Translation and Entrepreneurship at the Francis Crick Institute

THE FRANCIS CRICK INSTITUTE

Dr Barbara Domayne-Hayman,
Entrepreneur in Residence

An institute open to translation

- Translation is used to describe how knowledge from fundamental research can be progressed to solve human health challenges.
- Crick approach includes:

Close proximity of applied scientists and business expertise
Enhances the translation potential of Crick Science

Clinical Insights
More of our science influenced by the clinic

Accelerated technology transfer
Acceleration of discoveries for impact on human health & wealth

Accelerate translation for health and wealth

Translational opportunities

THE FRANCIS CRICK INSTITUTE

- **Key translational science areas:**
  - **Target validation** and discovery of new and improved **therapeutics**
    - Chemical biology – small molecules
    - Biologics – antibodies
    - RNA biology – anti-sense oligonucleotides (ASOs)
    - Cell/gene therapy
  - **Biomarker discovery** - early disease diagnosis, patient stratification and treatment response
  - **Tool development** - that can help other researchers progress their science or be developed for clinical applications e.g.
    - Model systems - Human disease platforms
    - Endpoint analysis - Imaging
    - Ways of modulating biology - Functional genomics
    - Data - Software

THE CRICK'S INNOVATIVE MODEL FOR TRANSLATION

- Embedded translation expertise
- Partnership
  Precompetitive framework, bespoke projects

- Funding innovation
  - i2i, i2i tech
  - LifeArc- Crick fund
  - External grants
- Nurture a literate community
  - training and engagement
- Agile TTO focus on Impact and ops support
- Build relationships with venture community – eg Venture Breakfasts
- Translation recognition: Sir David Cooksey annual prize in Translation

Early signs of success

- Permeability of ideas and knowledge
- Clinical translation/ reverse translation environment emerging
- Technology adoption
- Maturing pipeline of projects progressing
  - Attract investment
  - External grants
  - Partnership
- Over half Group Leaders engaged with Translation

Idea to Innovation (i2i) scheme

THE FRANCIS CRICK INSTITUTE

- The Idea to Innovation (i2i) scheme is a fund to support early stage projects and accelerate the transition from bench to real life application. It addresses a gap in funding and expertise, by providing both to effectively support scientists at the Crick.
- Typical project value: £75k
- Translation Advisory Group review – fantastic expert resource
- Funded 42 i2i projects, to a total value of £2.8 million since 2015
- Created follow-on fund in collaboration with LifeArc, to support scaling up of projects eg progression toward a clinical experiment

Idea to Innovation (i2i) - example project

THE FRANCIS CRICK INSTITUTE

Endogenous retroviruses as targets of anti-tumour immunity

- **Pioneered unique bioinformatics tools and discovered cancer-specific candidates for therapeutic cancer vaccines.**

- **This led to the creation of a spinout (Ervaxx – now called Enara), assisted by Houman Ashrafian (Entrepreneur in Residence), with the view to testing the potential cancer vaccine targets.**

- **Enara, which has attracted £13m of funding, validated the concept of ERV protein presentation in three additional cancers and pushed forward the vaccine development.**

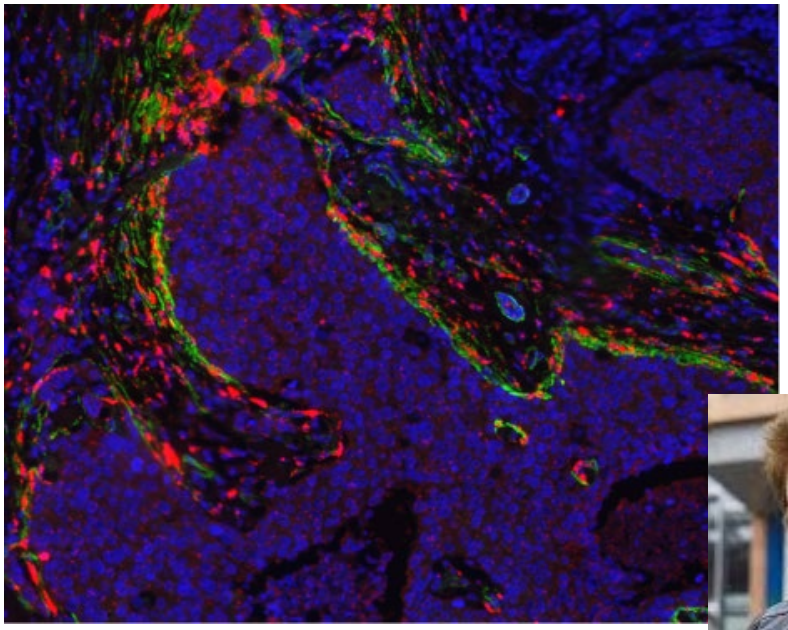
George Kassiotis

Industry collaboration - example project

THE FRANCIS CRICK INSTITUTE

Potential treatment of pancreatic ductal adenocarcinoma (PDAC)

