## SHANNON C. McFARLIN

**Institutional Address:** 

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## **ACADEMIC POSITIONS**

2011-**Assistant Professor**, Department of Anthropology, The George Washington

University, Washington, D.C.

2008-2011 **Assistant Research Professor**, Department of Anthropology, The George

Washington University, Washington, D.C.

2007-2008 Postdoctoral Research Scientist, The Center for the Advanced Study of Hominid

Paleobiology, The George Washington University, Washington, D.C.

## **EDUCATION**

2006 **Ph.D.**, **Physical Anthropology**, The Graduate Center of the City University of New

York, New York, N.Y.

Dissertation Title: Ontogenetic Variation in Long Bone Microstructure in Catarrhines

and its Significance for Life History Research.

Dissertation advisor: Dr. Timothy G. Bromage, New York University College of

Dentistry.

2001 M.Phil., Physical Anthropology, The Graduate Center of the City University of New

York, New York, N.Y.

1996 **B.A., Anthropology** (*Magna cum Laude*), Minor in Biology, Georgia State University,

Atlanta, GA.

#### **EXTRAMURAL RESEARCH GRANTS**

### **Grants in Review**

In review The Leakey Foundation, General Research Grant

> **Project P.I.** 'Growth and life history in wild mountain and western gorillas. With Co-PI Felix Ndagijimana, Thomas Breuer, and Tara Stoinski. Submitted January 5,

2013.

Wenner Gren Foundation, Int'l Collaborative Research Grant In review

> **Project P.I.** 'Using field photogrammetry to investigate socioecological influences on postnatal growth in wild mountain and western gorillas. With Co-PI Felix Ndagijimana, Thomas Breuer, and Tara Stoinski. Submitted November 1, 2012.

### **Grants Funded**

2010 - 2013 National Science Foundation, Physical Anthropology \$354,070 Project P.I. 'Mineralized tissue research on the life history of Virunga mountain gorillas.' With Co-PI T.G. Bromage and Senior Personnel A. Mudakikwa, K. Fawcett, M. Cranfield, T. Disotell. June 1, 2010 – Dec. 2013.

National Science Foundation, Physical Anthropology
 Project P.I. 'Skeletal Preservation of Virunga mountain gorillas.' With Co-PI T.G.
 Bromage and Senior Personnel A. Mudakikwa, A. Lilly, M. Cranfield, T. Disotell, D.
 Hunt, C. Kanimba Misago, S. Nawrocki. May 1, 2009 – April 30, 2013.

2008 - 2010 **Leakey Foundation \$20,000 Project P.I.** 'Mineralized tissue development and life history of Virunga mountain gorillas.' With Major Participants: T.G. Bromage, M. Cranfield, D. Hunt, A. Lilly, A. Mudakikwa. June 16, 2008 – Nov. 30, 2010.

2008 - 2009 National Geographic Society \$29,204
Major Participant. 'Dian Fossey Gorilla Skeletal Preservation and Life History'. T.G.
Bromage, Project PI. (NGS #8486-08, period: 7/15/08-7/14/10)

2002 – 2004 National Science Foundation, Physical Anthropology Project Co-P.I. 'Doctoral Dissertation Improvement: A comparative study of catarrhine bone microstructure and life history. T.G. Bromage, Project PI.

2002 – 2003 **Leakey Foundation \$6,462 Project P.I.** 'A comparative study of catarrhine bone microstructure and life history.'

### **Unfunded Grant Submissions**

2012 National Geographic Society - Full Proposal

**Project P.I.** 'Primate Skeletal Preservation and Research Collaboration: Integrative research on life histories of great apes and baboons from Gombe Stream Research Center, Karisoke Research Center and Amboseli National Park'. With Collivestigators. (Funding requested = \$21,458)

2008, Jan. National Science Foundation, Physical Anthropology
Project P.I. 'Skeletal preservation, mineralized tissue biology and life history of
Virunga mountain gorillas'. With Co-P.I. T.G. Bromage, and Senior Personnel M.
Cranfield, D. Hunt, A. Lilly, T. Mudakikwa, A. Ndacyayisenga. (Total funding
requested = \$404,007).

