

Tanya M. Smith

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Current Positions

- * Assistant Professor, Department of Human Evolutionary Biology, Harvard University, Cambridge, MA, USA.
- * Associated Scientist, Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.

Education

- * Stony Brook University, 1998-2004.
Interdepartmental Doctoral Program in Anthropological Sciences (IDPAS).
Master of Arts in Anthropology, 2002.
Ph.D. in Anthropology with Distinction, 2004.
- * State University of New York (SUNY) at Geneseo, 1993-1997.
Bachelor of Science in Biology with Honors, 1997.

Awards and Grants

- * Selected participant for NSF-funded Women Evolving Biological Sciences (WEBS) Symposium, 2010.
- * Joseph R. Levenson Memorial Teaching Prize Nominee, 2010.
- * Harvard University, William F. Milton Fund, 2010.
- * Harvard University, Publication Fund, 2008 & 2010.
- * European Virtual Anthropology Network, EU FP6 Marie Curie Actions (co-investigator), 2006-2009.
- * Stony Brook University President's Award for Distinguished Doctoral Students, 2005.
- * NSF Dissertation Improvement Grant (jointly awarded with L. Martin), 2002-2004.
- * IDPAS Conference Travel Awards, 2002, 2003 & 2004.
- * IDPAS Research Travel Awards, 2001 & 2002.
- * Primate Conservation, Inc. Research Grant (jointly awarded with M. Irwin), 1999.
- * Margot Marsh Biodiversity Foundation Research Grant (jointly awarded with M. Irwin), 1999.
- * Dean's List at SUNY Geneseo, Fall 1994-Spring 1997 (inclusive).
- * Geneseo Foundation Scholarship, 1997.
- * Second Place for Best Student Research at Tri-Beta Biological Honors Society Regional Convention, 1997.
- * Tri-Beta Biological Honors Society Research Grant, 1996.
- * SUNY Geneseo Foundation Research Grant, 1995.

Full Length Peer-Reviewed Publications

44. **Smith, T.M.**, Olejniczak, A.J., Zermeno, J.P., Tafforeau, P., Skinner, M.M., Hoffmann, A., Radovčić, J., Toussaint, M., Kruszynski, R., Menter, C., Moggi-Cecchi, J., Glasmacher, U.A., Kullmer, O., Schrenk, F., Stringer, C., Hublin, J.-J. (in review) Remarkable variation in enamel thickness within the genus *Homo*. *Proc. Roy. Soc. B*.
43. Raynal, J.P., Sbihi-Alaoui, F.-Z., Mohib, A., El Graoui, M., Lefèvre, D., Texier, J.-P., Geraads, D., Hublin, J.-J. **Smith, T.**, Tafforeau, P., Zouak, M., Grün, R., Rhodes, E.J., Eggins, S., Daujard, C., Fernandes, P., Gallotti, R., Hossini, S., Schwarcz, H.P. & Queffelec, A. (in review) New dental human fossils in the Hominid Cave at Thomas Quarry I (Casablanca, Morocco), their environmental, archaeological and taphonomical context and their ICP-MS laser ablation direct dating. *Bull. d'Archéologie Marocaine*

42. Hublin J.J., Bailey S., Olejniczak A., **Smith T.**, Verna C., Sbihi-Alaoui F.Z. and Zouak M. (in review) Dental evidence from the Aterian human populations of Morocco. In (Hublin, J.-J. & McPherron, S., Eds.) *Modern Origins: A North African Perspective*. Springer, Dordrecht.
41. **Smith, T.M.**, Reid, D.J., Olejniczak, A.J., Bailey, S., Glantz, M., Viola, B. & Hublin, J.-J. (in press) Dental development and age at death of a Middle Paleolithic juvenile hominin from Obi-Rakhmat Grotto, Uzbekistan. In (Condemi, S. & Weniger, G.-C., Eds.) *Continuity and Discontinuity in the Peopling of Europe: One Hundred Fifty Years of Neanderthal Study*. Springer, Dordrecht.
40. **Smith, T.M.**, Tafforeau, P., Reid, D.J., Pouech, J., Lazzari, V., Zermeno, J.P., Guatelli-Steinberg, D., Olejniczak, A.J., Hoffman, A., Radovčić, J., Masrour, M., Toussaint, M., Stringer, C., Hublin, J.-J. (2010) Dental evidence for ontogenetic differences between modern humans and Neanderthals. *Proc. Natl. Acad. Sci. USA* 107:20923-20928.
39. Feeney, R.N.M., Zermeno, J.P., Reid, D.J., Nakashima, S., Sano, H., Bahar, A., Hublin, J.J., **Smith, T.M.** (2010) Enamel thickness in Asian human canines and premolars. *Anthrop. Sci.* 118:191-198.
38. Lee, J.J.-W., Morris, D., Constantino, P.J., Lucas, P.W., **Smith, T.M.**, Lawn, B.R. (2010) Properties of tooth enamel in great apes. *Acta Biomaterialia* 6:4560-4565.
37. Raynal, J.P., Sbihi-Alaoui, F.-Z., Mohib, A., El Graoui, M., Lefèvre, D., Texier, J.-P., Geraads, D., Hublin, J.-J., **Smith, T.**, Tafforeau, P., Zouak, M., Grün, R., Rhodes, E.J., Eggins, S., Daujeard, C., Fernandes, P., Gallotti, R., Hossini, S. & Queffelec, A. (2010) Hominid Cave at Thomas Quarry I (Casablanca, Morocco): Recent findings and their context. *Quaternary Int.* 223-224:369-382.
36. **Smith, T.M.**, Smith, B.H., Reid, D.J., Siedel, H., Vigilant, L., Hublin, J.J., Boesch, C. (2010) Dental development of the Tâi Forest chimpanzees revisited. *J. hum. Evol.* 58:363-373.
35. Skinner, M.M., Evans, A., **Smith, T.**, Jernvall, J., Tafforeau, P., Kupczik, K., Olejniczak, A., Rosas A., Radovčić, Thackeray, J.F., Toussaint, M., Hublin, J.-J. (2010) Brief Communication: Contributions of enamel-dentine junction shape and enamel deposition to primate molar crown complexity. *Am. J. Phys. Anthropol.* 142:157-163.
34. **Smith, T.M.** & Reid, D.J. (2009) Temporal nature of periradicular bands (“striae periradicales”) on mammalian tooth roots. In (Koppe, T., Meyer, G. & Alt, K.W., Eds.) *Comparative Dental Morphology*. Karger, Basel, pp. 86-92.
33. Nielsen-Marsh, C.M., Stegemann, C., Hoffmann, R., **Smith, T.**, Feeney, R., Toussaint, M., Harvati, K., Panagopoulou, E., Hublin, J.-J., Richards, M.P. (2009) Extraction and sequencing of human and Neanderthal mature enamel proteins using MALDI-TOF/TOF MS. *J. Arch. Sci.* 36:1758-1763.
32. Richards, M., Grimes, V., Smith, C., **Smith, T.**, Harvati, K., Hublin, J.-J., Karkanias, P., & Panagopoulou, E. (2009) Response to Nowell and Horstwood (2009). *J. Arch. Sci.* 36:1657-1658.
31. **Smith, T.M.**, Olejniczak, A.J., Kupczik, K., Lazzari, V., Vos, J., Kullmer, O., Schrenk, F., Hublin, J.-J., Jacob, T. & Tafforeau, P. (2009) Taxonomic assessment of the Trinil molars using non-destructive 3D structural and developmental analysis. *PaleoAnthrop.* 2009:117-129.
30. **Smith, T.M.**, Harvati, K., Olejniczak, A.J., Reid, D.J., Hublin, J.-J. & Panagopoulou, E. (2009) Brief Communication: Dental development and enamel thickness in the Lakonis Neanderthal molar. *Am. J. Phys. Anthropol.* 138:112-118.
29. **Smith, T.M.** & Tafforeau, P. (2008) New visions of dental tissue research: tooth development, chemistry, and structure. *Evol. Anthropol.* 17:213-226.
28. Hublin, J.-J., Pääbo, S., Derevianko, A.P., Doronichev, V.B., Golovanova, L.V., Friess, M., Froment, A., Hoffmann, A., Kachache, N.E.J., Kullmer, O., Lordkipanidze, D., Moncel, M.-H., Potts, R., Radovic, J.,

