

Eva Christine Garrett

Postdoctoral Research Fellow
Department of Anthropology
Washington University in St. Louis

One Brookings Drive
St. Louis, MO 63130
email: ecgarrett@wustl.edu

EDUCATION

- 2015 **Ph.D., Anthropology.** The Graduate Center, City University of New York
New York, NY, USA
Dissertation: *Was There a Sensory Trade-off in Primate Evolution? The Vomeronasal Groove as a Means of Understanding the Vomeronasal System in the Fossil Record.*
Ph.D. Advisor: Dr. Eric Delson
- 2010 **M. Phil., Anthropology.** The Graduate Center, City University of New York.
- 2005 **B.A., Anthropology,** with honors and special honors in Anthropology.
University of Texas, Austin, TX, USA

RESEARCH INTERESTS

Primate evolution; evolutionary morphology; vomeronasal organ; nasal anatomy; olfaction; sexual dimorphism; sexual selection; sensory ecology; life history; primate paleontology; olfactory genomics

RESEARCH EXPERIENCE

I am devoted to collaborative research and am interested in various aspects of primate and mammalian evolutionary morphology. I am particularly interested in the role of olfaction in primate biology, and how evolution has affected the olfactory sensory organs, particularly the vomeronasal organ. I have collaborated with other scientists to study the variation in the vomeronasal organ in strepsirrhine and platyrrhine primates, and how this relates to their biology. I have also identified an osteological feature that is indicative of the vomeronasal organ in primates which can be visualized in fossils, and used to study sensory system evolution in the fossil record. I am interested as well in the genes underlying sensory systems and how morphological traits can be related back to genetics. Additionally I am interested in sexual dimorphism in primates and how this informs us on sexual selection.

PEER-REVIEWED PUBLICATIONS

2014. **Garrett EC** and Steiper ME. Strong Links between genomic and anatomical diversity of both mammalian olfactory chemosensory systems. *Proceedings of the Royal Society B: Biological Sciences*: 281(1783).
2013. **Garrett EC**, Dennis JC, Bhatnagar KP, Durham EL, Burrows AM, Bonar CJ, Steckler NK, Morrison EE, Smith TD. The vomeronasal complex of nocturnal strepsirrhines and implications for the ancestral condition in primates. *The Anatomical Record*: 296(12) 1881-1894.
2011. Smith TD, **Garrett EC**, Bhatnagar KP, Bonar CJ, Bruening A, Dennis JC, Kinzinger JH, Johnson EW, Morrison EE. The vomeronasal organ of New World Monkeys (Platyrrhini). *The Anatomical Record*: 2158-2178.
2011. Smith TD, Dennis JC, Bhatnagar KP, **Garrett EC**, Bonar CJ, Morrison EE. Olfactory marker protein expression in the vomeronasal neuroepithelium of tamarins (*Saguinus* spp). *Brain Research* (1375): 7-18.

RESEARCH FUNDING, AWARDS, and HONORS

- 2010 Student Poster Award. IGERT Conference, National Science Foundation
2010.2011 Doctoral Dissertation Improvement Grant. National Science Foundation
2010.2011 CUNY Writing Fellowship. The Graduate Center, CUNY
2009 Graduate Student Research Grant. The Graduate Center, CUNY
2006 Summer Research Fellowship. New York Consortium in Evolutionary Primatology
2005.2009 Chancellor's Fellowship/Graduate Teaching Fellowship. The Graduate Center, CUNY

PROFESSIONAL PREPARATION

- Oct. 2014- present **Postdoctoral Research Fellow**, Washington University at St. Louis – Working with Dr. Amanda Melin to study the evolution of olfactory receptor genes in humans and non-human primates.
2014 **Computational and Comparative Genomics Course Participant**. Cold Spring Harbor Lab, Cold Spring Harbor, New York.
2011 **AnthroTree Workshop Participant**. University of Massachusetts, Amherst, Massachusetts.
2010 **Sensory Ecology Short Course Participant**. Lund University, Lund, Sweden
2010.2011 **CUNY Writing Fellow, Borough of Manhattan Community College** - Led workshops and provided individual training with faculty at Borough of Manhattan Community College on integrating writing in course work to promote critical thinking.
2006-2014 **Adjunct Lecturer, The City University of New York** - Taught lecture and lab sections in introductory level biological anthropology courses and human variation, in addition to a summer lab session for middle school students.
2004.2005 **Senior Student Associate, The eSkeletons Project (www.eskeletons.org)** - Took photographs of primate skeletal elements and edited them for presentation on the eSkeletons website.

FIELD EXPERIENCE

- 2009 **The Fayum Research Site, Egypt**. Collected primate and mammalian fossils from several Eo.Oligocene sites in the Fayum Depression, Egypt with Dr. Erik Seiffert
2006 **The Senèze Research Site, France**. Collected mammalian fossils at the Pliocene site of Senèze, France with Dr. Eric Delson
2005 **The Dalquest Research Site, Texas**. Paleontological research at the Eocene Dalquest Research Site (near Marfa, Texas) with Dr. Chris Kirk.

SCHOLARLY PRESENTATIONS

Published abstracts and conference proceedings

2014. **Garrett EC**. Effects of mating system and color vision on the primate vomeronasal organ. Presented as a talk at the International Primatological Society Meetings, Hanoi, Vietnam, August 2014.
2014. **Garrett EC**. Life History variables and vomeronasal groove length in primates. American Journal of Physical Anthropology. 153 (S58): 124. [abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Calgary, AB, April 2014.
2013. **Garrett EC** and Steiper ME. Testing the color vision priority hypothesis in primates: acquisition of trichromatic color vision affects the vomeronasal system and not the main olfactory system. PaleoAnthropology. 2013: A13[abstract]. Presented as a talk at the Paleoanthropology Society Meetings,

Honolulu, HI, April 2013.