### **INTERNAL RESEARCH GRANTS**

2011 - 2013 **GW'S Center and Institute Facilitating Fund** 'Center for the Advanced Study Of Hominid Paleobiology (CASHP): The Great Ape and Baboon Skeletal Life History Project'. July 1, 2011 – June 30, 2013.

### **GRADUATE FELLOWSHIPS AND COMPETITIVE AWARDS**

- 2002 2003 Distinguished Scholar Dissertation Award Dissertation Year Fellowship, Graduate Center of the City University of New York.
- 2002 2003 Graduate Student Fellowship, New York Consortium in Evolutionary Primatology.
- 1996 2000 Graduate Student Fellowship, New York Consortium in Evolutionary Primatology.
- 1996 2000 Robert E. Gilleece Fellowship, Graduate Center of the City University of New York.

### PEER-REVIEWED RESEARCH ARTICLES

- In press **McFarlin S.C.,** Barks S.K., Tocheri M.W., Bromage T.G., Fawcett K.A., Hof P.R., Mudakikwa A., Cranfield M.R., Sherwood C.C. Exceptionally early brain growth in Virunga mountain gorillas (*Gorilla beringei beringei*). *American Journal of Primatology*.
- Bromage T.G., Lacruz R.S., Hogg R., Goldman H.M., **McFarlin S.C.**, Warshaw J., Dirks W., Perez Ochoa A., Smolyar I., Boyde A. Lamellar bone is an incremental tissue reconciling enamel rhythms, body size, and organismal life history. *Calcified Tissue International* 84:388-404.
- Bromage T.G., Goldman H.M., **McFarlin S.C.**, Perez Ochoa A., Boyde A. Circularly polarized confocal scanning optical microscopy of a 3my *Australopithecus afarensis* femur. *Scanning* 31:1-10. \*Cover article.
- Goldman H.M., **McFarlin S.C.**, Cooper D.M.L., Thomas C.D.L., Clement J.G. Ontogenetic patterning of cortical bone microstructure and geometry at the human mid-shaft femur. *Anatomical Record* 292:48-64.
- McFarlin S.C., Terranova C.J., Zihlman A.L., Enlow D.H., Bromage T.G. Regional variability in secondary remodeling within long bone cortices of catarrhine primates: the influence of bone growth history. *Journal of Anatomy* 213(3):308-324.
- Bromage T.G., Goldman H.M., **McFarlin S.C.**, Warshaw J., Riggs C.M., Boyde A. Circularly polarized light standards for investigations of collagen fiber orientation in bone. *The Anatomical Record: The New Anatomist* 274B:157-168.

### **BOOK CHAPTERS**

- McFarlin S.C., Wineski L. The Cutting Edge: Experimental anatomy and the reconstruction of nineteenth-century dissection techniques. In (R.L. Blakely & J.M. Harrington, eds.) *Bones in the Basement: Postmortem Racism in Nineteenth-Century Medical Training.* Washington D.C.: Smithsonian Institution Press. Pp. 107-161.
- Terrell K.J., **McFarlin S.C.** Subsistence and Science: Faunal analysis of the Medical College of Georgia Site. In (R.L. Blakely & J.M. Harrington, eds.) *Bones in the Basement: Postmortem Racism in Nineteenth-Century Medical Training.* Washington D.C.: Smithsonian Institution Press. Pp. 81-106.

