Curriculum Vitae

Julia M. Winchester

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Employment

2016 – **Postdoctoral Associate.** Department of Evolutionary Anthropology. Duke University.

2013 – 2016 **Instructor.** Occupational Therapy Program, College of Health Related Professions. State University of New York Downstate.

Education

2016 Ph.D., Anthropological Sciences (Concentration: Physical Anthropology). Stony Brook University.

2012 M.A., Anthropology. Stony Brook University.

2008 B.A. (with Honors), Anthropology. University of Arkansas.

Publications

2017 Wallace IJ, **Winchester JM**, Su A, Boyer DM, Konow N. Physical activity alters limb bone structure but not entheseal morphology. *Journal of Human Evolution*, 107: 14-18.

2016 Pampush JD, **Winchester JM**, Morse PE, Vining AQ, Boyer DM, Kay RF. Introducing molaR: a new R package for quantitative topographic analysis of teeth (and other topographic surfaces). *Jounal of Mammalian Evolution*, 1-16.

2016 **Winchester JM**. MorphoTester: An open source application for morphological topographic analysis. *PLoS ONE*, 11(2): e0147649.

2015 Boyer DM, **Winchester JM**, Glynn C, Puente J. Detailed anatomical orientations for certain types of morphometric measurements can be determined automatically with geometric algorithms. *The Anatomical Record*, 298: 1816-1823.

2015 Boyer DM, **Winchester JM**, Kay RF. The effect of differences in methodology among some recent applications of shearing quotients. *American Journal of Physical Anthropology,* 156: 166-178.

2014 Zohdy S, Gerber BD, Tecot S, Blanco MB, **Winchester JM**, Wright PC, Jernvall J. Teeth, sex, and testosterone: aging in the world's smallest primate. *PLoS ONE*, 9(10): e109528.

2014 **Winchester JM**, Boyer DM, St. Clair EM, Gosselin-Ildari AD, Cooke SB, Ledogar JA. Dental topography of platyrrhines and prosimians: convergence and contrasts. *American Journal of Physical Anthropology*, 153: 29-44.

2013 Ledogar JA, **Winchester JM**, St. Clair EM, Boyer DM. Diet and dental topography in pitheciine seed predators. *American Journal of Physical Anthropology*, 150: 107-121.

2012 Godfrey LR, **Winchester JM**, King SJ, Boyer DM, Jernvall J. Dental topography indicates ecological contraction of lemur communities. *American Journal of Physical Anthropology*, 148: 215-227.

2011 **Bunn JM***, Boyer DM, Lipman Y, St. Clair EM, Jernvall J, Daubechies I. Comparing Dirichlet normal surface energy of tooth crowns, a new technique of molar shape quantification for dietary inference, with previous methods in isolation and in combination. *American Journal of Physical Anthropology*, 145: 247-261.

2011 Blatch S, Boyer DM, King SJ, **Bunn JM***, Jernvall J, Wright PC. Changes in orientation of attritional wear facets with implications for jaw motion in a mixed longitudinal sample of *Propithecus edwardsi* from Ranomafana National Park, Madagascar. *American Journal of Physical Anthropology,* 146: 116-133.

2009 **Bunn JM***, Ungar PS. Dental topography and diets of four old world monkey species. *American Journal of Primatology*, 71: 466-477.

2008 Ungar PS, **Bunn JM***. Primate dental topographic analysis and functional morphology. In: *Technique and Application in Dental Anthropology.* Irish JD, Nelson GC, eds. Cambridge, Cambridge Univ. Press, pp. 253-265.

* Published under former name

Awards and Grants

2013 – 2015 Outstanding Anatomy Instructor Award, SUNY Downstate Occupational Therapy Program.

2013 National Science Foundation Doctoral Dissertation Improvement Grant: Molar topographic shape as a system for inferring paleoecology and developmental patterning in cercopithecoid evolution ($30,740).

2010 National Science Foundation Nordic Research Opportunity Grant ($5,000).

2009 National Science Foundation Graduate Research Fellowship ($120,000).

2008 Full Tuition Scholarship, IDPAS, Stony Brook University.

2008 Graduate Recruitment and Retention Fellowship, Stony Brook University ($10,000).

Invited Talks

2015 The dentition. Guest lecture for Stony Brook University course Human Osteology, 2/9/2015.

2011 The fossil record of the genus *Paranthropus*. Guest lecture for University of Helsinki course The Human Fossil Record, 4/4/2011.

2010 Dirichlet normal energy as a tool for quantifying molar tooth shape. Björn Kurten Paleontology Club, University of Helsinki, 11/16/2010.

Conference Presentations

2017 Fulwood E, **Winchester JM**, Gao T, Boyer DM, Daubechies I. Automated shape specification using digital data. *Digital Data in Paleontological Research Workshop.* Berkeley, CA. (Co-presented with Fulwood E.)

