ANTH 394
Biology of human skeletal variability

INSTRUCTOR: Dr. Alison Murray

COURSE DESCRIPTION AND OBJECTIVES
This course explores the biology of variability in the modern human skeleton and the mechanisms through which skeletal diversity is shaped in our species. It assesses the ways in which this skeletal variation can tell us something about the origins of bipedality in our species, about behaviour and locomotion in the past, and about the importance of sport and physical activity in modern humans for bone health. We will answer questions like:

- To what extent does human skeletal morphology reflect long-term genetic adaptation to climate?
- What is the role of developmental plasticity, epigenetics, and behaviour in shaping skeletal morphology during the lifespan?
- How does sport change the living skeleton?
- What are the locomotor biomechanics of walking upright?
- What does skeletal variation in fossil humans tell us about the shift from arboreality to bipedal locomotion? When did this occur and why?
- Did humans really evolve to run?
- What can modern athletes tell us about behaviour in prehistoric humans?
- Does our evolutionary history help explain modern human osteoporosis prevalence?

SKILLS DEVELOPMENT

Students who have learned successfully in this course will be able to:

- understand the complex relationships between genetic adaptation and plasticity during the lifespan (epigenetic, developmental, behavioural) in shaping the adult human skeleton
- apply this understanding to the interpretation of variation in skeletal morphology in the past, in relation to diet and health, ageing, locomotion and behaviour among fossil and prehistoric humans
- contribute to current discussions on the role of ageing, fracture risk, public health, and physical activity

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