### **PUBLISHED ABSTRACTS**

- In press Kralick A., Glowacka H., Cranfield M.R., Stoinski T.S., Mudakikwa A., Bromage T.G., **McFarlin S.C.** A preliminary radiographic analysis of dental development in Virunga mountain gorillas (*Gorilla beringei beringei*) from Volcanoes National Park, Rwanda. *American Journal of Physical Anthropology*
- In press Burgess M. L., Ruff C.B., **McFarlin S.C.,** Mudakikwa A. Locomotor ontogeny and limb bone length and strength proportions in mountain and lowland gorillas. *American Journal of Physical Anthropology*
- In press Glowacka H., Catlett K.K., Schwartz G.T., Mudakikwa A., Bromage T.G., Cranfield M.R., Fawcett K.A., **McFarlin S.C**. Molar wear in a wild population of known-age mountain gorillas from Volcanoes National Park, Rwanda. *American Journal of Physical Anthropology*
- In press Rabey K.N., Green D.J., Begun D.R., Richmond B.G., **McFarlin S.C**. Activity type and level influence growth rate, remodeling rate and diaphyseal geometry of cortical bone. *American Journal of Physical Anthropology.*
- Murtough K.L., **McFarlin S.C.**, Eriksen A.B., Mudakikwa A., Tocheri M.W., Richmond B.G. Hand and foot proportions of the mountain gorilla, *Gorilla beringei beringei. American Journal of Physical Anthropology* 147, Supp. 54:221. (Poster presentation)
- Rabey K., Green D.J., **McFarlin S.C.,** Richmond B.G. What can muscle insertions tell us about activity during life? Functional anatomy and development of the deltoid tuberosity in wild-type mice. *American Journal of Physical Anthropology* 147, Supp. 54:242. (Podium talk)
- McFarlin S.C., Eriksen A., Bromage T.G., Fawcett K.A., Hunt D., Nawrocki S.P., Cranfield M.R., Mudakikwa A. Skeletal pathology in mountain gorillas (*Gorilla beringei beringei*) from Parc National des Volcans, Rwanda. *American Journal of Physical Anthropology* 144, Supp. 52:211. (Poster Presentation)
- Eriksen A., Nawrocki S.P., **McFarlin S.C.**, Bromage T.G., Fawcett K., Cranfield M.R., and Mudakikwa A. Evidence of perimortem trauma in free-ranging mountain gorillas (*Gorilla beringei beringei*) from Volcanoes National Park, Rwanda. *American Journal of Physical Anthropology*, Supp. 50: 101-102. (Poster Presentation)
- McFarlin S.C., Bromage T.G., Lilly A.A, Cranfield M.R., Nawrocki S.P., Eriksen A., Hunt D., Ndacyayisenga A., Kanimba Misago C., Mudakikwa A. Recovery and preservation of a mountain gorilla skeletal resource in Rwanda. *American Journal of Physical Anthropology*, Supp. 48: 187-188. (Poster Presentation)
- Bromage T.G., Warshaw J., Hogg R., LaCruz R., **McFarlin S.C.**, Goldman H.M., Smolyar I., Enlow D.H., Boyde A. Bone rhythms correspond to enamel periods and reflect life history. *Journal of Dental Research* 87(A):1283. (Poster Presentation)
- Goldman H.M., **McFarlin S.C.**, Cooper M.L., Thomas C.D., Clement J.G. Ontogenetic patterning of cortical bone microstructure and geometry. *Transactions of the Orthopaedic Research Society* Volume 33:0902. (Poster Presentation)

