricanes Katrina and Rita, San Antonio, TX.

Web-Based Publications for Public Outreach

- 2022 **Klukkert ZS.** An island view from inside flooded caves. Shearwater Research Invited Community Forum [web], <https://www.shearwater.com/community/an-island-view-from-inside-flooded-caves/>.
- 2018 **Klukkert ZS.** Paleontology in the flooded caves of Madagascar. Shearwater Research Invited Community Forum [web], <https://www.shearwater.com/monthly-blog-posts/paleontology-flooded-caves-madagascar/>.
- 2016 **Klukkert ZS.** Project *Antillothrix*: Paleobiology in flooded Dominican caves. XDEEP Exploration Support Program Report [web], <http://www.xdeep.eu/project-antillothrix-2016-sd-9.html>.
- 2016 **Klukkert ZS.** Paleontology in the flooded caves of Madagascar. Madagascar Cave Diving Association Research [web], <https://www.madacaves.com/research>.
- 2015 **Klukkert ZS.** The monkeys of the Antilles. "Project *Antillothrix*" website [web], <https://www.antillothrix.com/monkeys-of-the-antilles>.
- 2015 **Klukkert ZS.** Antillean biogeography. "Project *Antillothrix*" website [web], <https://www.antillothrix.com/antillean-biogeography>.
- 2015 **Klukkert ZS.** Lost mammals of Hispaniola. "Project *Antillothrix*" website [web], <https://www.antillothrix.com/lost-mammals-of-hispaniola>.

MEDIA COVERAGE

- 2022 Black R. What lies beneath; Cave diving is a dangerous hobby, but for these paleontologists, it grants passage to the past. Popular Science, 294(3): pp. 21-26 [web]. Retrieved from: <https://popsci.zinioapps.com/article/z/z-i536808/z-a27156>. [pdf]
- 2022 Jodway B. CMU professor explores final frontier of paleontology by diving underwater. [Radio Broadcast] All Things Considered, WCMU National Public Radio. Air date: February 10, 2022.
- 2021 Mills N. Cave diving research sets CMU paleontologist apart. The Morning Sun, Sunday Edition. Print date: November 14, 2021. Retrieved from: <https://www.themorningsun.com/2021/11/14/cave-diving-research-sets-cmu-paleontologist-apart/>. [pdf]
- 2021 Godfrey LR. "Field Notes: Late Holocene changes in Madagascar's large vertebrates; Recent cave findings offer insights into what caused the extinction of some megafauna," *Natural History*, Nov. 2021, pp. 9-11.

- 2020 “Fossil Treasures Found in Flooded Caves in Southwest Madagascar.” National Science Foundation public outreach for National Fossil Day [web]. Retrieved from: <https://twitter.com/NSF/status/1316416776918519808>.
- 2020 Godfrey LR. Fossils from flooded caves in Madagascar offer a new perspective on the region’s history. National Science Foundation “Science Matters” invited blog series [web]. Retrieved from: <https://beta.nsf.gov/science-matters/fossils-flooded-caves-madagascar-offer-new-perspective-regions-history>. [pdf]
- 2020 Nelson H. Fossil frenzy. Central Michigan University Office of Research and Graduate Studies news bulletin [web]. Retrieved from: https://www.cmich.edu/office_provost/ORGS/Pages/Klukkert1.aspx. [pdf]
- 2019 “When Whales Walked” two-hour special broadcast on PBS [television]. Shining Red Productions, Inc., Twin Cities Public Broadcasting Service. Air date: June 19, 2019.
- 2018 “NSS-CDS Midwest 2018 Workshop Held in Pulaski County, Missouri.” Pulaski County Tourism News [web]. Retrieved from: <https://visitpulaskicounty.org/nss-cds-midwest-2018-workshop-held-in-pulaski-county-missouri/>. [pdf]
- 2017 Herrera M. Espeleobuzos Conquistan Manantiales Dominicanos. 7días.com.do [web]. Retrieved from: http://www.7dias.com.do/elpais/2017/09/04/i233692_espeleobuzos-conquistan-manantiales-dominicanos.html#.Wa33bEGB6Ec.
- 2017 Dax M. Underwater Caves are Earth’s Final Frontier. Outside Magazine [web]. Retrieved from: <https://www.outsideonline.com/2171946/underwater-caves-earths-final-frontier>. [pdf]
- 2016 Montanari S. Underwater Paleontology and the Monkeys of the Caribbean. Forbes Science [web]. Retrieved from: <https://www.forbes.com/sites/shaenamontanari/2016/08/22/underwater-paleontology-and-the-monkeys-of-thecaribbean/#28c7d979290c>. [pdf]