

Campbell Rolian

Curriculum Vitae

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CURRENT POSITION

Postdoctoral Fellow, Department of Anatomy and Cell Biology,
Faculty of Medicine, University of Calgary, Canada.

EDUCATION

Harvard University	Ph.D. in Biological Anthropology	2008
Harvard University	A.M. in Biological Anthropology	2004
McGill University	B.Sc. First Class Honours in Biology	2000

TEACHING APPOINTMENTS

- Visiting Lecturer, Bugando University College of Health Sciences, Mwanza, Tanzania
- *Human Gross Anatomy and Histology* 2009
- Head Teaching Fellow, Harvard University
- *Human Anatomy* 2005
- Teaching Fellow, Harvard University
 - *Human Structure* 2006
 - *Advanced Structure and Physiology of the Vertebrates* 2006
 - *Introduction to Human Evolution* 2005
 - *Human Anatomy* 2004

RESEARCH GRANTS AND FELLOWSHIPS

- CIHR Training Grant, Alberta Children's Hospital (C\$ 40'000/yr)
Investigating the developmental genetic determinants of leg bone length through selective breeding in mice 2009 - 2011
- University of Calgary International Fellowship (C\$ 6'500)
Craniofacial Variation in Children with Cleft Lip/Palate in Tanzania 2009 - 2010
- Harvard University Dissertation Completion Fellowship (US\$ 19'700) 2007 - 2008
- L.S.B. Leakey Foundation Research Grant (#2452, US\$ 6'458)
Bipedalism and the Evolution of Short Lateral Toes in Humans 2007 - 2008
- NSF Doctoral Dissertation Improvement Grant (NSF-0647624, US\$ 10'176)
Morphological Integration in Primate Hands and Feet 2007 - 2008
- NSERC Postgraduate Scholarship D (Doctoral), (Award : \$CDN 21'000/yr) 2005 - 2007
- Chapman Fellowship, Harvard University, (Award : \$USD 10'000) 2006
- NSERC Postgraduate Scholarship M (Masters), (Award : \$CDN 17'500/yr) 2003 - 2005

AWARDS AND HONOURS

- S.L. Washburn Prize for outstanding student presentation, 76th Annual Meeting of the American Association of Physical Anthropologists, Philadelphia 2007
- B.K.Hall-CMD Award for best student presentation, 45th Annual Meeting of the Canadian Society of Zoologists, Edmonton 2006
- Certificate of Distinction in Teaching, Harvard University (5 times) 2004-2007
- Fantham Memorial Prize in Biology, McGill University 2000
- NSERC Undergraduate Summer Research Award, McGill University 1999, 2000
- Hugh Brock Entrance Scholarship, McGill University 1996-2000
- Dean's Honour List, McGill University 1996-2000

PUBLICATIONS

1. **Rolian, C.** 2009. "Integration and evolvability in primate hands and feet". *Evolutionary Biology* **36**: 100-117
2. **Rolian, C.** And Willmore, K.W. 2009. 50 years of morphological integration: patterns and processes of integration in biological anthropology. *Evolutionary Biology* **36**: 1-4.
3. **Rolian, C.** Lieberman, D., Hamill, J., Scott, J. and Werbel, W. 2009. "Walking, running and the evolution of short toes in humans". *Journal of Experimental Biology* **215**: 713-721
4. **Rolian, C.** 2008. "Developmental basis of limb length in rodents: evidence for multiple divisions of labor in mechanisms of endochondral bone growth". *Evolution & Development* **10**: 15-28.
5. Carroll, R. L., Boisvert, C., Bolt, J., Green, D. M., Philip, N., **Rolian, C.**, Schoch, R. and Tarenko, A. 2004. "Changing patterns of ontogeny from osteolepiform fish through Permian tetrapods as a guide to the early evolution of land vertebrates". In: *Recent Advances in the Origin and Early Radiation of Vertebrates*. G. Arratia, R. Cloutier, and M.V. H. Wilson (eds). Verlag Dr. F. Pfeil, Munchen. Pp. 321-343

MANUSCRIPTS IN REVIEW

6. **Rolian, C.**, Lieberman, D. and Hallgrímsson, B. "The co-evolution of human hands and feet" (submitted to *Evolution*, MS# 09-667)
7. Pontzer, H., **Rolian, C.**, Rightmire, G.P., Lordkipanidze, D., Jashashvili, T., Zollikofer, C. and Ponce de Leon, M. "Locomotor anatomy and biomechanics of the Dmanisi hominids" (submitted to *Journal of Human Evolution*, MS# B-018)

INVITED TALKS

- 2008 "Morphological integration and the evolution of human hands and feet" *University of Connecticut, Department of Anthropology.*
- 2008 "Morphological integration and the evolution of human hands and feet" *University of Minnesota, Department of Anthropology.*
- 2008 "Morphological integration and the evolution of human hands and feet" *University of Texas at Austin, Department of Anthropology.*
- 2006 "Going out on a limb: morphological integration in primate hands and feet" *10th Annual Anthropology Day, Harvard University.*