- McFarlin S.C., Warshaw J., Goldman H.M., Bromage T.G. Comparative bone microstructure and its significance: evidence from primates. *Journal of Morphology*, 268(12): 1106. (Oral Presentation)
- Goldman H.G., Cooper D.M.L., **McFarlin S.C.**, Rudo K.M., Thomas C.D.L., Clement J.G. Two and three dimensional analysis of cortical bone microstructure from the human juvenile mid-shaft femur. *American Journal of Physical Anthropology*, Supp. 44: 117. (Oral Presentation)
- McFarlin S.C., Terranova C.J., Zihlman A.L., Bromage T.G. Ontogenetic and regional variability in intracortical remodeling at the midshaft femur and humerus of *Chlorocebus aethiops, Hylobates lar* and *Pan troglodytes. American Journal of Physical Anthropology*, Supp. 44: 168. (Poster Presentation)
- McFarlin S.C., Zihlman A.L., Bromage T.G. Ontogenetic variation in bone microstructure of catarrhines and its relationship to life history. *American Journal of Physical Anthropology*, Supp. 40:152. (Poster Presentation)
- **McFarlin S.C.** Bone histology in catarrhine primates relates to aspects of life history. *Journal of Morphology* 260(3):311. (Poster Presentation)
- Bromage T.G., Hazel M.-A., **McFarlin S.C.**, Smolyar I., Wikelsi M.. A new perspective on lamellar bone and its potential for life history investigation in the paleontological record. *Journal of Vertebrate Paleontology.* 22 (Supp. 3):39A. (Poster Presentation)
- Bromage T.G., Chowdhury I.G., Ellis P., Ferrell R., Marshack A., **McFarlin S.**, Nuger R., O'Higgins P., Pardi W., Plummer T., Potts R., Tausch J., Warshaw J. Current research of the Analytical Microscopy and Imaging Center in Anthropology. *Scanning* 23(2):76-77. (Oral Presentation)
- McFarlin S.C., Erwin J.M., Hof P.R., Zihlman A.L., Bromage T.G. Comparative primate bone microstructure and life history. *Journal of Morphology* 248(3):260. (Poster Presentation)
- Goldman H.M., **McFarlin S.C.**, Warshaw J.S., Szalay F.S., Bromage T.G. Application of bone microstructural analysis to the comparative study of primate functional adaptation and life history. *American Journal of Physical Anthropology*, Supp. 30:160. (Poster Presentation)
- Warshaw J., **McFarlin S.C.**, Bromage T.G., Szalay F.S. Some bone microstructural variables in extant therians, and their relationship to life history, locomotion and phylogeny. *Journal of Vertebrate Paleontology* 20(3):76-77A. (Poster Presentation)

### **INVITED TALKS**

- McFarlin S.C. Mountain Gorilla Skeletal Preservation and Research in Rwanda. Smithsonian's Vertebrate Zoology Seminar Series. December 12, 2012
- McFarlin S.C. Out of the Mist and into the Light: Skeletal Preservation and Hard Tissue Research on Mountain Gorillas from Rwanda. Newcastle University, England School of Dental Sciences, Oral Biology Seminar Series. January 05, 2012.

Wild Primates. Smithsonian's Human Origins Program - Paleoanthropology Series. May 4, 2011
McFarlin S.C. The Mountain Gorilla Skeletal Project. Karisoke Research Center, Research Seminar Series. July 27, 2010
McFarlin S.C. Recovery and preservation of mountain gorilla skeletal resources in Rwanda. Kwita Izina gorilla conservation conference. Annual Kwita Izina event, Rwanda. Scheduled for June 17, 2009.
McFarlin S.C. Ontogenetic variability in primary bone microstructure of Old World monkeys and apes. Bone Seminar Series, New York Center for Biomedical Engineering at the City University of New York. May 15th 2007.
McFarlin S.C., Warshaw J. Comparative and ontogenetic investigations of bone

McFarlin S.C. Primate Skeletal Life Histories: Skeletal Preservation and Research on

- McFarlin S.C., Warshaw J. Comparative and ontogenetic investigations of bone microstructure in primates. Presented at the "Donald H. Enlow International Research Symposium: An Integrative Approach to Skeletal Biology". New York University College of Dentistry, New York. November 6-7, 2006.
- McFarlin S.C., Bromage T.G. Bone histological features and life history in catarrhines. Presented at the joint international symposium of C.O.E. 2 and S.A.G.A. 5, titled "Evolution of the Apes and the Origin of the Human Beings". Primate Research Institute, Kyoto University. (Poster and Oral Presentation)

### **TEACHING: UNIVERSITY**

## **GW Teaching**

2011

ANTH 1001	Introduction to Biological Anthropology
ANTH 3401	Human Functional Anatomy
ANTH 3411	Primatology
ANTH 3491	Evolution of Primate Life Histories
ANTH 6404	Evolution of Primate Life Histories (Graduate Seminar)
ANTH 6491	Introduction to Laboratory Techniques in Paleoanthropology

## **Prior Teaching**

2001	Adjunct Lecturer, Course Director of ANTHP 102 "Human Variation", Department of Anthropology, Hunter College, City University of New York.
2001	Teaching Assistant, ANTHP 895 "Laboratory Methods in Hard Tissue Biology", Department of Anthropology, Hunter College, City University of New York.
2000 – 2001	Adjunct Lecturer, Laboratory Instructor for ANTHP 102 "Human Variation Laboratory", Department of Anthropology, Hunter College, City University of New York.
1999	Adjunct Lecturer, Laboratory Instructor for ANTHP 101 "Human Evolution Laboratory", Department of Anthropology, Hunter College, City University of New York.

1998 – 1999 Adjunct Lecturer, Laboratory Instructor for SCI 101 and SCI 102 "Foundations of Science Laboratory", Department of Biology, Hunter College, City University of New York.

Teaching Assistant, Biology 141 "Introductory Biology", Department of Biology, Oxford College of Emory University.

### **TEACHING: MEDICAL SCHOOL**

2008	Adjunct Instructor for "Human Microscopic Anatomy" laboratory (ANAT 213), Department of Anatomy and Cell Biology, the George Washington University School of Medicine and Health Sciences, Washington, D.C.
2007-2009	Adjunct Instructor for "Gross Anatomy" laboratory (PT 710), Department of Physical Therapy, Marymount University, Arlington, VA.
2006-2008	Adjunct Instructor for "Gross Anatomy" laboratory (ANAT 210), Department of Anatomy and Cell Biology, the George Washington University School of Medicine and Health Sciences, Washington, D.C.
2005	Adjunct Instructor for the Microscopic Anatomy laboratory component of "Human Development and Structure", Department of Anatomy, Northeastern Ohio Universities College of Medicine, Rootstown.
2003	Adjunct Faculty for "Medical Gross Anatomy and Human Development" laboratory (BMED 322), Department of Cell Biology and Anatomical Sciences, Sophie Davis School of Biomedical Education, City College of New York, City University of New York.
2002	Adjunct Faculty for "Histology" laboratory (BIMD 714), Department of Anatomy and Cell Biology, Mount Sinai School of Medicine, New York.
1998	Teaching Assistant for "Human Morphology" laboratory (BIMD 704), Department of Anatomy and Cell Biology, Mount Sinai School of Medicine, New York.

## PRESS COVERAGE & PUBLIC UNDERSTANDING OF SCIENCE

## **Press Coverage**

"Exhuming Rwanda's Gorillas: Fossey's Legacy", National Public Radio, Special Series comprising 10 entries posted from July 27 – August 13, 2009. McFarlin was featured as Project Co-Leader in this series covering the 2009 field season of the collaborative Mountain Gorilla Skeletal Preservation and Research Project.

(http://www.npr.org/templates/story/story.php?storyId=106843731)

Entry titles: Why dig up mountain gorillas? (July 27); Timeline: The life and research of Dian Fossey (July 27); "Rwanda and a golden monkey" (July 28); "Poetry in Pathology: Deciphering the lives of gorillas" (July 29); "Bones the size of a pea" (July 30); "A public menace: driver ants" (August 3); "Meet Bosco, Dian Fossey's right hand man" (August 4); "Cleaning Bones: Messy, but somebody's gotta do it" (August 5); "Rwanda's mountain medicine" (August 6); "Wrap-up: Leaving the Virunga Mountains" (August 13).

