

## Imperial at a glance

### Established in 1907

Imperial College was established in 1907 from the merger of the Royal College of Science, the City and Guilds College and the Royal School of Mines.

### Mergers

St Mary's Hospital Medical School and the National Heart and Lung Institute merged with the College in 1988 and 1995 respectively. In 1997 they were joined by Charing Cross and Westminster Medical School and the Royal Postgraduate Medical School to form the Faculty of Medicine.

In 2000 Wye College in Kent and the Kennedy Institute of Rheumatology also merged with Imperial.

### The College

The College now has nine campuses in London, Kent and Berkshire, including its main campus in South Kensington.

It is made up of three academic Faculties — Engineering, Natural Sciences and Medicine — plus Tanaka Business School.

Current Rector Sir Richard Sykes is the thirteenth to have led the institution since its foundation in 1907

The College is formed of the largest estate in the UK university sector, equivalent to 133 football pitches.

### The students

Imperial has 11,500 students — 8,000 undergraduates and 3,500 postgraduates.

International students number 3,300, a rise of 67% over the last five years.

### Graduation

Imperial holds two graduation ceremonies each year — postgraduate in May and undergraduate in October — both in the Royal Albert Hall.

In 2007, as part of the Centenary celebrations, an additional graduation ceremony will take place in Singapore, to reflect the large number of students coming to Imperial from Asia.

### 14 Nobel Laureates

Former staff include 14 Nobel Laureates.

### Current staff

Current staff include both The Queen's Physician and The Prime Minister's Physician.

### Notable alumni

Notable alumni include writer HG Wells, former Indian Prime Minister Rajiv Gandhi, chair of the Commission for Racial Equality Trevor Phillips, Brian May of Queen and Sir Roger Bannister, the first man to run a mile in under four minutes.

### Crest

Imperial's official crest includes the motto SCIENTIA IMPERII DECUS ET TUTAMEN, which can be translated 'knowledge is the adornment and protection of the state'.

## Imperial's Nobel Laureates

### Physics

1937 **THOMSON, Sir George Paget FRS** (1892–1975)

Professor of Physics 1930–1952  
Fellow of Imperial College, 1955  
*(Joint award) for his contribution to experimental discovery of the diffraction of electrons by crystals*

1948 **BLACKETT, Lord Patrick Maynard Stuart FRS** (1897–1974)

Professor of Physics 1953–65  
Fellow of Imperial College, 1967  
*For his development of the Wilson cloud chamber method, and his discoveries therewith in the fields of nuclear physics and cosmic radiation*

1971 **GABOR, Dennis FRS** (1900–1979)

Professor of Electron Physics 1958–67  
Fellow of Imperial College, 1970  
*For his invention and development of the holographic method*

1979 **SALAM, Abdus** (1926–1996)

Professor of Theoretical Physics 1957–1996  
(Emeritus Professor 1993)  
Fellow of Imperial College, 1994  
*(Joint award) for his contribution to the theory of the unified weak and electromagnetic interaction between elementary particles, including inter alia the prediction of the weak neutral current*

### Chemistry

1937 **HAWORTH, Sir Walter Norman FRS** (1883–1950)

Senior Demonstrator in Chemistry 1956  
*For his research into the constitution of carbohydrates and vitamin C. (The award for 1937 was shared 1911–12 with Paul Karrer)*

1956 **HINSHELWOOD, Sir Cyril Norman FRS** (1897–1967)

Senior Research Fellow Imperial College, 1964–1967  
*(Joint award) for his contribution to researches into the mechanisms of chemical reactions*

1967 **PORTER, Sir George FRS** (1920–2002)

Visiting Professor, Department of Biology 1978–2002  
Fellow of Imperial College, 1987  
*(Joint award) for his contribution to studies of*

*extremely fast chemical reactions, effected by disturbing the equilibrium by means of very short pulses of energy*

1969 **BARTON, Sir Derek FRS** (1918–1998)

Professor of Organic Chemistry 1957–1978  
Fellow of Imperial College, 1980  
(Emeritus Professor 1978)  
*(Joint award) for contribution to the development of the concept of conformation and its applications in chemistry*

1973 **WILKINSON, Sir Geoffrey FRS**

Professor of Inorganic Chemistry 1956–1996  
(Emeritus Professor 1988)  
Fellow of Imperial College, 1993  
*(Joint award) for pioneering work, performed independently on the chemistry of the organometallic so called sandwich compounds*

### Physiology and Medicine

1929 **HOPKINS, Sir Frederick Gowland FRS** (1861–1947)

Student RSM c.1881–1883  
*(Joint award) for his discovery of the growth stimulating vitamins*

1945 **FLEMING, Sir Alexander** (1881–1955)

Professor of Bacteriology 1928–1948, St Mary's Hospital Medical School  
*Jointly with Sir Ernst Chain and Sir Howard Florey for discovering Penicillin*

1945 **CHAIN, Sir Ernst Boris FRS** (1906–1979)

Professor of Biochemistry 1961–73  
Fellow of Imperial College, 1978  
*(Joint award) for the discovery of Penicillin and its curative effect in various infection diseases*

1963 **HUXLEY, Sir Andrew Fielding FRS** (1917)

Fellow of Imperial College, 1980  
*(Joint award) for discoveries concerning the ionic mechanisms involved in excitations and inhibition in the peripheral and central portions of the nerve cell membrane*

1972 **PORTER, Rodney Robert** (1917–1985)

Pfizer Professor of Immunology, St Mary's Hospital Medical School 1960–1967  
*For his research on the chemical structure of antibodies*

## Imperial's science stars of today

### Igor Aleksander

Igor Aleksander, now Emeritus Professor of Neural Systems Engineering, joined the College in 1984. He is a leading expert on artificial intelligence and consciousness, and designed the world's first neural pattern recognition in the early 1980s.