- Rak, Y.Z., Richards, M., Méndez, J.R., Rosas, A., Schmauder, M., Schmitz, R.W., Semal, P., **Smith, T.**, Tafuri, M.A., Tattersall, I., Tournepiche, J.-F., Toussaint, M., Vassiliev, S., Vialet, A., White, T. & Ziegler, R. (2008). Suggested guidelines for invasive sampling of hominid remains. *J. hum. Evol.* 55:756-757.
27. Olejniczak, A.J., **Smith, T.M.**, Skinner, M.M., Grine, F.E., Feeney, R.N.M., Thackeray, F.J. & Hublin, J.-J. (2008) Three-dimensional molar enamel distribution and thickness in *Australopithecus* and *Paranthropus*. *Biol. Lett.* 4:406-410.
 26. Olejniczak, A.J., **Smith, T.M.**, Feeney, R.N.M., Macchiarelli, R., Mazurier, A., Bondioli, L., Rosas, A., Fortea, J., de la Rasilla, M., García-Taberner, A., Radović, J., Skinner, M.M., Toussaint, M. & Hublin, J.-J. (2008) Dental tissue proportions and enamel thickness in Neandertal and modern human molars. *J. hum. Evol.* 55:12-23.
 25. **Smith, T.M.**, Olejniczak, A.J., Reh, S., Reid, D.J., & Hublin, J.-J. (2008) Brief Communication: Enamel thickness trends in the dental arcade of humans and chimpanzees. *Am. J. Phys. Anthropol.* 136:237-241.
 24. Richards, M., Harvati, K., Grimes, V., Smith, C., **Smith, T.**, Hublin, J.-J., Karkanis, P., & Panagopoulou, E. (2008) Strontium isotope evidence of Neanderthal mobility at the site of Lakonis, Greece using laser-ablation PIMMS. *J. Arch. Sci.* 35:1251-1256.
 23. **Smith, T.M.** (2008) Incremental dental development: methods and applications in hominoid evolutionary studies. *J. hum. Evol.* 54:205-224.
 22. **Smith, T.M.** & Hublin, J.-J. (2008) Dental tissue studies: 2D and 3D insights into human evolution. *J. hum. Evol.* 54:169-172.
 21. Skinner, M.M., Wood, B., Boesch, C., Olejniczak, A.J., Rosas, A., **Smith, T.M.**, & Hublin, J.J. (2008) Non-metric dental trait expression at the enamel-dentine junction of lower molars in extant and fossil hominoids. *J. hum. Evol.* 54:173-186.
 20. Tafforeau, P.T. & **Smith, T.M.** (2008) Nondestructive imaging of hominoid dental microstructure using phase contrast X-ray synchrotron microtomography. *J. hum. Evol.* 54:272-278.
 19. Olejniczak, A.J., **Smith, T.M.**, Wei, W., Potts, R., Ciochon, R., Kullmer, O., Schrenk, F. & Hublin, J.-J. (2008) Molar enamel thickness and dentine horn height in *Gigantopithecus blacki*. *Am. J. phys. Anthropol.* 135:85-91.
 18. **Smith, T.M.**, Toussaint, M., Reid, D.J., Olejniczak, A.J. & Hublin, J.-J. (2007) Rapid dental development in a Middle Paleolithic Belgian Neanderthal. *Proc. Natl. Acad. Sci. USA* 104:20220-20225.
 17. **Smith, T.M.**, Reid, D.J., Dean, M.C., Olejniczak, A.J., Ferrell, R.J. & Martin, L.B. (2007) New perspectives on chimpanzee and human dental development. In (Bailey, S. & Hublin, J.-J., Eds.) *Dental Perspectives on Human Evolution: State of the Art Research in Dental Paleoanthropology*. Springer, Dordrecht, pp. 177-192.
 16. Olejniczak, A.J., Gilbert, C.C., Grine, F.E., Martin, L.B., **Smith, T.M.** & Ulhaas, L. (2007) Morphology of the enamel-dentine junction in sections of anthropoid primate maxillary molars. *J. hum. Evol.* 53:292-301.
 15. Mahoney, P., **Smith, T.M.**, Schwartz, G., Dean, C. & Kelley, J. (2007) Molar crown formation in the late Miocene Asian hominoids, *Sivapithecus parvada* and *Sivapithecus indicus*. *J. hum. Evol.* 53:61-68.
 14. Olejniczak, A.J., Tafforeau, P., **Smith, T.M.**, Temming, H., & Hublin, J.-J. (2007) Technical note: Compatibility of microtomographic imaging systems for dental measurements. *Am. J. phys. Anthropol.* 134:130-134.
 13. **Smith, T.M.**, Tafforeau, P.T., Reid, D.J., Grün, R., Eggins, S., Boutakiout, M. & Hublin, J.-J. (2007) Earliest evidence of modern human life history in North African early *Homo sapiens*. *Proc. Natl. Acad. Sci. USA* 104:6128-6133.
 12. **Smith, T.M.**, Reid, D.J., Dean, M.C., Olejniczak, A.J. & Martin, L.B. (2007) Molar development in common chimpanzees (*Pan troglodytes*). *J. hum. Evol.* 52:201-216.

