Curriculum Vitae

Kelsey T. Stilson, M.Sc.
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Contact

The University of Chicago
Organismal Biology and Anatomy
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References

Callum Ross. PhD Supervisor. rossc@uchicago.edu
Nicholas Hatsopoulos. PhD Supervisor. nicho@uchicago.edu

Society Memberships

Society of Vertebrate Paleontology
Society for Integrative and Comparitive Biology
Society for the Study of Amphibians and Reptiles
American Association for the Advancement of Science

Awards and Honors

UC Hinds Research Fund 2018 -$2246.00
Integrative Neuromechanics GAANN scholar 2017-18 -$50,400.00
Duchin Endowed Presidential Scholarship for 2013-2014 -$3,000.00
UO Dean's Scholarship, Fall 2008 – 2013
UO Clark Honors Scholarship, Fall, 2008 – 2013

Education

Ph.D. 2016-present (Expected Spring 2020) The University of Chicago
Department of Organismal Biology and Anatomy
Ross Functional Biomechanics Lab and Hatsopoulous Neuromechanis Lab.
Dissertation: The Evolution, Function, and Consequences of Periodontal Innervation

M.S. 2013-2016. The University of Texas at Austin
Jackson School of Geosciences
Bell Paleontology Lab

Thesis: A Critical Analysis of Skull Osteology in Australian Agamidae with Implications for the Fossil Record
GPA: 3.8

B.S. 2008- 2013. The University of Oregon
Clark Honors College, Major: Geology (Paleontology)
Hopkins and Davis Paleontology Labs
Thesis: Evolution of Rhino Arthritis in the Cenozoic.
GPA: 3.15

Employment (2013-present)

PhD Candiates, Fall 2015 – Present. I am currently a rising fourth year PhD candidate in the Universtiy of Chicago Integrative Biology program. In am in the Ross Functional Biomechanics Lab and Hatsopoulous Neuromechanis Lab.

Research Assistant at the Nonvertebrate Paleontology Laboratory - Summer 2014, Summer 2015.

Masters Student, Fall 2013 – Fall 2015. I received a Masters degree under Dr. Christopher Bell at the University of Texas Jackson School of Geosciences. I studied modern Australian agmid skull variation in ontogeny and development, and what the implications are for species identifications in the recent fossil record.

Nonvertebrate Paleontology Laboratory, Summer 2014. Worked in ArcGIS, Specify, high definition scanning, programming, and Google Glass.

Research Assistant, 2009 – Spring 2013. Hopkins-Davis Lab, University of Oregon Department of Geological Sciences. Projects include collecting mammalian nocturnality and locomotor data, numbering and identifying of elements in the Shuttler Formation Fauna, molding and casting, and cataloguing fossils collected in the 2011 field season.

Research Assistant, Fall 2012-Spring 2013. Kimmel Lab, University of Oregon Institute of Neuroscience. Recently started working on a project with a mutant strain of 'smoothback' zebrafish that involves genetic crosses, cell marking, bone staining and imagaing.

Research Experience

Publications

Qian, K., dos Anjos, L. A., Balasubramanian, K., Stilson, K., Balcer, C., Hatsopoulos, N. G., & Kamper, D. G. (2017, July). Using monkey hand exoskeleton to explore finger passive joint movement response in primary motor cortex. In *Engineering in Medicine and Biology Society (EMBC), 2017 39th Annual International Conference of the IEEE* (pp. 3624-3627). IEEE.

Stilson, K.T., Bell, C.J., and Mead, J. 2017. Patterns of Variation in the Cranial Osteology of Three Species of Endemic Australian Lizards (Ctenophorus: Squamata: Agamidae): Implications for the Fossil Record and Morphological Analyses made with Limited Sample Sizes. *Journal of Herptology*. Accepted.

Stilson, Kelsey T., Samantha SB Hopkins, and Edward Byrd Davis. "Osteopathology in rhinocerotidae from 50 million years to the present." *PloS one* 11.2 (2016): e0146221.

Davis, E.B., Brakora, K., and Stilson, K.T. 2014. The evolution, development, and functional role of horns in cattle. pp.72-82*. In: The Evolution of Wild Cattle*, Meletti, M. and Burton, J. eds. Cambridge University Press.

Fossils at UT: A Coloring Book

I drew and co-wrote a 12 page coloring book for science outreach through the Jackson School of Geosciences. The book was printed this year and has begun distribution.

Upcoming Publications

Michael C. Granatosky, Caleb M. Bryce, Jandy Hanna, Aidan Fitzsimons, Myra F. Laird, Kelsey Stilson, Christine E. Wall, and Callum F. Ross. Inter-stride variability triggers gait transitions in mammals and birds. Submitted.

