

Zachary S. Klukkert

Curriculum Vitae
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Department of Foundational Sciences
Central Michigan University College of Medicine
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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

- 2020- Assistant Professor of Anatomy. Department of Foundational Sciences, Central Michigan University College of Medicine.
2019-20 Research Postdoctoral Fellow. The Johns Hopkins University School of Medicine Center for Functional Anatomy and Evolution.
2014-15 Adjunct Assistant Professor. Department of Anthropology, Tulane University.

PUBLICATIONS

- In Press* 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.
- 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, Rahantahirivao 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. p. 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): 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: 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. p. 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

Research Presentations

- 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.

Panel Discussions

- 2021 Panelist, Anatomy Think-Tank Symposium 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. Reschedule pending.*

CONFERENCE PARTICIPATION

Organization and Leadership

- 2019 Co-founder and Co-organizer, “Baltimore Symposium on Caribbean Natural History,” Johns Hopkins University School of Medicine, Baltimore, MD, December 2019.

Research Presented

- 2020* 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. [\[abstract\]](#) **Accepted for presentation but the conference was cancelled due to COVID-19 pandemic, rescheduled: April 2022.*
- 2020* Lewis ME, Godfrey LR, Rakotondramavo J, **Klukkert ZS**, Scroxton 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 the conference was cancelled due to COVID-19 pandemic.*
- 2020* Godfrey LR, Muldoon KM, Burns SJ, Crowley BE, **Klukkert ZS**, Scroxton 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 the conference was 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 of Anatomists, 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, Scroxton 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. [\[abstract\]](#)
- 2016* **Klukkert ZS**. Tooth size and diet among the extinct primates of the Caribbean. American Association of Physical Anthropologists, Atlanta, GA, April 2016. [\[abstract\]](#) **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. [\[abstract\]](#) **Subsequent author names alphabetical.*
- 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

- 2020- **Central Michigan University College of Medicine**
 Cardiopulmonary & Respiratory Systems¹
 Foundational Sciences of Medicine A & B¹
 Gastrointestinal System¹
 Musculoskeletal & Dermal Systems^{1,2}
 Neurosciences & Behavior¹
 Renal & Endocrine System¹
 Reproduction and Human Development^{1,2}
 Summer Anatomy Dissection Program (extracurricular)²
 Surgical Anatomy Elective
¹Anatomy faculty in multidisciplinary team; ²Contributed 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 – Lab TA
- 2007-08 **University of Arkansas**
 Introduction to Biological Anthropology Lab

2004 **El Estación Biológica de Ometepe (Nicaragua)**
Primate Behavior & Ecology Field School – TA

Mentorship

- 2022- Research Mentor, Summer Scholars Program [funded], CMU College of Medicine. Project IP:
 ○ 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.
- 2022 Research Mentor, CMU College of Medicine & CMU Medical Education Partners Research Symposium. Supervised Project:
 ○ Maher 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. Supervised Projects:
 ○ 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.
- 2021-22 Faculty Advisor, Ophthalmology Student Interest Group, CMU College of Medicine.
 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. Supervised Project:
 ○ 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- Associate Member, Central Michigan University Academy of Medical Educators.
 2019-20 Postdoctoral Trainee, Johns Hopkins University Teaching Academy.

RESEARCH EXPERIENCE

Paleontology Field Research

- 2020* Flooded Cave Paleontology in Madagascar – SCUBA Cave Excavation/Survey.
 Role: Collaborator. PIs: Evon Hekkala, Christopher Raxworthy. Funding Source: National Science Foundation. Location: Southwest Madagascar and Antananarivo. **Fieldwork postponed pending resolution of COVID-19 pandemic.*
- 2019 Paleontology & Paleoclimate in the Dominican Republic – SCUBA Cave Excavation/Survey.
 Role 1: Principal Investigator. Role 2: Collaborator. Funding Source 1: Explorers Club Grant. Funding Source 2: Massachusetts Institute of Technology MISTI Grant; PIs: David McGee, Nick Scroxton. Location: Several sites, Dominican Republic.
- 2018,19 Flooded Cave Paleontology & Paleoclimate in Madagascar – SCUBA Cave Excavation/Survey.
 Role: Collaborator. PIs: Laurie Godfrey, Kathleen Muldoon, Stephen Burns, Brooke Crowley, Ventura Perez. Funding Sources: 1) National Science Foundation, Biological Anthropology; 2)

