Foundation for Science and Technology

Scotland and Innovation

Professor Julie Fitzpatrick

Chief Scientific Adviser for Scotland & Director of Moredun Research

@ScotSciChief

7 November 2022

Chief Scientific Adviser's Role

- **Science Advice for Policy**
  - science evidence and advice across all policy areas, especially on cross-cutting or strategic issues
    - UK Chief Scientists Network
    - Scottish Government (SG) Network
- **Policy for Science**
  - input on issues affecting science policy and the science and engineering profession within SG
  - science and innovation champion
- **Science for Society**
  - speaking at events, promoting Scotland's science excellence with key stakeholders, and working with the science public engagement sector

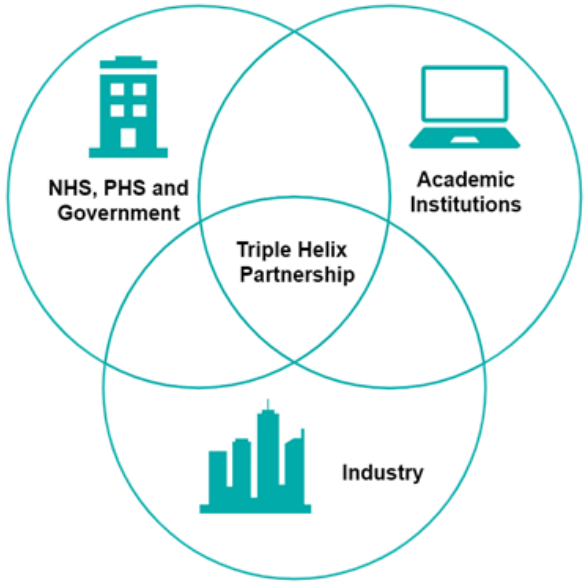
My objectives:

- Responding to COVID-19
- Pandemic preparedness
- Science and technology roadmap for Scotland's Climate Change Plan
- Sustainable food systems for Scotland as a Good Food Nation
- Enhancing the Science and Innovation platform in Scotland - **ScotSCIENCE**

The Importance of the Innovation System in Scotland

- Vision: become one of the most innovative small nations in the world
- Ambition: boost innovation, productivity and green economic growth
- Research excellence is vital in driving innovation
- Industry investment linked to universities strengths
- Research and development is the third largest focus of foreign direct investment
- Sustained investment into research, development and innovation is critical

Triple HELIX



Scottish Innovation Ecosystem – talent, jobs, culture, society, economy

World Leading Excellence

2021 Nobel Prize for Chemistry

David MacMillan of Princeton University

Scotland is ready for ARIA and new funding opportunities

REF 2021 Research Excellence Framework

Scottish Knowledge Exchange Awards

HERIOT WATT UNIVERSITY

SMAS Scottish Manufacturing Advisory Service

Abergower

Innovative Business – University of Dundee

- Dundee ranked top UK university for Biological Sciences in REF 21
- Wellcome Centre for Anti-infectives and Drug Discovery Unit
- Close links and funding via Pharma and Biotech companies
- **Life Sciences Innovation District** as part of the Tay Cities Biomedical Cluster and City Deal

Focus on **attracting and retaining innovative scientists and building life science companies of scale in Dundee and Scotland**

