

The Rosalind
Franklin Institute

The Rosalind Franklin Institute

A new national research centre designed to develop and accelerate the application of disruptive technologies and next-generation physical science methods that will underpin future advances in the life sciences, accelerate the discovery of new treatments for disease, and deliver new jobs and long-term growth.

- Formally announced by government in February 2017
- Five technology themes
- Led by ten University Partners plus STFC/DLS
- Hub and Spokes Model
- Ground breaking research and translation



Our Members



Imperial College
London



UNIVERSITY OF LEEDS



UNIVERSITY OF
Southampton



UNIVERSITY OF
BIRMINGHAM

The University of Manchester

UNIVERSITY OF
CAMBRIDGE



Science & Technology
Facilities Council



THE UNIVERSITY
of EDINBURGH



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Who are we ?

- Institute Chair
 - **Dr Vivienne Cox CBE**
- Institute Director
 - **Professor Jim Naismith**
- Science Directors
 - **Correlated Imaging / EM - Professor Angus Kirkland (Oxford ePSIC and RFI)**
 - **Structural Biology - Professor Jim Naismith (Oxford, RCaH and RFI)**
 - **Mass Spectrometry - Professors Zoltan Takats (Imperial) and Josephine Bunch (NPL)**
- Deputy Science Director
 - **Correlated Imaging / EM – Dr Judy Kim (Oxford ePSIC and RFI)**
- Interim Theme Leads
 - **Medicinal Chemistry - Professor Adam Nelson (Leeds)**
 - **Imaging with Sound and Light - Professor Ron Roy (Oxford)**
- Chief Operating Officer
 - **Dr Ellie Johnson-Searle**
- Head of Communications
 - **Laura Holland**

Strategic aims

- Drive **convergence** of the physical sciences, engineering and life sciences in the UK and foster **many-to-many** links across academia and industry, acting as a national focal point
- **Optimise** the effectiveness of existing government investment in **science infrastructure**
- Develop **(disruptive) new techniques** and instrumentation to address known challenges and **rate-limiting steps** in the life sciences sector, broadly defined (**"life science pull"**)
- Exploit opportunities offered by emerging physical science techniques by accelerating their application in the (academic and industrial) life and medical sciences (**"EPS push"**)
- Become a Global Centre of Excellence for **technology development and innovation**, seed a new **life sciences cluster**, and enhance the **UK skills base**
- Support **economic growth** (regionally and nationally) and **value creation**

