

# Anna G. Warrener, Ph.D.

## Resume

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### EXPERIENCE

**University of Colorado Denver**, Denver CO. 2015-current  
Lecturer, Department of Anthropology  
Teach graduate and undergraduate courses in biological anthropology focusing on human evolution and the fossil record.

**Metropolitan State University Denver**, Denver CO. 2016-current  
Lecturer, Department of Sociology and Anthropology  
Teach undergraduate introductory courses in biological anthropology

**Harvard University**, Cambridge MA. 2015-current  
Affiliate  
Prepare research for publication

**Harvard University**, Cambridge MA. 2012-2015  
Skeletal Biology and Biomechanics Laboratory, Daniel E. Lieberman P.I.  
The lab employs biomechanics and modeling techniques to understand human anatomy and movement in an evolutionary context.

Lab Manager/Postdoctoral Fellow/Lecturer, Dept. of Human Evolutionary Biology

- Research focuses on, pelvic shape and locomotor performance in humans; locomotor dynamics in the frontal plane; the evolution of human birth; properties of lower-limb muscle architecture.
- Perform collaborative research with Harvard-Boston Children's Hospital running injury study.
  - Responsible for data collection with 150 participants; data analysis design and implementation.
- Research techniques include biomechanics data acquisition using motion-capture and force platforms; metabolic data acquisition; inverse dynamics techniques using MATLAB and Visual 3D software; MRI analysis using Analyze 10.0 and

VG Studio Max software; statistical analysis; anatomical dissection and measurement.

- Laboratory management duties include, equipment and software management; vendor interaction; training researchers; supplies.
- Primary and co-lecturer (spring 2012 – present) for courses including Experimental Biomechanics (HEB 1210) and Walk this Way: Sex differences in Locomotion (HEB 1275).
- Serve as undergraduate thesis advisor.

**Washington University in St. Louis**, St. Louis, MO 2004 - 2011

Human Evolutionary Biomechanics Laboratory, Herman Pontzer P.I.

Graduate Researcher, department of Anthropology

- Doctoral thesis: *Pelvic Shape, Hip Abductor Mechanics and Locomotor Energetics in Extinct Hominins and Modern Humans*
- Demonstrated that greater pelvic width in human females does not increase locomotor cost; showed pelvic width is a poor predictor of hip muscle force production during dynamic motion; applied findings to the fossil record; provided large database of human lower-limb anatomical measures.
- Research activities included; recruiting participants, obtaining institutional approvals, collecting and analyzing data, coordinating medical imaging of all participants through outside organizations, written and oral presentation of results.
- Collaborated with researchers and co-authored papers on the evolutionary origins of obstructed labor and locomotor development in children.
- Trained undergraduate researchers in biomechanics data collection and analysis.
- Wrote grants and received funding from L.S.B. Leakey Foundation Research Grant (2009-2010), NSF (2009-2010) and Wenner-Gren Foundation for Anthropological Research (2009-2010)
- Graduate teaching assistant (spring 2006 – Fall 2010)

Field School, Magapansgat, South Africa 2002

Ballet Faculty, Boulder Ballet, Boulder CO. 1999-2004

2015-current

Ballet dancer, Boulder Ballet and

Lemon Sponge Cake Contemporary Ballet, Boulder, CO. 1997-2007

Administrative and Financial Assistant,

Athenaeum International, Boulder, CO. 1998-1999

## EDUCATION

Postdoctoral Fellow, Harvard University	2012-2015
Ph.D. Anthropology, Washington University in St. Louis	2011
MA Anthropology, Washington University in St. Louis	2006
BA Anthropology, Summa Cum Laude, University of Colorado	2003

## PROFESSIONAL SERVICE

### Grant Reviewer:

National Science Foundation	2013
Leakey Foundation	2013

### Journal Reviewer:

Journal of Human Evolution, American Journal of Physical Anthropology	2013 - current
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## TEACHING EXPERIENCE

### *Instructor*

2013 (fall)	HEB 1275: Walk this way: sex differences in locomotion Harvard University
2012-2013 (spring)	HEB 1210: Research in Comparative Biomechanics Harvard University
2012-2013	Undergraduate thesis advisor (two advisees) Harvard University
2009 (summer)	Anthro 150A: Introduction to Human Evolution University College, Washington University in St. Louis

### *Graduate Teaching Assistant*

2010 (fall)	Introduction to Human Evolution
2009 (fall)	Principles of Human Anatomy and Development
2009 (spring)	Human Energetics and Physiology
2008 (spring)	Experimental Methods in Animal Biomechanics
2008	Human Gross Anatomy, Washington University School of Medicine, St. Louis
2007 (fall)	Human Variation
2007 (spring)	The Female Life-Cycle in Cross-Cultural Perspective
2006 (spring)	Disability and Culture

