

Zach Throckmorton, PhD

Associate Professor of Anatomy, Arkansas College of Osteopathic Medicine

Fort Smith, Arkansas

email: zachary.throckmorton@arcomedu.org

web: throckman.net

twitter: @throckman

Education:

2013	PhD, Anthropology	University of Wisconsin-Madison Dissertation: "Variation and non-adaptive evolution of the hominin foot"
2009	MS, Anthropology	University of Wisconsin-Madison
2007	MS, Human Biology	University of Indianapolis
2004	BS, Anthropology-Zoology	University of Michigan, Ann Arbor

Academic Appointments:

2019-present	Associate Professor of Anatomy, Arkansas College of Osteopathic Medicine, Fort Smith, Arkansas
2019-present	Adjunct Assistant Professor of Anthropology, University of Arkansas, Fayetteville, Arkansas
2017-2019	Assistant Professor of Anatomy, Arkansas College of Osteopathic Medicine, Fort Smith, Arkansas
2014-present	Research Fellow, Evolutionary Studies Institute, University of the Witwatersrand, Johannesburg, Gauteng, South Africa
2013-2017	Assistant Professor of Anatomy, DeBusk College of Osteopathic Medicine, Lincoln Memorial University, Harrogate, Tennessee
2013-2018	Honorary Fellow, Department of Anthropology, University of Wisconsin-Madison, Madison, Wisconsin
2007-2013	Teaching Assistant, Department of Anthropology & BioCore Curriculum, University of Wisconsin-Madison, Madison, Wisconsin
2004-2007	Teaching Assistant, Department of Biology, University of Indianapolis, Indianapolis, Indiana

Publications (* indicates equal authorship):

- 2019 Walker C., Grabowski M., Churchill S., Cofran Z., Marchi D., Throckmorton Z., Cook R., Hawks J., Yapuncich G., Van Arsdale A., Rentzeperis F., Berger L., & J. DeSilva. Morphology of the *Homo naledi* femora from Lesedi Chamber, South Africa. *American Journal of Physical Anthropology*. 170:5-23.
- 2019 Traynor S., Banghart M., & Z. Throckmorton. Metatarsophalangeal proportions of *Homo naledi*. *South African Journal of Science*. 115:5/6 2019-4662
- 2017 Pickering T., Heaton J., Throckmorton Z., Prang T., & C. Brain. A burned primate cuboid from Swartkrans Cave, South Africa. *Annals of the Ditsong National Museum of Natural History*. 7:1-7.
- 2016 Odes E., Randolph-Quinney P., Steyn M., Throckmorton Z., Smilg J., Zipfel B., Augustine T., de Beer F., Hoffman J., Franklin R., & L. Berger. Earliest hominin cancer: 1.7-million-year-old osteosarcoma from Swartkrans Cave, South Africa. *South African Journal of Science*. 112:7/8, 2015-0471.
- 2015 Harcourt-Smith* W., Throckmorton* Z., Congdon* K., Zipfel B., Deane A., Drapeau M., Churchill S., Berger L., & J. DeSilva. The foot of *Homo naledi*. *Nature Communications*. 6:8432.
- 2015 Rising Star Working Group (Berger L. et al.). *Homo naledi*, a new species of the genus *Homo* from the Dinaledi Chamber, South Africa. *eLife*. 4:e09560
- 2015 Throckmorton Z., Forth N., & N. Thomas. Non-adaptive evolution of the *m. palmaris longus* in the Homininae. *bioRxiv*. <http://dx.doi.org/10.1101/015321>
- 2013 Hawks J. & Z. Throckmorton. Relevance of archaic genomes to modern human origins. In: Origin of Modern Humans. F. Smith & J. Ahern, Eds. Wiley.
- 2010 DeSilva* J. & Z. Throckmorton*. Lucy's flat feet: the relationship between the ankle & rearfoot arching in early hominins. *PLoS ONE*. 5:12e14432

Research Awards:

- 2019 *American Journal of Physical Anthropology* Editor's Choice, August (for "Morphology of the *Homo naledi* femora")
- 2019 *South African Journal of Science* Readers' Choice, May/June (for "Metatarsophalangeal proportions")

- 2016 AltMetric Top 100 Papers of 2016 (for “Earliest hominin cancer”)
 2011 PLoS Paleontology Collection Featured Paper (for “Lucy’s flat feet”)

Invited Symposium Presentations at National Conferences:

- 2019 Throckmorton Z. How comparative anatomy provides insight into human anatomy. 130th Annual American Association of Anatomists Meeting. Orlando, Florida.
 2016 Throckmorton Z., Harcourt-Smith W., Congdon K., Zipfel B., DeSilva J., VanSickle C., *et al.* *Homo naledi* strides again: reconstructing the gait of an extinct hominin. 86th Annual American Association of Physical Anthropologists Meeting. Atlanta, Georgia.