- **The team have worked to validate a target for the treatment of pancreatic ductal adenocarcinoma (PDAC). This has the potential to reduce desmoplasia, promote an anti-tumour immune response and decrease cachexia (muscle-wasting).**
- **The team have developed a target validation approach that enables understanding of the underlying biology**



Caroline Hill

Technology and software applications

THE FRANCIS CRICK INSTITUTE

- Tool development - that can help other researchers progress their science or developed for clinical applications
- Some Crick examples:
  - Microscopy applications (Lucy Collinson)
  - Proteomics for stratifying patients (Markus Ralser)
  - RNA biology (Jernej Ule)

Forming companies to translate our academic work toward patient benefits

jobs created
175 (UK) /25 (US)

Investment
£196M /$ 25M

THE FRANCIS CRICK INSTITUTE

Paradromics
Dec 2015
Andreas Schaefer
Stanford –Crick

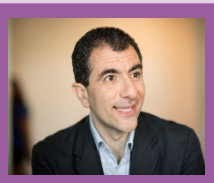
R&D

Achilles Therapeutics
June 2016
Charlie Swanton
UCL-Crick – CRT
FTIH in June 2020

Gamma Delta Therapeutics
August 2016
Adrian Hayday
KCL-Crick-CRT

Aim for FTIH 2020

Enara (Ervaxx)
May 2017
George Kassiotis



Houman Ashrafian EiR

R&D

Metacognis
March 2019
Mihaly Kollo PDRF
A . Schaeffer Lab
Crick

R&D

Myricx
Dec 2019
Ed Tate and Dinis Calados
Imperial -Crick

R&D

KQ Labs – building an ecosystem for digital health start-ups

THE FRANCIS CRICK INSTITUTE

Objectives:

- Stimulate early stage investment into data driven health companies –interface area between data and biomedical science challenging for investors
- Develop a digital health ecosystem in Kings Cross Knowledge Quarter and support future digital health leaders

What is the programme?

- KQ Labs is a 16 week accelerator programme for 10 carefully selected start-ups
- Each start-up given £40,000 as convertible loan
- Programme includes a series of workshops given by leaders in their fields, seminars and mentoring, culminating in Demo Day
- Introductions to key contacts throughout – including investors and corporates (for feasibility studies, business development) - Aim is to get start-ups investment-ready

Funding and sustainability

- Cohort #1 (Oct 2018 – Mar 2019) supported by Innovate UK
- Cohort #2 (Oct 2019 – Mar 2020) supported by Wellcome Trust
- Cohort #3 starting Oct 2020 – supported by LifeArc

KQ Labs

KQ Labs

lifeArc

wellcome

UKRI Innovate UK

THE FRANCIS CRICK INSTITUTE

COHORT #1:

Deepscope

CORTIRIO

ConcR

OKKO HEALTH

mendelian

Vesynta

quin

macusoft™

Heron

COHORT #2:

Sano

BOLD HEALTH

Oppilotech
UNLOCKING BIOLOGY

Jiva.ai

ZETTA GENOMICS

PHARMenable

baseimmune
data-driven vaccine design platform

iMERA

pexxi

MY PERSONAL THERAPEUTICS

Cutting edge research meets entrepreneurship

Programme for Up-and-coming Life Sciences Entrepreneurs

Run jointly with BIA

Focus on first-time CEOs and founders mainly from an academic setting

3 day bootcamp for ~ 20 people

Nurturing the grass roots: PhDs and Postdocs interested in entrepreneurship

- Data X Biomedical Science Summer School (2019) – 4 day bootcamp
- Masterclass Series (virtual - 2020)
- Run in collaboration Crick – Turing – Entrepreneur First

The Alan Turing Institute

Work with great people: The Translation Team

David Roblin
Chair of Scientific Translation

THE FRANCIS CRICK INSTITUTE

Translation Team

Veronique Birault
Director of Translation

Alison Maloney
Head of Translational Science

Paul Mercer
Head of Collaboration

Donna Hackett
Head of Commercial Translation

Barbara Domayne-Hayman
Entrepreneur-in-residence

Crick Legal and Contracts Team

Dan Fitz
General Counsel & Company Secretary

Lyndsey Houseman
Research Translation Manager

Gita Mistry
Clinical compliance & Translation Manager

Isabel Ramos
Business Manager

Melissa Lezamata
Business Manager
CRUK secondee

Ranmali Nawaratne
Senior Business Manager

Emma Fox
KQ Labs
Project coordinator

THE FRANCIS CRICK INSTITUTE

Thank you!