

Curriculum Vitae
Robert W. Burroughs
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Contact

Robert W. Burroughs
University of Chicago
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Education

2014 (expected 2019) – **PhD Evolutionary Biology** –
University of Chicago, Committee on Evolutionary Biology
Dissertation: Dr. StrangeVole or: How I learned to Stop Worrying and Love Integrative Biology - Kenneth Angielczyk and Zhe-Xi Luo (Supervisors)
2010-2013 - **M.S. Geological Sciences** -
The University of Texas at Austin, Jackson School of Geosciences
Thesis: Fossils, Phylogeny, and Anatomical Regions: Insights Exemplified through Turtles - Christopher J. Bell (Supervisor)
2006–2010 - **B.A. Anthropology** -
The University of Texas at Austin, College of Liberal Arts

Professional Appointments

2014 – **Lecturer**
The University of Texas at Austin, Jackson School of Geosciences
2013 – **Teaching Specialist**
The University of Texas at Austin, School of Undergraduate Studies

Peer-Reviewed Publications

Burroughs, R. W. In Review. Description of a new functional box turtle from the Eocene/Oligocene boundary of west Texas and issues of testudinoid phylogeny. *Palaeontologia Electronica*.

Angielczyk, K. D., **Burroughs, R. W.**, Feldman, C. F. 2015. Do Turtles Follow Rules? Latitudinal Gradients in Species Richness, Body Size, and Geographic Range Area of the World's Turtles. *Journal of Experimental Zoology Part B*. (Currently – Jan. 2015, available Online)

Burroughs, R. W., Morris, Z. S., Marsh, A. D. 2014. *Trachemys scripta*, Red-Eared Slider, *Pseudemys texana*, Texas River Cooter, *Chelydra serpentina*, Common Snapping Turtle, Feeding Behavior and Scavenging. *Herpetological Review* 45(2): 321-322.

Burroughs, R. W., Bell, C. J., LaDuc, T. J., and Hendrickson, D. A. 2013. Morphological Variation in the Carapace and Plastron of *Terrapene coahuila* Schmidt and Owens, 1944. D. B. Brinkman, P. A. Holroyd, and J. D. Gardner (editors), "*Morphology and Evolution of Turtles: Origin and Early Diversification.*" Springer, Dordrecht: 535-566. [Published Online in 2012]

National Science Foundation Grants (Collaborator)

Ann Molineux (PI), Rowan Martindale (Co-PI), James Sprinkle (Collaborator), **Robert Burroughs** (Collaborator). *Natural History: Critical infrastructure upgrades and expanded digital access to Non-vertebrate Paleontology Collections at the University of Texas at Austin*. NSF proposal number 1458198; Requested amount: \$495,880; Duration 36 months; Start date 7/1/2015; Solicitation NSF14-564 of DBI-Biological Research Collections unit.

Published Abstracts (going back only the most recent three years).

Burroughs, R., Grossnickle, D., Jass, C., Bell, C. 2015. Enamel patterns and surface morphology of the lower first molars of *Lemmiscus curtatus* (Rodentia: Arvicolinae). *Journal of Vertebrate Paleontology, Program and Abstracts* 2015: 100.

Burroughs, R., Angielczyk, K. 2014. Issues of Homoplasy and Support in Phylogenetic Estimation as Exemplified by a new Testudinoid Turtle from the Miocene (Clarendonian) of California. *Journal of Vertebrate Paleontology, Program and Abstracts* 2014: 102.

Molineux, A., **Burroughs, R.**, Geigerman, F. 2014. The virtually browseable collection: connecting GIS to whole drawer imaging. Society for the Preservation of Natural History Collections, Annual Meeting, June 22-27th, Cardiff, Wales, UK

Burroughs, R. W. 2014. Evaluating the impact of anatomical partitions on morphology-based phylogenetic reconstructions. Society of Integrative and Comparative Biology Annual Meeting Abstracts: 43.

Burroughs, R., Morris, Z., Colbert, M. 2013. Use of a Network Algorithm to Rapidly Generate Ontogenetic Sequences. *Journal of Vertebrate Paleontology* 33 (Online Supplement): 97.

Morris, Z., **Burroughs, R.**, Colbert, M. 2013. Developmental Variation Complicates Reconstructions of Skeletal Ontogeny of Extinct Vertebrates: A lesson from *Triceratops* and *Torosaurus*. *Journal of Vertebrate Paleontology* 33 (Online Supplement): 181.