Features of RFI science

Adventure	Projects which have significant risk, and significant pay-off if successful – more than would be tolerated through standard funding modes.
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Engagement	Our projects are not conceived of or delivered by one organisation – they engage multiple partners from academia and industry and there is demonstrable support for their development.
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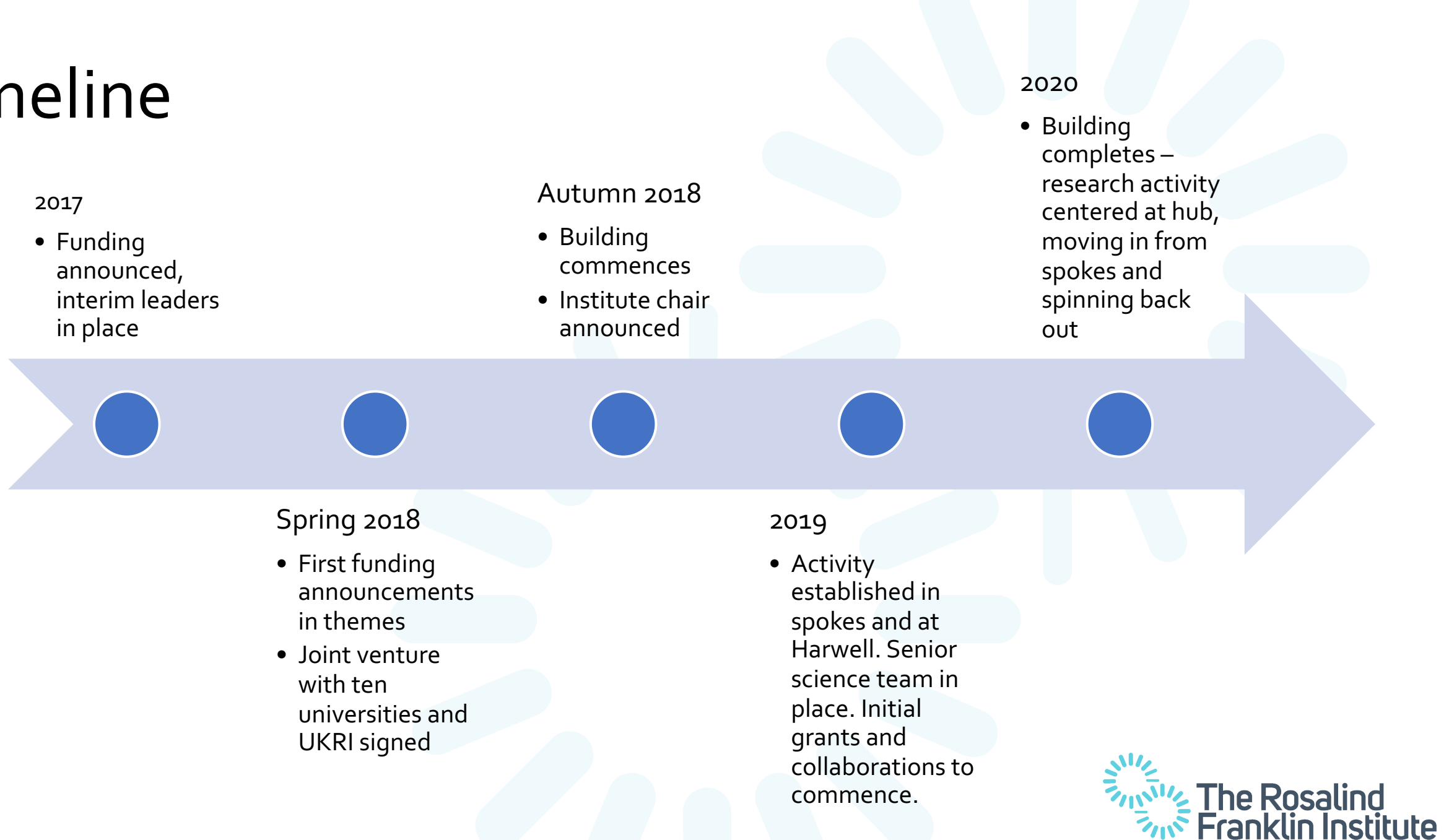
Novelty	Our technologies will be novel in their application and design.
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Utility	Our technologies will be sought after by both academic and industrial communities, generating significant research and economic benefits.
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The RFI Role

- **We will complement not compete** with Universities / other established Institutions.
- We will develop **disruptive , not incremental** instruments and methods.
- Successful developments will be made accessible through established National Facilities (EBIC / ePSIC for EM).