- "UIndy researchers aid in African gorilla project", University of Indianapolis
  Communications, 04 June 2009. McFarlin was quoted in this article featuring results
  from the first field season of the collaborative Mountain Gorilla Skeletal Preservation
  and Research Project.
- 2009 "Expeditions: Reading Ape Bones" in *National Geographic Magazine*, March 2009 issue. Featured results from the first field season of the collaborative Mountain Gorilla Skeletal Preservation and Research Project.
- "ORTPN in a Mountain Gorilla Skeletal Preservation and Research Project", October 10, 2008. GW's involvement was featured in this article describing the outcome of the first field season of the collaborative Mountain Gorilla Skeletal Preservation and Research Project. (http://www.rwandatourism/mountaingorillaskeletal.htm)
- "National Geographic Society Awards Grant to NYU College of Dentistry to Study Endangered Gorillas" in Global Health Nexus, Winter 2009. GW's involvement was featured in this article describing the outcome of the first field season of the collaborative Mountain Gorilla Skeletal Preservation and Research Project.
- 2008 "Dian Fossey's Gorillas Exhumed for Investigation" in National Geographic News, 24
  September 2008. McFarlin was quoted in this article featuring results from the first field season of the collaborative Mountain Gorilla Skeletal Preservation and Research Project.

  (http://news.nationalgeographic.com/news/2008/09/080924-fossey-gorillamissions.html)

#### **Museum Exhibits**

Microscopy images images as part of my research have been displayed in museum exhibitions (organized by Drs. Timothy G. Bromage and Alejandro Perez-Ochoa) in both the United States and Spain, which explore the integration between art and science.

Most recently, these images were displayed in an exhibition entitled, "Oseos Cosmos: The Shapes of Time", showing at the Museo de Arte Contemporaneo Union Fenosa, La Caruña, Spain, February 1 – May 7, 2007.

### **STUDENT MENTORING & COMMITTEES**

### **Undergraduate Mentoring in Research**

- 2011-current Alexandra Kralick (S2011-current, laboratory research; F2011 Independent Research, 2 credits). Recipient of the Gamow Undergraduate Research Fellowship (summer 2012): A radiographic study of dental development in Virunga mountain gorillas from Rwanda.
- 2012 Cheyenne Lewis, B.S. program in Biological Anthropology. Principal Advisor for the Senior Thesis: *Examining the relationship of dorsal pubic pits in regards to sex and age.*

### **Graduate Student Mentoring (Principal Advisor)**

- 2012-present Kathryn McGrath, Ph.D. student, Hominid Paleobiology Doctoral Program, The George Washington University.
- 2010-2011 Kallista Bernal, Ph.D. student, Hominid Paleobiology Doctoral Program, The George Washington University. Co-advisor with Dr. Robin Bernstein.

### **Graduate Student Mentoring (Committee Member)**

- 2011-present Josef Stiegler, Ph.D. student, Department of Biology, The George Washington University
- 2010-2011 Kallista Bernal, MSc student, Hominid Paleobiology Doctoral Program, The George Washington University.
- 2010-present Habiba Chirchir, Ph.D. Candidate in Hominid Paleobiology, The George Washington University. Title: Why do humans have unusually low trabecular density? A comparative and experimental study on the factors influencing trabecular bone density.
- 2009-present Amandine Eriksen, M.S. program in Human Biology, University of Indianapolis. Thesis title: *Forensic Primatology: Taphonomy and Trauma in Virunga Mountain Gorillas (*Gorilla beringei beringei), *Rwanda*.

### Other Graduate Student Mentoring in the Lab

- 2012S Michael Kern, M.S. student in Anthropology, The George Washington University. *Laboratory techniques in hard tissue research.*
- 2012S Katherine Murtough, Ph.D. student in Hominid Paleobiology, The George Washington University. *Laboratory techniques in hard tissue research.*
- 2011-current Josef Stiegler, Ph.D. student in Biology The George Washington University. *Laboratory techniques in skeletal tissue research.*
- 2011-current Chrisandra Kufeldt, Ph.D. student in Hominid Paleobiology, The George Washington University. *Laboratory techniques in dental tissue research.*
- 2011-current Habiba Chirchir, Ph.D. student in Hominid Paleobiology, The George Washington University. *Ph.D. dissertation research:* Why do humans have unusually low trabecular density? A comparative and experimental study on the factors influencing trabecular bone density.
- 2010-current Karyne Rabey, Ph.D. Candidate, Department of Biological Anthropology, University of Toronto. (October 1 December 23, 2010, Spring-Summer 2012). Ph.D. dissertation research:

