

50TH ANNIVERSARY

Whatever happened to...



Winners of the 1962 Nobel Prizes display their diplomas. Maurice Wilkins is on the far left, Francis Crick is third from the left and James Watson is second from the right. © Bettmann/CORBIS.

Watson and Crick are among the most recognizable names in biology, Wilkins and Franklin perhaps less so, but what happened to these

inspirational people after their ideas and dedication made 1953 a watershed year in science?

Francis Harry Compton Crick, the man who, at the age of 30, in his own words “essentially knew nothing”, has continued to address ‘big’ questions since he and James Watson answered one of the biggest. Collaborations with the 2002 Nobel laureate Sydney Brenner produced ideas on protein synthesis and the genetic code. Crick joined the Salk Institute in California in 1976, and this has remained his affiliation up to the present, where he has focused on the problem of consciousness. Most recently, he has been considering the neural correlates of consciousness: the minimal set of neuronal events that give rise to a specific aspect of a conscious precept.

Rosalind Elsie Franklin, often characterized as the wronged heroine of the double helix story, died four years before Watson, Crick and Wilkins received their Nobel Prize in 1962. The Nobel rules preclude posthumous awards, but they also preclude prizes being shared by

more than three people, so would she have been honoured even had she been alive? Regardless, Franklin did become something of a feminist icon after Watson was rather dismissive of her in his bestseller of the late 1960s, *The Double Helix*. Her last working years produced what Watson describes as “very beautiful work” on the structure of tobacco mosaic virus.

James Dewey Watson has retained the high profile that he gained after widespread recognition followed on the heels of the 1953 breakthrough. After brief stints working with Alexander Rich, and Crick again, Watson went on to Harvard where he collaborated with Walter Gilbert. In 1968, he took over as Director of Cold Spring Harbor Laboratory, which he revitalized by focusing on tumour biology, eventually becoming its President in 1994. In this role, as well as during a stint at the National Institutes of Health as Associate Director for Human Genome Research and subsequently as Director of the

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Twisting the night away

DNA’s big anniversary has not been allowed to slip away with only a few geneticists raising a cheer: the public are also being involved.

Celebrations got off to a serious start in the UK with a public forum on ‘Genetics and the Search for Safer Drugs’ (6 February, Royal College of Physicians, London). Science festivals in March (24–30, Wrexham) and April (17–22, Edinburgh, Scotland) promise to be more light-hearted, with DNA-based public lectures, discussion forums and interactive workshops. Interaction is also a big part of Kew Garden’s celebratory event ‘DNA in the Garden’ (29 March–11 May, London).

Double helix fever is also gripping the US, particularly in New York, where numerous organizations are taking part in a host of activities under the DNA festival banner. One exhibition promises to tell the story of New York and DNA, placing the discovery

in a historical and social context (New York Public Library, 25 February–29 August).

Some events are considerably less public: the DNA gala dinner at the Waldorf Astoria (28 February, New York) was an invite-only affair. Similarly, the flagship celebratory dinner in the UK (23 April, Guildhall, London) will have a restricted guest list, probably featuring the prime minister, members of the royal family, Nobel laureates and, if guest of honour James Watson has his way, Michael Caine, Sean Connery and soccer-star David Beckham!

Watson, surely the busiest man in the world this year, has also been invited to unveil a plaque at the Eagle public house where Francis Crick famously declared to puzzled drinkers on 28 February 1953 ‘We have uncovered the secret of life’ (25 April, Cambridge, UK). Of course, Crick’s exclamation came after he and

Watson had put together a model of the double helix. Consequently, DNA models feature in several celebratory events including the Watson-adorned DNA50 events at the International Centre for Life (14–17 April, Newcastle, UK).

Maurice Wilkins is also a man in demand in this anniversary year, with appearances at public events in Cambridge (‘Who Twists the Helix?’, The University Centre, 17–19 March) and London (‘DNA Past, Present and Future’, King’s College, 22 April).

Anyone not able to attend these events will still be able to get into the spirit of the celebration: ‘National DNA Day’ (25 April) will be celebrated by high schools throughout the USA, and in the UK a special DNA £2 coin will be a nice souvenir for any double helix buff.