2017 Fulwood E, Gao T, Daubechies I, Boyer DM, **Winchester JM**. Automatic segmentation of morphological structure into biologically corresponding features: implications for systematics and ecomorphology. *86th Annual Meeting of the American Association of Physical Anthropologists.* New Orleans, LA.

2017 Patel BA, Boyer DM, Perchalski BA, Ryan TM, St. Clair EM, **Winchester JM**, Seiffert ER. New fossils and the paleobiology of

Karanisia clarki from the late Eocene of Egypt. *86th Annual Meeting of the American Association of Physical Anthropologists.* New Orleans, LA.

2016 **Winchester JM.** Topographic complexity of second mandibular molars increases with a wear proxy in five species of cercopithecoid primates. *85th Annual Meeting of the American Association of Physical Anthropologists.* Atlanta, GA.

2016 De Vries D, **Winchester JM**, St. Clair EM, Boyer DM. Dietary inference from P_4 topography in prosimians. *85th Annual Meeting of the American Association of Physical Anthropologists.* Atlanta, GA.

2015 **Winchester JM**, St. Clair EM, Boyer DM. Folivores, frugivores, and *Theropithecus*: diet and dental topography in cercopithecoids. *84th Annual Meeting of the American Association of Physical Anthropologists.* St. Louis, MO.

2014 **Winchester JM,** Boyer DM, Jernvall J. Cercopithecoid molar size and shape variability in an evolutionary-developmental framework. *83rd Annual Meeting of the American Association of Physical Anthropologists.* Calgary, Canada.

2011 **Winchester JM**, Zohdy S, King SJ, Wright PC, Jernvall J. Testing for tooth wear resistant measures of diet in primates. *71st Annual Meeting of the Society of Vertebrate Paleontology,* Las Vegas, NV.

2011 **Bunn JM***. Comparing ontogenetic molar wear in *Paranthropus robustus* and *Australopithecus africanus*. *80th Annual Meeting of the American Association of Physical Anthropologists*, Minneapolis, MN.

2011 Boyer DM, Cooke SB, **Bunn JM***, St. Clair EM, Ledogar JA. Dental topographic variables (orientation patch count, relief index, Dirichlet energy) of platyrrhine second mandibular molars. *80th Annual Meeting of the American Association of Physical Anthropologists,* Minneapolis, MN.

2011 Ledogar JA, **Bunn JM***, St. Clair EM, Boyer DM. Dental topographic analysis of pitheciine (*Pithecia, Chiropotes, Cacajao)* second mandibular molars. *80th Annual Meeting of the American Association of Physical Anthropologists,* Minneapolis, MN.

2010 Blatch S, Boyer DM, King SJ, **Bunn JM***, Jernvall J, Wright PC. Do old siafakas (*Propithecus edwardsi*) chew differently? *79th Annual Meeting of the American Association of Physical Anthropologists*, Albuquerque, NM.

2010 Godfrey LR, King SJ, Muldoon KM, Blanco MB, Boyer DM, **Bunn JM***. Dental complexity, topographic relief, and dietary reconstruction in

subfossil lemurs. *79th Annual Meeting of the American Association of Physical Anthropologists*, Albuquerque, NM.

2009 **Bunn JM***, Boyer DM, Lipman Y, Jernvall J, Daubechies I. Who cares which way is up? An orientation and landmark-free quantification of tooth shape. *69th Annual Meeting of the Society of Vertebrate Paleontology,* Bristol, United Kingdom.

* Published under former name

Research Experience

2010 – 2012 Visiting Researcher, Developmental Biology Program. Institute of Biotechnology, University of Helsinki.

Teaching Experience

2013 – 2016 Course Director, ANAT-5001 Human Gross Anatomy. State University of New York Downstate. Lecture and cadaver dissection instruction for occupational therapy graduate students.

2015 Teaching Assistant, ANP 404 Human Osteology. Stony Brook University. Exercise-based laboratory course.

2008 – 2016 Lab Instructor, ANP 300 Human Anatomy. Stony Brook University. Regional anatomy instruction for undergraduate students based on models, osteology, and virtual dissection.

2009 Lab Instructor, HBA 461/561/540 Regional Human Anatomy. Stony Brook University. Cadaver dissection course for allied health professional students (physical therapy, physician assistant, occupational therapy).

2008 Lab Instructor/Teaching Assistant, ANP 120/121 Introduction to Biological Anthropology. Stony Brook University. Exercise-based laboratory course.

Software Development and Contribution

2017 hecate: Consistent segmentation of biological surface regions from 3D data.

2016 auto3dgm: Automatic alignment of 3D surface meshes.

2016 Xfix: Human anatomy educational web application.

2015	molaR: An R package for quantitative topographic analysis.
2015	MorphoTester: An open source freeware software platform for the quantification of topographic shape in 3D data.

Programming Language Skills

R, Python, MATLAB, JavaScript, PHP, HTML/CSS

Departmental Committees

2013	PhD Admissions Committee, IDPAS, Stony Brook University.

Journals Refereed

Anatomical Record, Annales Zoologici Fennici, PLoS ONE.

Professional Society Memberships

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