National Conference Presentations:

- 2020 Nix J., McCullough R., & Z. Throckmorton. Ultrasound’s limitations in investigating dynamic ligamentous ankle anatomy. 130th Annual American Association for Anatomy Meeting. San Diego, California. (Cancelled due to COVID-19 pandemic.)
 2020 Cotner C., Howard M., Throckmorton Z., and T. Fotopoulos. Student perception of brief, pre-OMM lab anatomy lectures. American Academy of Osteopathy Convocation. Colorado Springs, Colorado. (Cancelled due to COVID-19 pandemic.)
 2019 Chapman T., Throckmorton Z., Churchill S., *et al.* The gait of *Homo naledi*. 9th Annual European Society for the Study of Human Evolution Meeting. Liege, Belgium.
 2018 Throckmorton Z. & S. Sheridan. A byzantine tarsal coalition from Byzantium. 129th Annual American Association of Anatomists Meeting. San Diego, California.
 2018 Traynor S., Sams A., & Z. Throckmorton. Metatarsophalangeal proportions of *Homo naledi*. 88th Annual American Association of Physical Anthropologists Meeting. Austin, Texas.
 2017 Throckmorton Z., Zipfel B., Randolph-Quinney P., Odes E., Congdon K., DeSilva J., *et al.* *Homo naledi*’s pedal pathologies. 87th Annual American Association of Physical Anthropologists Meeting. New Orleans, Louisiana.
 2016 Walker C., DeSilva J., Holliday T., Marchi D., Garvin H., Cofran Z., *et al.* Relative length of the immature *Homo naledi* tibia U.W. 101-1070: evidence for elongation of the leg. Invited symposium talk. 86th Annual American Association of Physical Anthropologists Meeting. Atlanta, Georgia.
 2016 Rising Star Working Group (de Ruiter, D. *et al.*). *Homo naledi*, a new species of hominin from the Dinaledi Chamber, South Africa. 25th Annual Paleoanthropology Society Meeting. Atlanta, Georgia.
 2015 Throckmorton Z., Pickering T., Heaton J., Sutton M., Senjem J., Prang C., & C. Brain. New hominin tarsals from Swartkrans, South Africa. 24th Annual Paleoanthropology Society Meeting. San Francisco, California.
 2015 Gassler J., Throckmorton Z., Westergard E., Mohseni B., & P. Herling. The gripping tale of Gantzer’s muscle. 85th Annual American Association of Physical Anthropologists Meeting. St. Louis, Missouri.
 2014 Throckmorton Z., Forth N., Schandl A., & N. Thomas. Adventures at the anthropology-anatomy interface: palmaris longus agenesis variation & evolution. 84th Annual American Association of Physical Anthropologists Meeting. Calgary, Alberta.
 2013 Throckmorton Z. Endless forms most beau-toe-ful: evolution of the human hallux. 83rd Annual American Association of Physical Anthropologists Meeting. Knoxville, Tennessee.
 2011 Throckmorton Z. & J. DeSilva. A new bent on hominin ankle evolution. 81st Annual American Association of Physical Anthropologists Meeting. Minneapolis, Minnesota.
 2007 Throckmorton Z. Bringing the Stone Age into the Information Age: introducing the web-based paleoanthropology database. 77th Annual American Association of Physical Anthropologists Meeting. Columbus, Ohio.
 2005 Turner L., Langdon J., & Z. Throckmorton. Since when are humans different? 14th Annual PaleoAnthropology Society Meeting. Milwaukee, Wisconsin.

