

MEMORANDUM

Date: March 3, 2015

To: Dr. Todd Randall
Acting Dean
Faculty of Science and Environmental Studies

From: Dr. David Law
Chair of Biology

Subject: **NEW INTERNAL ADJUNCT FACULTY:**
Dr. Matthew Tocheri, Department of Anthropology

Dr. Matthew Tocheri has applied for internal adjunct faculty status within the Department of Biology.

As an internal adjunct faculty member, Dr. Tocheri will:

- supervise or co-supervise graduate or undergraduate students
- contribute to other scholarly pursuits of the department
- facilitate the pursuit of independent research
- present a research seminar to the Department of Biology in September 2015

The Department of Biology recommends that Dr. Tocheri's application for internal adjunct faculty status be approved for the time period March 1, 2015 to June 30, 2019.

Please see attached documents.



David Law

DL:em
Attachments



Biology
t: (807) 343-8277 f: (807) 346-7796
e: dlaw@lakeheadu.ca

February 23, 2015

Re: Adjunct application of Matthew Tocheri

Dear colleagues:

Dr. Matthew Tocheri has applied for Adjunct Professor membership in the Department of Biology.

Matthew began his career at Lakehead in January 2015 as an Assistant Professor and Canada Research Chair (Tier II) in Human Origins in the Department of Anthropology. He received a PhD in 2007 in Anthropology and was affiliated with the Institute of Human Origins at Arizona State University in Tempe. He comes to Lakehead after seven years with the Human Origins program at the National Museum of Natural History at the Smithsonian Institution in Washington, DC. During his time there, in roles from pre-doctoral fellow to research assistant professor he mentored over 30 interns, undergraduate students and graduate students.

Matthew's research achievements are impressive. He has authored or co-authored 28 peer-reviewed publications in journals such as PNAS and the Journal of Human Evolution, as well as being first author on a 2007 Science publication on the wrist anatomy of *Homo floresiensis*. He has won four U.S. and Canadian awards for excellence in research and was elected Fellow of the AAAS in 2013. As PI or co-PI, he has obtained research funding totaling more than US\$1M from US agencies such as the NSF and the Leakey and Wenner-Gren Foundations and the Australian Research Council.

His research spans both the sciences and humanities in anthropology and field, lab and collections work. It focuses on both the evolution of humans and non-human primates through anatomical comparisons in the lab, and on determining temporal and physical locations that document the evolution of modern humans in Southeast Asia. He continues to do field work in Indonesia. There thus exist field and lab opportunities for students interested in pursuing biological anthropology work in human evolution as part of undergrad research or MSc Biology projects under his supervision. Matthew has indicated his desire to supervise graduate and undergraduate student research projects and contribute to teaching in Biology. I am hopeful that his presence at Lakehead will enhance our delivery of evolution-based courses and research opportunities for grad and undergrad students, and increase collaboration between faculty in the Departments of Anthropology and Biology. For these reasons, I enthusiastically support his application.

Sincerely,

A handwritten signature in cursive script that reads "David Law".

David Law
Associate Professor and Chair.



Department of Anthropology

t: (807) 343-8568 f: (807) 766-7117
mtocheri@lakeheadu.ca

January 28, 2015

To the Faculty of Lakehead University's Department of Biology,

Please consider my request to become an adjunct faculty member of your Department in order to facilitate my teaching and supervision of students enrolled in the Biology program. I am Canada Research Chair in Human Origins and Assistant Professor in Lakehead University's Department of Anthropology. I am an innovative and high-caliber researcher with an internationally-recognized record in Biological Anthropology. I have authored/co-authored 28 peer-reviewed publications and 58 conference presentations, received more than one million dollars in competitive grants and fellowships as principal investigator (PI) or co-PI, and have also given 21 invited lectures on three continents. Moreover, I have won four awards for excellence in research from the Smithsonian Institution, the Smithsonian's National Museum of Natural History, Lakehead University's Alumni Association, and the Canadian Association of Physical Anthropologists, and I was elected Fellow of the American Association for the Advancement of Science in 2013.

