

Thomas P. Eiting

Postdoctoral Fellow

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Education

2014: Ph.D., Organismic & Evolutionary Biology, University of Massachusetts Amherst

2006: M.Sc., Geological Sciences, University of Michigan, Ann Arbor

2004: B.S., Biology, University of Texas at Austin

2004: B.S., Geological Sciences, University of Texas at Austin

Honors and Awards

2011-2013: NSF Doctoral Dissertation Improvement Grant

2010-2011: OEB Teaching Assistant Award (UMass)

Summer 2009: UMass Natural History Collections Summer Research Scholarship

Fall 2007: Travel Grant, Society of Vertebrate Paleontology

2003-2004: Thomas R. Banks Memorial Scholarship (U. Texas)

Summer 2002: Americorps Education Award

2002-2003: Karl F. Hagemeyer, Jr. Endowed Presidential Scholarship (U. Texas)

2001-2002: W. F. Bowman Endowed Presidential Scholarship (U. Texas)

Fall 2000: John H. And Luzja McCammon Endowed Scholarship (U. Texas)

Peer-Reviewed Publications

1. **Eiting, T.P.**, Perot, J.B., Dumont, E.R. 2015. How much does nasal cavity morphology matter? Patterns and rates of olfactory airflow in phyllostomid bats. *Proceedings of the Royal Society of London B: Biological Sciences* 282(1800): 20142161.
2. **Eiting, T.P.**, Smith, T.D., Dumont, E.R. 2014. Olfactory epithelium in the olfactory recess: A case study in New World Leaf-nosed Bats. *The Anatomical Record* 297: 2105-2112.
3. Smith, T.D., **Eiting, T.P.**, Bonar, C.J., Craven, B.A. 2014. Nasal morphometry in Primates: Is there a trade-off for visual specialists? *The Anatomical Record* 297: 2093-2104.
4. **Eiting, T.P.**, Smith, T.D., Perot, J.B., Dumont, E.R. 2014. The role of the olfactory recess in olfactory airflow. *The Journal of Experimental Biology* 217: 1799-1803.
5. Smith, A.J., Rosario, M.V., **Eiting, T.P.**, Dumont, E.R. 2014. Joined at the hip: linked characters and the problem of missing data in studies of disparity. *Evolution* 68: 2386-2400.
6. Smith, T.D., **Eiting, T.P.**, Bhatnagar, K.P. 2012. A quantitative study of olfactory, non-olfactory, and vomeronasal epithelia in the nasal fossa of the bat *Megaderma lyra*. *Journal of Mammalian Evolution* 19(1): 27-41.
7. Santana, S.E., Dial, T.O., **Eiting, T.P.**, Alfaro, M.E. 2011. Roosting ecology and the evolution of pelage markings in bats. *PLoS ONE* 6(10): e25845. doi:10.1371/journal.pone.0025845.
8. Smith, T.D., **Eiting, T.P.**, Rossie, J.B. 2011. Distribution of olfactory and non-olfactory surface area in the nasal fossa of *Microcebus murinus*: Implications for microCT and airflow studies. *Anatomical Record* 294: 1217-1225.

9. Gunnell, G.F., **Eiting, T.P.**, Geraads, D. 2011. New Late Pliocene bats (Chiroptera) from Ahl al Oughlam, Morocco. *Neues Jahrbuch für Geologie und Paläontologie – Abhandlungen* 260: 55-71.
10. Smith, G.R., Badgley, C., **Eiting, T.P.**, Larson, P.S. 2010. Species diversity gradients in relation to geological history in North American freshwater fishes. *Evolutionary Ecology Research* 12(6): 693-726.
11. **Eiting, T.P.**, Gunnell, G.F. 2009. Global completeness of the bat fossil record. *Journal of Mammalian Evolution* 16(3): 151-173.
12. Reinholt, L.E., Burrows, A.M., **Eiting, T.P.**, Dumont, E.R., Smith, T.D. 2009. Brief Communication: Histology and micro CT as methods for assessment of facial suture patency. *American Journal of Physical Anthropology* 138(4): 499-506.
13. Wood, A.R., Zelditch, M.L., Rountrey, A.N., **Eiting, T.P.**, Sheets, H.D., Gingerich, P.D. 2007. Multivariate stasis in the dental morphology of the Paleocene-Eocene condylarth *Ectocion*. *Paleobiology* 33(2): 248-260.
14. **Eiting, T.P.**, Smith, G.R. 2007. Miocene Salmon (*Oncorhynchus*) from Western North America: Gill Raker evolution correlated with plankton productivity in the Eastern Pacific. *Palaeogeography, Palaeoclimatology, Palaeoecology* 249(3/4): 412-424.
15. Rowe, T., **Eiting, T.**, Macrini, T., Ketcham, R. 2005. Organization of the olfactory and respiratory skeleton in the nose of the gray short-tailed opossum *Monodelphis domestica*. *Journal of Mammalian Evolution* 12(3/4): 303-336.

