The Laser-hybrid Accelerator for Radiobiological Applications  
*R&D proposal for the preliminary, pre-construction phase*

Author list

# Executive summary

**Lead authors:**

# Lay summary

**Lead authors:**

# 1. Motivation

## 1.1 Overview

**Lead author:**

## 1.2 Scientific case

**Lead authors:**

## 1.3 Technological advancement

**Lead author:**

## 1.4 Impact

**Lead author:**

# 2. LhARA; the Laser-hybrid Accelerator for Radiobiological Application

## 2.1 Overview

**Lead author:**

## 2.2 Conceptual design

**Lead author:**

## 2.3 Staging

**Lead author:** K. Long, C. Whyte

## 2.3 Timeline for the LhARA initiative

**Lead author:** K. Long, C. Whyte, T. Kokalova-Wheldon

# 3. Preparatory, pre-construction phase proposal

## 3.1 Project Management

**Lead authors:** C. Whyte, J. Parsons

## 3.2 Laser-driven proton and ion source

**Lead authors:** E. Boella, N. Dover, R. Gray

## 3.3 Proton and ion capture

**Lead authors:** W. Bertsche, M. Charlton

## 3.3 Real-time dose-deposition profiling

**Lead authors:** J. Bamber, J. Matheson

## 3.4 Novel, automated end-station development

**Lead authors:** R. McLauchlan, T. Price

## 3.5 Facility design and integration

**Lead authors:** J. Pasternak, + TBD

# 4. Summary

**Lead authors:**

# Annex: LhARA preliminary, pre-construction phase project specification

## A.1 Introduction

**Lead authors:** K. Long, C. Whyte

## A.2 Work package details

**Lead authors:**

## A.3 Staff effort

**Lead authors:**

## A.4 Overview of preliminary, pre-construction phase project costs

**Lead authors:** K. Long, C. Whyte

## A.5 Preliminary, pre-construction phase project schedule and milestones

**Lead authors:** K. Long, C. Whyte

## A.6 Preliminary, pre-construction phase project risk analysis

**Lead authors:** K. Long, C. Whyte

## A.7 Outreach and engagement plan

**Lead authors:**

## A.8 Project organisation, management, and reporting

**Lead authors:** KL, CW