Investing in Innovation – Aberdeen

Centre for Energy Transition

University of Aberdeen

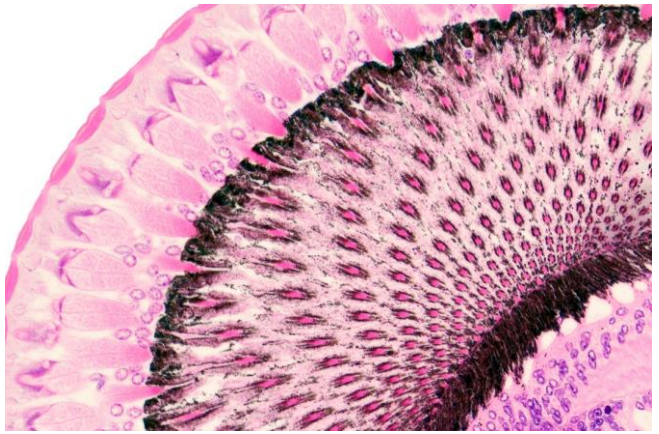
- Wind power, Hydrogen, Geothermal, Oil and Gas (Production and Storage), Carbon Storage, Nuclear, Hydro, Wave and Tidal, and Decommissioning;
- GeoNetZero Centre for Doctoral Training (CDT);
- 12 UK academic institutions in partnership – geoscience and more;
- Investment in training program by 10 industry partners;
- **CDT – 178 PhDs enrolled; 75 completed;** all employed
- National Energy Skills Accelerator (NESA) – collaboration between UofA, RGU, NESColl, SDS and ETZ - SFC Pathfinder, SG Just Transition Fund;
- **Support for post-doctoral scientists required**
- **Skills escalator – schools, apprenticeships, colleges, universities, industry**

Role of the Public Sector in Innovation

- National Strategy for Economic Transformation
- Net Zero
- Reducing inequalities and child poverty
- Cost of Living Crisis
- 475 scientists; 138 engineers

Scottish Government
Riaghaltas na h-Alba

Marine Scotland

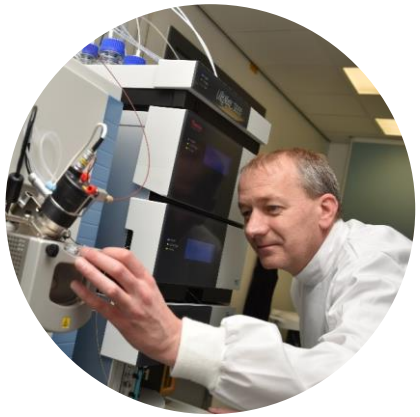


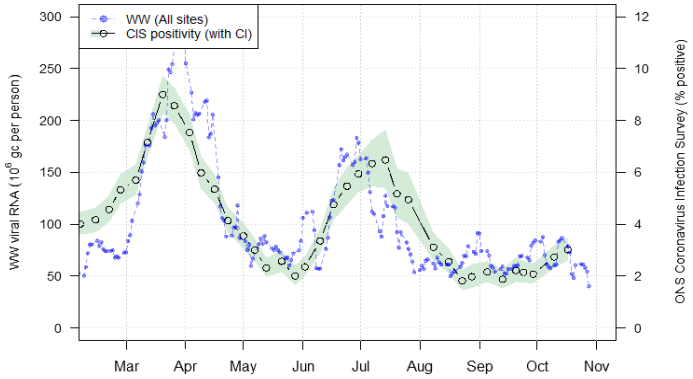
Scottish Government
Riaghaltas na h-Alba

