

Peishu Li

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EDUCATION

- Ph.D. Integrative Biology, University of Chicago** 2019-present
Expected graduation date: Summer 2024
Advisors: Drs. Zhe-Xi Luo and Callum F. Ross
Thesis title: “Evolution of the mammalian hyoid apparatus: implication for swallowing biomechanics”
- M.S. Integrative Biology, University of Chicago** 2022
- B.Sc. in Biology and Earth and Ocean Sciences, Duke University** 2015-2019
Summa Cum Laude, Phi Beta Kappa

PUBLICATIONS

1. **Li P.**, Ross C. F., Luo Z-X., Gidmark N. J. (2023) Head posture impacts mammalian hyoid position and suprahyoid muscle length: implication for swallowing biomechanics. *Philosophical Transactions of the Royal Society B*. 20220552. <https://doi.org/10.1098/rstb.2022.0552>
2. Stilson, K., Luo Z-X., **Li P.**, Olson S., Ross C. F. (2023) Three-dimensional mandibular kinematics of mastication in the marsupial *Didelphis virginiana*. *Philosophical Transactions of the Royal Society B*. 20220548. <https://doi.org/10.1098/rstb.2022.0548>
3. Ross C. F., Laurence-Chasen J. D., **Li P.**, Orsbon C., Hatsopoulos N. G. (2023) Biomechanical and Cortical Control of Tongue Movements during Chewing and Swallowing. *Dysphagia*, 1-32. <https://doi.org/10.1007/s00455-023-10596-9>

4. **Li P.**, Ross C. F., Luo Z-X. (2022) Morphological disparity and evolutionary transformations in the primate hyoid apparatus. *Journal of Human Evolution* 162, 103094. <https://doi.org/10.1016/j.jhevol.2021.103094>
5. **Li P.** (2020) Digest: Microhabitat use and developmental timing shape anuran limb evolution. *Evolution* 74 (9), 2172-2173. <https://doi.org/10.1111/evo.14047>
6. **Li P.** Morse P. E., Kay R. F. (2020) Dental topographic change with macrowear and dietary inference in *Homunculus patagonicus*. *Journal of Human Evolution* 144, 102786. <https://doi.org/10.1016/j.jhevol.2020.102786>
7. Wernette B., **Li P.**, Boudreau A. (2020) Sulfides, Native Silver, and associated trace minerals of the Skaergaard Intrusion, Greenland: Evidence of late hydrothermal fluids. *Mineralium Deposita* 55 (6), 1197-1214. <https://doi.org/10.1007/s00126-019-00924-1>
8. **Li P.**, Smith K. K. (2019) Comparative skeletal anatomy of neonatal ursids and the extreme altriciality of the giant panda. *Journal of Anatomy* 236 (4), 724-736. <https://doi.org/10.1111/joa.13127>
9. **Li P.**, Boudreau A. (2019) Vapor transport of silver and gold in basaltic lava flows. *Geology* 47 (9), 877-880. <https://doi.org/10.1130/G46407.1>

FELLOWSHIPS, GRANTS AND AWARDS

NSF Collaborative Research: “Evolution of the hyoid, pharynx and swallowing biomechanics in mammals” (\$802,224) 2023

- PIs: Callum Ross, Zhe-Xi Luo, Susan Williams, Rachel Olson
- Conceived project and experimental design with the PIs, contributed to preliminary data collection and visualization, wrote and edited the final proposal document

Graduate Council Research & Personal Development Fund, University of Chicago (\$600) 2023

Summer research funds, Department of Organismal Biology and Anatomy, University of Chicago (\$1,200) 2022

Wayne Booth Graduate Student Teaching Prize, University of Chicago 2022

Graduate Council Research & Personal Development Fund, University of Chicago (\$600)	2021
Hinds fund for Graduate Research, University of Chicago (\$1,500)	2019
James B. Rast Award for Comparative Organismal Biology, Department of Biology, Duke University	2019
Thomas V. Laska Memorial Award, Division of Earth and Ocean Sciences, Nicholas School of the Environment, Duke University	2019
SMIF Undergraduate User Program, Shared Materials Instrumentation Facility, Duke University (\$4,500)	2018
Duke University Undergraduate Research Support Travel Grant (\$350)	2018
Duke University Undergraduate Research Support Independent Study Grant (\$400)	2017
Duke University Undergraduate Research Support Travel Grant, (\$400)	2017

CONFERENCE ABSTRACTS

1. **Li P.**, Gidmark N. J., Sellers K., Lever T., Z-X. Luo, Ross C. F. (2024) Kinematic mobility and modularity of integro-cornuate hyoids during mammalian feeding. Society of Integrative and Comparative Biology, Seattle, WA.
2. Wang A., **Li P.**, Nathan S., Prescher H., Ross C.F., Reid R.R. (2024) Impact of mandibular distraction on hyoid position in humans with Pierre Robin Sequence. Society of Integrative and Comparative Biology, Seattle, WA.
3. Magallanes I., **Li P.**, Luo Z-X. (2024) Tooth root shape/orientation and its relationship to bite force in the jaws of two therian mammals. Society of Integrative and Comparative Biology, Seattle, WA.
4. Khoo M. M., **Li P.**, Neander A. I., Patterson B. D., Luo Z-X. (2024) Science of attraction: investigating sexual dimorphism in the vocal organ of fruit bats. Society of Integrative and Comparative Biology, Seattle, WA.
5. Stringer A., McParland E. D., **Li P.**, Gidmark N. J. (2024) Bony morphology dictates TMJ stress field positioning across common model species. Society of Integrative and Comparative Biology, Seattle, WA.

6. Lopez S. E., McParland E. D., **Li P.**, Gidmark N. J., Orsbon C. (2024) Cranial landmark variation in mammals gives diverse alignment for temporomandibular biomechanics. Society of Integrative and Comparative Biology, Seattle, WA.
7. Siddique A., Herrand L. O., Stringer A., McParland E. D., **Li P.**, Orsbon C., Gidmark N. J., (2024) Diverse jaw muscle orientations provide clinically relevant correlations with occlusal grinding. Society of Integrative and Comparative Biology, Seattle, WA.
8. Magallanes I., **Li P.**, Martin T., Luo Z-X. (2023) Exploring the functional significance of tooth root shape, size, and orientation in modern tribosphenic mammals and Jurassic cladotherians. Society of Vertebrate Paleontology, Cincinnati, OH.
9. **Li P.**, Gidmark, N. J., Luo, Z-X., & Ross C. F. (2023) 3D hyoid and tongue kinematics reveal mechanism of tongue base retraction during swallowing in *Didelphis virginiana*. *Physiology*, 38(S1), 5732906.
10. **Li P.**, Gidmark N. J., Luo Z-X, Ross C. F. (2023) XROMM reveals tongue base retraction mechanism during swallowing in *Didelphis virginiana*. Society of Integrative and Comparative Biology, Austin, TX.
11. McParland E. D., **Li P.**, Orsbon C., Ross C. F., Gidmark N. J. (2023) Of mice and models: XROMM's utility in temporomandibular joint disorder model organisms. Society of Integrative and Comparative Biology, Austin, TX.
12. Siddique A., Herrand L. O., Stringer A., McParland E. D., Orsbon C., **Li P.**, Gidmark N. J. (2023) On the clinical relevance of comparative jaw joint biomechanics across mammals. Society of Integrative and Comparative Biology, Austin, TX.
13. **Li P.**, Ross C. F., Luo Z-X, Gidmark N. J. (2022) Head posture and gape impact hyoid position in *Didelphis virginiana*. Society of Experimental Biology Annual Meeting, Montpellier, France.
14. **Li P.**, Ross C. F., Gidmark N. J. (2022) Sensitivity of hyoid posture to head-neck angle in the Virginia opossum (*Didelphis virginiana*), *Integrative and Comparative Biology*, 82-8
15. **Li P.**, Ross C. F., Luo Z-X. (2021) Morphological evolution of the primate hyoid apparatus. *Integrative and Comparative Biology* 61, E525-E526
16. Stilson K. T., **Li P.**, Laurence-Chasen J. D., Olson S., Luo Z-X., Ross C. F., The role of inferior alveolar nerve afferents in control of jaw kinematics in *Didelphis virginiana*. *Integrative and Comparative Biology* 104-7
17. **Li P.**, Smith K. K., Comparative skeletal anatomy of neonatal ursids and the altricial-precocial spectrum of therian mammals. 12th International Congress of Vertebrate Morphology. *Journal of Morphology* 280 (S1). p s165.
18. **Li P.**, Morse P. E., Kay R. F., Dental topographic change and dietary inference in *Homunculus patagonicus* (Mammalia: Primates). The 79th Annual Meeting of Society of Vertebrate Paleontology Program and Abstracts.