Honors and Awards

- 2014 – Society of Vertebrate Paleontology – Jackson School Student Travel Award
- 2012 – Texas Academy of Science Student Research Award
Evaluating the evolution of plastral kinesis in Testudinoid turtles
- 2011 – Jackson School of Geoscience Ernest L. Lundelius Fellowship for Research in Vertebrate Paleontology
- 2010 – The University of Texas at Austin Undergraduate Research Fellowship – Evaluating morphological variation in extant *Terrapene*

Teaching Experience (Selected Entries - The University of Texas at Austin)

In the Spring 2014, I was the sole instructor of record for Geology 404C, which is a lower-division geology course for majors and non-majors with 75 students enrolled. I was responsible for lecture and course development and overseeing graduate student teaching assistants in developing lab materials and lab instruction.

In the Fall 2013, I was a full-time teaching specialist for Freshman Research Methods, which meant I was fully responsible for the management of 95 students, who were conducting experiments in a Class 1 Biology laboratory. I was also responsible for the co-supervision of more than 50 independent undergraduate student research projects. I shared grading, project supervision, and course development responsibilities with the instructor of record (Dr. Mary Poteet).

In each course for which I was a teaching assistant, my duties were to aid the instructor, but also to independently instruct labs and develop course and laboratory materials. (Instructor(s) of Record shown in parentheses)

- 2014 – Spring: Lecturer for Geo 404C – Plate Tectonics and Life History (Robert Burroughs)
- 2013 – Fall: Teaching Specialist for UGS 303 – Freshman Research Methods (Dr. Mary Poteet)
- 2012 – Spring: Teaching Assistant for Geology 303 – Introduction to Geology (Drs. Leon Long and Laurie Duncan)
Fall: Teaching Assistant for Geology 405 – Life Through Time (Dr. Julia Clarke)
- 2011 – Spring: Teaching Assistant for Geology 302M – Age of Mammals (Dr. Christopher Bell)

Professional Service (Selected Entries)

2015-Present – University of Chicago

- Graduate student mentor for Geosciences undergraduate, Ernesto Vargas. Ernesto is currently working primarily with Dr. Mark Webster on research on Cambrian trilobites and issues of biostratigraphy.
- Graduate student mentor for Ecology and Evolution undergraduate, Daniel Hughes. Dan is currently developing his own independent research. He is investigating the influence of shape and structure of the mandibular symphysis in marsupials on feeding ecology, diet, and tooth shape in tribosphenic molars. Dan is working with Dr. Zhe-Xi Luo and myself.

2014-Present – University of Chicago

- Official representative of the Multicultural Graduate Community (MGC) registered student organization within the University of Chicago.

2012-Present – Jackson School of Geosciences (UT Austin)

- Graduate student supervisor for geosciences undergraduate, Samuel (Sam) Muller. Sam is currently working on evaluating the cranial morphology of the extant turtle *Notochelys platynota* by building a digital atlas of the skull using x-ray CT data. Sam graduated in May of 2015 and is currently working on the publication of his manuscript in collaboration with Dr. Christopher Bell and myself.
- PI Collaborator with Non-Vertebrate Paleontology Laboratory. Currently working with Ann Molineux and Rowan Martindale to develop protocols, working procedure, and recruit students to work on collections improvement and movement.

2012-Present – Society of Vertebrate Paleontology

- Development Committee – Student Member/Representative
- My work with the development committee includes regular interaction with donors to raise for funds for a variety of awards funds given by the society
- To date (July 2015) – I have raised in collaboration with other development committee members in excess of \$125,000.

Journals Served as Reviewer

- Proceedings of the Royal Society of London, Series B (2015)

Research Interests

My current research program is two fold. The first is studying morphological evolution in rodent dentition and integrating population and developmental genetics to understand how new morphotypes arise and eventually replace more ancient morphotypes, and how these changes result in speciation and distinct populations and lineages.

I am currently working with model systems (*Mus musculus*) and non-model systems (*Ondatra zebithicus*, *Lemmiscus curtatus* and *Microtus spp.*).

The second aspect of my research program is a focus on the evolution, biogeography, and phylogeny of turtles. Currently, I am working on developing a model to quantitatively assess rates of convergent evolution based on developmental and ecological constraints and relative fitness of specific morphotypes for turtles. In addition, I am working on research investigating the ecological constraints that may limit geographic distributions of turtle species. Finally, I maintain an active interest in descriptive and functional morphology, by working on collecting and describing new fossils and species of turtles from the Cenozoic.

Professional Memberships

Organismal

- Society for the Study of Amphibians and Reptiles (SSAR)
- Herpetologist's League (HL)
- American Society of Mammalogists (ASM)
- International Society of Vertebrate Morphologists (ISVM)
- Society of Vertebrate Paleontology (SVP)

Systematics

- The Willi Hennig Society
- Society of Systematic Biologists

Integrative and Developmental Biology

- Society for Developmental Biology (SDB)
- Pan-American Society for Evolutionary Developmental Biology
- Society of Integrative and Comparative Biology (SICB)
- Society for the Study of Evolution (SSE)