Timeline



Building progress and features

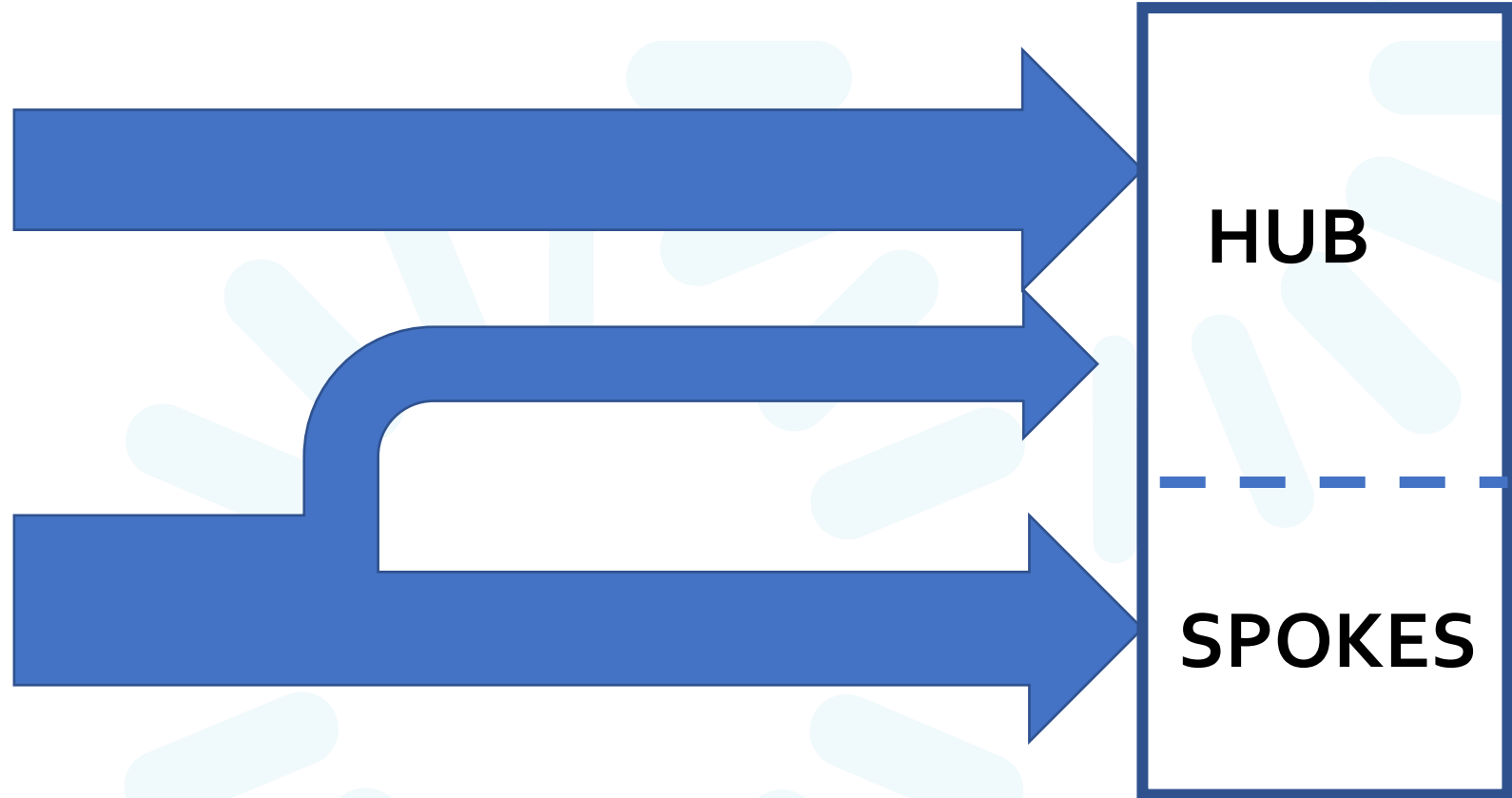
- RIBA stage Four complete – achieved in record time on campus - on track and on budget
- Spaces created for science – no areas wasted, optimised for strong collaborative working with world leading lab facilities
- One of the world's most stable facility for EM – using state of the art construction techniques



RFI Evolution and Operation

CREATOR FUNDING

RFI Core Funding
CREATES Unique
Technology Platforms
[Approved]



USER FUNDING

Grants and contracts for
research that USES the
Unique Technology
Platforms
[Work to win]

The Big Challenges

- Imaging from cm to pm (not mm to nm) and from s to ns.
- Integration of other new instruments into the workflow; e.g. hyperspectral optical, label-free, Raman, XCT and wide field X-Ray Imaging...
- General 3D correlation models; multi modal, multi spectral, multi length and time.
- Sample environments suitable for all instruments- open hardware / engineering.
- Coherent (open source) software to control the workflow.
- Big data; ML and AI.