19. **Li P.**, Boudreau A. (2017), Occurrence of native copper, silver and gold in basaltic lava flows. GSA Fall Meeting, 22-25 October 2017, Session No. 392

TEACHING EXPERIENCE

TEACHING ASSISTANT

- “Biological Evolution” (BIO13123) led by Dr. David Jablonski, Undergraduate course, University of Chicago 2022-2023
- “The Human Body” (ORGB30001) led by Dr. Callum Ross, Pritzker School of Medicine, University of Chicago 2022
- “Mammalian Evolutionary Biology” (BIO23262) led by Dr. Zhe-Xi Luo and Dr. Ken Angielczyk, Undergraduate course, University of Chicago 2021
- “Evolution of Life and Earth” (EOS 204) led by Dr. Alexander Glass, Undergraduate course, Duke University 2018-2019
- “Earth Materials” (EOS 201) led by Dr. Alan Boudreau, Undergraduate course, Duke University 2018

PRIMARY INSTRUCTOR

- Discussion sessions in “Biological Evolution” (BIO13123), University of Chicago 2022-2023
- Laboratories in “Mammalian Evolutionary Biology” (BIO23262), University of Chicago 2021
- Laboratories in “Evolution of Life and Earth” (EOS 204), Duke University 2018-2019
- Laboratories in “Earth Materials” (EOS 201), Duke University 2018

GUEST LECTURER

- “Mammalian Evolutionary Biology” (BIO23262), University of Chicago 2022-2023
- “Evolution of Life and Earth” (EOS 204), Duke University 2019

MENTORSHIP EXPERIENCE

Annie Wang, Chemistry Major, University of Chicago, 2022-present
Miya Khoo, Biology Major, University of Chicago, 2021-present
Emily McParland, Biology Major, Knox College, 2021-2023
Theodore Covello, Biology Major, University of Chicago, 2020-2022
Riya Gumidyala, Junior, Illinois Mathematics and Science Academy, 2023-present

FIELD EXPERIENCE

Stillwater Igneous Complex, Montana, USA (14 days)	2018
Cedar Mountain Formation, Cretaceous, Utah, USA (14 days)	2017
Cedar Mountain Formation, Cretaceous, Utah, USA (14 days)	2016

PROFESSIONAL SERVICE

Peer review (3 in total): Royal Society Open Science (1), Philosophical Transactions of the Royal Society B (1), Journal of Experimental Zoology (1)	2023-present
Contributed Talks Session chair, Annual Meeting of Society of Integrative and Comparative Biology	2023-present
Organizing committee member, Midwest Regional Meeting for Society of Integrative and Comparative Biology	2023
Organizing committee member, Great Lakes Student Paleontology Conference	2022
Student member, Gans Award Committee, Society of Integrative and Comparative Biology	2022
Biological Sciences Division student representative, Editorial Committee of Medical & Biological Sciences Alumni Association, University of Chicago	2022-present
Organizing committee member, Evolutionary Morphology Seminar series, Committee on Evolutionary Biology, University of Chicago	2021-present

Organizing committee member, Sewall Wright Lecture series, Committee on Evolutionary Biology, University of Chicago 2021-2023

Graduate admission committee student member, Integrative Biology PhD program, University of Chicago 2021

Public Affairs Committee Student Journalist Internship, Society of Integrative and Comparative Biology 2021

COMMUNITY OUTREACH

Participant in Southside Science Festival, University of Chicago 2022-2023

- Designed interactive poster exhibits on the evolution and biomechanics of Mesozoic feeding system and inner ear
- Created 3D printed models of echolocating bat larynx for interactive learning of musculoskeletal design associated with echolocation

Instructor for Schwab Rehabilitation Hospital residency program 2021-2023

- Prepared human cadaver prosection for resident training on the musculoskeletal anatomy and biomechanics of upper and lower limb

Instructor for Splash! Chicago 2020

- Designed and taught an interactive course on Mesozoic mammal middle ear evolution for high school students from South Side Chicago

Tutor for Science Olympiad 2019

- Designed and taught course preparing Science Olympiad participants for competition questions on anatomy and physiology

CURRENT MEMBERSHIPS IN ACADEMIC SOCIETIES

Society of Integrative and Comparative Biology
American Physiological Society
American Association of Anatomists
American Association of Biological Anthropologists
Society of Vertebrate Paleontology

CONTACTS FOR REFERENCES

Dr. Zhe-Xi Luo (PhD advisor, mammal evolution) zxluo@uchicago.edu	Department of Organismal Biology and Anatomy, University of Chicago
Dr. Callum F. Ross (PhD advisor, vertebrate biomechanics) rossc@uchicago.edu	Department of Organismal Biology and Anatomy, University of Chicago
Dr. Zeray Alemseged (PhD committee chair, primate evolution) alemseged@uchicago.edu	Department of Organismal Biology and Anatomy, University of Chicago
Dr. Nicholas J. Gidmark (PhD committee member, vertebrate biomechanics) gidmark@knox.edu	Department of Biology, Knox College
Dr. Kathleen K. Smith (vertebrate biomechanics and evolutionary morphology) kksmith@duke.edu	Department of Biology, Duke University
Dr. Richard Kay (primate evolution) richard.kay@duke.edu	Department of Evolutionary Anthropology, Duke University