

# ETHAN ANDREW SHIRLEY

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ResearchGate: <https://www.researchgate.net/profile/Ethan-Shirley>

H-index: 5 | Citations: 119 | Publications: 11 | 1st Author: 5 | Solo: 2 | Conference Presentations: 43

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## RESEARCH INTERESTS

- Patterns of biodiversity and abundance, and their abiotic and biotic causes in the past and present
- Life history and behavior of organisms and its evolution, plasticity, and consequences for conservation
- Conservation and environmental policy and law; social science and environmental science to support it

## PROFESSIONAL POSITIONS

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	<b>Adjunct Lecturer   University of Michigan</b>
2025	<b>Postdoctoral Researcher   University of Michigan</b>
2024	<b>Visiting Assistant Investigator   University of Michigan</b>

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## EDUCATION

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	<b>PhD Earth and Environmental Sciences   University of Michigan</b> <i>Diss: Deciphering mammoth life histories to test causes of mammoth extinction and advance elephant conservation</i> Graduate Teaching Certificate (2021)
2024	Museum of Natural History Science Communications Fellow (2021)
	<b>JD magna cum laude College of Law   Michigan State University</b> <b>MS Fisheries and Wildlife   Michigan State University</b> <i>Thesis: Compliance and Noncompliance with Environmental Rules in the Brazilian Pantanal</i>
	<b>MJ College of Law   Michigan State University</b> Mouser Scholarship in Conservation Education recipient (2017)
2018	Conservation Leaders of Tomorrow Certificate (2016)
2016	<b>Fulbright Fellow   Universidade Federal de Mato Grosso (Brazil)</b>
	<b>BS Anthropology-Zoology, minor in Paleontology   University of Michigan</b> <i>Thesis: Preliminary Results and Analysis of CT Scans of Lyuba, a Baby Woolly Mammoth (Mammuthus primigenius)</i> Davis Project for Peace awardee (2010)
2010	Wallenberg Fellowship recipient (2010)

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## TEACHING EXPERIENCE

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2025	Paleontology Lab (Instructor for EARTH 419 Winter 2025)   <b>University of Michigan</b>
	Geobiology Lab (GSI-sub for EARTH 313 for 1 lab session on campus; Fall 2024)   <b>University of Michigan</b>
2024	EARTH 101, 109, 110, 112, 115 Minicourses (GSI (grader) for Summer 2024)   <b>University of Michigan</b>
	Intro Geology in the Field (GSI for EARTH 116 field course, Camp Davis, WY; Summer 2023)   <b>University of Michigan</b>
2023	Environmental Science in Brazil (Co-instructor, trip leader of EARTH 436 on campus; Winter 2023)   <b>University of Michigan</b>
	Intro Geology in the Field (GSI for EARTH 116 field course, Camp Davis, WY; Summer 2022)   <b>University of Michigan</b>
	Paleontology/Paleontology Lab (GSI for EARTH 418/419 on campus; Winter 2022)   <b>University of Michigan</b>
2022	Engineering abroad capstone course (Trip leader of the canceled trip to Brazil; Winter 2022)   <b>Mount Union University</b>
	Geobiology Lab (GSI-sub for EARTH 313 for 4 lab sessions on campus; Fall 2021)   <b>University of Michigan</b>
	Ecosystem Science in the Rockies (GSI for EARTH 450 capstone, Camp Davis, WY; Summer 2021)   <b>University of Michigan</b>
2021	Engineering abroad capstone course (Trip leader in Hiram, OH; Winter 2021)   <b>Mount Union University</b>
	Your Inner Ape (GSI for HONORS 232 online; Fall 2020)   <b>University of Michigan</b>
	Field Environmental Science (GSI for EARTH 296 online; Summer 2020)   <b>University of Michigan</b>
	Paleontology/Paleontology Lab (GSI for EARTH 418/419 hybrid; Winter 2020)   <b>University of Michigan</b>
2020	Engineering abroad capstone course (Trip leader of the canceled trip to Brazil; Winter 2020)   <b>Mount Union University</b>
2019	Intro Geology in the Field (GSI for EARTH 116 field course, Camp Davis, WY; Summer 2019)   <b>University of Michigan</b>
	Intro Geology and Lab (GSI for EARTH 118/119 on campus; Fall 2018)   <b>University of Michigan</b>
2018	Organismal Biology Lab (Teaching Assistant (TA) for BIOSCI 172; Winter 2018)   <b>Michigan State University</b>
2017	Ecology (TA for IBIO 355; Fall 2017)   <b>Michigan State University</b>
	Wetlands Ecology and Conservation: The Pantanal (Trip leader in Brazil; Summer 2014)   <b>Stanford University</b>
2014	GIEU Brazil: English & Environment (Trip leader in Brazil and on campus; Winter and Summer 2014)   <b>University of Michigan</b>
2010	GIEU Brazil: Rural Schools (Trip leader in Brazil and on campus; Winter and Summer 2010)   <b>University of Michigan</b>