Teaching Experience:

- 2017-present, at ARCOM: Anatomical Sciences (gross anatomy, embryology, histology, & neuroanatomy lectures & body donor dissection lab)
 Biomedical Essentials of Comprehensive Osteopathic Medicine II course

director, 2019-present

2013-2017, at LMU: Medical Gross Anatomy (lecture & body donor dissection lab)
Medical Gross Anatomy co-course director (2014-2017)
Graduate Critical Readings Colloquium
Comparative and Evolutionary Anatomy
Anatomical Imaging

2007-2013, at UW-Madison (TA): Introduction to Anthropology (one semester)
Introduction to Physical Anthropology (six semesters)
BioCore Honors Ecology, Evolution, & Genetics (three semesters)
BioCore Honors Cell Biology & Physiology (one semester)

2004-2007, at UIndy (TA): Introduction to Human Anatomy (two semesters)
Honors Introduction to Biology (two semesters)
Introduction to Evolution (one semester)

Teaching Awards:

2019 ARCOM Faculty of the Month, October
2018 ARCOM Faculty of the Month, August
2017 ARCOM Inaugural Faculty of the Month, August (shared with entire Anatomy Department)

Invited Talks:

2019 University of Tennessee Department of Anthropology. "Ongoing research into *Homo naledi*"
2019 University of Oregon Department of Anthropology. "Ongoing research into *Homo naledi*"
2019 University of Oregon Museum of Cultural and Natural History. "Science, pseudoscience, and sasquatch"
2019 University of Arkansas Department of Anthropology. "Functional lower limb anatomy of *Homo naledi*"
2018 Appalachian State University Department of Anthropology. "Ongoing research into *Homo naledi*"
2018 University of Cape Town Human Evolution Research Institute Heritage Talk. "Development and functional anatomy of *Homo naledi*'s postcranial skeleton" (Presented with Dr. Chris Walker, North Carolina State College of Veterinary Medicine.)
2018 University of Tennessee Department of Anthropology "Ongoing research into *Homo naledi*"
2018 Santa Rosa Junior College Department of Behavioral Sciences. "Meet *Homo naledi*"
2017 University of North Carolina-Greensboro Department of Anthropology. "Development and functional anatomy of *Homo naledi*" (Presented with Dr. Chris Walker.)
2017 University of North Texas Health Science Center Department of Anatomical Sciences. "Functional postcranial anatomy of *Homo naledi*"
2017 East Tennessee State University Gray Fossil Site & Natural History Museum. Darwin Day keynote. "*Homo naledi*, open access, & science outreach"
2016 Appalachian State University Departments of Anthropology and Biology. "Meet *Homo naledi*"
2016 University of West Florida Department of Anthropology and Archaeology. "Meet *Homo naledi*"
2016 University of South Alabama Department of Sociology and Anthropology. "Meet *Homo naledi*"
2016 University of Tennessee Department of Anthropology. "*Homo naledi*'s evolutionary context"
2016 University of Notre Dame Department of Anthropology. "Meet *Homo naledi*"
2016 University of Wisconsin-Madison Department of Anthropology. "The tale of the malignant metatarsal"
2016 Grand Valley State University Department of Biomedical Sciences. "*Homo naledi* strides again"
2015 University of Tennessee Department of Anthropology. "Meet *Homo naledi*"
2015 University of Mississippi Departments of Anthropology & Biology. "Meet *Homo naledi*" (Presented with Dr. Juliet Brophy, Louisiana State Department of Anthropology.)
2015 University of Indianapolis Departments of Anthropology & Biology. "Meet *Homo naledi*"
2015 East Tennessee State University Gray Fossil Site & Natural History Museum. "Meet *Homo naledi*"
2015 University of North Carolina-Charlotte Department of Anthropology. "Meet *Homo naledi*"
2015 Western Carolina University Departments of Anthropology & Biology. "*Homo naledi*'s postcrania:

deliberate disposal of a dated dichotomy”

- 2013 UW-Madison JF Crow Institute for the Study of Evolution Seminar Series. “Non-adaptive hominin foot evolution”
- 2012 UW-Madison JF Crow Institute for the Study of Evolution Seminar Series. “Flat feet in the first folks”
- 2011 Edgewood College Department of Biology. “Science, pseudoscience, & sasquatch”

Awards:

- 2012 & 2013 American Association of Physical Anthropologists Pollitzer Prize
- 2012 UW-Madison Anthropology Department Miller Award
- 2010 UW-Madison Anthropology Department Vilas Dissertation Travel Award
- 2005 & 2007 UIndy InQuery Award

External Funding:

- 2014 National Geographic Society funding to attend and participate in the Rising Star Workshop at the University of the Witwatersrand’s Evolutionary Studies Institute, Johannesburg, South Africa.

