

# The LhARA initiative

## An initial business case

LhARA is a ground-breaking biomedical initiative that will transform cancer treatment. The mission of the international, multidisciplinary collaboration is to:

- Demonstrate laser-hybrid proton/ion beams in a facility dedicated to biological research;
- Create the national and international partnerships necessary for LhARA to become a multidisciplinary research centre of excellence in the UK; and to
- Generate clinical and other impact through incremental deployment of new techniques and technologies, ultimately to co-creating a transformative commercial clinical product.

The collaboration has established the conceptual design of the research facility and now seeks to take the initiative forward in partnership with Leo Cancer Care, CNRS, and STFC.

## Aim

To develop:

- LhARA ...

## Timeline

- **2025/28:** Establishment of the core programme:
  - Development of overarching business case and diversification of funding model:
  - Biology and bio-instrumentation:
  - Strong, cylindrically-symmetric focusing:
  - Co-creation & pre-clinical R&D:
- **2028:** Initiate the pre-construction R&D programme with Imperial at the heart of the national/international LhARA consortium;
- **2030:** Integration of the first phase of LhARA; the low-energy beam line serving *in-vitro* radiobiology with protons beams at 15 MeV;
- **2035:** Exploitation of the LhARA facility for the systematic study of the biology that determines the response of tissue to proton and ion beams;  
**2040s:** Establishment of first laser-based clinical radiotherapy facility built on the successful operation of LhARA;

## Initial investment and funding model

## Return on investment