## **SELECT RESEARCH / FIELD EXPERIENCE AND PROJECTS**

2010-present Skeletal preservation of yellow baboons (*Papio cynocephalus*) from Amboseli National Park, in collaboration with the Amboseli Baboon Research Project, directed

by Drs. Susan Alberts (Duke University) and Jeanne Altmann (Princeton University). Activities have included excavation and recovery of buried baboon skeletal remains, training of local project personnel, and establishing protocols for future remains to ensure their long-term preservation. Planned research includes mineralized tissue investigations of life history and stress.

2006-present US-based Project Director, Collaborative Mountain Gorilla Skeletal Preservation and Life History Project. With Drs. Tony Mudakikwa (Rwanda Development Board -Tourism and Conservation; Project Co-Leader and Director of Rwanda-based efforts), Timothy G. Bromage (New York University College of Dentistry; Project Co-Leader), and other major participants from Dian Fossey Gorilla Fund International/Karisoke, Mountain Gorilla Veterinary Project, Musée National du Rwanda, Smithsonian's National Museum of Natural History, University of Indianapolis Archeology and Forensic Laboratory, and New York University's Molecular Primatology Lab. This is a multifaceted and collaborative effort, whose main goals are to: (1) assist RDB in the recovery and curation of skeletal remains from deceased mountain gorillas (dating from 1995-current), and provide training and help build local capacity for their long-term preservation and management as a resource for research and education in Rwanda; (2) conduct research on the life history and health of mountain gorillas through microscopic analyses of their skeletal tissues. Results of the first field season were recently featured in National Geographic News: http://news.nationalgeographic.com/news/2008/09/080924fossey-gorilla-missions.html

2006-2009

Collaborative research, directed by Haviva Goldman (Drexel University College of Medicine), on human bone growth and microscopy anatomy. This research seeks to establish the fundamental bone growth processes underlying the development of bone geometry and microscopic anatomy in the human skeleton, using light microscopy and three-dimensional microCT techniques, with an additional emphasis on determining the effects of urbanization and nutritional stress on patterns of human bone growth.

1998-2006

Graduate Student Researcher, Hard Tissue Research Unit, New York University College of Dentistry, directed by Dr. Timothy Bromage (New York University College of Dentistry, New York) and Dr. Frederick Szalay (1998-2002, currently at the University of New Mexico). Conducted research in the area of comparative mammalian (particularly primate) bone micro-structure.

1997

Field Research Assistant on the Hominid Corridor Research Project in the Karonga District, Malawi and Maputo, Mozambique. Directed by Dr. Timothy Bromage (New York University College of Dentistry, New York), Dr. Yusuf Juwayeyi (formerly of the Department of Antiquities, Lilongwe, Malawi), and Dr. Friedemann Schrenk (University of Frankfurt, Germany). Assisted in conducting paleontological investigations of late Pliocene hominin-bearing sediments.

1994-1996

Research Assistant, Department of Anthropology, Georgia State University. Medical College of Georgia (MCG) Bioarchaeology Project, directed by Dr. Robert L. Blakely. Responsibilities included identification of nearly 10,000 nineteenth-century human bones and bone fragments excavated from the basement of the MCG in Augusta. During later stages of the project, conducted an analysis of those human and nonhuman remains showing evidence of post-mortem dissection and surgical

practice, for the purpose of reconstructing  $19^{th}$  century medical school comparative anatomy and surgical training.

# **MEMBERSHIP IN PROFESSIONAL SOCIETIES** (past and present)

American Association of Physical Anthropologists International Society of Vertebrate Morphologists International Bone and Mineral Society