11. **Smith, T.M.**, Olejniczak, A.J., Tafforeau, P., Reid, D.J., Grine, F.E. & Hublin, J.-J. (2006) Molar crown thickness, volume, and development in South African Middle Stone Age humans. *S. Afri. J. Sci.* 102:513-517.
10. **Smith, T.M.**, Olejniczak, A.J., Reid, D.J., Ferrell, R.J. & Hublin, J.-J. (2006) Modern human molar enamel thickness and enamel-dentine junction shape. *Arch. oral Biol.* 51:974-995.
9. **Smith, T.M.**, Reid, D.J., & Sirianni, J.E. (2006) The accuracy of histological assessments of dental development and age at death. *J. Anat.* 208:125-138.
8. **Smith, T.M.** (2006) Experimental determination of the periodicity of incremental features in enamel. *J. Anat.* 208:99-114.
7. **Smith, T.M.** (2005) New evidence for the periodicity of incremental structures in enamel. In (Zadzinska, E., Ed.) *Current Trends in Dental Morphology Research*. University of Lodz Press, Lodz, pp. 445-456.
6. **Smith, T.M.**, Olejniczak, A.J., Martin, L.B. & Reid, D.J. (2005) Variation in hominoid molar enamel thickness. *J. hum. Evol.* 48:575-592.
5. **Smith, T.M.**, Martin, L.B., Reid, D.J., Bonis, L. & Koufos, G.D. (2004) An examination of dental development in *Graecopithecus freybergi* (= *Ouranopithecus macedoniensis*). *J. hum. Evol.* 46:551-577.
4. **Smith, T.M.** (2004) *Incremental Development of Primate Dental Enamel*. PhD Dissertation. Stony Brook University. Available on-line at: www.paleoanthro.org/dissertations.htm
3. Kelley, J. & **Smith, T.M.** (2003) Age at first molar emergence in early Miocene *Afropithecus turkanensis* and life-history evolution in the Hominoidea. *J. hum. Evol.* 44:307-329.
2. **Smith, T.M.**, Martin, L.B. & Leakey, M.G. (2003) Enamel thickness, microstructure and development in *Afropithecus turkanensis*. *J. hum. Evol.* 44:283-306.
1. Irwin M.T., **Smith, T.M.** & Wright P.C. (2000) Census of three eastern rainforest sites north of Ranomafana National Park: preliminary results and implications for lemur conservation. *Lemur News* 5:20-22.

Additional Contributions to Edited Volumes

- * Dental Morphology Topic Editor for *Blackwell's Dictionary of Human Evolution*. Primary Editor: Bernard Wood, (in press).
- * **Smith, T.M.** (in press) Contributions of dental histology to archaeological science. In (Richards, M., Ed.) *Archaeological Science: An Introduction*. Cambridge University Press, New York.
- * *ESRF Highlights* 2010: "Synchrotron reveals human children outpaced Neanderthals by slowing down," in press.
- * Contributor to *3-D Tooth Atlas*, version 6, Brown and Herbranson Imaging (2010). <http://www.ehuman.com/products/3d-tooth-atlas-6>
- * Book Review: *Technique and Application in Dental Anthropology*, J Irish & G Nelson, Eds. (2009). *Am. J. phys. Anthropol.* 139:607-608.
- * Guest Associate Editor for Dental Tissues Special Issue of *Journal of Human Evolution*, vol. 54, February 2008.
- * *ESRF Highlights* 2007: "Phase-contrast X-ray imaging demonstrates earliest occurrence of the modern human growth and development pattern," p. 115-117.

Selected Presentations at Professional Meetings (Published Abstracts Indicated)

48. Tafforeau, P., **Smith, T.M.** (in review) The ESRF virtual database: A new resource for paleoanthropologists. To be presented at the Annual Meeting of the Paleoanthropology Society, Minneapolis, Minnesota.

47. **Smith, T.M.**, Tafforeau, P., Reid, D.J., Pouech, J., Lazzari, V., Zermano, J.P., Guatelli-Steinberg, D., Olejniczak, A.J., Hoffman, A., Radovčić, J., Masrou, M., Toussaint, M., Stringer, C., Hublin, J.-J. (in press) Histological evidence for ontogenetic differences between modern human and Neanderthal dentitions. To be presented at the 80th Annual Meeting of the American Association of Physical Anthropologists, Minnesota, MN, April 13-16, 2011.
46. Tafforeau, P., Pouech, J., **Smith, T.M.**, Moggi-Cecchi, J., Menter, C.G. (in press) Dental development in juvenile fossil hominins from Drimolen, South Africa using synchrotron virtual histology. To be presented at the 80th Annual Meeting of the American Association of Physical Anthropologists, Minnesota, MN, April 13-16, 2011.
45. Green, D.R., Glowacka, H., Schwartz, G.T., Reid, D.J., Martin, L.B., **Smith, T.M.** (in press) Developmental variation in great ape molar crowns. To be presented at the 80th Annual Meeting of the American Association of Physical Anthropologists, Minnesota, MN, April 13-16, 2011.
44. Tafforeau, P., **Smith, T.M.**, Reid, D.J., Pouech, J., Lazzari, V., Zermano, J.P., Guatelli-Steinberg, D., Olejniczak, A.J., Hoffman, A., Radovčić, J., Masrou, M., Toussaint, M., Stringer, C., Hublin, J.-J. (in press) Différences ontogénétiques entre les dentitions des humains modernes et des Neanderthaliens révélées par histologie virtuelle dentaire synchrotron. To be presented at the Journées de la Société Paléoanthropologique, Paris, France, January 26-28th, 2011.
43. **Smith, T.M.** (2010) Biological rhythms in dental hard tissues. Presented at the 2010 Northeast Regional Meeting of the Division of Vertebrate Morphology of the Society for Integrative and Comparative Biology, Cambridge, MA, October 16th, 2010.
42. **Smith, T.M.** (2010) Insights from the inside: what teeth tell us about great ape evolution. Presented at the 23rd International Primatological Society Congress, Kyoto, Japan, September 12-18, 2010.
41. **Smith, T.M.**, Zermano, J.P., Pouech, J., Tafforeau, P., Olejniczak, A.J., Reid, D.J., Eastham, L., Hublin, J.-J., Kordos, L., Begun, D. (2010) Enamel thickness and tooth development in a subadult *Dryopithecus branchoi* (*Rudapithecus hungaricus*) individual. Presented at the 79th Annual Meeting of the American Association of Physical Anthropologists, Albuquerque, New Mexico, April 14-17. (*Am. J. phys. Anthropol.* Suppl. 50:220)
40. Zermano, J.P., **Smith, T.M.**, Tafforeau, P. (2010) Enamel prisms revealed in three-dimensions by phase contrast synchrotron microtomography. Presented at the 79th Annual Meeting of the American Association of Physical Anthropologists, Albuquerque, New Mexico, April 14-17. (*Am. J. phys. Anthropol.* Suppl. 50:250-251)
39. MacLachy, L., Rossie, J., **Smith, T.M.**, Tafforeau, P. (2010) Evidence for dietary niche separation in the Miocene hominoids *Morotopithecus* and *Afropithecus*. Presented at the 79th Annual Meeting of the American Association of Physical Anthropologists, Albuquerque, New Mexico, April 14-17. (*Am. J. phys. Anthropol.* Suppl. 50:60)
38. Zink, K., Siders, A., **Smith, T.**, Lieberman, D. (2010) Bone and dental responses to masticatory loading: a shared regulatory mechanism? Presented at the 79th Annual Meeting of the American Association of Physical Anthropologists, Albuquerque, New Mexico, April 14-17. (*Am. J. phys. Anthropol.* Suppl. 50:251 - Erroneously omitted from author list in program.)
37. Constantino, P.J., Lee, J. J.-W., Morris, D., Hartstone-Rose, A., **Smith, T.M.**, Lucas, P.W., Lawn, B.R. (2010) Extracting ecological information from the mechanical properties and structure of primate teeth. Presented at the 79th Annual Meeting of the American Association of Physical Anthropologists, Albuquerque, New Mexico, April 14-17. (*Am. J. phys. Anthropol.* Suppl. 50:84)
36. **Smith, T.M.**, Tafforeau, P. (2009) Paleontological applications of synchrotron imaging with special insights into human evolution. Presented at the General Congress of the French Physics Society, Palaiseau, France, July 6-10.
35. **Smith, T.M.**, Smith, B.H., Boesch, C. (2009) Dental development in the Tai forest chimpanzees reappraised. Presented at the 78th Annual Meeting of the American Association of Physical Anthropologists, Chicago, Illinois, April 1-4. (*Am. J. phys. Anthropol.* Suppl. 48:377).

