



CAPE Grand Challenge: Systems and Devices for Healthcare

Call for Expressions of Interest

The CAPE Grand Challenge: Systems and Devices for Healthcare is a competition for project outlines aligned with the strategic research theme proposed by CAPE partner GSK Consumer Healthcare. The primary intent of this call is to support an initial body of work in this new Theme. The winning submissions will be developed into full CAPE project proposals in collaboration with GSK (which may involve other CAPE Partners), leading to a seed project. Priority will be given to smaller research proposals that lay the groundwork for larger, future investigations. We also support cross-disciplinary collaboration and strongly encourage applications that involve participation from the School of Clinical Medicine.

Up to £100k funding is available, we expect to fund 2 or 3 proposals for short term (3-6 month) seed projects with budget in range £30k-£50k.

The competition is open to researchers and academics in the University of Cambridge.

Objective

GSK Consumer Healthcare is in the business of supporting the 'everyday health' of the public. Our aim is to create new products, devices and services that can be used, in a social and domestic setting, to improve all our lives. We are interested in understanding health and condition diagnosis in order to deliver better and earlier interventions. Within CAPE, we have a focus on science and technology that helps us improve our understanding of human health and the ways it can be positively influenced. Specifically, we are interested in research in two main areas:

- To measure and monitor the physiology, biological functions and wellness of the human body
- To understand and interpret complex measurements to create actionable insight on health interventions.

Research Topics

GSK Consumer Healthcare currently has a particular interest in the following areas:

- The **translation of physiological data and measurements to meaningful insights** and actions a patient or consumer can take to improve their health outcomes, e.g. statistical analysis of changes in hormone levels over time and associated symptoms to provide a consumer with insights into their health interventions based on objective measurement.
- The **physiological and psychological effects of stress**. In particular, use of biomarkers to objectively measure of stress acuity and identify changes in mood and thought
- **Oral health as a route to improve general healthcare** e.g. Salivonomics - using saliva samples to assess health issues; blood samples—gum bleeding can be a symptom of oral health issues, and the blood itself could be analysed further; other devices e.g. smart tooth floss, breath measurements, orthodontic sensor etc. to measure bacterial, viral, chemical levels
- Devices or systems that use **sample free measurement** to measure **physiological biomarkers** directly through the human body (e.g. wearables to monitor physiological stress response)



- Physiological measurement and health monitoring for **women's hormonal health** e.g. physiological and biological impacts associated with hormonal health conditions or phases such as menopause, endometriosis, PCOS; monitoring outcomes; offering **personalised solutions** for these conditions.
- The physiological impacts and implications of **microbiome** populations for everyday wellness, stress and hormone balance. In particular, how to measure, analyse and deliver meaningful impact through insights gained.

However, proposals outside these areas, in general consumer healthcare are equally welcome.

Proposals for research will be assessed on their merits and against four main criteria (noting that an individual proposal does not have to address all of these elements)

- The ability of the research to produce tangible demonstration or evidence of findings
- The opportunity to access novel information or insights on human health
- The ability to generate Intellectual Property associated with the research
- The opportunity to open up novel areas of research or investigation

GSK recognises the value of research throughout the maturation of technologies e.g.

- Edge Research – Entirely new science
- Maturation – Engineering for cost, reliability or efficiency in existing approaches
- Demonstration – Integration of technologies to demonstrate/evidence new capabilities

We encourage proposals to be clear on what stage of maturity the research is expecting to address.

Please capture in the proposal the potential long-term applications you believe possible for the technology or concept in the Consumer Healthcare market e.g. improved sensor for wearable, multi-virus detection device.

Award

£1,000 bonus will be awarded to the submitter of a Grand Challenge proposal that is developed into a project with a CAPE Partner. CAPE reserves the right not to issue an award if the criteria for the project are not fulfilled and there is no guarantee that the project proposal will be funded.

All research project proposals resulting from the CAPE Grand Challenge between the winner and partner/s will follow standard CAPE project approval procedures and will operate under the terms of the CAPE Partnership Agreement. Contact CAPE office for details of the governance, IP and confidentiality terms.

Eligibility

The competition is open to researchers and academics in the University of Cambridge. Each submission must include one applicant (i.e. the submitter or a co-investigator) who is eligible for PI status within the University.

CAPE is committed to equality of opportunity and to a proactive and inclusive approach to equality, which promotes an inclusive culture, and values diversity. We actively encourage applications from all under-represented groups.



Criteria

Expressions of Interest will initially be evaluated by GSK Consumer Healthcare, and they will indicate which proposal(s) most closely meet their needs and have the potential to form the basis of a full CAPE project proposal which they would support. In collaboration with GSK, a full project proposal will be submitted to the CAPE Steering Committee following the established CAPE process.

Timeline

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| 26 th April | Call for Proposals announced |
| Friday 27 th May | Deadline for Expression of Interest |
| Friday 24 th June | Submission of full project proposals |
| July | Announcement of Awards |

How to apply

Please complete an Expression of Interest Form ([here](#)) and return to cape-office@eng.cam.ac.uk by **Friday 27th May 2022**.

Pre application discussions

If you have an idea for a proposal, GSK Consumer Healthcare would be happy to discuss it with you ahead of submission. Please contact cape-office@eng.cam.ac.uk to arrange an online meeting.

Further Information

There will be an opportunity to find out more about the objectives of the call and GSK Consumer Healthcare research interests at the CAPE Advanced Technology Lecture '*Consumer Healthcare - Finding Research that Changes the World*' on Wednesday May 4 at 2 pm in the CGC Seminar Room, Electrical Engineering Building or online. Register for online participation: [here](#).

If you have any queries, please contact Ms Denisa Demko (CAPE Coordinator) or Dr Mark Leadbeater, CAPE Office, 9 JJ Thomson Avenue, Cambridge, CB3 0FA

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What are we interested in?