As summarized below, my research program is original, high-quality, innovative, and collaborative, and includes field, laboratory, and collections-based components. It also has a strong focus on educating and mentoring students, interns, and fellows, while also diffusing and disseminating knowledge to the scientific community and general public. The overall objective of my research program is to gain and promote broad knowledge of human and nonhuman primate biological evolution, as well as defining key time periods and geographical locations that help document the biological, cultural, and linguistic evolution of modern humans across Southeast Asia.

My academic degrees in Anthropology are from Lakehead University (HBA, 1999) and Arizona State University (MA, 2003; PhD, 2007). My doctoral dissertation focused on the evolution and functional morphology of the hominin wrist as it relates to the origins and spread of behaviours utilizing stone tool technologies. This work formed the comparative basis for my 2007 publication in *Science* on the wrist anatomy of *Homo floresiensis*, which has since been cited more than 100 times by scholars around the world. I have participated in fieldwork at multiple sites on the Indonesian island of Flores since 2008, including investigations of several sites within the Soa Basin, the oldest known hominin locality on Flores (~0.8 to 1 million years ago). Since 2010, I have co-lead excavations at the internationally recognized site of Liang Bua with researchers from the National Research Center for Archaeology in Indonesia. We will continue fieldwork at Liang Bua for several years to come, and we have also identified several new sites on Flores with test excavations planned in the near future.

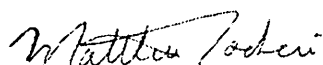
At Liang Bua, our on-going work is targeting important scientific questions surrounding the timing and nature of the extinction of *Homo floresiensis* and other endemic fauna during the late Pleistocene. This research also focuses on increasing knowledge about the subsequent arrival of modern humans and associated non-endemic fauna during the Holocene as well as the introduction and transition to farming on Flores. We have recovered important new skeletal and cultural remains of *Homo floresiensis* and *Homo sapiens*, as well as the distinctive fauna associated with each of these human species within the 100,000-year stratigraphic sequence. I

am currently overseeing laboratory research based on these new findings and those from previous excavations. These analyses will help elucidate the phylogenetic relationships, functional morphology, and locomotor and feeding behaviors of taxa recovered on Flores, as well as provide new reconstructions of the paleoecology and paleoenvironment. To aid in these research efforts, I have utilized my data management experience to generate and manage a relational database that now contains information on more than 350,000 faunal elements excavated from Liang Bua since 2001. Moreover, I am leading the first stable isotopic dietary study of small and large mammal remains from Liang Bua, the results of which show a dramatic shift to C₄ plant consumption that coincides with the first appearance of pottery in the sequence. These results will likely have an important impact on current interpretations of the origins and spread of domesticated plants and farming across Island Southeast Asia during the past 5,000 years.

I am recognized internationally as a leader in developing novel three-dimensional quantitative methods for the study of anatomical structure, particularly wrist and ankle bone morphology. My published work utilizing these methods to test specific hypotheses is widely cited by anthropologists, biologists, and other scientists. Currently, I am part of a collaborative team studying all available fossil human and great ape hand and foot remains. Analyses of fossil humans and great apes are central to issues relating to reconstructing the anatomy and locomotor repertoire of the last common ancestor of the *Pan-Homo* clade, which arguably represents one of the most important and longstanding questions in paleoanthropology. Our collaborative effort is one of the most comprehensive studies of the evolution and functional morphology of human/great ape hands and feet, and underscores the importance of collaboration and collections-based research in my research program.

During my previous position at the Smithsonian (2007-2014), I mentored more than 30 students, interns, and fellows. I look forward to the possibility of teaching, supervising, and providing research opportunities to interested students in your department. Thank you for considering my request.

Sincerely,



Matthew W. Tocheri, Ph.D.
Canada Research Chair in Human Origins

CURRICULUM VITAE

1. NAME: Matthew W. Tocheri

Department/School/Program: Anthropology

Present Rank/Title: Canada Research Chair in Human Origins / Assistant Professor

Date Tenured: Tenure-track

Date of Appointment: January 1, 2015

2. ACADEMIC & PROFESSIONAL QUALIFICATIONS:

Degree	University	Year	Thesis Title (if any)
PhD	Arizona State University	2007	Three-dimensional Riddles of the Radial Wrist: Derived Carpal and Carpometacarpal Joint Morphology in the Genus <i>Homo</i> and the Implications for Understanding the Evolution of Stone Tool-Related Behaviors in Hominins
MA	Arizona State University	2003	
HBA	Lakehead University	1999	