34. Tafforeau, P., Hublin, J.-J., **Smith, T.M.** (2009) Hominin dental structure and development revealed non-destructively by multi-scale synchrotron imaging. Presented at the 78th Annual Meeting of the American Association of Physical Anthropologists, Chicago, Illinois, April 1-4. (*Am. J. phys. Anthropol. Suppl.* 48:157-158.).
33. Constantino, P.J., Lee, J.J.-W., **Smith, T.M.**, Lucas, P.W. & Lawn, B.R. (2009) Mechanical properties of great ape tooth enamel. Presented at the 78th Annual Meeting of the American Association of Physical Anthropologists, Chicago, Illinois, April 1-4. (*Am. J. phys. Anthropol. Suppl.* 48:391-392.).
32. Raynal, J.P., Sbihi-Alaoui, F-Z., Mohib, A., El Graoui, M., Lefèvre, D., Texier, J-P., Geraads, D., Hublin, J-J. **Smith, T.**, Tafforeau, P., Zouak, M., Grün, R., Rhodes, E.J., Eggins, S., Daujard, C., Fernandes, P., Gallotti, R., Hossini, S. & Queffelec, A. (2008) Hominid Cave at Thomas Quarry I (Casablanca, Morocco): recent findings and their context. Presented at the International Congress: The oldest human expansions in Eurasia - Favouring and limiting factors, Paris, France, November 26-28.
31. **Smith, T.M.** (2008) Life and death in juvenile hominins from the Middle Paleolithic. Presented at the 14th International Symposium on Dental Morphology, Greifswald, Germany, August 26-30.
30. **Smith, T.M.** & Reid, D.J. (2008) The temporal nature of periradicular bands (“*Striae Periradicales*”) on mammalian tooth roots. Presented at the 14th International Symposium on Dental Morphology, Greifswald, Germany, August 26-30.
29. **Smith, T.M.**, Harvati, K., Olejniczak, A.J., Reid, D.J., Hublin, J.-J. & Panagopoulou, E. (2008) Dental development and enamel thickness in the Neanderthal molar from Lakonis, Greece. Presented at the 77th Annual Meeting of the American Association of Physical Anthropologists, Columbus, Ohio, April 7-13. (*Am. J. phys. Anthropol. Suppl.* 46:197-198).
28. Reid, D.J., **Smith, T.M.** & Hublin, J.-J. (2008) Dental development and enamel thickness in northwestern African modern humans. Presented at the 77th Annual Meeting of the American Association of Physical Anthropologists, Columbus, Ohio, April 7-13. (*Am. J. phys. Anthropol. Suppl.* 46:179).
27. **Smith, T.M.**, Hublin, J.-J. & Tafforeau, P. (2008) Synchrotron investigations of fossil hominin dental structure and development. Presented at the Annual Meeting of the Paleoanthropology Society, Philadelphia, Pennsylvania, March 25-March 26. (*Paleoanthropology*: A30).
26. Olejniczak, A.J., **Smith, T.M.**, Glasmacher, U.A. & Hublin, J.-J. (2007) High-resolution microCT analysis of the Mauer mandible. Proceedings of the 7th Congress of the German Anthropological Association. Freiburg im Breisgau, Germany, September 11, 2007.
25. **Smith, T.M.** (2007) New approaches to understanding tooth development and life history in hominoid evolution. Plenary lecture presented at the 2nd Congress of the European Federation for Primatology, Prague, Czech Republic, September 3-7, 2007.
24. Hublin, J.J., Bailey, S., Olejniczak, A., **Smith, T.**, Verna, C., Sbihi-Alaoui, F.Z. & Zouak, M. (2007) Dental evidence from the Aterian human populations of Morocco. Presented at the conference: Modern Origins: A North African Perspective, Leipzig, Germany, August 30- September 1.
23. **Smith, T.M.**, Olejniczak, A.J., Reid, D.J., Guatelli-Steinberg, D., Hoffmann, A. & Hublin, J.-J. (2007) Le Moustier 1 dental development and enamel thickness. Presented at the International Congress of Vertebrate Morphology, Paris, France, July 16-July 21. (*J. Morph.* 268:1135-1136)
22. **Smith, T.M.**, Olejniczak, A.J., Reid, D.J., Hublin, J.-J., & Toussaint, M. (2007) Dental development, enamel thickness, and age at death in the Scladina Cave Belgian Neanderthal. Presented at the Annual Meeting of the Paleoanthropology Society, Philadelphia, Pennsylvania, March 27-March 28. (*Paleoanthropology*: A30)
21. Olejniczak, A.J., **Smith, T.M.**, Skinner, M.M., Grine, F.E., Feeney, R.N.M., Thackeray, J.F., & Hublin, J.-J. (2007) Molar tissue volumes and enamel thickness in South African fossil hominins. Presented at the Annual Meeting of the Paleoanthropology Society, Philadelphia, Pennsylvania, March 27-March 28. (*Paleoanthropology*: A21-22)

20. **Smith, T.M.** (2007) Molar crown development in wild orangutans. Presented at the 76th Annual Meeting of the American Association of Physical Anthropologists, Philadelphia, Pennsylvania, March 29-April 1. (*Am. J. phys. Anthropol. Suppl.* 44:222)
19. Olejniczak, A.J., **Smith, T.M.**, Wei, W., Potts, R., Ciochon, R., Kullmer, O., Schrenk, F. & Hublin, J.-J. (2007) Microtomographic investigation of enamel thickness and enamel-dentine junction shape in *Gigantopithecus blacki*. Presented at the 76th Annual Meeting of the American Association of Physical Anthropologists, Philadelphia, Pennsylvania, March 29-April 1. (Erroneously omitted from *Am. J. phys. Anthropol. Suppl.* 44)
18. Skinner, M.M., Olejniczak, A.J., Rosas, A., **Smith, T.M.**, Wood, B.A. & Hublin, J.-J. (2007) Dentine crown expression of discrete dental traits on extant hominoid and fossil hominin lower molars. Presented at the 76th Annual Meeting of the American Association of Physical Anthropologists, Philadelphia, Pennsylvania, March 29-April 1. (*Am. J. phys. Anthropol. Suppl.* 44:220) Won Albert A. Dahlberg Student Prize.
17. **Smith, T.M.**, Tafforeau, P., Reid, D.J., Boutakiout, M. & Hublin, J.-J. (2006) Crown formation and age at death in the juvenile hominin from Jebel Irhoud, Morocco. Presented at the Dental Tissues Workshop: 2D and 3D Insights into Human Evolution, Leipzig, Germany, September 20-23.
16. **Smith, T.M.**, Reid, D.J., Olejniczak, A.J., Bailey, S., Glantz, M., Viola, B. & Hublin, J.-J. (2006) Dental development and age at death in a Middle Paleolithic juvenile hominin from Obi-Rakhmat Grotto, Uzbekistan. Presented at the 150 Years of Neanderthal Discoveries International Congress, Bonn, Germany, July 21-26. (*Terra Nostra* 2:136.)
15. Olejniczak, A.J., **Smith, T.M.**, Macchiarelli, R., Mazurier, A., Bondioli, L., Rosas, A., Fortea, J., de la Rasilla, M., García-Taberner, A., Skinner, M.M. & Hublin, J.-J. (2006) Enamel volume and thickness in Neanderthal molars: a microtomographic investigation. Presented at the 150 Years of Neanderthal Discoveries International Congress, Bonn, Germany, July 21-26. (*Terra Nostra* 2:128-129.)
14. **Smith, T.M.**, Olejniczak, A.J., Tafforeau, P., Grine, F.E. & Hublin, J.-J. (2006) High resolution microtomography of Middle Stone Age human molars from South Africa. Presented at the 75th Annual Meeting of the American Association of Physical Anthropologists, Anchorage, Alaska, March 8-11. (*Am. J. phys. Anthropol. Suppl.* 42:140-141.)
13. Olejniczak, A.J., **Smith, T.M.**, Tafforeau, P., Temming, H. & Hublin, J.-J. (2006) A comparison of microtomographic systems for the analysis of dental tissues. Presented at the 75th Annual Meeting of the American Association of Physical Anthropologists, Anchorage, Alaska, March 8-11. (*Am. J. phys. Anthropol. Suppl.* 42:167.)
12. **Smith, T.M.**, Olejniczak, A.J., Tafforeau, P. & Hublin, J.-J. (2005) New approaches to understanding enamel thickness and development in human and primate evolution. Presented at the International Symposium on Migration and Evolution of Early Humans in the Old World, Baise, Guangxi Zhuang Autonomous Region, China, December 5-9.
11. **Smith, T.M.** (2005) New evidence for the periodicity of incremental structures in enamel. Presented at the 13th International Dental Symposium on Dental Morphology, Lodz, Poland, August 24-27.
10. **Smith, T.M.**, Reid, D.J., Dean, M.C., Olejniczak, A.J., Ferrell, R.J. & Martin, L.B. (2005) New perspectives on chimpanzee and human dental development. Presented at the Max Planck Institute for Evolutionary Anthropology Dental Paleoanthropology Conference, Leipzig, Germany, May 26-28.
9. **Smith, T.M.**, Olejniczak, A.J., Martin, L.B., Reid, D.J. & Dean, M.C. (2005) Molar cusp formation in common chimpanzees (*Pan troglodytes*). Presented at the 74th Annual Meeting of the American Association of Physical Anthropologists, Milwaukee, Wisconsin, April 6-9. (*Am. J. phys. Anthropol. Suppl.* 40:198.)
8. **Smith, T.M.**, Benes, S. & Martin, L.B. (2004) Relative enamel thickness in a large sample of *Pan* and *Pongo* molars. Presented at the 73rd Annual Meeting of the American Association of Physical Anthropologists, Tampa, FL, April 14-17. (*Am. J. phys. Anthropol. Suppl.* 38:185.)

