



New exhibition reveals the unseen side of science at Britain's biggest lab

Every year, at the Francis Crick Institute in central London:

- 1.5 million flies need to be fed
- Billions of cancer cells must be cared for
- 750,000 flasks, test-tubes and beakers have to be cleaned
- 3,000 pieces of cutting-edge equipment need to be fixed
- Thousands of microscopic images are collected and analysed

The Francis Crick Institute's new exhibition, *Craft & Graft: Making Science Happen*, showcases the surprising roles of the people who work around the clock to make its life-changing research possible.

The free exhibition, which opens on **1 March 2019 until 30 November 2019**, takes visitors behind the scenes to meet the technicians, engineers and specialists supporting science at Europe's biggest biomedical research institute under one roof.

These technical teams prepare, process, make, mend, analyse and innovate. From fixing faults in complex cutting-edge technology to feeding fruit flies and operating robots, these individuals are essential to keep the labs running and science happening.

The exhibition shines a spotlight on five specialist teams who have opened their doors for the first time:

- The technicians feeding and breeding over 15,000 families of fruit flies. They are also trained to perform incredibly precise tasks including hand-injecting DNA into fly embryos.
- The 'librarian's of life-forms' responsible for nurturing billions of cells in thousands of flasks, plates and vials.
- The people who meticulously clean the Crick's essential glassware to allow re-use and prevent any contamination.
- The mechanical and electronic engineers who race against time to fix, adapt or invent vital equipment for use in the labs.
- The specialists preparing biological samples, from fruit flies to cancer cells, for study using powerful microscopes. Some ultra-thin samples are so delicate, an astonishing tool is used to manoeuvre them: an eyelash glued to a cocktail stick.

Visitors will see five typical workbenches which have been specially created with tools and equipment, short films, personal interviews, imagery and interactive exhibits to bring the stories and skills of these teams to life.

Sir Paul Nurse, Director, the Francis Crick Institute "I began my scientific life as a 17 year old laboratory technician, so I really understand what they contribute to research. Engineers, technicians and other research specialists make up a significant part of our workforce and without them the science we do here would be impossible."

Emily Scott-Dearing, Curator says “In the Crick’s gleaming laboratories more than 1,000 scientists are thinking, experimenting and collaborating. What’s less well known is that they depend on the support of an army of technicians, engineers and specialists – from school-leavers learning on the job to highly trained experts. These individuals rarely play the leading roles but without this ensemble cast there’d be no science here at all.”

Key Exhibition Highlights:

Fly Facility

The Crick is home to over 15,000 fruit fly families – formally known as *Drosophila*. The flies are part of a complex breeding programme enabling scientists to study their genes, nervous systems, behaviour and development. Around 70% of human disease genes have a fruit fly equivalent, making them a powerful subject for studying human health. Technicians work alongside scientists to monitor and care for these flies. They also create new genetically modified flies – combining technology, craft, and a very steady hand to inject edited DNA into hundreds of fly embryos. Using very fine paint brushes, they gently manoeuvre flies under the microscope to identify distinctive markings and check whether a fly has mated.

Cell Services

Highly skilled scientific technicians nurture billions of cells in thousands of flasks, plates and vials on behalf of scientists, paying meticulous attention to detail. Over 6,000 cells are currently in a state of deep hibernation in the Crick’s deep freeze liquid nitrogen tanks, ready to be thawed when they’re needed for research. The team operates a strict quarantine system, screening every sample of cells that arrives at the institute. These can only be used in scientific research once Cell Services have confirmed their identity and given the cells a clean bill of health.

Glasswash

Every year, technicians at the Crick wash over 750,000 items of glassware so that they can be reused. To banish every last germ, the technicians must also bake the glassware in ovens or pressure cook them in an autoclave. Every batch must be scrupulously clean: a single mistake could contaminate a scientific experiment and put life-changing research at risk.

Engineering

The Crick’s scientists work their equipment hard. If it breaks or wears out, they need it fixed fast. Every year around 3,000 items of broken scientific equipment – from centrifuges to carbon dioxide delivery systems – are mended by the Crick’s specialist electronic engineers. The team are also responsible for adapting or designing new equipment, managing the process from concept and prototyping to final production.

Microscopy

Highly-trained specialists prepare biological samples, which could be anything from fruit flies to cancer cells, for scientists to magnify using powerful microscopes. It takes years of training and hands-on experience to use the Crick’s cutting-edge microscopes with absolute precision and accurately interpret the results. Ultra-thin samples 1,000 times finer than a human hair must be gently arranged on the surface of a water droplet. They’re so delicate that the team have hand-crafted an astonishingly low-tech tool to manoeuvre these samples: an eyelash glued to a cocktail stick.

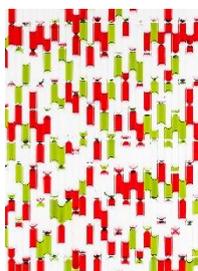
Visitors are also able to become ‘citizen scientists’ by participating in the Zooniverse ‘Etch-a-Cell’ machine learning project. A simple task of tracing around the edge of a magnified cell nucleus will help train computers to improve analysis of microscopy images.

***Craft & Graft: Making Science Happen*, 1 March 2019 until 30 November 2019**

FREE ADMISSION.

Open to the public: Wednesdays 10am – 8pm and Thursdays, Fridays and Saturdays 10am – 4pm.

The exhibition is part of the Crick's wider commitment to the Technician Commitment, a sector-wide initiative led by the Science Council and the Gatsby Foundation aiming to address the career challenges faced by technical working in research.



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PRESS ENQUIRIES & IMAGES

Further details, images, interviews with curator & technical teams are available.

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NOTES TO EDITORS

The Francis Crick Institute is a biomedical discovery institute dedicated to understanding the fundamental biology underlying health and disease. Its work is helping to understand why disease develops and to translate discoveries into new ways to prevent, diagnose and treat illnesses such as cancer, heart disease, stroke, infections, and neurodegenerative diseases.

An independent organisation, its founding partners are the Medical Research Council (MRC), Cancer Research UK, Wellcome, UCL (University College London), Imperial College London and King's College London.

The Crick was formed in 2015, and in 2016 it moved into a brand new state-of-the-art building in central London which brings together 1500 scientists and support staff working collaboratively across disciplines, making it the biggest biomedical research facility under a single roof in Europe.

Craft & Graft: Making Science Happen is the fourth exhibition at the Crick. Alongside the exhibition there will be a lively programme of events and talks – visit the website for more details. <https://www.crick.ac.uk/>

The Francis Crick Institute, 1 Midland Road, London, NW1 1AT

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The Technician Commitment is a sector-wide initiative, led by the Science Council and supported by the Gatsby Foundation, that aims to ensure visibility, recognition, career development and sustainability for technicians working in higher education and research, across all disciplines.

The Francis Crick Institute has signed the Technicians Commitment recognising the important role that technical staff play in the Institute. **Find out more at:** <http://technicians.org.uk>