UNIVERSITÀ DEGLI STUDI DI MILANO

SELEZIONE PUBBLICA, PER TITOLI ED ESAMI, PER IL RECLUTAMENTO DI N. 1 UNITÀ DI PERSONALE CON RAPPORTO DI LAVORO SUBORDINATO A TEMPO DETERMINATO DI CATEGORIA D – AREA AMMINISTRATIVA-GESTIONALE, PRESSO IL DIPARTIMENTO DI BIOSCIENZE - CODICE 22247

La Commissione giudicatrice del concorso, nominata con Determina Direttoriale n. 4813 del 29/03/2023 e composta da:

Prof. Paolo Landini	Presidente
Dott.ssa Isabella Rotondo	Componente
Dott.ssa Tiziana Turrisi	Componente
Dott. Giampaolo Bosi	Segretario

comunica i quesiti relativi alla prova orale:

GRUPPO DI QUESITI N. 1

1) In cosa consiste la fase di pre-award nei principali bandi di finanziamento
2) Un ricercatore viene da te per comprare uno strumento su un progetto in corso e che scade nel prossimo triennio. Quali sono i tuoi suggerimenti?
3) Traduzione di un testo con tema scientifico
https://www.nature.com/articles/d41586-023-01313-5
fonte Nature

What Rosalind Franklin truly contributed to the discovery of DNA's structure

James Watson and Francis Crick are two of the twentieth century's most renowned scientists. The seminal paper from the pair at the University of Cambridge, UK, detailing the discovery of the DNA double helix, was published as part of a trio in Nature70 years ago this week[1–3]. They are also widely believed to have hit on the structure only after stealing data from Rosalind Franklin, a physical chemist working at King's College London.

Lore has it that the decisive insight for the double helix came when Watson was shown an X-ray image of DNA taken by Franklin — without her permission or knowledge. Known as Photograph 51, this image is treated as the philosopher's stone of molecular biology, the key to the 'secret of life' (not to mention a Nobel prize). In this telling, Franklin, who died of ovarian cancer in 1958 at just 37, is portrayed as a brilliant scientist, but one who was ultimately unable to decipher what her own data were telling her about DNA. She supposedly sat on the image for months without realizing its significance, only for Watson to understand it at a glance.

Franklin and DNA

In the early 1950s, the structure and function of DNA remained unclear. It had been found in every cell type investigated, and was known to consist of a phosphate backbone to which were attached four kinds of base — adenine, thymine, cytosine and guanine (A, T, C and G).

In 1944, the microbiologist Oswald Avery and his colleagues had shown that DNA (not protein) could transform benign Streptococcus pneumoniae bacteria into a virulent form[4]. But it remained far from clear that it was the genetic material in all organisms.

At King's College London, biophysicists funded by the Medical Research Council (MRC), and led by John Randall, with Maurice Wilkins as his deputy (who would later share the Nobel prize with Watson and Crick in 1962), were using X-ray diffraction to study the structure of the molecule. In 1951, they were joined by Franklin, who had been using this technique to investigate the structure of coal at the Central State Laboratory of Chemical Services in Paris.

GRUPPO DI QUESITI N. 2

1) A cosa servono i time-sheet in fase di rendicontazione?
2) Che cos'è un audit di primo livello?
3) Traduzione di un testo con tema scientifico

https://www.nature.com/articles/d41586-023-00222-x
fonte Nature

Could Africa be the future for genomics research?

In 2020, an analysis of 426 African genomes, involving researchers from 15 African countries, uncovered 3 million new variants in the human genome1. The discovery contributed to the development of a tool that enables researchers to identify genetic associations specifically in African populations — the Infinium H3Africa Consortium genotyping array, produced by the US biotechnology firm Illumina.

Although various enterprises have supported cutting-edge human genomics in Africa, the Human Heredity and Health in Africa (H3Africa) initiative2, which supported this work, has probably contributed the most in terms of infrastructure and training. The US$176-million programme began in 2010, funded by the US National Institutes of Health (NIH) and the UK biomedical charity Wellcome (in partnership with the African Society of Human Genetics). Projects have ranged from population-based genomic studies of common disorders, such as heart disease, to investigations of infectious diseases, such as COVID-19. Together, some 51 projects, all led by African scientists and involving researchers from more than 30 African countries, have resulted in 50,000 samples being genotyped and nearly 700 papers being published.

Thanks to H3Africa and other genomics initiatives, such as the Nigerian 100K Genome Project3, African genomics is now poised to improve the health of millions of people worldwide, including those across the continent and the African diaspora. But building on the discoveries made so far — and especially applying findings to the clinic — will require several systemic changes, including a major shift in how genomics research in Africa is funded.

All remaining projects supported by the H3Africa initiative are expected to wrap up this year. (Although funding formally ended in June 2022, some H3Africa grant recipients were able to obtain extensions because of disruption from the COVID-19 pandemic.) Here, we lay out what is needed to ensure that investment in genomics in Africa is not just sustained in a post-H3Africa world but expanded. In our view, Africa could become the birthplace for a new kind of genomics — one that brings better health to all.

Milano, 3 maggio 2023

La Commissione

Prof. Paolo Landini - Presidente

Dott.ssa Isabella Rotondo - Componente

Dott.ssa Tiziana Turrisi - Componente

Dott. Giampaolo Bosi - Componente