7. **Smith, T.M.**, Dean, M.C., Kelley, J., Martin, L.B., Reid, D.J. & Schwartz, G.T. (2003) Molar crown formation in Miocene hominoids: a preliminary synthesis. Presented at the 72nd Annual Meeting of the American Association of Physical Anthropologists, Tempe, AZ, April 23-26. (*Am. J. phys. Anthropol.* Suppl. 36:196.)
6. Johnson, S.E., Irwin, M.T., Wright, P.C., Arrigo-Nelson, S., Grassi, C., Samonds, K.E. & **Smith, T.M.** (2003) Natural and anthropomorphic influences on lemur population structure in southeastern Madagascar. Presented at the 72nd Annual Meeting of the American Association of Physical Anthropologists, Tempe, AZ, April 23-26. (*Am. J. phys. Anthropol.* Suppl. 36:123.)
5. **Smith, T.M.**, Martin, L.B. & Sirianni, J.E. (2002) Incremental features of pre- and postnatal enamel microstructure in pigtailed macaques (*Macaca nemestrina*). Presented at the 71st Annual Meeting of the American Association of Physical Anthropologists, Buffalo, NY, April 10-14. (*Am. J. phys. Anthropol.* Suppl. 34:144.)
4. **Smith, T.M.**, Martin, L.B., de Bonis, L. & Koufos, G.D. (2001) Dental development in *Graecopithecus freybergi* (*Ouranopithecus macedoniensis*). Presented at the 70th Annual Meeting of the American Association of Physical Anthropologists, Kansas City, Missouri, March 28-31. (*Am. J. phys. Anthropol.* Suppl. 32:140.)
3. **Smith, T.M.** & Martin, L.B. (2000) A re-evaluation of enamel thickness and development in *Afropithecus turkanensis*. Presented at the 69th Annual Meeting of the American Association of Physical Anthropologists, San Antonio, Texas, April 10-15. (*Am. J. phys. Anthropol.* Suppl. 30:285-286.)
2. **Smith, T.M.**, Iovine, T., Anemone, R.L. & Nachman, B. (1997) Vertebrate paleontology of the great divide basin, SW Wyoming: field and lab studies. Presented at the 37th Annual Meeting of the Northeastern Anthropological Association, Quebec, Canada, April 11-13.
1. **Smith, T.M.** (1997) Scanning electron microscope investigations of fossil and living mammalian dentitions. Presented at the Tri-Beta Biological Honors Society Regional Meetings, Geneseo, NY, March 15.

Workshops and Symposia Organized & Chaired

- * Developmental Variation of the Primate Dentition: A Symposium in Honor of Donald J. Reid (Co-chair with Debbie Guatelli-Steinberg), American Association of Physical Anthropologists' Annual Meeting, Minneapolis, MN, April, 2011.
- * Dental Tissues Workshop: 2D and 3D Insights into Human Evolution, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany, September 20-23, 2006. (Co-chair with J.-J. Hublin)
Website: http://www.eva.mpg.de/evolution/dental_workshop/index.htm
- * Stony Brook University Women's Leadership Symposium, Stony Brook University, NY, April 25 & 27, 2002.

Invited Addresses and Lectures

- * Keynote Address, Bone & Teeth Gordon Research Conference, Les Diablerets, Switzerland, 2011.
- * Seminar for Interdisciplinary Biological and Biomedical Science, University of New Mexico, Albuquerque, 2011.
- * Organismic & Evolutionary Biology Seminar Series, University of Massachusetts at Amherst, Amherst, MA, 2011.
- * California Academy of Sciences Bioforum, San Francisco, CA, 2010.
http://fora.tv/2010/11/06/Tanya_M_Smith_A_Bite_Through_Time
- * Physical Anthropology Seminar Series, University of Massachusetts at Amherst, Amherst, MA, 2010.
- * Harvard Natural History Museum, Cambridge, USA, 2010.
- * Paleontology Initiative Meeting, European Synchrotron Radiation Facility, Grenoble, France, 2009.
- * Plenary Address, General Congress of the French Physics Society, Paris, France, 2009.
- * Concord Field Station Seminar Series, Harvard University, Cambridge, USA, 2008.
- * School of Anatomical Sciences, University of the Witwatersrand, South Africa, 2008.
- * Keynote Address, Biological Physics at Large Facilities From Molecule to Cell, Grenoble, France, 2008.
- * Keynote Address, International Symposium on Dental Morphology, Greifswald, Germany, 2008.
- * Paleobiology Seminar Series, Stony Brook University, Stony Brook, NY, USA, 2008.
- * Human Origins Guest Lecture, Brandeis University, Waltham, MA, USA, 2008.

