Advanced Research & Invention Agency (ARIA) Roundtable Input (September 2022)

Background:

The Physiological Society (The Society) is Europe's largest network of physiologists, at the forefront of science for 146 years. Physiology is the science of life, and research in physiology helps us to understand how the body works in health, what goes wrong in disease, and how it responds and adapts to the challenges of everyday life. The Society's membership is made up of researchers in all of these areas, from neuroscience through to endocrinology, nutrition and sport and exercise science with the science ranging from the mechanistic to the applied, from molecular to whole body.

The Advanced Research and Invention Agency (ARIA), a government research agency, requested evidence for transformational 'Moonshot' ideas to tackle global challenges. ARIA requested the research community develop a short pitch of about 300 words proposing roundtable sessions to develop potential themes that could be taken forward.

The Physiological Society proposed a roundtable titled *Fostering interdisciplinary action to make the greatest impact on climate change and health* based on our recent work highlighting the role of physiology and scientific research to mitigate and adapt to climate change.

Roundtable proposal:

The World Health Organization has identified climate change as the single biggest health threat facing humanity. Physiology is an essential part of the scientific response as it helps us understand the consequences of climate change for humans and other animals. As the science of how the body works, physiology explains the impact of climate change on our health and productivity, as well as the scope we have for mitigation and adaptation. In so doing, physiology is integral to the future of life.

While global efforts on climate change have focused on carbon emissions reduction, CO2 is not the only greenhouse gas of concern – methane accounts for 25% of global emissions and has 80 times the warming power of CO2 over the first 20 years. About 65% of methane emissions come from human activity such as animal agriculture. Physiology can help develop and assess alternative diets that meet nutritional standards but reduce our reliance on animals.

As the UK hands over its COP presidency, it is time for us to collaborate to make a tangible difference to arrest climate change. The scale of the climate change problem is so vast that we need an interdisciplinary approach that marries natural sciences with social sciences and humanities to offer deeper and broader insights to address the problem. From reducing energy use and emissions to mitigate climate change, through to the adaptation of human and animal physiology to ensure the health of the planet and its inhabitants, physiology is central to tackling climate change and understanding its impact.

Related reading

Physiology and Climate Change

The Climate Emergency: Research Gaps and Policy Priorities

The Future of Interdisciplinary Research Beyond REF 2021