

Robert W. Burroughs
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Education

Ph.D. Evolutionary Biology University of Chicago, Committee on Evolutionary Biology Laboratories of Dr. Kenneth Angielczyk and Dr. Zhe-Xi Luo.	2014-Present
M.S. Geological Sciences The University of Texas at Austin, Jackson School of Geosciences Laboratory of Dr. Christopher J. Bell.	2010-2013
B.A. Anthropology The University of Texas at Austin, College of Liberal Arts	2006-2010

Peer-Reviewed Publications

Burroughs, R. W., Jass, C.N., Bell, C.J. **In Prep.** Three-Dimensional quantitative variation in extant and fossil populations of the North American Sagebrush Vole (*Lemmiscus curtatus*).

Burroughs, R.W., Cebulski, A. **In Prep.** Why don't turtles climb mountains? Biological constraints define altitudinal limits for turtle distributions.

Burroughs, R.W. In Review. *In silico* modeling reveals developmental constraints on the evolution of rodent dentition.

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* 324(3): 270-294.

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 Abstracts*

*Each Abstract provided here represents a presentation at a scientific conference.

Burroughs, R. 2017. ASSESSING THE PALEOBIOGEOGRAPHIC HISTORY OF *LEMMISCUS CURTATUS* (MAMMALIA, RODENTIA): SINGLE SPECIES OR SPECIES COMPLEX? *Journal of Vertebrate Paleontology, Programs and Abstracts 2017*: 90.

Socki, F. and **Burroughs, R.** 2017. REASSESSING THE BIOCHRONOLOGY OF KENNEWICK ROAD-CUT (WASHINGTON, USA) USING ARVICOLINE RODENTS. *Journal of Vertebrate Paleontology, Programs and Abstracts 2017*: 197.

Burroughs, R. 2016. Use of automated three-dimensional morphometrics to detect taphonomic bias:

Fossil arvicoline rodent teeth as a case study. *Journal of Vertebrate Paleontology, Programs and Abstracts* 2016: 98.

Burroughs, R. 2016. Voles, Molars, and Molecules: Integrating Quantitative Morphology, Genetics, and Evo-Devo to study evolutionary processes. *International Congress of Vertebrate Morphology* 11: June 29-July 3, 2016, Washington, D.C.

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.

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.

Burroughs, R. W. 2012. Exploring and evaluating the impact of anatomical partitions on morphology-based phylogenetic analyses. *Journal of Vertebrate Paleontology* 32 (Supplement to 6): 71.

Vitek, N.S. and **Burroughs, R. W.** 2012. Variation and complex systematic problems: A case study. *Journal of Vertebrate Paleontology* 32 (Supplement to 6): 189-190.

Molineux, A., **Burroughs, R.W.**, Zachos, L., Criswell, K.E. 2012 Gaining ground on the Digital Roundabout: Project to Archive to Project Annual GSA, Charlotte, NC GSA Abstracts with Programs V. 44, No. 7.

Burroughs, R. W. 2012. Exploring and Evaluating the Impact of Anatomical Partitions on Morphology-based Phylogenetic Analyses. *Symposium on Turtle Evolution, Karls Eberhard Universität Tübingen Abstract Volume*: 12.

Vitek, N. S., and **Burroughs, R. W.** 2012. Cf. *Terrapene carolina*: A complicated evolutionary history. *Symposium on Turtle Evolution, Karls Eberhard Universität Tübingen, Abstract Volume*: 45.

Burroughs, R.W., Wicks, T. Z., Clarke, J. A. 2012. Adapting the paper time roll technique for teaching the diversity of Life in conjunction with deep geologic time in geology, paleontology, and biology courses. *Texas Academy of Science 115th Annual Meeting Program and Abstracts Volume*: 99.

Burroughs, R. W. 2011. New fossil box turtles from the Paleogene of west Texas: A new taxon with critical insights into the evolutionary history of box turtles. *Journal of Vertebrate Paleontology* 31 (Supplement to 6): 80.

Burroughs, R. W., Bell, C. J., LaDuc, T. J., and Hendrickson, D. A. 2011. Evaluation of the post-cranial skeletal variation of *Terrapene coahuila* (Schmidt and Owens 1944) and implications. *Texas Herpetological Society Student Research Symposium Program and Abstracts Volume*: 7.

Burroughs, R. W., Bell, C. J., Latimer, A. E., and Kirk, E. C. 2011. Fossil turtles from the Devil's Graveyard formation of southwest Texas: large terrestrial turtles and a geographic range extension for carret-tochelyid turtles. Texas Academy of Science 114th Annual Meeting Program and Abstracts Volume: 91-92.

Burroughs, R. W., LaDuc, T. J., Bell, C. J., and Hendrickson, D. A. 2009. Morphological Variation in the Carapace and Plastron of *Terrapene coahuila* Schmidt and Owens, 1944. Gaffney Turtle Symposium Abstract Volume 2009: 24.

Teaching

Teaching Assistant, University of Chicago, Department of Biological Sciences 2016-2017

Teaching assistant for **Biogeography**. This course is an upper division undergraduate majors-only course for biological sciences students at the University of Chicago. My responsibilities included independently leading weekly lab sections for University of Chicago undergraduates. Training them in the technical aspects of biogeographic analysis. And developing new materials for lab.