So, there is no excuse for the public not to be involved in the party this year, and let us hope that they do get involved because, as Watson says, “DNA is for the world, not just science”.

Nick Campbell

References and links

WEB SITE

Cold Spring Harbor Laboratory DNA anniversary site:
<http://www.dna50.org/main.htm>

National Center for Human Genome Research, he has remained at the forefront of research and policy-making in genetics and molecular biology.

Maurice Hugh Frederick Wilkins has been less publicly prominent than Watson since 1953. In a way this is surprising, given that as well as his work on the structure of DNA he was also involved with the development of the nuclear bomb — an innovation that might even dwarf the profile of the double helix in the public's perception of science in the twentieth century. Wilkins continues to teach and pursue his interest in social responsibility in science, and, at the age of 86, remains an active staff member at King's College, London.

Nick Campbell

References and links

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The art of the helix

The beauty of the DNA double helix, together with the social and ethical issues that developments in genetics have raised, are the source of inspiration for many artists. The celebration of the 50th anniversary of the discovery of the DNA structure has catalysed the organization of several art exhibitions with the theme of genetics.

Art can help scientists to communicate the advances that have been made in genetics, and to engage the public in debate about topics such as cloning, genetic modification and gene patenting. For example, an exhibition on the impact of the Human Genome Project — 'How Human: Life in the Post-Genome Era' (International Center of Photography, New York, 28 February–25 May) — that includes works by more than 30 artists and photographers, will reach more people than would ever visit the labs that are responsible for sequencing the human genome.

New York hosts a number of other exhibitions, including 'Genetic Expressions: Art after DNA' (Hecksher Museum of Art, Huntington, 28 June–7 September) and 'From Code to Commodity: Genetics and Visual Art' (The New York Academy of Sciences; until 11 April). The Graduate Center Art Gallery in New York also marks the anniversary of Watson and Crick's discovery with an exhibition in April entitled 'Genomic Issue(s): Art and Science'.

In February and March, the Universal Concepts Unlimited Gallery, New York, presented the work of five female artists in 'Women in Science: Genomically Yours' — an exhibition that was dedicated to Rosalind Franklin, who is also the subject of a play that was shown at the City University of New York in March. Artwork from The Santa Barbara Museum of Art's exhibition 'PhotoGENESIS: Opus 2', which aims to provide an artist's response to the genetic information age, was also exhibited in New York in February, coinciding with the Watson and Crick celebrations.

Outside New York, the 'Paradise Now' exhibition, which is the product of collaborations between artists and scientists, can be seen at the Tulane Museum, New Orleans (until May) and the McKinney Avenue Contemporary, Dallas (June to July). The works presented in this exhibition, including an interesting example of how genetics can be used to develop technologies that are useful to the artist, can also be seen at the Paradise Now web site. Among the exhibitors are Ackroyd and



Image by Luisa Estanislao 2002

Harvey, who use grass to produce wonderful, but short-lived, images. Photographic negatives are laid on grass and, over time, an image develops as the level of green photosynthetic pigments in the grass alters in response to the amount of light penetrating the negative. Geneticists at the Institute of Grassland and Environmental Research, Wales (UK) have produced a genetically modified 'stay-green' rye-grass that enables the artists to dry their grass pictures, so that they last for longer.

At the University of Cambridge (UK) — a short distance from where Watson and Crick solved the structure of DNA — the Whipple Museum of the History of Science will host the 'Representations of the Double Helix' exhibition throughout the year.

As well as being a source of enjoyment and discussion for scientists, artists and members of the public, these exhibitions might promote links between scientists and artists. Such links can only improve the ability of scientists to communicate their research and explore the ethical implications of their work.

Catherine Baxter

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FURTHER READING Kemp, M. The *Mona Lisa* of modern science. *Nature* **421**, 416–420 (2003) | Nelkin, D. & Anker, S. The influence of genetics on contemporary art. *Nature Rev. Genet.* **3**, 967–971 (2002)

WEB SITES

Genomic Art:
<http://www.genearth.org/genehome.htm>
Paradise Now:
<http://www.genearth.org/pn-home.htm>

