

ECSS 2022 Special Interest Group - Environmental Physiology

“Evolutionary perspectives of endurance exercise in extremes of temperature”

Date: 01.09.2022, **Time:** 12:15-13:15, **Lecture Room** TBC.

Chair: Dr Lee Taylor, School of Sport, Exercise and Health Sciences, Loughborough University, UK.

Speaker: Dr Danny Longman, School of Sport, Exercise and Health Sciences, Loughborough University, UK.

Dr Danny Longman is an evolutionary biologist who's research focusses primarily on human adaptability and function. Danny graduated from the University of Cambridge with a BA (Hons) in Natural Sciences, as well as an MPhil and PhD in Human Evolution. Following a 4-year Post-Doctoral Fellowship at Cambridge, Danny joined Loughborough University as a Lecturer in Physiology in 2019.

Over the last decade, Danny has worked with colleagues to develop and define the evolutionary sub-discipline of human athletic palaeobiology, in which athletes are recruited as study participants, and contemporary sports are used as a model to study evolutionary theory. The use of sport as a conceptual framework offers unprecedented opportunities to improve our understanding of what the body does, shedding new light on our evolutionary trajectory, our capacity for adaptation, and the underlying biological mechanisms. This approach has gained significant traction over recent years. Human athletic palaeobiology has facilitated enhanced understanding of why our species evolved endurance running abilities, of how physical activity drove the emergence of human morphological thermal adaptation and has provided unique insight towards patterns of energy allocation during energetic stress.

In this session, Danny will discuss evolutionary perspectives of endurance exercise in extremes of temperature. He will consider the evolutionary selective pressures which drove our endurance running abilities, as well as recent research demonstrating the functional benefits of morphological thermal adaptation and patterns of energy allocation in endurance runners during energetic stress. These concepts will be examined with reference to the challenges facing contemporary athletes and illustrated by Danny's own experiences during two recent World Record-breaking ultra-endurance expeditions in hot and cold climates. These are the [2022 Black Sea Row Expedition](#), which set a new world speed record for the fastest crossing of the Black Sea (1250km), and the [2017 Polar Row Expedition](#), which set seven new official Guinness World Records during the 1700km row across the Arctic Ocean.