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## PUBLICATIONS

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- 2024 11 **Vertebrates of the Mississippian Marshall Fm. of Michigan.** Andrews JV, Shirley EA, Figueroa RT. 2024. Contributions to the University of Michigan Museum of Paleontology.
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- 2023 10 **Testosterone in tusks reveals musth episodes in woolly mammoths.** Cherney MD, Fisher DC, Auchus RJ, Rountrey AN, Selcer P, Shirley EA, Beld SG, Buigues B, Mol D, Boeskorov GG, Vartanyan SL, Tikhonov AN. 2023. *Nature* 617, 533–539.
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- 2022 9 **Advancing global competencies within a required global engineering course during COVID-19.** Tritico H, Korach C, Okechukwu U, Shirley EA, Carney AJ. 2022. (In *American Society for Engineering Education Conference Proceedings.*)
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- 2021 8 **Stable isotope patterns record nursing and weaning in a mother-calf pair of captive African elephants.** Cherney MD, Fisher DC, Hren MT, Shirley EA. 2021. *Palaeogeography, Palaeoclimatology, Palaeoecology* 567, 110223.
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- 2020 7 **Teaching soundscapes in the Brazilian Pantanal: benefits of integrating music and science education.** Shirley EA, Carney AJ, Alves Pereira M. 2020. (In *Proceedings of the International Society for Music Education 34th World Conference on Music Education.*)
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- 2019 6 **Influence of trust in scientists on illegal fishing: insights from the Brazilian Pantanal.** Shirley EA, Gore ML. 2019. *PLoS One* 14 (3), e0207973.
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- 2018 5 **Using music to teach ecology and conservation: a pedagogical case study from the Brazilian Pantanal.** Shirley EA, Carney AJ, Hannaford CS, Ewing GJ. 2018. (In *Proceedings of the International Society for Music Education 33rd World Conference on Music Education Baku, Azerbaijan, 15-20 July 2018, Edited by David Forrest.*)
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- 2017 4 **Can the North American Model work in the Global South?** Shirley EA. 2017. (In *2017 Wildlife Law Call*, Association of Fish and Wildlife Agencies yearly publication.)
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- 2017 3 **A woolly mammoth (*Mammuthus primigenius*) carcass from Maly Lyakhovsky Island (New Siberian Islands, Russian Federation).** Grigoriev SE, Fisher DC, Obadã T, Shirley EA, Rountrey AN, Savvinov GN, Garmaeva DK, Novgorodov GP, Cheprasov MY, Vasilev SE, Goncharov AE. 2017. *Quaternary International* 445, 89-103.
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- 2015 2 **Legal regimes balancing conservation and development: land use controls & their effects on agriculture and the environment.** Shirley EA. 2015. (Paper from the State Bar of Michigan Agricultural Law Section Student Symposium.)
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- 2014 1 **X-ray computed tomography of two mammoth calf mummies.** Fisher DC, Shirley EA, Whalen CD, Calamari ZT, Rountrey AN, Tikhonov AN, Buigues B, Lacombat F, Grigoriev S, Lazarev PA. 2014. *Journal of Paleontology* 88 (4), 664-675.
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## PRESENTATIONS

