'From sprinting cheetah to walking wildebeest: studies of locomotion and physiology in Africa'

Professor Alan Wilson studied Veterinary Medicine and intercalated Physiology at Glasgow University, where he also competed internationally as a distance runner. His PhD at Bristol University was on the mechanical basis of tendon injury. He is now Professor of Locomotor Biomechanics at the Royal Veterinary College, University of London, where he is head of the Structure and Motion Laboratory. His research focuses on the anatomical, mechanical and physiological limits to locomotor performance in species ranging from humans and racehorses to cheetahs and wildebeest. He has pioneered novel GPS and motion tracking technologies for studying wild animals in their natural environment. Most of his current research is based in Botswana where he is involved in all aspects of the research program from capture and collaring of wild animals through to flying aerial surveys. Alan's work has featured in a number of BBC wildlife documentaries, including 'The Secret Life of the Cat' and 'Big Cats'.

Alan will describe the specialised anatomy of athletic animals with particular reference to muscle and tendon and discuss the factors that define speed, acceleration and manoeuvring performance. He will present data and insights gained from studies of a range of African predators and their prey using GPS and inertial sensors developed by his team for the purpose. Topics will include how athletic a prey animal needs to be to evade capture by a cheetah or lion, the tactics the prey should use to maximise its chance of survival and the remarkable anatomy and physiology that enable a wildebeest to cover 80 km over five days in 40 degree heat without drinking.