Lecturer, The University at Texas, Jackson School of Geosciences 2013-2014

Lecturer (Instructor of Record) for **Plate Tectonics and Earth and Life History**. This course serves as one of two options of historical geology for undergraduate geology majors at The University of Texas at Austin. My responsibilities included selection and creating new course materials, giving lectures, holding office hours, and being responsible for 74 undergraduate enrollees. I was also responsible for managing two graduate teaching assistants and worked with those TAs to update and construct new lab materials to match constructed lectures.

Teaching Specialist, The University of Texas at Austin, School of Undergraduate Studies 2013

Teaching Specialist for **Freshman Research Methods**. My responsibilities for this course were varied. I was responsible for managing eight laboratory sections for 94 undergraduate freshmen. The core goal of FRM is to provide freshmen students interested in STEM research-based careers to learn how to become scientists. Over the course of 15-weeks students propose a research project (lab-based) with related hypotheses, order materials, collect data to address their hypotheses, write up their data, and present their research findings. Thus, my responsibilities included managing the laboratory, eight undergraduate teaching assistants, grading assignments, reviewing and providing feedback on written project proposals and written project results, teaching lab techniques, lab safety, managing lab inventory and budgets, and helping students develop quantitative and systematic ways to collect scientific data.

Teaching Assistant*, The University of Texas at Austin, Jackson School of Geosciences 2010-2013

*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.

Teaching Assistant for **Introduction to Geology**. This course is the introductory level geology course for geology majors at The University of Texas. This course requires TAs to teaching basic theory and tools necessary for students to begin to interpret and map geological sections, identify common fossils, and understand basic principles of geology.

Teaching Assistant for **Life Through Time**. This course is one of two options for undergraduate geology majors at The University of Texas. Lab materials for this course included teaching students to identify major invertebrate fossils commonly found in central Texas. I served as a teaching assistant twice for this course.

Teaching Assistant for **Age of Mammals**. This course is one of two non-major lower-division open enrollment courses taught in geological sciences at The University of Texas. It offers concepts and information similar to historical geology for majors.

Teaching Assistant for **Age of Dinosaurs**. This course is one of two non-major lower-division open enrollment courses taught in geological sciences at The University of Texas. It offers concepts and information similar to historical geology for majors.

Grants and Awards

National Science Foundation	2015-Present
Ann Molineux (PI), Rowan Martindale (Co-PI), James Sprinkle (Collaborator), Robert Burroughs (Collaborator). <i>Natural History: Critical infrastructure upgrades and expanded digital access to Non-vertebrate Paleontology Collections at the University of Texas at Austin</i> . 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.	
Burke Museum of Natural History, University of Washington Vertebrate Paleontology Research Grant - \$1400	2016
University of Chicago - Biological Sciences Division Hinds Fund Research Award - \$1205	2015
Society of Vertebrate Paleontology Jackson School Student Travel Award - \$700	2014
2012 – Texas Academy of Science Master’s Student Research Award - \$750	2012
Jackson School of Geosciences Ernest L. Lundelius Fellowship for Research in Vertebrate Paleontology - \$1000	2011
The University of Texas at Austin Undergraduate Research Fellowship - \$1000	2010

Students Mentored

University of Chicago/Field Museum of Natural History	2015-Present
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	
Naperville North High School Senior, Kathryn Jin. Kathryn is currently working on cranial and tooth morphology of mammals, specifically <i>Didelphis virginiana</i>	
Macalester College Biology Undergraduate, Emma Wise. Emma 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.	
Northwestern University Journalism Undergraduate, Ann Cebulski. Annie is currently working on elevational gradients and how they effect the biogeographic distributions of extant turtles. She is funded under a summer internship program via Northwestern University.	

UChicago Evolutionary Biology undergraduate, Maria Viteri. Maria completed her undergraduate degree in June of 2016. She will begin her doctoral studies with the Department of Evolution and Ecology at Stanford University in the fall of 2017. Maria is currently working on new methodology and techniques for integrating paleobiology and modern conservation ecology to help develop and inform modern biological conservation efforts.

UChicago Evolutionary Biology undergraduate, R. Ben Sulser. Ben completed his undergraduate degree in June of 2016. He will begin his doctoral studies at the Gilder School of the American Museum of Natural History in the fall of 2017. He is investigating the shape and function of nerve canals in the inner-ears of bats, utilizing comparative anatomy, morphometrics, and CT endocasts.

Ohio Wesleyan Zoology undergraduate, Francesca Socki. Francesca is studying the biostratigraphy of fossil voles from the Kennewick Roadcut locality in south-central Washington State. She was also an NSF REU Intern with the Moreau Lab at the Field Museum of Natural History, studying the morphological disparity of head morphology of turtle ants.

Jackson School of Geosciences

2011-2014

Jackson School of Geosciences undergraduate, Samuel Muller. Sam worked 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 from the Jackson School in May of 2015. He is currently employed as a Junior Scientist with Banda Group International (Environmental Consulting).

Professional Service (Selected Entries)

University of Chicago

2014-Present

Served as official representative of the Multicultural Graduate Community (MGC) registered student organization within the University of Chicago (2015-2016).

Organizer for the Vertebrate Paleontology Reading Group, with weekly meeting held at the Field Museum (2015-2016).

Society of Vertebrate Paleontology

2012-2017

Development Committee – Student Member/Representative. My work with the development committee included regular interaction with donors to raise funds for a variety of awards funds given by the society To date (October 2017) – I have helped raise in collaboration with other development committee members in excess of \$150,000 for the society. Primarily in support the Stephen Cohen Student Research Award.

Journals Served as Reviewer

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

PeerJ (2016)

Bulletin of the Yale Peabody Museum (2017)