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- 43 **Recovery of life history data from mammoth tusks.** Shirley EA, Fisher DC, Rountrey AN, Cherney DC. 2024. [IN RUSSIAN] (Oral presentation at the Mammoth Museum Symposium honoring the Life of Semyon Grigoriev online and in Yakutsk, Russian Federation. <<https://www.youtube.com/watch?v=8o4fwP9IsRw>>)
- 42 **Hormones preserved in tusks enhance life-history analyses of proboscideans.** Cherney MD, Fisher DC, Auchus R, Shirley EA, Selcer P, Garapati S, Beld S, Vartanyan S, Tikhonov A. 2024. (Oral presentation at the Mammoth Museum Symposium honoring the Life of Semyon Grigoriev online and in Yakutsk, Russian Federation.)
- 41 **Forwarding the understanding of proboscidean behavior and diagenesis with chemical analysis of dentin.** Shirley EA. 2024. (Presentation at the Society for Vertebrate Paleontology annual meeting in Minneapolis, MN).
- 40 **Conservation Attitudes and the Effectiveness of the “Apes of Uganda” Outreach Program.** Norwood AL, Shirley EA, Namaganda S, Mugume A, Henry TL, Augustin JS, MacLatchy LM. 2024. (Oral presentation at the American Primatological Association meeting in Riviera Maya, Mexico).
- 39 **\*Early-life endocrinology in modern and prehistoric proboscideans revealed through steroid analyses of hair and dentin.** Garapati SS, Cherney MD, Fisher DC, Auchus R, Shirley EA, Rountrey AN. 2024. (Presentation at the North American Paleontology Convention in Ann Arbor, MI.)
- 38 **“A striking pattern of incremental lamination”: growth increments in vertebrate tissues.** Rountrey AN, Fisher DC, Beld S, Shirley EA, Cherney MD. 2024. (Oral presentation at the North American Paleontology Convention in Ann Arbor, MI.)
- 37 **\*Mammoth tusk-derived reproductive life histories from eastern Siberia and the conservation biology of elephants.** Shirley EA, Fisher DC, Aulicino B, Cherney MD, Rountrey AN, El Adli JJ, Vartanyan S, Tikhonov A. 2024. (Oral presentation at the North American Paleontology Convention in Ann Arbor, MI.)
- 36 **\*Investigating the Impact of Paleobiology Outreach on Attitudes about Fossils and Living Ape Conservation in Uganda.** Shirley EA, Norwood AL, MacLatchy L, Augustin J, Henry T, Mugume A, Namaganda S. 2024. (Oral presentation at the North American Paleontology Convention in Ann Arbor, MI.)
- 35 **Hormones preserved in tusks enhance life-history analyses of proboscideans past and present.** Cherney MD, Fisher DC, Auchus R, Shirley EA, Garapati S, Rountrey AN, Vartanyan S, Tikhonov A. 2024. (Oral presentation at the North American Paleontology Convention in Ann Arbor, MI.)
- 2024 34 **\*Life histories of mammoths from Chukotka.** Shirley EA Aulicino B. 2024. (Presentation at the Michigan Geophysical Union in Ann Arbor, MI.)
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- 33 **Pioneering proboscidean paleoendocrinology: hormones in tusks shed light on woolly mammoth mating behavior.** Cherney MD, Fisher DC, Auchus R, Selcer P, Shirley EA, Beld SB. 2023. (Oral presentation at the Society of Vertebrate
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Paleontology conference in Cincinnati, OH.)

2023 32 **Mammoth population models: implications for paleobiology and conservation.** Shirley EA, Fisher DC. 2023. (Oral presentation at the Society of Vertebrate Paleontology conference in Cincinnati, OH.)

31 **Complex fluvial systems produce complex sequences: insights from modern floodplains and implications for terrestrial paleoenvironmental reconstruction.** Wood MC, Shirley EA, Ng RY. 2023. (Poster presentation at the Geological Society of America annual meeting in Pittsburgh, PA.)

