RESEARCH & INNOVATION SCOTLAND

Case Study

A Successful Model for Bridging University and Industry in Enabling Technologies

Members Involved: SUPA, SINAPSE, SULSA, CENSIS, IBioIC, DHI, PMS-IC & Interface

This project addressed the intersection between two areas of significant activity in the Scottish economy, namely life sciences and photonics - a recognised strength in Scottish physics research. Following initial scoping workshops in 2018, we focused on optical imaging, a vibrant area of technology development within photonics, and an essential enabler for biology discovery, drug development and medical applications.

Biophotonics will be especially important for the development of personalised treatments and dealing with challenges of an aging population. We sought to understand current strengths and activities across academia and industry and to investigate how to better bridge physical and life sciences capability to accelerate optical imaging technologies for application. We believe our joined-up approach supports both academia and industry, particularly SMEs, engage more effectively with the current funding landscape, particularly in terms of bidding for ambitious Industrial Strategy Challenge Fund support and similar (see figure below). Additional funding from SFC and contributions from the three pools, allowed a range of approaches to be used.

1. A commissioned review of global market opportunities for cross sector optical imaging estimated that the world market for optical imaging for medical, pharmaceutical and biology research sectors is the range US$ 3.8 – 9 billion with substantial further growth forecast.

2. An appointed Innovator-in-Residence explored the current academic and industrial landscape in Scotland, gaining an overview of existing strengths with a focus on understanding where we have the critical mass required to build effective consortia.
3. The review process identified five potential university spin-out companies, two of which are under discussion for support from the Scottish Enterprise High-Growth spin-out programme.

4. Four potential Scottish-based major bid consortia were identified for challenge fund calls. An outline proposal to UKRI Strength in Places Funding (SIPF), Wave 2 has been accepted by UKRI to proceed to a full proposal. A joint project led by Heriot-Watt University, with co-PIs from Edinburgh and Bath “U-care: Deep ultraviolet light therapies” has been awarded £7.6M by UKRI/EPSRC.

5. A one-day Crucible interactive workshop informed and created collaborative opportunities for 50 selected early/mid-career researchers hearing expert talks from academia, public bodies and industry (UKRI, SFC, NHS, KTN, Blackford Analysis, Scottish Health Innovations Ltd) with guest speakers from Stanford and Berkeley, USA. Richard Lochhead, Minister for Further Education, Higher Education and Science was guest of honour at a networking dinner for all participants.

6. The Crucible was enhanced by competitive seed funding offered for innovative proof-of-principle projects of one-year duration requiring collaboration between academic and industry partners - this led to 8 on-going projects.

Other partners involved: Technology Scotland; Scottish Lifesciences Association; FraunhoferUK-CAP; Optos

Contributors to Crucible: UKRI; SFC; NHS; NPSC, FraunhoferUK, Stanford University; Berkeley University

Industry project partners: Zeiss (UK), Nikon (UK), Chromacity Ltd, Optos (Nikon UK), Tissue Solutions Ltd, Devro plc, Horiba Scientific Ltd, Wide Blue Ltd

Overview of Scottish Capabilities in Optical Imaging for Life Sciences: