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Academics go to extremes for research

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Two researchers from Essex University are taking part in an international research project to study the physical effects of competing in one of the world's most extreme endurance races.

Professor Ralph Beneke and Dr Renate Leithäuser, from the university's centre for sports and exercise science, have been invited to participate in the runex123 project, which will follow the progress of 15 male competitors before, during and after the Badwater Ultramarathon that takes place in California's Death Valley in July.

The study, involving researchers from the UK, the US, Austria and Germany, will measure the psychological, physiological and biochemical effects of taking part in the 135-mile course, usually completed within 60 hours.

Professor Beneke, who specialises in sports medicine, applied physiology and sports and exercise science, said: "I am keen to look at plasma volume changes and regulation, fluid balance, and electrolytes in these ultra-endurance runners. Additionally, the extreme exercise and environmental conditions might enable me to further investigate structural and functional integrity of cells with special respect to blood, skeletal muscle, heart, liver, kidneys and the central nervous system."

He added that the project could help the increasing number of participants in extreme sports develop risk management strategies, as well as stimulate new approaches to understanding cellular stress and integrity with clinical relevance.

The research team has secured the bulk of the project's funding, worth about £100,000, from international sponsors with links to the extreme sports industry.

However, the team is looking for an additional £12,000 to establish field labs to analyse blood samples that will be taken from the competitors along the course to investigate how cells cope under extreme stress.

The Badwater Ultramarathon is one of the toughest endurance races in the world. "This is the equivalent of more than five marathons, without a break, in temperatures reaching 55 degrees centigrade," said Professor Beneke.

Its course, 46 miles of which is uphill, begins at the lowest point in the US - 86 metres below sea level - in Badwater and finishes at the foot of Mount Whitney in the Sierra Nevada mountain range at 2,500metres above sea level.

The idea for the research project came from two experienced Badwater competitors who wanted to find out how they could be better prepared to face its challenges.

The 10 researchers who will be flying out to the US for the study have proven interest in extreme sports - two at least are ultramarathon runners.

Anyone interested in supporting the project should contact Professor Beneke on 01206 872530 or email rbeneke@essex.ac.uk.

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