

Press release – strictly embargoed until 00:01 on Tuesday 7 August

Canon Medical Research receives £140k to develop AI-powered cancer assessment prototype

- Edinburgh-based firm is working with NHS Greater Glasgow and Clyde on an AI project to assess Malignant Pleural Mesothelioma (MPM) tumours, also known as the 'asbestos cancer'
- Phase II project funding is awarded from the Cancer Innovation Challenge
- The prototype developed could pave the way to save time, money and lives in the fight against cancer

Canon Medical Research Europe has been awarded £140,000 to develop a prototype that combines Artificial Intelligence (AI) and medical imaging technology to improve assessment for one of the most difficult cancers to manage, Malignant Pleural Mesothelioma (MPM).

The Cancer Innovation Challenge aims to inspire novel data and technology innovations to help Scotland become a world leader in cancer care. Funded by Scottish Government through the Scottish Funding Council and delivered by three Scottish innovation centres led by The Data Lab, this Phase II funding focuses on identifying innovative ways to improve cancer treatment and outcomes using data science.

Working with renowned mesothelioma physician and researcher, Dr Kevin Blyth of NHS Greater Glasgow and Clyde, Canon Medical is seeking to show that AI can be an effective tool in the fight against this particularly challenging cancer.

If successful, the company hopes to start development on an AI tool that will recognise, assess and measure cancer tumours, while contributing to the growing body of evidence for how AI can help medical advancement across the world.

Scotland has one of the highest incidence rates of mesothelioma, sometimes known as 'asbestos cancer', in the world. Unlike most types of tumour, which are roughly spherical in shape, mesothelioma grows in a skin-like manner around the lung. This makes measuring its size much more time-consuming and error-prone than for other cancers. Without a reliable measurement it is very difficult to gauge how well a treatment is working, or to choose the most effective treatment for each patient.

This project will develop AI technology that rapidly and accurately measures the size of the mesothelioma tumour, which could form an important component of a precision medicine system for treating patients with the disease.

The project team also hopes that an AI-based assessment tool could have a positive impact on the cost of cancer drugs. This is because clinical trials may become more efficient using AI tools to determine whether new drugs are having a useful effect. AI systems have the potential to make these assessments more accurate and less expensive than current human reporting systems.

Minister for Trade, Investment and Innovation, Ivan McKee MSP said:

"Most of us will have been affected by cancer at some stage either personally or through family members. This research, if successful, will bring us closer to vital advances in cancer treatment through data science.

I am really pleased to hear of Canon Medical's success in Phase II of the Cancer Innovation Challenge. This is a great example of how our investment in innovation is supporting advancements in Artificial Intelligence to deliver better outcomes for the people of Scotland." Dr Ken Sutherland, Company President of Canon Medical Research Europe, said:

"Canon Medical is fully focused on improving the lives of patients and providing the latest and most advanced clinical decision support tools to clinicians. We are actively tackling those areas where our technology and know-how can make a significant impact on people's lives.

"MPM is a terrible condition for those that are unfortunate enough to suffer from it, and we believe that an automated assessment method using AI would be a major advance in fighting this disease and, potentially, other forms of lung cancer. The funding from CIC is critical to developing this ground-breaking tool."

Dr Kevin Blyth of NHS Greater Glasgow and Clyde said: "MPM is an exceptionally challenging cancer to start with, but the possibilities are enormous using Canon Medical's technology and our clinical and research input.

"While it is an ambitious project we are positive that whatever we learn will be valuable for advancing medical knowledge and taking us towards a world in which treatments are increasingly tailored, affordable, and successful."

Gillian Docherty, CEO of The Data Lab, which is leading the innovation centres' support on the project, said: "We were extremely impressed with Canon Medical's innovative concept and obvious commitment to best practice in data science, clinical input, and AI development for improving patient care and outcomes. We believe this research will go a long way to advancing medical technology and precision in Scotland, and across the world."

ENDS

For further information, please contact: Joanna Buggy or Candace Watermeyer on 07523 493 850 / datalab@grayling.com

Interviews are available with Canon Medical and Dr Blyth, please contact Candace on the details above to arrange.

Notes to editors:

About current methods of cancer assessment and how AI could help:

Currently cancer tumour assessment is usually performed using a technique called RECIST (Response Evaluation Criteria in Solid Tumours). This involves manually measuring changes in the size of tumours on Computed Tomography (CT) or Magnetic Resonance Image (MRI) scans, a method which is time-consuming and expensive, often requiring multiple assessments by different human reporters to produce a reliable conclusion. Beyond being vulnerable to human variation, this system cannot always be delivered routinely in the NHS because of a shortage of human reporters (i.e. specialist radiologists) and it adds to the costs of clinical trials because pharmaceutical companies may need multiple reporters to ensure a reliable response assessment is made of their expensive new drug therapy

The project team hopes that automating the RECIST process through AI and machine-learning will speed up this process and increase accuracy. Doctors would be able to assess and treat cancer with greater precision, saving costs for the NHS while more accurately deploying its cancer treatment resources. Patients would benefit from even more effective treatment plans.