SEFARI

Strategic Policy-focussed Research

Adoption and Diffusion





BioSS

The James Hutton Institute
Science connecting land and people

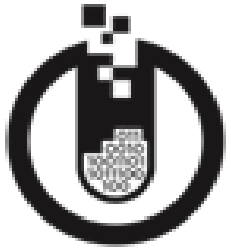
Moredun Research Institute

Rowett Institute of Nutrition and Health
University of Aberdeen

Royal Botanic Garden Edinburgh

SRUC

Innovation Centres – part of Scotland's **Innovation Infrastructure**



THE DATA LAB
value from data

BE—ST

CENSIS

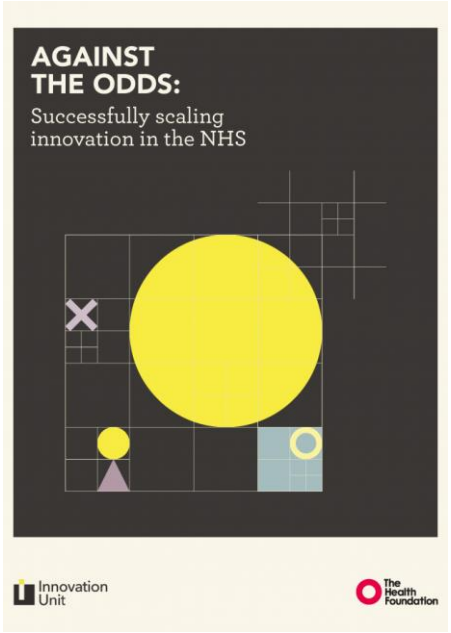
IBioIC

SAIC

Precision Medicine Scotland

Digital Health & Care Innovation Centre

Sectors with strong research and growth potential, links and funding from industry, draws on research excellence



THE OPPORTUNTIY

"There is broad agreement that the pressures and challenges currently facing health and social care can only be addressed if outcome-improving, experience-enhancing and value-adding innovations can be rapidly identified and adopted"

"Radical, perhaps even disruptive, innovation at scale has become a necessity, not a luxury"

Delivering Innovation in Health and Social Care

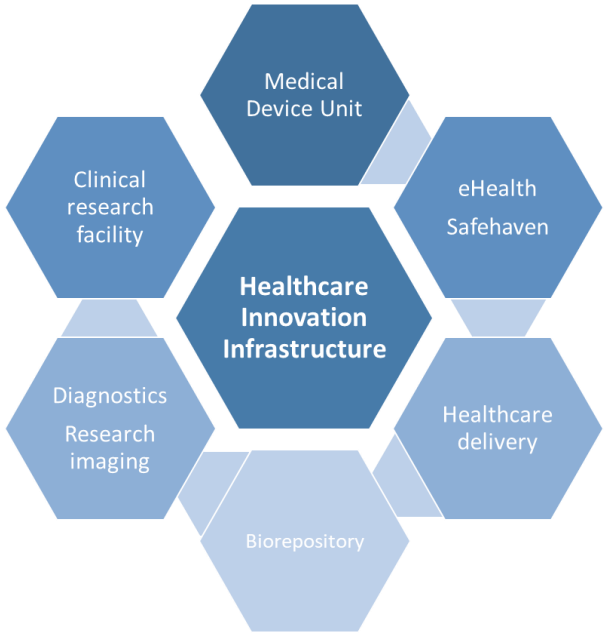
THE CHALLENGE

"Health and social care in Scotland currently has a rich but uncoordinated landscape for innovation, with many players. Some are duplicating others and some are pulled in at the wrong point of the innovation pathway, which can slow down momentum."

Scottish Government
Riaghaltas na h-Alba

RESEARCH AND DEVELOPMENT

Three Regional Test Beds

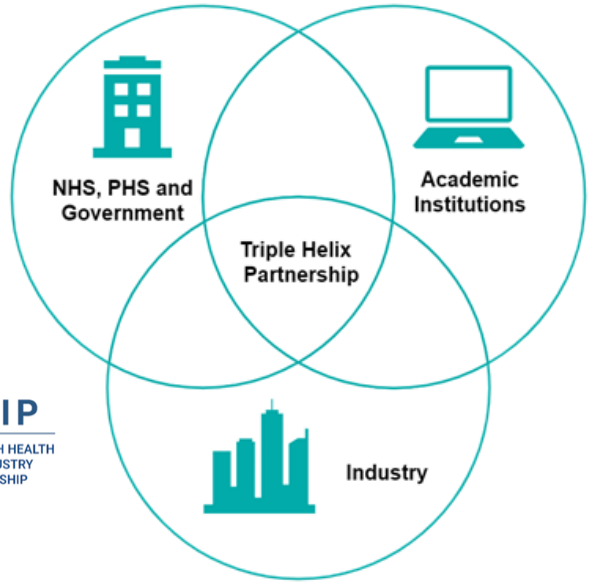


£3.5 million invested over 2022/23 in Test Beds and SHIP

CHIEF SCIENTIST OFFICE

SHIP
SCOTTISH HEALTH AND INDUSTRY PARTNERSHIP

Triple HELIX



Industry Partnership Group

abbvie · AMGEN · AstraZeneca · Bristol-Myers Squibb · CHILTERN · Daiichi-Sankyo · gsk · IQVIA · Janssen · labcorp · LumiraDx · MEDPACE · NOVARTIS · Pfizer · abpi · PPD · Roche

