ABOUT THE GRAND CHALLENGE INITIATIVE

In 2014 Cancer Research UK published a bold new research strategy with an ambition to support more innovative high-risk, potentially high-reward research. As part of this, the Grand Challenge initiative was launched which aims to stimulate a focused multinational, multidisciplinary research effort to address significant challenges in cancer research, by bringing in fresh thinking, innovation and technology from other disciplines and sectors to transform the cancer research field. It is intended to drive global collaboration and support research that would not be able to happen without a team approach and funding of this scale.

In 2015 our Grand Challenge Advisory Panel (GCAP) set seven challenges. Each challenge identified some of the greatest barriers preventing true progress in cancer research:

**CHALLENGE 1** DEVELOP VACCINES TO PREVENT NONVIRAL CANCERS

**CHALLENGE 2** TO ERADICATE EBV-INDUCED CANCERS FROM THE WORLD

**CHALLENGE 3** DISCOVER HOW UNUSUAL PATTERNS OF MUTATION ARE INDUCED BY DIFFERENT CANCER-CAUSING EVENTS

**CHALLENGE 4** DISTINGUISH BETWEEN LETHAL CANCERS THAT NEED TREATING, AND NON-LETHAL CANCERS THAT DON’T

**CHALLENGE 5** FIND A WAY OF MAPPING TUMOURS AT THE MOLECULAR AND CELLULAR LEVEL

**CHALLENGE 6** DEVELOP INNOVATIVE APPROACHES TO TARGET THE CANCER SUPERCONTROLLER MYC

**CHALLENGE 7** DELIVER BIOLOGICALLY ACTIVE MACROMOLECULES TO ANY AND ALL CELLS IN THE BODY

This prompted an international call for bold ideas that would benefit from the freedom and support of this innovative award. We received a wide range of high quality applications from over 200 institutes, spanning 25 countries, uniting over 400 world-class researchers. In February 2017 we announced that four exceptional teams had been funded, each proposing novel, game-changing approaches to answer some of the most important questions in cancer research.

Our GCAP will meet again in spring 2017 to review and refresh the challenge areas and now we want to hear from the research community what you think we should address as part of next year’s Grand Challenge.

WHAT MAKES A GRAND CHALLENGE?

We have defined Grand Challenge as:

“An approach to tackle one or more specific barrier(s) that, when removed, would help solve an important problem in cancer research and have significant potential for the benefit of cancer patients”
SETTING A GRAND CHALLENGE

A Grand Challenge should be broad enough in scope to not limit potential, yet specific enough to drive a critical pathway towards tangible outcomes. In considering potential opportunity areas, it is important to articulate a question with ideal specificity that will stimulate a wide range of approaches with the greatest potential impact, whilst still maintaining a clear objective and realistic, tangible outputs. The following example has been provided as a stimulus when thinking about the breadth of possible challenges:

EXAMPLE: SETTING A GRAND CHALLENGE AROUND EARLY DIAGNOSIS

- How can we improve the early detection of cancer?
- How can we detect, at a stage that would improve clinical outcome, the cancers that are most often diagnosed late?
- How can we detect pancreatic cancer early?
- How can we detect pancreatic cancer at or before stage 2 in 75% of patients?
- How can we develop a blood test to detect pancreatic cancer at or before stage 2?
- How can we define and detect the pre-neoplastic to neoplastic switch?
- How can we use imaging to detect the pre-neoplastic to neoplastic switch?

KEY CONSIDERATIONS

In submitting a potential Grand Challenge question to the GCAP we encourage you to consider that:

- Grand Challenge is an award of up to £20/$16 million, generally over five years
- Grand Challenge awards should attack significant barriers and should not be quickly solvable
- The work proposed should not be achievable using a standard funding mechanism
- Work should be transformative, with a future line of sight to the clinic
- Questions should be framed in a way that is attractive and meaningful to a wide range of disciplines