- * European Synchrotron Radiation Facility, Annual Users Meeting, Grenoble, France, 2008.
- * Biological Anthropology Seminar Series, Harvard University, Cambridge, USA, 2007.
- * Plenary Address, European Federation for Primatology, 2nd Congress, Prague, Czech Republic, 2007.
- * Research Symposium, Weizmann Institute, Rehovot, Israel, 2007.
- * Cafe Scientifique, Freiberg, Germany, 2007.
- * International Curators' Workshop, Max Planck Institute for Evolutionary Anthropology, Germany, 2007.
- * Leipzig School of Human Origins, Max Planck Institute for Evolutionary Anthropology, Germany, 2005.
- * Student Address for the University Doctoral Commencement Ceremony, Stony Brook University, 2005.
- * Distinguished Doctoral Students Awards Colloquium, Stony Brook University, 2005.
- * Institute for Human Genetics and Anthropology, University of Freiburg, Germany, 2005.
- * Keynote Address, President's Junior Academy Student Research Support Program, Stony Brook University, 2002.
- * Stony Brook University's Women in Science and Engineering High School Program, Stony Brook University, 2002.

Appointments

- * Assistant Professor, Department of Human Evolutionary Biology (new dept), Harvard University, 2009-present.
- * Assistant Professor, Department of Anthropology, Harvard University, 2008-2009.
- * Associated Scientist, Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, 2008-present.
- * Visiting Research Associate, Department of Anthropology, Brandeis University, 2007-2008.
- * Research Scientist (Assistant Professor Equivalent), Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, 2006-2008.
- * Post-doctoral Fellow, Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, 2004-2005.
- * Research Assistant to Dr. Lawrence Martin, Stony Brook University, 1999-2004.

Teaching and Mentoring Experience

- * HU, HEB 1420: Human Evolutionary Anatomy, Spring 2009, 2010, 2011
- * HU, HEB 1421: The Biology of Primate Dentitions, Spring & Fall 2009
- * HU, FS 44: Neanderthals and Human Evolutionary Theory, Fall 2009
- * SBU, WIS 187: Introduction to Research: Dental Anthropology (Instructor), 2000-2004.
- * SBU, ANP 300: Human Anatomy (Laboratory Instructor), Fall 2003.
- * SBU, HBA 521: Gross Anatomy (Substitute Laboratory Instructor & Tutor), Fall 2003.
- * SBU, HBA 531: The Body (Laboratory Instructor), Fall 2002.
- * SBU, Mentor for the Women in Science and Engineering W:W Mentor Program, 2000-2002.
- * SBU, BIO 151: Organisms to Ecosystems Laboratory (Laboratory Instructor), Fall 1998.
- * SUNY Geneseo, ANTH 203: Human Osteology (Teaching Assistant), Fall 1997.
- * SUNY Geneseo, ANTH 105: Introduction to Physical Anthropology (Teaching Assistant), Fall 1997.
- * SUNY Geneseo, BIO 104: Human Biology Laboratory (Laboratory Instructor), Spring 1997.

Student Supervision

- * Undergraduate Student Thesis: John Zermeno (Primary Advisor)
- * Graduate Student Thesis Committees: Katherine Duncan-Zink, Daniel Green (Primary Advisor)

Journals, Books, and Grants Refereed

American Journal of Human Biology, American Journal of Physical Anthropology, Archives of Oral Biology, Biological Journal of the Linnean Society, Current Anthropology, Evolutionary Anthropology, Folia Primatologica, Geochimica et Cosmochimica Acta, Graduate Women in Science Fellowships, Journal of Anatomy, Journal of Human Evolution, Journal of Morphology, L.S.B. Leakey Foundation, PLoS Genetics, PLoS ONE, Proceedings of the National Academy of Sciences USA, National Science Foundation, Springer's Vertebrate Paleobiology and Paleoanthropology Edited Volume Series, South African Journal of Science

Institutional Service

- * HU, Undergraduate Research Fair Presentation, 2010.
- * HU, Invited Speaker, Undergraduate Women's Leadership Project, 2010.
- * HU, HEB Faculty Search Committee Member, 2009-2010.
- * HU, Consultant for FAS Senior Adviser on Faculty Development and Diversity, 2009-2010.
- * HU, Anthropology Department Speaker Series Co-Chair, 2008-2010.
- * HU, Consultant for Harvard Museum of Natural History's Evolution Exhibit, 2009.
- * HU, Career Panel Participant, Science Mentor Program, 2009.
- * HU, Pre-Dental Society Faculty Advisor, 2008-present.
- * HU, Anthropology Department Graduate Curriculum Review Committee, 2008-2009.
- * MPI-EVA, Institute Review Preparation Committee, 2006-2008.
- * MPI-EVA, Coordinator, Dental Tissues Working Group, 2005-2008.
- * MPI-EVA, Research Staff Publication Evaluation Committee, 2005-2006.
- * SBU, Anthropology Department Senator, Graduate Student Organization, 1999-2001, 2002-2004.
- * SBU Organizer and Chair of the Stony Brook University Women's Leadership Symposium, 2001-2002.
- * SBU, Vice President, Graduate Student Organization, 2001-2002.
- * SBU, Executive Committee, University (Faculty) Senate, 2001-2002.
- * SBU, Speaker of the Senate, Graduate Student Organization, 2001.

Professional Memberships

American Association of Physical Anthropologists, Dental Anthropology Association, International Society of Vertebrate Morphologists, Paleoanthropology Society

Current Research

- * Evolutionary developmental biology of the human dentition. This project examines the limited fossil record of dental remains from middle and late Pleistocene hominids in North and South Africa, as well as in Western and Eastern Europe. Primarily non-destructive techniques are being applied to compare dental development and tooth structure in later representatives of *Homo* with modern populations. This will yield insight into the origins of modern human life history, as well as more refined methods of assessing hominid taxonomy.
- * Evolutionary developmental biology of Asian great apes. This project is an analysis of dental structure and development as revealed by high resolution computed tomography and dental microstructure in large-bodied extant and extinct Asian apes. Given that there is currently little known about dental development as it relates to geographic and temporal variation, these results will be of particular value for the interpretation of hominid data, as well as for studies of the effects of environmental change that are invaluable for conservation biologists.