Pharma; Med-Tech; Digital

Scottish Government
Riaghaltas na h-Alba

£2 million over 2022/23 & 2023/24 invested in the Accelerated National Innovation Adoption Pathway

Procurement planning, regulatory compliance and Service Adoption Readiness assessment

Data baselining, whole system modelling and equalities input

Inputting into ANIA assessments and adoption planning from a workforce perspective, including **workforce development,** education and training

Research capacity for Health technology assessments and **value case assessments**

Healthcare Improvement Scotland

NHS National Services Scotland

Public Health Scotland

NHS Education for Scotland

Digital Health & Care Scotland

SHIP Scottish Health and Industry Partnership

Centre for Sustainable Delivery

NHS Scotland

Co-ordination of the ANIA pathway, progression of innovations through it and national clinical engagement.

Ensure alignment with other digital programmes and technical design for how digital innovations will be scaled nationally

SHIP develops and test new innovations on our healthcare challenges - providing evidence, advice and guidance to the ANIA process as they become **ready for potential implementation**

ANIA has been operating since Jan 22 and expected to be fully resourced by Dec 22

Scottish Government
Riaghaltas na h-Alba

Benefit of Scottish Government and UK Government Innovation

Scottish Government
Riaghaltas na h-Alba

UKRI

HORIZON EUROPE

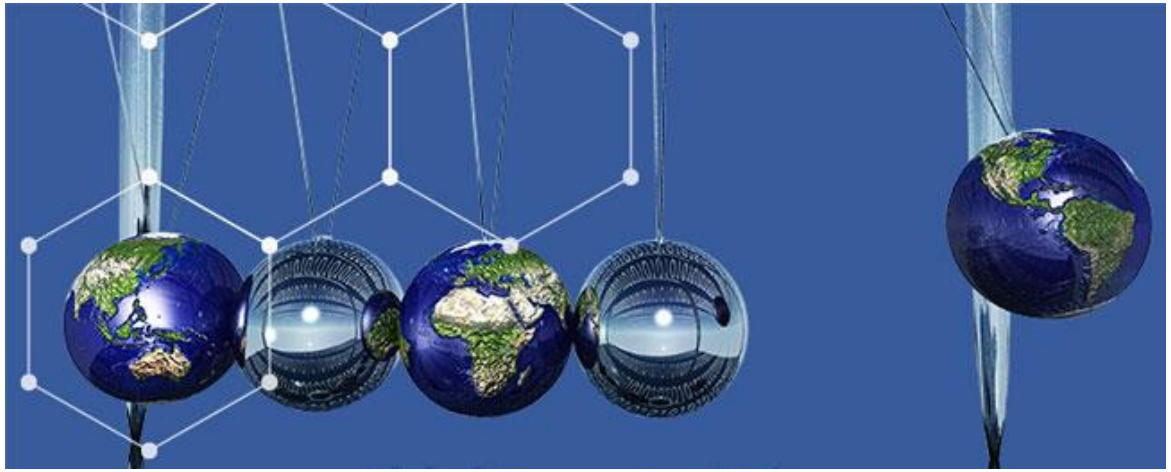
ROYAL SOCIETIES & ACADEMIES

CSA NETWORK

HM Government

Innovating with Impact

World leading excellence, Investing in innovative businesses,
Adoption & diffusion, Role of the public sector
Commercialisation, Innovation architecture, Delivering innovation



Creativity, courage, collaboration, communication, centres, community