Manuscripts in Preparation

1. **Eiting, T.P.**, Smith, T.D., Forger, N. G., Dumont, E.R. The relationship of olfactory bulb size to neural correlates of olfactory ability. To be resubmitted to: *Biological Journal of the Linnean Society*.

Book Chapters

1. Smith, T., **Eiting, T.**, Bhatnagar, K. (in press). Anatomy of the nasal passages in mammals. in: *Handbook of Olfaction and Gustation, 3rd Ed.* Ed: R. Doty). New York, NY: Wiley.
2. Gunnell, G.F., **Eiting, T.P.**, Simons, E.L., Seiffert, E.R. 2012. African Vespertilionoidea (Chiroptera) and the antiquity of Myotinae. pp. 252-266 in: *Evolutionary history of bats: Fossils, molecules, and morphology*. Eds: G.F. Gunnell and N.B. Simmons. Cambridge University Press.

Conference Presentations

1. **Eiting, T.**, Perot, J.B., Dumont, E. (2014). Smelling the difference: How do the size and shape of the olfactory recess relate to olfactory airflow? Society for Integrative and Comparative Biology, Austin, TX.
2. **Eiting, T.**, Smith, T., Perot, J.B., Dumont, E. (2013). The extent of the transverse lamina and its role in olfactory airflow. International Congress of Vertebrate Morphology, Barcelona, Spain.
3. Smith, T., **Eiting, T.**, Craven, B. (2013). Nasal fossa histology, morphometry, and functional morphology in three species of Primates. International Congress of Vertebrate Morphology, Barcelona, Spain.
4. **Eiting, T.**, Dumont, E., Perot, J.B. (2013). Nasal airway morphology and olfactory airflow in phyllostomid bats. Society for Integrative and Comparative Biology, San Francisco, CA.
5. Smith, A.J., Rosario, M.V., **Eiting, T.P.**, Dumont, E.R. (2013). A conundrum of covariation: The effects of missing data on disparity analysis. Society for Integrative and Comparative Biology, San Francisco, CA.
6. **Eiting, T.**, Dumont, E., Perot, J.B. (2012). Olfactory airflow in the nasal cavity of phyllostomid bats. Joint Northeast Regional Divisional Meetings of Vertebrate Morphology and Comparative Biomechanics of the Society for Integrative and Comparative Biology. Amherst, MA.

7. **Eiting, T.**, Smith, T, Forger, N, Dumont, E. (2012). Comparing sensory abilities: olfactory bulb size and olfactory sensitivity in phyllostomid bats. Society for Integrative and Comparative Biology, Charleston, SC.
8. Dial, T.O., Santana, S.E., **Eiting, T.P.**, Alfaro, M.E. (2012). How the bat got its stripes: Roosting ecology and the evolution of pelage marking in bats. Society for Integrative and Comparative Biology, Charleston, SC.
9. **Eiting, T.**, Dumont, E, Perot, J.B. (2011). Airflow modeling and olfaction in the nasal cavities of bats. Joint Northeast Regional Divisional Meetings of Vertebrate Morphology and Comparative Biomechanics of the Society for Integrative and Comparative Biology. Kingston, RI.
10. **Eiting, T.P.**, Dumont, E.R. (2009). The correlated evolution of olfactory ability and sociality in bats. North American Symposium on Bat Research, Portland, OR.
11. **Eiting, T.P.**, Dumont, E.R. (2009). A comparative analysis of olfactory communication in bats. Society for Integrative and Comparative Biology, Boston, MA.
12. **Eiting, T.P.**, Gunnell, G.F. (2008). Global completeness of the bat fossil record. North American Symposium on Bat Research, Scranton, PA.
13. **Eiting, T.**, Gunnell, G. (2007). Regional and global perspectives on the quality of the fossil record of bats. Society of Vertebrate Paleontology, Austin, TX.
14. Gunnell, G., **Eiting, T.**, Simons, E., Seiffert, E. (2007). Back to the future – African Vespertilionoidea (Chiroptera) and the antiquity of Myotinae. Society of Vertebrate Paleontology, Austin, TX.
15. **Eiting, T.**, Geraads, D., Gunnell, G. (2006). New Late Pliocene bats (Chiroptera) from Ahl al Oughlam, Casablanca, Morocco. Society of Vertebrate Paleontology, Ottawa, Canada.
16. **Eiting, T.**, Smith, G. (2005). Internal gill raker morphology of fossil Salmonidae using high-resolution X-ray computed tomography. Society of Vertebrate Paleontology, Mesa, AZ.
17. Wood, A., Desilva, J., **Eiting, T.**, Rountrey, A., Whitlock, J., Zelditch, M. (2005). Multivariate tests of evolutionary mode in *Ectocion* teeth. Society of Vertebrate Paleontology, Mesa, AZ.
18. Rowe, T. B., Macrini, T. E., **Eiting, T. P.**, Ketcham, R. A. (2005). The olfactory and respiratory skeleton in the nose of the opossum *Monodelphis domestica*. Society for Integrative and Comparative Biology, San Diego, CA.
19. **Eiting, T.**, Rowe, T., Ketcham R. (2004). Quantitative analysis of the mammalian skull: a new method for studying the internal nasal anatomy of *Monodelphis domestica* (Marsupialia: Didelphidae). Society of Vertebrate Paleontology, Denver, CO.