- National Science Foundation, Geosciences. Location: Tsimanampesotse National Park and Antananarivo, Madagascar.
- 2016 Flooded Cave Paleontology in Madagascar – SCUBA Cave Excavation/Survey.
Role: Student Trainee. PI: Alfred Rosenberger; Supervisor: Laurie Godfrey. Funding Source: National Geographic Society Waitt Foundation Grant. Location: Tsimanampesotse National Park, Madagascar
- 2015,16 Education & Museum Enhancement in the Dominican Republic. Role: Graduate Student Project Manager. PI: Alfred Rosenberger. Funding Source: United States Agency for International Development (USAID). Location: Parque del Este and Santo Domingo, Dominican Republic.
- 2012 Paleontology Fieldwork in the Dominican Republic. Role: Student Trainee. PI: Alfred Rosenberger. Funding Source: National Geographic Society – Waitt Foundation Grant. Location: Parque del Este and Santo Domingo, Dominican Republic.

Field Primatology Research

- 2010 NYCEP Student Internship Project in Uganda. Role: Student Trainee. Supervisor: Jessica Rothman. Funding Source: National Science Foundation Integrated Graduate Education and Research Traineeship (IGERT). Location: Kibale National Park, Uganda.
- 2003 Primate Behavior & Ecology Field School in Nicaragua. Role: Student. Instructor: Paul Garber. Location: Ometepe Biological Field Station, Nicaragua.
- 2003 Primate Behavior & Ecology Field School in Costa Rica. Role: Student. Instructor: Lynn Bell. Location: La Suerte Biological Field Station, Costa Rica.

Clinical Research

- 2008-09 NIH Phase 1 Clinical Trial Assessing Surface Texture of Skin Lesions. Role: Principal Investigator. Project Title: A Non-Invasive Method to Distinguish Melanoma from Benign Skin Lesions. Funding Source: NIH 1R43CA128247-01A1 REVISED. Location: University of Arkansas, Fayetteville, AR.

SERVICE & OUTREACH

Administrative Service at CMU College of Medicine

- 2022- Member, LCME Self-Study Task Force – Curriculum Content working group.
- 2022 Student Admissions Multiple Mini Interview (MMI) Interviewer.
- 2022 Facilitator, Student Critical Consciousness Workshop – Implicit Bias.
- 2021-22 Member, Curriculum Segment Review Working Group: Instructional Modality Review subgroup; Course Content/Structure Placement subgroup; Assessment subgroup.
- 2021-22 Member, Faculty Search Committee: Open-Rank Anatomy Faculty search.
- 2021 Secondary Student Application Screener.
- 2021 Facilitator, Student Critical Consciousness Workshop – Social Identity.
- 2021 Member, Faculty Search Committee: Open Rank Pathology Faculty.
- 2020 Member, Staff Search Committee: Anatomy Lab Coordinator.

Service to Profession

- 2021-24 Member, Diversity, Equity and Inclusion Committee, American Association for Anatomy.
- 2019, 21 Peer Reviewer, Journal Manuscript, American Journal of Primatology.
- 2016 Peer Reviewer, Journal Manuscript, American Journal of Physical Anthropology.

Volunteer Service for Education

- 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.

Volunteer Service for Community Support

- 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

- 2018 **Klukkert ZS.** Paleontology in the flooded caves of Madagascar. Shearwater Research Invited Community Blog [*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 page [*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 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]