3. CHRONOLOGICAL ACCOUNT OF CAREER:

Appt Dates	Position	Employer
2015 - present	CRC in Human Origins	Lakehead University
2011-2014	Associate Research Professor	Center for the Advanced Study of Hominid Paleobiology, The George Washington University
2009 - 2014	Data Management Specialist	Human Origins Program, Department of Anthropology, National Museum of Natural History, Smithsonian Institution
2007 - 2009	Data Management Technician	Human Origins Program, Department of Anthropology, National Museum of Natural History, Smithsonian Institution
2005 - 2007	Pre and Postdoctoral Fellow	Human Origins Program, Department of Anthropology, National Museum of Natural History, Smithsonian Institution
2001 - 2005	Graduate Teaching/Research Associate	Department of Anthropology / Partnership for Research in Spatial Modeling, Arizona State University

4. HONOURS AND AWARDS:

Year	Award
2013	Fellow of the American Association for the Advancement of Science
2012	Lakehead University Young Alumni Award
2011	Smithsonian National Museum of Natural History Outreach Achievement Award
2008	Smithsonian Institution Secretary's Research Prize
2007	Smithsonian National Museum of Natural History Science Achievement Award

5. PUBLICATIONS:

a) Life-time summary:

Books	1
Papers in Refereed Journals	23
Book Chapters	4
Reports	0
Non-refereed Publications	1
Papers in Refereed Conference Proceedings.	1
Abstracts in Refereed Conference Proceedings	58
Papers/Abstracts in Non-refereed Conference Proceedings	0

b) Details for past seven (7) years: (include 2004/5 and on)

Books

Baker BJ, Dupras TL, **Tocheri MW** (2005) *The Osteology of Infants and Children*. Texas A & M Press, College Station, Texas.

Papers in Refereed Journals:

Almójica S, Orr CM, **Tocheri MW**, Patel BA, Jungers WL (in press). Exploring phylogenetic and functional signals in complex morphologies: The hamate of extant anthropoids as a test-case study. *Anatomical Record*.

Knigge RP, **Tocheri MW**, Orr CM, McNulty KP (in press) Three-dimensional geometric morphometric analysis of talar morphology in extant gorilla taxa from highland and lowland localities. *Anatomical Record*.

Dunn RH, **Tocheri MW**, Orr CM, Jungers WL (2014) Ecological divergence and talar morphology in gorillas. *American Journal of Physical Anthropology* 153:526–541.

Ward CV, **Tocheri MW**, Plavcan JM, Brown FH, Manthi FK (2013) Early Pleistocene third metacarpal from Kenya and the evolution of modern human-like hand morphology. *Proceedings of the National Academy of Sciences* 111:121–124.

Meijer HJM, Sutikna T, Wahyu Saptomo E, Rokus Due Awe, Wasisto S, James HF, Morwood MJ, **Tocheri, MW** (2013) Late Pleistocene-Holocene non-passerine avifauna of Liang Bua (Flores, Indonesia). *Journal of Vertebrate Paleontology* 33:877–894.

McFarlin SC, Barks SK, **Tocheri MW**, Massey JS, Eriksen AB, Fawcett KA, Hof PR, Bromage TG, Mudakikwa A, Cranfield MR, Sherwood CC (2013) Early brain growth cessation in wild Virunga mountain gorillas (*Gorilla beringei beringei*). *American Journal of Primatology* 75:450–463.

Orr CM, **Tocheri MW**, Burnett SE, Rokus Due Awe, Wayhu Saptomo E, Sutikna T, Jatmiko, Wasisto S, Morwood MJ, Jungers WL (2013) New wrist bones from *Homo floresiensis*. *Journal of Human Evolution* 64:109–129.