## PROFESSIONAL AFFILIATIONS AND MEMBERSHIP

American Association of Physical Anthropologists 2003-present

American Association of Anatomists 2013-present  
Phi Beta Kappa, 2003-present

## PUBLICATIONS

- **Warrener AG.** Hominin hip biomechanics: changing perspectives. *Anatomical Record* (accepted).
- **Warrener AG.** Childbirth and brain size: evolutionary constraints. In H. Callan (Ed.), *International Encyclopedia of Anthropology*. John Wiley & Sons. (accepted).
- Lieberman DE, **Warrener AG**, Wang J, Castillo ER. 2015. Effects of stride frequency and foot position at landing on braking force, hip torque, impact peak force and the metabolic cost of running in humans. *Journal of Experimental Biology* 218:3406-3414.
- **Warrener AG**, Lewton KL, Pontzer H, Lieberman DE. A wider pelvis does not increase locomotor cost in humans, with implications for birth. (in press).
- Barak M, Lieberman DE, Raichlen D, Pontzer H, **Warrener AG**, Hublin J. Trabecular evidence for a human-like gait in *Australopithecus africanus*. *PLOS one* 8:e77687.
- Dunsworth H, **Warrener AG**, Deacon T, Ellison P, Pontzer H. 2011. A metabolic hypothesis for human altriciality. *PNAS* 109:15212-15216.
- Cowgill L, **Warrener AG**, Pontzer H, Ocobock C. 2010. Waddling and toddling: biomechanical effects of immature gait. *American Journal of Physical Anthropology* 143:52-61.
- **Blackburn Wittman AG**, and Wall L. 2007. The evolutionary origins of obstructed labor: bipedalism, encephalization, and the human obstetric dilemma. *Obstetrical & Gynecological Survey* 62:739-748.

### Articles in Preparation

- Warrener, AG, Tamai R, Lieberman D. Effects of forward trunk lean on running biomechanics.

## INVITED TALKS

- A model dilemma: how assumptions about locomotion and birth have shaped the obstetrical dilemma. University of Colorado School of Medicine, Spring 2016.
- Pelvic shape and locomotor mechanics: the case of the obstetrical dilemma. Human Evolutionary Biology Symposia, University of Southern California, Spring 2014
- A model dilemma: how assumptions about locomotion and birth have shaped the obstetrical dilemma. American Association of Anatomists, Los Angeles CA, 2014

- Human birth and locomotor efficiency: a natural selection tradeoff for women? Department of Anthropology, University of Colorado at Boulder, 2013.
- Hip Abductor Mechanics and Pelvic Shape: an anthropological perspective with applications for clinical treatment. Massachusetts General Hospital, Sports Medicine and Orthopaedic Surgery, 2012.

## CONFERENCE PRESENTATIONS

- Warrener A, Amanullah S, Castillo E, Lieberman D. 2015. Balancing the body: frontal plane dynamics during locomotion. American Association of Physical Anthropologists (St. Louis, MO).
- Warrener A. 2013. Skeletal measures dictating hip abductor force production during locomotion (poster). American Association of Anatomists (Boston, MA).
- Warrener A. 2013. Lower limb joint mechanics in men and women (poster). American Association of Physical Anthropologists (Knoxville, TN).
- Darr M, Pontzer H, Warrener A. 2013. Bicondylar angle in modern humans and its relationship to joint stresses and locomotor economy (poster). American Association of Physical Anthropologists (Knoxville, TN).
- Barak M, Lieberman D, Raichlen D, Pontzer H, Warrener A, Hublin J. 2013. Evidence for extended lower limb posture in early hominin locomotion (poster). New England Science Symposium (Boston, MA).
- Warrener, A. 2012. Hip abductor force production as a contributor to locomotor cost (podium presentation). American Association of Physical Anthropologists (Portland, OR).
- Warrener A. 2011. Relating pelvic shape to hip abductor mechanics and locomotor cost (podium presentation). American Association of Physical Anthropologists (Minneapolis, MN).
- Dunsworth HM, Warrener A, Pontzer H. 2011. Life history just isn't hip: human evolution without an "obstetric dilemma" (poster). Society of Vertebrate Paleontology (Las Vegas, NV).
- Blackburn Wittman A, Cowgill L, Pontzer H, Ocozbek C. 2009. Waddling and toddling: biomechanical effects of immature gait (poster). American Association of Physical Anthropologists (Chicago, IL).
- Blackburn Wittman A, and Pontzer H. 2008. The effect of pelvic dimorphism on locomotor cost: are women less efficient than men? (podium presentation) American Association of Physical Anthropologists (Columbus, OH).
- Blackburn Wittman A, and Adams J. 2004. Examination of the paleoenvironments of two South African caves (poster). American Association of Physical Anthropologists (Tampa, FL).