Internal Funding:

- 2018 ARCOM Biomedical Research Enhancement Award. \$3,400 for continued research on *Homo naledi* at the University of the Witwatersrand, Johannesburg, South Africa.
- 2016 LMU Internal Research Grant. \$3,000 for continued research on *Homo naledi* in South Africa.
- 2015 LMU Capital Equipment Grant. \$9,400 to purchase a 3D laser scanner and supporting equipment (Co-PI with Dr. Natalie Langley).
- 2012 University of Wisconsin-Madison Anthropology Department Dissertation Support Grant. \$500.

Media Appearances:

- 2020 Le Scienze, Apr 2nd. “Le scimmie antropomorfe come non le avete mai viste”
- 2020 Wall Street Journal, Feb 6th. “Plagues from the animal kingdom”
- 2019 Smithsonian Magazine, Dec 31st. “The top ten scientific discoveries of the decade”
- 2019 Mentalfloss.com, Dec 26th. “14 incredible scientific discoveries of the decade”
- 2019 CNN, Dec 20th. “Exoplanets, black holes, human ancestors and new dinosaurs: The 2010s were stellar for space and science discoveries”
- 2019 National Geographic, Dec 5th. “These are the top 20 scientific discoveries of the decade”
- 2019 Forbes Science, Apr 26th. “Alaskan child’s footprint is rare evidence of prehistoric subarctic life”
- 2018 Ars Technica, Dec 20th. “Rising Star found a new species – now it wants to find a new way for Paleoanthropology”
- 2018 Guardian, Aug 20th. “Modern myths about cancer – from ‘chemicals’ in food to wifi”
- 2018 Forbes Science, Mar 28th. “Oldest human footprints in North America found on Canadian coast”
- 2018 CBC News, Feb 23rd. “One hell of an impression”
- 2017 Bristol Herald, Feb 8th. “Gray Fossil Site and Museum to hold annual Darwin Day celebration”
- 2017 Johnson City Press, Feb 8th. “Gray Fossil Site presents annual Darwin Day in celebration of science”
- 2017 Cosmos Magazine, Feb 1st. “What fossilized skin, blood and sperm reveal about ancient life”
- 2016 Forbes Science, Aug 30th. “Lucy the australopithecine’s death: skyfall or tall tale?”
- 2016 New York Times, Aug 22nd. “The known: cancer is really, really old. The unknown: how common it was”
- 2016 Radio New Zealand radio interview, Aug 5th. “Oldest evidence of cancer found”
- 2016 National Geographic, Aug. 1st. “Earliest human cancer found in 1.7-million-year-old bone”
- 2016 Fox News Science, Aug. 1st. “Oldest cancer in human ancestor found in 1.7-million-year-old bone”
- 2016 Popular Science, Aug. 1st. “Tumor in ancient foot bone suggests paleo diet overrated”
- 2016 WOKI-FM Oak Ridge radio interview, Aug. 1st. “Morning news with Howell and Yarbrough”
- 2016 Knoxville News Sentinel, July 30th. “Editorial: A look at recent events that pleased us”
- 2016 CNN Health, July 29th. “Scientists find cancer in million-year-old fossil”
- 2016 WATE ABC Knoxville, July 29th. “LMU assistant professor helps discover bone cancer in ancient fossil”
- 2016 Knoxville News Sentinel, July 29th. “Scientist uses his work as LMU faculty member to make discovery about cancer”