Mentoring

2011-2012: Nadya Shlykova, UMass undergraduate; taught microscopy and histological examination of tissues found in the nasal cavity of bats

Research Experience

2007 – 2014: Research Assistant, Dr. Elizabeth Dumont, UMass Amherst: Finite Element modeling and Biomech website content and development

2007: Research Assistant, Dr. Jerry Smith, University of Michigan: North American river discharge and fish diversity gradients

2005 – 2006: Museum Assistant, U. Michigan Museum of Paleontology, invertebrate fossil collection relocation and curation

Summer 2005: Field assistant, Bighorn Basin, Wyoming; Paleontological and paleomagnetic sampling

2002 – 2004: Research Assistant, University of Texas X-ray CT facility; image processing of CT datasets of rocks, fossils, and animals

2002: Student Conservation Association Intern, Carlsbad Caverns Nat'l Park; conservation of cave resources and tour guide

2002: Undergraduate Assistant, Vertebrate Paleontology Lab, U. Texas; fossil preparation and assisted with creating of "Dino Pit" exhibit

Winter 2001: Field assistant, Franklin Mountains, El Paso, Texas; geological sampling

Workshops

Fall 2007: Finite Element Analysis in Biology, UMass Amherst

Teaching Experience

Teaching Assistant, University of Massachusetts Amherst

Biology 100: Introductory Biology laboratory. Led students in laboratory exercises on topics such as genetics, development, enzyme reactions, and photosynthesis (1 semester)

Biology 280: Evolution. Responsible for maintaining the course website, creating and administering weekly online quizzes, holding office hours, and hosting review sessions (1 semester)

Bio 494: Life after Biology. Led discussion section that covered professional development topics for biology undergraduates, including writing and editing cover letters & resumes, doing mock-interviews, finding a job or other post-graduate training, and asking for letters of recommendation (1 semester)

Biology 521: Comparative Vertebrate Anatomy laboratory. Led comparative examination of all major organ systems of the body; included dissection (5 semesters)

Biology 522: Vertebrate Fossils and Evolution laboratory. Led laboratory investigations on the comparative study of major clades of fossil vertebrates; included fossil and cast material, as well as frequent use of the display collections at the Amherst College Museum of Natural History (2 semesters)

Graduate Student Instructor (i.e. Teaching Assistant), University of Michigan

Geology 116: Introduction to Geology in the Field, Camp Davis Field Station. Assisted course instructors by helping students learn basic field identification of minerals, rock types, stratigraphy, and tectonic processes; also gave a guest lecture on the historical construction of the geologic time scale (one 5-week field season)

Geology 125: Evolution and Extinction discussion sections. Lectured students in small discussion sections on topics such as the history of life, the fossil record, macroevolution, and extinction (1 semester)

Service

Summer 2013: Co-chaired the symposium, "Inside the Vertebrate Nose, Evolution, Structure, and Function" at the 10th International Congress of Vertebrate Morphology in Barcelona, Spain. (Co-chairs Blair Van Valkenburgh, UCLA, and Irina Ruf, Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany)

Spring 2010 & Spring 2012: Student member, search committee for Darwin Postdoctoral Fellow, OEB Graduate Program, UMass

Fall 2010 – Spring 2012: Student representative to the Steering Committee, OEB Graduate Program, UMass

Fall 2007: Co-chaired the symposium, "Fossils, Molecules and Morphology - Evolutionary History of Bats," at the 67th Annual Meeting of the Society of Vertebrate Paleontology in Austin, Texas. (Co-chairs Nancy Simmons, AMNH, and Gregg Gunnell, U. Michigan)

Reviewer for the following journals:

The Anatomical Record

Outreach

February 2013: Guest Scientist, OEB Science Café, “Smell: the Secret Sense”

Fall 2011-present: Core Participant, OEB Science Café program; monthly events at a local café that bring science to the public, includes talks by local scientists and science-related skits, games, & songs