SELECTED ABSTRACTS (* denotes podium presentation)

- Rolian, C.**, Lieberman, D.E. and Hallgrímsson, B. 2009*. "Did human fingers and toes co-evolve?". *To be presented at the Annual Meeting of the Society for Integrative and Comparative Biology, Seattle, Jan. 3-7 2010.*
- Jamniczky, H.*; Boughner, J.; Gonzalez, P.; Parsons, T.; Powell, C.; **Rolian, C.**; Schmidt, E.; Bookstein, F.; Hallgrímsson, B. "Mapping the Epigenetic Landscape: Rediscovering Waddington in the Post-Genomic Age". *To be presented at the Annual Meeting of the Society for Integrative and Comparative Biology, Seattle, Jan. 3-7 2010*
- Nelson, E., Cashmore, L. and **Rolian, C.** 2009. "Predicting the social systems of extinct hominids using digit ratios (2D:4D)". *Journal of Vertebrate Paleontology*, **29(3)**:155
- Rolian, C.** 2008*: "Morphological integration and the role of pleiotropy in the evolution of primate hands and feet". *American Journal of Physical Anthropology*. **Suppl. 46**:182
- Rolian, C.** 2007*: "Producing phenotypic diversity by tinkering with growth plates: a case study in rodents" *8th International Congress of Vertebrate Morphology*
- Rolian, C.**, Lieberman, D.E., Scott, J.W. 2007*: "Why are our toes so tiny? Walking, running and the evolution of a short forefoot in the genus *Homo*" *American Journal of Physical Anthropology* **Suppl. 44**: 202
- Rolian, C.**, Lieberman, D.E., Scott, J.W. 2007*: "Why are our toes so tiny? Walking, running and the evolution of a short forefoot in the genus *Homo*" *Integrative and Comparative Biology* **46(1)**: e120
- Rolian, C.** 2006*: "Comparative growth plate kinetics in rodents: insights into the evolution and development of limb length allometry" *American Journal of Physical Anthropology* **Suppl. 42**: 154
- Rolian, C.** 2005*: "Comparative growth plate kinetics in rodents". *Integrative and Comparative Biology* **45(6)**: 1064
- Rolian, C.** 2004: "Biomechanical model of the index finger during simulated hardhammer percussion". *American Journal of Physical Anthropology* **Suppl. 38**: 168-169

PROFESSIONAL SERVICE

- Guest editor for: *Evolutionary Biology*
- Reviewer for: *Developmental Dynamics, Evolution, Evolutionary Biology, Journal of Anatomy, Journal of Human Biology, Journal of Human Evolution*
- Co-organizer: "Patterns and processes of morphological integration in primate and human evolution". Symposium held at the 77th annual meeting of the American Association of Physical Anthropologists, Columbus, Ohio.
- Co-organizer: 2006 New England Biological Anthropology Symposium

PROFESSIONAL MEMBERSHIPS

- American Association of Physical Anthropology
- Society for Integrative and Comparative Biology
- Canadian Association of Physical Anthropology
- Canadian Society of Zoologists

SCIENCE IN THE COMMUNITY

- Research on the evolution of the human foot featured on CBC Radio 1's science show *Quirks and Quarks* (May 2nd 2009), National Post, wired.com
- Instructor : Harvard Museum of Natural History - Workshop Series on Human Evolution (2006, 2007)
- Science Educator and Manager of Public Programs : Redpath Museum of Natural History, McGill University (2000-2002).

RESEARCH EXPERIENCE

Paleontological fieldwork

July-August 2003, July 2004, 2005: Excavations in Dmanisi, Republic of Georgia

Institutions visited for research

American Museum of Natural History (New York); Bayerische Staatssammlung (Munich); Cleveland Museum of Natural History; Harvard Museum of Comparative Zoology, Musée de l'Homme (Paris), National Museum of Natural History (Washington); Powell-Cotton Museum (Birchington, Kent); Dept. of Anthropology, University of Geneva; Dept. of Anthropology, University of Minnesota, Minneapolis; Dept. of Anthropology, University of Illinois - Urbana-Champaign; Laboratory for Primate Morphology and Genetics, University of Puerto Rico, San Juan; Dept. of Anthropology, University of Texas – Austin.

Laboratory experience

- Biomechanics (Qualisys 3D motion capture, Kistler and AMTI force plate, RSScan pressure plate data collection)
- Instrumentation for biomechanical applications (designed/built instrumented gloves and portable force plates for *in vivo* analysis of forces in the hand)
- Surface electromyography
- Histology
- μ CT imaging (Scanco vivaCT 40)
- 2D and 3D morphometrics
- Programming experience (Matlab)

LANGUAGES

English: native
French: native
German: fluent written and spoken

REFERENCES

Available upon request