- Marzke MW, **Tocheri MW**, Marzke RF, Femiani JD (2012) Three-dimensional quantitative comparative analysis of trapeziometacarpal joint surface curvatures in human populations. *The Journal of Hand Surgery* 37:72–76.
- Kibii JM, Clarke RJ, **Tocheri MW** (2011) A hominin scaphoid from Sterkfontein, Member 4: Morphological description and first comparative phenetic 3D analyses. *Journal of Human Evolution* 61:510–517.
- Tocheri MW**, Solhan CR, Orr CM, Femiani J, Frohlich B, Groves CP, Harcourt-Smith WE, Richmond BG, Shoelson B, Jungers WL (2011) Ecological divergence and medial cuneiform morphology in gorillas. *Journal of Human Evolution* 60:171–184.
- DeSilva JM, Zipfel B, Van Arsdale AP, **Tocheri MW** (2010) The Olduvai Hominid 8 foot: Adult or subadult? *Journal of Human Evolution* 58: 418–423.
- Marzke MW, **Tocheri MW**, Steinberg B, Femiani JD, Reece SP, Linsheid RL, Orr CM, Marzke RF (2010) Comparative 3D quantitative analyses of trapeziometacarpal joint surface curvatures among living catarrhines and fossil hominins. *American Journal of Physical Anthropology* 141:38–51.
- Larson SG, Jungers WL, **Tocheri MW**, Orr CM, Morwood MJ, Sutikna T, Due Awe R, Djubiantono T (2009) Descriptions of the upper limb skeleton of *Homo floresiensis*. *Journal of Human Evolution* 57: 555–570.
- Jungers WL, Harcourt-Smith WEH, Wunderlich RE, **Tocheri MW**, Larson SG, Sutikna T, Awe Due R, Morwood MJ (2009) The foot of *Homo floresiensis*. *Nature* 459: 81–84.
- Tocheri MW**, Orr CM, Jacofsky MC, Marzke MW (2008) The evolutionary history of the hominin hand since the last common ancestor of *Pan* and *Homo*. *Journal of Anatomy* 212: 544–562.

Book Chapters:

- Wheeler SM, Williams L, Dupras TL, **Tocheri M**, Molto JE (2011) Childhood in Roman Egypt : Bioarchaeology of the Kellis 2 Cemetery, Dakhleh Oasis, Egypt. In Lally M, Moore A (eds.): (Re)Thinking the Little Ancestor : New Perspectives on the Archaeology of Infancy and Childhood. BAR International Series 2271. Oxford: Archaeopress, pp 110–121.
- Tocheri MW** (2009) Laser Scanning: 3D analysis of biological surfaces. In Sensen CW and Hallgrímsson B (eds.): *Advanced Imaging in Biology and Medicine: Technology, Software Environments, Applications*. Berlin: Springer-Verlag, pp. 85–101.

6. CONFERENCE PAPERS:

Papers/Abstracts in Non-refereed Conference Proceedings:

Jashashvili T, **Tocheri M**, Orr CM, Dowdeswell MR, Patel BA (2014) Evolution of the ulnar and radial sides of the human hand. Annual Meeting of the European Society for the Study of Human Evolution, Florence, Italy.

Jashashvili T, Patel BA, **Tocheri M**, Dowdeswell MR, Lordkipanidze D (2014) New Hominin Hand Bones from Dmanisi and Implications for the Evolution of Tool Use in Early *Homo*. The 18th Congress of the International Federation of Associations of Anatomists, Beijing, China.

Veatch EG, **Tocheri MW**, Rokus Due Awe, Wahyu Saptomo E, Sutikna T, Jatmiko, Wasisto S, McGrath KJ, Meijer MJM, Helgen KM (2014). The postcranial functional anatomy of the endemic rats from Liang Bua, Flores, Indonesia. Annual meeting of the Paleoanthropology Society (Calgary, Alberta, Canada).

Almójica S, Orr CM, **Tocheri MW**, Patel BA, Jungers WL (2013) Morpho-functional signals in the wrist of extant hominoids derived from 3D geometric morphometrics: the hamate as a test case. American Journal of Physical Anthropology 150 (Suppl. 56):67.

Knigge RP, **Tocheri MW**, Orr CM, McNulty KP (2013) The relationship between talar morphology and habitual substrate use among living gorilla taxa assessed using geometric morphometrics. American Journal of Physical Anthropology 150 (Suppl. 56):170.

Prang C, **Tocheri MW** (2013) Locomotor diversity and midfoot mobility in gorillas. American Journal of Physical Anthropology 150 (Suppl. 56):224.

Ward CV, **Tocheri MW**, Plavcan JM, Brown FH, Manthi FK (2013) Earliest evidence of distinctive modern human-like hand morphology from West Turkana, Kenya. American Journal of Physical Anthropology 150 (Suppl. 56):284.