30 **Methods of hormone extraction and analysis in Pleistocene fossil tooth material.** Shirley EA, Cherney MD, Fisher DC, Auchus RJ, Selcer P. 2023. (Oral presentation at the Geological Society of America annual meeting in Pittsburgh, PA.)

29 **Biodiversity in the Pantanal: problems with available species range and biome boundaries, and a historical justification for conservation.** Shirley EA. 2023. (Oral presentation at the International Congress of Conservation Biology in Kigali, Rwanda.)

28 **\*Growth increment measures in a female woolly mammoth tusk: New insights for interpreting life history.** Aulicino B,\* Shirley EA. 2023. (Poster presentation at MGU 2023).

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27 **Does learning about deep-time extinction affect views on modern environmental problems?** Shirley EA. 2022. (Oral presentation at Great Lakes Student Paleontology Conference in Chicago, Illinois.)

26 **Tusk growth and preservational setting of an LGM mammoth at the margin of the ice sheet.** Shirley EA, Fisher DC, Rountrey AN, Cherney MD, Beld SG. 2022. (Poster presentation at SVP Toronto, Canada)

25 **The Devonian of Michigan: a fossil reference and new methods.** Shirley EA, Figueroa RT. 2022. *[IN PORTUGUESE]*. (Poster presentation at the Brazilian Paleontological Society's Annual Conference in Cuiabá, Brazil.)

24 **Advancing global competencies within a required global engineering course during COVID-19.** Tritico H, Okechukwu U, Shirley EA, Carney AJ. 2022. (Presentation at the American Society of Engineering Education Conference 2022 in Minneapolis, MN)

2022 23 **Density patterns in 1-, 2-, and 3-dimension in a woolly mammoth tusk: implications for growth rates and probabilistic reconstruction of life history.** Shirley EA. 2022. (Poster presentation at MGU 2022).

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22 **Life history parameters during mammoth extinction: lessons for modern elephant conservation.** Shirley EA, Fisher DC. 2021. (Oral presentation at the International Congress of Conservation Biology; conference held online.)

21 **\*Assembling composite tusk growth profiles from successive core samples using X-ray microCT.** Fisher DC, Shirley EA, Hood JM, Beld SM, Rountrey AN, Jones MH, Mol D, Buigues B, Protopopov AV, Boeskorov GG, Lazarev PA<sup>†</sup>, Tikhonov AN. 2021. (Presentation at the Mammoth Conference online.)

20 **Implications of a slowed life history in a female woolly mammoth.** Shirley EA, Fisher DC. 2021. (Presentation at the Mammoth Conference online.)

2021 19 **A population viability analysis of fossil mammoths and its implications for modern conservation.** Shirley EA. 2021. (Pre-recorded presentation at Michigan Geophysical Union student conference, held online.)

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18 **Teaching soundscapes in the Brazilian Pantanal: benefits of integrating music and science education.** Shirley EA, Carney AJ, Alves Pereira M. 2020. (Oral presentation at the International Society for Music Education Conference in Helsinki, Finland; conference held online.)

17 **Creative elaboration on birdsong to teach contemporary music techniques and science.** Carney AJ, Shirley EA, Alves Pereira M. 2020. (Workshop at the International Society for Music Education Conference in Helsinki, Finland; conference held online.)

2020 16 **\*The Pantanal jaguar population and longitudinal citizen-collected data.** Shirley EA, Smutterberg C, Caramagno L. 2019. (Poster presentation at the Pathways Conference on Human Dimensions of Wildlife Management in Estes Park, CO.)

15 **Double-scanning and Gaussian blurs improve quality of paleontological CT scans: experiences with two mammoth tusks.** Shirley EA, Fisher DC, Rountrey AN, Cherney MD, El Adli JJ, Protopopov A, Plotnikov V, Grigoriev S. 2019. (Poster presentation at the Society of Vertebrate Paleontology Annual Conference in Brisbane, Australia.)