- 2016 AOL News, July 28th. "Scientists discover most ancient case of human cancer ever recorded"
- 2016 NPR, July 28th. "Ancient bone shows evidence of cancer in human ancestor"
- 2016 Science Daily, July 28th. "Cancer on a Paleo-diet? Ask someone who lived 1.7 million years ago"
- 2016 Gizmodo, July 28th. "Cancer has been a deadly problem for longer than we thought"
- 2016 Motherboard.VICE, July 28th. "Scientists just discovered the oldest evidence of cancer in humans"
- 2016 National Geographic News, July 28th. "Earliest human cancer found in 1.7-million-year-old bone"
- 2016 Knoxville News Sentinel, July 28th. "LMU scientist helps discover oldest evidence of human cancer"
- 2016 American Scientist, July/August. "The latest on *Homo naledi*."
- 2016 Daily Mail UK, Apr. 25th. "Another twist in the *Homo naledi* tale"
- 2016 ScienceNews.org, Apr. 19th. "Pieces of *Homo naledi* story continue to puzzle"
- 2016 University of Michigan LSA Magazine, Spring Edition. "Skeleton key"
- 2015 USA Today, Dec 18th. "From water on Mars to Homo naledi, 2015 crammed with major discoveries"
- 2015 University of Indianapolis Portico Magazine, Winter Edition. "A step ahead in discovery"
- 2015 On Wisconsin Alumni Magazine, Winter Edition. "Chamber of discovery"
- 2015 Johnson City Press, Nov. 17th. "LMU scientist to talk on early humanoid at ETSU's Gray Fossil Site museum"
- 2015 Southsider Voice, Nov. 11th. "Doctor studies hominin fossil remains"
- 2015 WFAE Charlotte NPR, Oct. 14th. "*Homo naledi*" (with Dr. Jon Marks)
- 2015 Middlesboro Daily News, Sept. 21st. "New species has ties to home"
- 2015 PBS NOVA, Sept. 16th. "Dawn of Humanity"
- 2015 Knoxville News Sentinel, Sept. 12th. "Editorial: A look at recent events that pleased us"
- 2015 Chattanooga Times Free Press, Sept. 11th. "Tennessee scientist studying fossils"
- 2015 New York Times, Sept. 11th. "Cave yields addition to the human family tree"
- 2015 WCBR NBC Chattanooga, Sept. 10th. "Lincoln Memorial scientist studies bones in South Africa"
- 2015 Knoxville News Sentinel, Sept. 10th. "LMU professor helps research early human narrative"
- 2015 Morristown Citizen Tribune, Sept. 10th. "LMU professor aids in historic discovery"
- 2015 WBIR NBC Knoxville television interview, Sept. 10th. "East TN researcher helps in *Homo naledi* discovery"
- 2015 WATE ABC Knoxville television interview, Sept. 10th. "Claiborne County professor on research team that discovered new species"
- 2015 WVLT CBS Knoxville television interview, Sept. 10th. "Scientists announce newly-discovered human relative, local professor part of team"

Professional Society Memberships:

- 2017-present American Association for Anatomy
- 2016-present American Association for the Advancement of Science
- 2016-present American Association of Clinical Anatomists
- 2007-present American Association of Physical Anthropologists
- 2004-present Paleoanthropology Society

Service to the field:

- 2019 Co-author with student James Dolbow, StatPearls article "Neuroanatomy, Spinal Cord Myotatic Reflex" PubMed ID NBK551629
- 2018-present AAPA Pollitzer Prize essay evaluator
- 2016 Book review of Jon Marks' *Tales of the Ex-Apes*, *American Journal of Physical Anthropology*
- 2013-present Reviewer for *American Journal of Physical Anthropology*, *Journal of Human Evolution*, *PLoS ONE*, *Anatomical Record*, *American Anthropologist*, *South African Journal of Science*, *Proceedings of the Geologists Association*, *PaleoAnthropology*, and the Leakey Foundation
- 2013-present Twitter account dedicated to science outreach with more than 2,500 followers (@throckman)

Service to the school and department:

- 2019-present ARCOM student progress committee
- 2017-present Ten ARCOM faculty search committees
- 2017-present ARCOM research committee

2017-present Medical school applicant interviewer, ARCOM
2017-present ARCOM lead student advisor
2017-2018 ARCOM curriculum committee
2016-2017 LMU-DCOM lead student advisor
2015-2017 LMU-DCOM student progress committee
2014-2016 Five LMU-DCOM faculty search committees
2013-2017 LMU-DCOM Student Research Association (founder & faculty adviser)
2013-2017 Faculty adviser, LMU-DCOM Student Osteopathic Surgical Association
2013-2017 Medical school applicant interviewer, LMU-DCOM
2011 Coordinating Committee member, UW-Madison J.F. Crow Institute

Service to the community:

2019 Science, Pseudoscience, and Sasquatch public talk, Fort Smith Brewing Company
2017-2018 University of Arkansas Medical School Fort Smith MASH High School Program workshop leader
2017 Gray Fossil Site Darwin Day keynote speaker
2016 Gray Fossil Site invited speaker
2012 Madison Nerd Nite public talk invited speaker, High Noon Saloon
2010 Madison Nerd Nite public talk invited speaker, Genna's Cocktail Lounge
2007-2013 University of Wisconsin-Madison Annual Darwin Day presenter

Academic Honors:

2004 University of Michigan University Honors, Winter Semester
2003 University of Michigan University Honors, Summer Semester

Academic Interests:

Anatomical variation, evolutionary anatomy, paleoanthropology, comparative anatomy, mammalogy, science humor