Williams L, Norris AL, Dupras T, Wheeler S, **Tocheri M** (2013) Isotopic measures of intra-individual variation in fetal bone collagen and apatite. American Journal of Physical Anthropology 150 (Suppl. 56):292.

Brooks AS, Potts R, **Tocheri M**, Tryon CA (2013) Coding the Paleolithic of East Africa: Problems Possibilities and Procedures. Presentation at the 2013 meetings of the Paleoanthropology Society. Hawaii, USA.

Meijer, HJM, Sutikna, T, Saptomo, EW, Due RA, Jatmiko, Wasisto, S, James, HF, Brumm, A, van den Bergh, GD, Morwood, MJ, **Tocheri, MW** (2013) Fossil avifaunas from insular Southeast Asia and their implications for avian biogeography. [keynote] 2nd Southeast Asian Gateway Evolution Meeting, Berlin, March 11-15.

- Meijer HJM, James HF, Sutikna T, Due RA, **Tocheri MW** (2012) Comparing late Pleistocene with present-day avian community structure on Flores island, Indonesia. *Journal of Vertebrate Paleontology* 32 (Suppl. 1):140.
- Meijer HJM, James HF, Sutikna T, Due RA, **Tocheri MW**, Morwood MJ (2012) Comparing Pleistocene with Present-Day Avian Community Structure on Flores, Indonesia. 8th International Meeting of the Society of Avian Paleontology and Evolution, Vienna, June 11-16.
- Almejica S, Orr CM, **Tocheri MW** (2012) 3D geometric morphometric analysis of the hamate in extant hominoids. *American Journal of Physical Anthropology* 147 (Suppl. 54):82-83.
- Crevecoeur I, **Tocheri MW**, Due Awe R, Orr CM, Carnation S, Jungers WL (2012) The thumb of *Homo floresiensis*: first comparative analyses of the proximal and distal first manual phalanges from Liang Bua. *American Journal of Physical Anthropology* 147 (Suppl. 54):121.
- Murtough KL, McFarlin SC, Eriksen AB, Mudakikwa A, **Tocheri MW**, Richmond BG (2012) Hand and foot proportions of the mountain gorilla, *Gorilla beringei beringei*. *American Journal of Physical Anthropology* 147 (Suppl. 54):221.
- McClure NK, Philips AC, Vogel ER, **Tocheri MW** (2012) Unexpected pollex and hallux use in wild *Pongo pygmaeus wurmbii*. *American Journal of Physical Anthropology* 147 (Suppl. 54):208.
- Prang C, **Tocheri MW** (2012) Three-dimensional quantitative analyses of calcaneal and cuboid joint morphology in eastern and western gorillas. Poster presented at the Undergraduate Symposium at the 2012 meetings of the American Association of Physical Anthropologists.
- Meijer HJM, James HF, Sutikna T, Due Awe R, **Tocheri MW** (2011) The Liang Bua Avifauna: Faunal composition, diversity, and extinction. Paper presented at the 2011 meetings of the Society for Vertebrate Paleontology.
- Deane A, Cornett K, Parell P, **Tocheri M** (2011) The functional morphology of the metacarpophalangeal joint surface of hominoid manual phalanges. *American Journal of Physical Anthropology* 144 (Suppl. 52):122-123.
- Orr CM, **Tocheri MW**, Arrott JL, Rokus Awe Due, Wayhu Saptomo E, Sutikna T, Wasisto S, Morwood MJ, Jungers WL (2011) New wrist bones from *Homo floresiensis*. *American Journal of Physical Anthropology* 144 (Suppl. 52):230-231.
- Potts R, **Tocheri MW**, Tryon CA, Kovarovic K, Campisano CJ, Walton N, Halvorsen B, Bjorkvoll L, Hodefjell A (2011) The Smithsonian Institution's Human Origins Program Database: development, accessibility, and goals for research and education. *American Journal of Physical Anthropology* 144 (Suppl. 52):242-243.
- Tocheri MW** (2011) The evolutionary implications of significant carpal and tarsal variation among gorilla taxa. *American Journal of Physical Anthropology* 144 (Suppl. 52):295.