2011. Steiper ME and **Garrett EC**. Testing the correlation between the anatomical structures of odorant and pheromone perception and their corresponding gene families in primates and other mammals. *American Journal of Physical Anthropology*. 144 (S52): 284-285. [abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Minneapolis, MN, April 2011.

2011. Smith TD, **Garrett EC**, Bhatnagar, KP, Bonar CJ, Breuning, AE, Dennis JC. New findings on the vomeronasal complex of platyrrhine primates. *American Journal of Physical Anthropology*. 144 (S52): 279. [abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Minneapolis, MN, April 2011.

2011. **Garrett EC** and Smith TD. Reconstructing the vomeronasal system of the earliest primates. *American Journal of Physical Anthropology*. 144 (S52): 140. [abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Minneapolis, MN, April 2011.

2010. **Garrett EC**. Getting in the groove: indirect observations of the primate vomeronasal system using CT. *American Journal of Physical Anthropology* 141(S50): 109. [abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Albuquerque, NM, April 2010.

2009. **Garrett EC**, Smith TD, Burrows AM, Bonar CJ. Osteological correlates of the vomeronasal system in primates. *American Journal of Physical Anthropology* (S48):132.[abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Chicago, IL, April 2009.

2008. **Garrett EC** and Delson E. Geometric morphometric analysis of the ontogeny of canine and craniofacial growth in *Colobus guereza*: implications for its lack of canine dimorphism. *American Journal of Physical Anthropology* 135(S46):101.[abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Columbus, OH, April 2008.

2008. Steiper ME, Swedell L, Chowdhury S, **Garrett EC**. A comparison of inexpensive methods for obtaining DNA from the feces of baboons. *American Journal of Physical Anthropology* 135(S46):200. [abstract]. Presented as a poster at the Annual Meeting of the American Association of Physical Anthropologists, Columbus, OH, April 2008.

Presentations without published abstracts and invited/guest lectures

2014 Relationships within and between the mammalian olfactory systems, and applications for studying the sensory trade-off hypothesis in primates. Invited guest lecture for Dr. Amanda Melin's upper division course in anthropological genetics. Washington University, St. Louis.

2014 Variation in the Vomeronasal Complex and Implications for the Sensory Trade-off Hypothesis in Primates. Talk presented to the Washington University's Department of Anthropology Journal Club. Washington University, St. Louis.

2013 Osteological correlates of the primate vomeronasal organ and implications for the Sensory Trade-off Hypothesis. Invited lecture at Rutgers University, NJ.

2013 Color vision, the olfactory subsystems, and implications for primate sensory trade-off. Talk presented to the New York Consortium on Evolutionary Primatology.

New York, NY.

- 2013 Olfaction and Sexual Selection. Invited guest lecture for Margaret Bryer's course on the anthropology of sex. Brooklyn College, NY.
- 2012-2014 Sensory trade-off in primates. Invited lecture at the American Museum of Natural History. New York, NY.
- 2012 Relationships within and between the mammalian olfactory systems. Talk presented to the New York Consortium on Evolutionary Primatology. New York, NY.
- 2011 The vomeronasal groove and what it can tell us about sensory trade-off in primate evolution. Invited lecture for Introduction to Human Evolution, taught by Dr. Jessica Rothman, Hunter College. New York, NY.
- 2010 Getting in the groove: a method for detecting sensory trade off in the primate fossil record. Poster presented at the Lund University Sensory Ecology Short Course, Lund, Sweden.
- 2010 Getting in the groove: inferring chemical communication in the primate fossil record. Poster presented at the National Science Foundation IGERT 2010 Project Meeting, Washington, DC. Awarded one of ten student poster prizes for excellence in science communication.
- 2010 An update on the vomeronasal groove and what it can tell us about sensory trade off in primate evolution. Talk presented to the New York Consortium on Evolutionary Primatology. New York, NY.
- 2009 Osteological correlates of the vomeronasal system in primates. Talk presented to the New York Consortium on Evolutionary Primatology. New York, NY.

COURSES TAUGHT

- 2012-2013 Lecture Instructor, Introduction to Human Evolution, Department of Anthropology, Hunter College
- 2012- 2014 Lab Instructor, Queens School of Inquiry Summer Session
- 2010-2014 Lab Instructor, Introduction to Human Evolution, Department of Anthropology, Hunter College
- 2006.2014 Lecture and Lab Instructor, Introduction to Human Evolution, Department of Anthropology, Lehman College
- 2010 Introduction to Human Variation, Department of Anthropology, Lehman College

SERVICE and OUTREACH

- 2014 Discussed the role of olfaction in primate and mammalian evolution with a public audience in the American Museum of Natural History's Sackler Lab, New York, NY
- 2014 Interviewed for the documentary "The SkinDeep" on the role of olfaction in mediating sexual selection and relationships in humans.
- 2010.2011 Co organizer for a symposium on primate sensory ecology, AAPA

2007 New Student and Orientation Committee, New York Consortium in Evolutionary Primatology
2007-2009 Social Events Committee, New York Consortium in Evolutionary Primatology
2005 Volunteer for NYCEP "Monkeys Old and New" Conference, New York, NY

PROFESSIONAL AFFILIATIONS

American Association of Physical Anthropology, Paleoanthropology Society, American Association for the Advancement of Science, Society for Vertebrate Paleontology