Stilson, K.T., Bell, C.J., Maisano, J., and Mead, J. 2018. Morphological data for *Cryptagama aurita* Yields New insights into the endemic Australian agamid lizard radiation. In prep. Target Submission: November 2018.

Stilson, K.T., Davis, E.B,. and Hopkins, S.S.B. A new resampling method for normalizing size-based taphonomic bias across fossil assemblages. In prep. Target Submission: January 2019.

Presentations (2013-present)

Stilson, K.T. Mastication Fascination in *Didelphis virginiana.*

- Great Lakes Student Paleoconference, November 10-12, 2017.
- Committee on Evolutionary Biology Research Symposium. April 29, 2018.

Qian, K., Luiz Antonio dos Anjos, Jr., Karthikeyan Balasubramanian, Kelsey Stilson, Carrie Balcer, Nicholas G. Hatsopoulos and Derek G. Kamper, **Using monkey hand exoskeleton to explore finger passive joint movement response in primary motor cortex**

- 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. July 11 to 15th 2017.

Stilson, K. T., Tietjen, K., and Coates, J. **New Chondrocranium from *Tanaodus weisi* adds to Petalodont Diversity.**

- Presented (talk) at the Society of Vertebrate Paleontology meeting October 2016.

Stilson, K.T., Maisano, J., Mead, J., and Bell, C. J. **A Morphologic Phylogeny of Endemic Australian Agamidae, comparison with genetic data and implications for fossil taxa**.

- Presented (poster) at the Society of Vertebrate Paleontology meeting October 2015.

Stilson, K.T., Maisano, J., Mead, J., and Bell, C. **Morphological Data for *Cryptagama Aurita* Yield New Insights into the Endemic Australian Agamid Lizard Radiation.**

- Presented (poster) at the Society of Vertebrate Paleontology meeting November 2014.
- Presented (poster) at the Jackson School of Geosciences Annual Research Symposium 2015.

Stilson, K.T., Davis, E.B,. and Hopkins, S.S.B. **A new resampling method for normalizing size-based taphonomic bias across fossil assemblages.**

- Presented (talk) at the North American Paleontology conference Febuary 2014

Stilson, K.T., Davis, E.B,. and Hopkins, S.S.B. **50 Million Years of Severe Osteopathology in Rhinocerotidae.**

- Presented (talk) at the University of Chicago Paleoclub November 9th, 2016.
- Presented (talk) at the Paleontological Society of Austin October 21st, 2014.
- Presented (talk) at the Jackson School Third Annual Research Symposim January 25th, 2014.
- Presented (talk) at the Society for Integrative and Comparitive Biology meeting January 2014.
- Presented (talk) at the University of Texas at Austin Paleontology Thursday Lunch November 21st 2013.
- Presented (poster) at the Society of Vertebrate Paleontology meeting October-November 2013.

Published Articles About Me

'Author Interview: Kelsey Stilson on Gnarly Rhino Bones' by Andrew Farke for PLOS Blogs. http://blogs.plos.org/paleocomm/2016/02/05/author-interview-kelsey-stilson-on-gnarly-rhino-bones/

'How the rhino got his walking stick', by Matt Kaplan for The Economist online. http://www.economist.com/blogs/babbage/2012/10/arthritis-rhinoceros

Professional Service

Co-Chair- University of Chicago Dean's Council Co-Chair (Fall 2018-Present)

Co-Chair- University of Chicago Art and Science Committee (2017-Present)
Yearly Spring Art Show highlighting the art of science and research. Art is being submitted by undergraduate and graduate level researchers. Date of shows: May 12, 2017;

Health Liaison- University of Chicago Darwin Cluster Health Liaison
I attend meetings with the student health and counseling services and relay information to the graduate student population.

Co-Chair- Society of Vertebrate Paleontology Student and Post-Doctoral Committee (Summer 2014-2-2018)
2017: Raised $2400 dollars for the SVP Student Travel Grant
2016: Raised $7,300 dollars for the Stephen Cohen Student Fund, completing the grant, which is now self-sustaining.
2015: Raised $5,300 dollars towards the Stephen Cohen Student Fund. We were able to present the inaugural recipient for the award this year.
2014: Raised $2,000 for the Stephen Cohen Student Fund, a 2:1 matching grant.

Students Mentored

University of Chicago Ross Lab (2018)

- High school students **Tanvi Bagal**, **David Bradford**, and **Yiyue (Isabella) Wang** are learning how to digitize opossum XROMM data and the subsequent analyses in Maya. They are also learning how to analyze neural data and the principles of electronics through the Arduino platform.