About the Cancer Innovation Challenge

The Cancer Innovation Challenge is a project funded by Scottish Government through the Scottish Funding Council (SFC) to encourage Innovation Centres in Scotland to work in partnership to help the country become a world-leading carer for people with cancer through open innovation funding calls for data science solutions.

The project brings together three Innovation Centres, led by The Data Lab in collaboration with the Digital Health and Care Institute (DHI) and Stratified Medicine Scotland (SMS). The Innovation Centres are funded by the SFC to support transformational collaboration between universities and businesses. The Centres aim to enhance innovation and entrepreneurship across Scotland's key economic sectors to create jobs and grow the economy.

The Challenge has two major work streams:

- 1) An open innovation funding call to develop new tools for cancer patient reported outcomes and experience measures
- 2) An open innovation funding call to identify innovative cancer data science solutions

Canon Medical is one of three recipients of earlier Phase I funding for this second stream. The Data Lab is working with the other two Phase I recipients, Jayex Technology and Sharpe Analytics, to explore future options or provide data science advice and support where appropriate.

There is a programme of activities surrounding each work stream involving industry, the public and a variety of stakeholders in the wider health sector. Organisations supporting the delivery of the challenge include:

- NHS National Services Scotland
- The Usher Institute of Population Health Sciences and Informatics at the University of Edinburgh
- The Innovative Healthcare Delivery Programme (IHDP) at the Farr Institute Scotland
- The University of Edinburgh
- The Nursing, Midwifery and Allied Health Professions Research Unit at the University of Stirling
- Health and Social Care Alliance Scotland

Find out more here: www.cancerchallengescotland.com

Twitter: @cancerchallscot, #DataSavesLives

Scottish Funding Council

The Scottish Funding Council (SFC) is helping to make Scotland the best place in the world to educate, to research and to innovate. Investing around £1.5 billion of public money each year, SFC's funding enables Scotland's colleges and universities to provide life-changing opportunities for over half a million people. Its support for university research means every one of Scotland's 19 universities is able to carry out world-leading research. www.sfc.ac.uk

The Data Lab

The Data Lab is an innovation centre focused on helping Scottish industry to capitalise on a growing market opportunity in data science. Established with an £11.3 million grant from the Scottish Funding Council, The Data Lab enables industry, public sector and world-class university researchers to innovate and develop new data science capabilities in a collaborative environment. Its core mission is to generate significant economic, social and scientific value from data for Scotland.

www.thedatalab.com

www.datafest.global

Canon Medical Research Europe:

Founded in 1994 as University of Edinburgh spin-out Voxar, Canon Medical Research Europe has become a 130-strong Scottish R&D centre creating AI-augmented Clinical Decision Support systems and Advanced Image Analysis and Visualization software for all medical imaging modalities. Its technology supports the \$3.6 billion annual revenue of Canon Medical Systems Corporation, integrated into their global installed base of scanners and clinical software solutions. As Canon's corporate centre of excellence for healthcare AI, Canon Medical currently sponsors twelve doctoral studentships at Scottish universities, collaborating with NHS and academic partners to address a range of Machine Learning challenges, and boast an expanding portfolio of 70 granted and 30 pending patents

Visit www.research.eu.medical.canon/ or email Kirsten.McAllan@eu.medical.canon for more information.

NHSGGC

The Glasgow Pleural Disease Unit provides specialist services for patients affected by Mesothelioma and is home to Scotland's only Mesothelioma multi-disciplinary team and clinical nurse specialist. The unit is led by Dr Kevin Blyth, who runs a translational research program focused on Mesothelioma, supported by an NHS Research Scotland Senior Research Fellowship. Dr Blyth's team have over the last 5 years developed state-of-the-art mesothelioma imaging techniques that will be deployed in the current project. The project team will also have the full support of the College of Medical and Veterinary Life Sciences at the University of Glasgow, within which department Dr Blyth is an Honorary Clinical Associate Professor. They will be able to exploit unrivalled facilities for collaborative imaging research via the Imaging Centre for Excellence (ICE, located on the Queen Elizabeth University Hospital Campus. This project is an excellent example of the integrated research involving the NHS, academia and industry that Glasgow Biomedicine and ICE have been designed to deliver and support.

Visit www.nhsggc.org.uk for more information.