Thesis Research

Incremental Development of Primate Dental Enamel (2004, PhD Thesis, Stony Brook University) This NSF-funded project involved an experimental approach to examine the periodicity of incremental features in developing macaque dentitions, and the accuracy of histological assessments of crown formation time and age at death. In addition, the variation of incremental features was examined in a large sample of chimpanzee molar teeth. Variation was assessed within and between individuals, which permitted greater insight into the developmental variation of living and fossil apes and humans. Available on-line at: www.paleoanthro.org/dissertation_list.htm

Additional Research in Vertebrate Paleontology

- * A study of the enamel thickness and dental development of Miocene hominoids, including *Afropithecus turkanensis* (17-18 mya), *Graecopithecus freybergi* (9-9.5 mya), *Sivapithecus sivalensis* (8.5-9.5 mya) and *Griphopithecus* sp. (~14 mya). Co-PI Lawrence Martin. 1998- present.
- * Member of the SUNY at Geneseo's Great Divide Basin Project in southwestern Wyoming. Involved prospecting for new mammalian fossil localities, collecting fossils and quarrying productive localities discovered during

previous field seasons. Geological work involved measuring stratigraphic sections in order to correlate localities. Principal Investigator: Robert Anemone. July 1996 & July 1997.

Additional Research in Primatology

- * A census of lemurs in three eastern rainforest sites in Madagascar, with co-PI Mitch Irwin (Stony Brook University). Faculty Advisor: Patricia C. Wright. May- August 1999.
- * A study of the behavior of mantled howler monkey infants (*Alouatta palliata*) in Nicaragua and Costa Rica. Faculty Advisors: Paul Garber and Barbara Welker. December 1997- April 1998.
- * A study of the feeding ecology of mantled howler monkeys (*Alouatta palliata*) in Costa Rica. Principal Investigator: Barbara Welker. January- April 1998.

Selected Media Coverage and Interviews

- * Earthsky Procast "Neanderthal teeth reveal short childhood," November 29, 2010
- * *Nature* Research Highlights article: "Neanderthals matured fast," vol. 468, 2010, p. 478.
- * *NPR All Things Considered*: "Growing slowly, humans outsmarted Neanderthals," aired November 16, 2010.
- * *BBC The World Tonight* International Radio Program Featured Scientist, aired November 16, 2010.
- * *ScienceNOW* Daily News article by Ann Gibbons, November 15, 2010.
- * Consultant for *Almost Chimpanzee: Searching for What Makes Us Human, in Rainforests, Labs, Sanctuaries, and Zoos* by Jon Cohen, 2010.
- * Consultant for *PBS NOVA Human Spark* series, aired January 6, 2010, <http://www.pbs.org/wnet/humanspark/>
- * Consultant for *Discovery* Magazine article The Secret Life of Fossils, July/August issue 2009.
- * Consultant for *Slate* Magazine article on aging the Somali pirate, April 2009.
- * Consultant for *PBS NOVA Becoming Human* series, aired November 17, 2009, <http://www.pbs.org/wgbh/nova/beta/evolution/becoming-human-part-3.html>
- * *BBC Discovery* International Radio Program Featured Scientist, aired March 11, 2009.
- * *Science* article: "The birth of childhood," vol. 322, 2008, p. 1040-1043.
- * Consultant for *National Geographic* magazine feature article "Neanderthals," October issue, 2008,
- * San Francisco Exploratorium Museum Featured Scientist for "Evidence: How do we know what we know?" Summer 2008, <http://www.exploratorium.edu/evidence>
- * *Nederlandse Geologische Vereniging* (Journal of the Dutch Geological Association) article: "Neanderthaler groeide sneller op dan huidige mens," vol. 144, 2008, article 881.
- * *Max Planck Society Yearly Report 2007*: "How long does a child remain a child?," p. 10.
- * *Science* article: "Dental evidence suggests Neandertals matured faster than we do," vol. 318, 2007, p. 1547.
- * *Science* article: "Paleontologists get X-ray vision," vol. 318, 2007, p. 1546-1547.
- * *Max Planck Research* article: "How long does a child remain a child," vol. 3, 2007, p. 10.
- * *France 2 & 3* (French National and Local TV) Featured Scientist for news reports from the European Synchrotron Radiation Facility, Grenoble, France October 2 & 20, 2007.
- * *WDR* (German TV) Featured Scientist for the documentary "Auf der Spur der Neandertal" (On the trail of the Neanderthal), October 2, 2007.
- * European Virtual Anthropology Network Featured Contributor for "Human Kind in 3D: In the Focus of Digital Techniques," traveling museum exhibit in Germany, Austria, and France, 2007-2008.
- * *Smithsonian* article: Very early childhood, May 2007, p. 14.
- * *Radio Mephisto* (Leipzig, Germany Public Radio Talkshow) Featured Scientist, aired March 20, 2007
- * *Science News* article: "Ancient slow growth" Bruce Bower, March 17, 2007, vol. 171, pp. 163-164.
- * *BBC Leading Edge & BBC Science in Action* International Radio Programs, Featured Scientist "The Evolution of Childhood, aired March 15 & 16, 2007
- * *Voice of America* interview with Jessica Berman, March 15, 2007,
- * *National Geographic News* interview with Kelly Hearn, March 14, 2007, <http://news.nationalgeographic.com/news/2007/03/070314-first-humans.html>
- * *ScienceNOW* Daily News article by Ann Gibbons, March 12, 2007, <http://sciencenow.sciencemag.org/cgi/content/full/2007/312/1>
- * *The History Channel* Documentary Consultant, "Giganto: The Real King Kong," aired on December 15, 2005.
- * *Allgemeiner Rundfunk Deutschland* (General German Broadcast) Featured Scientist for Kulturreport aus Leipzig "Special: King Kong," aired on December 11, 2005.