14 **First micro-CT of a tropical South American gomphothere tooth and implications for research on end-Pleistocene megafaunal life histories.** Shirley EA, Cherney MD, Fisher DC, Rountrey AN. 2019. *[IN SPANISH]* (Oral presentation at the X Congress of Latin-American Paleontology in San Salvador, El Salvador.)

2019 13 **Growth increments and seasons in a tropical South American gomphothere tooth.** Shirley EA, Fisher DC, Cherney MD, Rountrey AN. 2019. (Poster presentation at Michigan Geophysical Union student conference in Ann Arbor, Michigan.)

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12 **Using music to teach ecology and conservation: a pedagogical case study from the Brazilian Pantanal.** Shirley EA, Carney AJ, Hannaford CS, Ewing GJ. 2018. (Oral presentation at International Society of Music Education Conference in Baku, Azerbaijan.)

11 **Music and the environment: lessons from six years of projects and partnership in the Brazilian Pantanal.** Shirley EA, Carney AJ, Hannaford CS, Ewing GJ. 2018. (Poster presentation at the International Society of Music Education Conference in Baku, Azerbaijan.)

2018 10 **Effects of trust on IUU fishing: management implications.** Shirley EA, Gore ML, Kramer DB. 2018. (Oral presentation at Pathways Africa Wildlife Management Conference in Windhoek, Namibia.)

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2017 9 **Exploring Compliance with Fisheries Rules in the Brazilian Pantanal.** Shirley EA, Gore ML. 2017. (Poster presentation at International Conference of Conservation Biology in Cartagena, Colombia.)

2017 8 **Trust in biologists determines the frequency with which fishermen violate environmental rules.** Shirley EA. 2017. [*IN PORTUGUESE*] (Oral presentation at the Federal University of Mato Grosso in Cuiabá, MT Brazil)

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2016 7 **Legal Regimes Balancing Conservation and Development: Land Use Controls & Their Effects on Agriculture and the Environment.** Shirley EA. 2016. (Oral presentation at the State Bar of Michigan Agricultural Law Section Student Symposium in East Lansing, MI.)

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2014 6 **A Student-run International Music Exchange to Bring Music Education to Rural Brazil.** Shirley EA, Carney AJ, Kieme R. 2014. (Poster presentation at International Society of Music Education conference in Porto Alegre, Brazil.)

2014 5 **Technology and Intercultural Exchange in a Sustainable Model for Music Education.** Carney AJ, Shirley EA, Kieme R. 2014. (Oral presentation at the International Society of Music Education conference in Porto Alegre, Brazil.)

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2013 4 **Ontogeny of mandible shape in rodents.** Calamari ZT, Shirley EA, Swiderski D, Zelditch M. 2013. (Oral presentation at Michigan Morphometrics Meeting in East Lansing, MI.)

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2012 3 **Visualization and analysis of CT imaging in two mammoth calves.** Whalen CD, Shirley EA, Fisher DC, Rountrey AN, Calamari ZT, Tikhonov AN, Buigues B, Grigoriev S, Holmes CE, Lacomat F. 2012. (Oral presentation at 2012 GSA Annual Conference in Charlotte, NC.)

2012 2 **TEDxUofM: Transforming Brazil.** Shirley E, Bateman J. 2012. (Presentation at 2012 TEDxUofM in Ann Arbor, MI. <[www.youtube.com/watch?v=Qcw5KT62x0s](http://www.youtube.com/watch?v=Qcw5KT62x0s)>.)

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2011 1 **X-ray computed tomography of two exceptionally preserved neonate mammoths from Siberia.** Shirley E, Rountrey AN, Fisher DC, Tikhonov A, Buigues B. 2011. (Poster presentation at 2011 Society of Vertebrate Paleontology meeting in Las Vegas, NV.)

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**LANGUAGES**

- Portuguese (native-level; ~CEFR C2)
- Spanish (fluent; ~CEFR C1)
- Russian (conversational; ~CEFR A2)
- French (conversational; ~CEFR A2)
- Additional familiarity with Turkish, Arabic, Mandarin, Swahili, and Guarani