University of Chicago/Field Museum of Natural History (2017)

- Naperville North High School Senior, **Amy Chang**. Amy is currently working on studying the evolution of the modern mammalian tongue apparatus. She is funded via the Field Museum Women-in-Science Summer Internship program, and supervised by Dr. Ken Angielczyk, Robert Burroughs, and myself.

- Naperville North High School Senior, **Kathryn Jin**. Kathryn is worked on cranial and tooth morphology of mammals, specifically *Didelphis virginiana*. She is supervised by Robert Burroughs and myself.

- Macalester College Biology Undergradute, **Emma Wise**. Emma is currently working on studying the evolution of the moder mammalian tongue apparatus. She is funded via the Field Museum Women-in-Science Summer Internship program, and supervised by Dr. Ken Angielczyk, Robert Burroughs, and myself.

- Northwestern University Journalism Undergraduate, **Ann Cebulski**. Annie worked on elevational gradients and how they effect the biogeographic distributions of extant turtles. She is funded under a summer internship program via Northwestern University. She is working with Robert Burroughs and myself.

- The University of Chicago Undergraduate, Emily Shen. Emily is currently analyzing the kinematics of *D. virginiana* mastication using X-Ray Reconstruction of Moving Morphology (XROMM) data. She is supervised by myself.

Outreach (2013-present)

Sheep Heart Dissection, April 7th, 2018. Led sheep heart dissections with two groups of Science Olympiad high school and middle school students.

Brains!, December 15th, 2016. Teaching Assistant - Workshops for middle school students. Led 7th grade students from a local Chicago Public School through 3 hands-on experiments in neuroscience.

UT Regional Science Olympiad Tournament, March 28th, 2015. Fellow graduate student Joshua Lively and I hosted the 'Fossil' section of the Science Olympiad for both middle and high school divisions. Our test focused on specimen-based identification and interpretation. We also suggested updates to the official study sheets for paleontology.

Elementary School Presentation, Febuary 26th, 2015. I and fellow graduate student Rachel Wallace brought casts of dinosaurs, reptiles, and mammals (including a life-size hippo cast) to Williams Elementary to present to groups of 2nd and 5th graders.

Darwin Day Austin, Febuary 9th, 2015. The UT Paleontology graduate students hosted a table in the common area of the Pickle Research Campus as part of an outreach event.

NPL presentation at Paleontological Society, January 20th, 2015. I and four other employees of the UT Non-Vertebrate Paleontology Laboratory presented NPL cutting edge work in curation and management of fossils, including a hands-on demonstration of Google Glass.

Fossil Fest 'Ask a Paleontologist' Table, November 15th, 2014. Fossil Fest is an annual public event run by the Paleontological Society of Austin. We fielded questions and presented Pleistocene specimens from the UT Vertebrate Paleontology Laboratory.

Elementary Career Fair Table, May 30th, 2014. I hosted the Paleontology section along with graduate student Felicia Kulp at St.Elmo's 5th grade career fair. We presented with the Jackson School of Geosciences and brought hands-on specimens, such as trilobites, an alligator skull, a cast of a sabertooth cat, and a life-size cast of a hippo.

UT Regional Science Olympiad Tournament, March 29th , 2014. Fellow graduate student Joshua Lively and I were moderators for the Palentology section of the Science Olympiad for both the middle school and high school divisions. We also designed the test and provided all the fossil specimens used.

Shirt Design for the UO Anthropology Department Fundraiser, March 2014. I was contacted by the University of Oregon Anthropology Department about a drawing of Muccaca mullata I had completed about a year before. I cleaned up the drawing and gave them permission to use it on a t-shirt design for a nonprofit fundraiser.

Elementary School Presentation, March 18th, 2014. Fellow graduate student Benn Breeden and I gave a 30 minute presentation to two groups of fourth and fifth

graders at Williams Elementary. We emphasized all the different roles paleontologists contribute to society and the opertunities for women and minorities in the sciences.

Explore UT , March 1st, 2014. I was part of the pantology graduate student group that led micofossil picking and vertebrate skull variation stations as part of a campus-wide outreach event at the University of Texas at Austin.

Scribe for the Summit on the Future of Undergraduate Science Education, January 10-12, 2014. The Jackson School of Geosciences hosted this three day conference, were I took notes and prepared presentations for a breakout sessions.

UO Mentoring, Fall 2012-Spring 2013. I met biweekly with an aspiring scientific illustrator who was in middle school to discuss drawing techniques, resources, projects, and life.

Paleontology Presentation, January 31st, 2013. Presented a 40 minute talk three times to the students of the Rachel L. Carson School of Environmental Science as part of their Science Fair.