### Roy Anderson

Roy Anderson, Professor of Infectious Disease Epidemiology, conducts research in the field of epidemiology, using mathematical models to predict the effectiveness of different methods of containment for diseases including SARS, BSE and vCJD, and foot and mouth.

### Donal Bradley

Donal Bradley, now head of the Department of Physics, carries out ground-breaking research into electronic materials and devices. One of his successes includes the development of polymer light emitting diodes, already translated into lightweight, low-power displays for products such as mobile phones.

### John Burland

John Burland, Emeritus Professor of Soil Mechanics, is best known as the engineer who prevented the Leaning Tower of Pisa from toppling over, for which he was awarded the Knight Commander of the Royal Order of Francis I by the Italian government. He was also involved in ensuring that the Houses of Parliament and Big Ben were unharmed by the extension of the London Underground Jubilee Line.

### Ara Darzi

Ara Darzi, Head of the Division of Surgery, Oncology, Reproductive Biology and Anaesthetics, is one of the UK's leading surgeons in the field of minimally invasive and robot-assisted surgery. He was one of the first practitioners to use the Da Vinci robot for surgery and the first in the UK to trial the use of the Remote Presence 'Robo-Doc' system, which allows doctors to see and examine patients from anywhere in the world.

### Julia Higgins

Julia Higgins, Professor of Polymer Science and currently Principal of the Faculty of Engineering, is known both for her research on the behaviour of complex materials and her work to promote the participation of women in science, engineering and technology.

### Ravinder Maini and Marc Feldmann

Ravinder Maini, Emeritus Professor of Rheumatology, and Marc Feldmann, Professor of Cellular Immunology, have researched extensively on rheumatoid arthritis and made major breakthroughs in its treatment. Their work paved the way for anti-TNF drugs, which have transformed the lives of thousands of people worldwide.

### John Pendry

John Pendry, Professor of Theoretical Solid State Physics, is one of the founders of the field of metamaterials. This led to the demonstration of the world's first 'invisibility cloak' in 2006, constructed from metamaterials, built from artificial atoms that cause microwaves to split and flow around the material rather than penetrating and bouncing off it to make it detectable. This breakthrough could have a variety of applications for radar and communications technologies.

### Magdi Yacoub

Magdi Yacoub, Professor of Cardiothoracic Surgery, is one of the pioneers of heart surgery. He helped to develop the techniques of heart and heart-lung transplantation, and specialised in working with children with congenital heart defects, performing complex operations on the hearts of babies in their first days of life. He also performed the first ever domino operation, in which one patient with failing lungs is given a new heart and lungs, with a second patient receiving the fully functioning heart of the first.

## Imperial's science stars of the past

### George Finch • 1888–1970

George Finch, Professor of Applied Physical Chemistry at Imperial 1936–1952, is best known for his pioneering work on oxygen which enabled him to develop breathing apparatus to be used at high altitudes. A keen mountaineer, he tested his designs personally and in 1922 reached 27,300 feet on Everest using oxygen equipment, higher than any human had previously climbed.

### William Hamilton • 1936–2000

William Hamilton, considered one of the greatest evolutionary theorists of the twentieth century, was a lecturer in genetics at Imperial 1964–1977. His work, in particular his theory of kin-selection, provided the basis for the development of a gene-centric view of evolution, later popularised by Richard Dawkins and his 'selfish gene'.

### Arthur Holmes • 1890–1965

Arthur Holmes, who obtained his PhD from Imperial in 1917, was one of the most eminent geologists of the twentieth century and a pioneer of the radiometric dating of rocks. He performed the first uranium-lead radiometric dating and in 1913 estimated the age of the earth to be 1.6 billion years, a finding that was rigorously attacked at the time.

### Thomas Huxley • 1825–1895

TH Huxley, Professor of Natural History at the Royal School of Mines from 1854 to 1884, is best known for his early and active support of Darwin's theory of evolution, which earned him the nickname 'Darwin's bulldog'. He also coined the term 'agnosticism' to describe his stance on religious belief.

### Eric Laithwaite • 1921–1997

Eric Laithwaite, Professor of Heavy Electrical Engineering at Imperial 1964–1986, is principally known for his development of magnetically-levitated (maglev) high-speed trains, which he demonstrated with a prototype high-speed wheel-less vehicle propelled by the force of a magnetic field. He was also an early advocate of science communication through numerous lectures and television appearances.

### William Penney • 1909–1991

William Penney, Rector of the College from 1967 to 1973, was a leading authority on the effects of nuclear weapons and headed the team that created the first British atomic bomb following World War II. He went on to serve on the board of the UK Atomic Energy Authority, and it was under his leadership that the first British hydrogen bomb was developed and tested in 1957.

### David Potter • 1943

David Potter joined Imperial in 1970 as a lecturer in physics, leaving in 1980 to form the IT company PSION. The company launched the world's first volume-produced handheld computer in 1984.

### Henry Tizard • 1885–1959

Henry Tizard, Rector of Imperial 1929–1942, held a number of key government posts during his career but is best known for his contribution to the development of radar, which he supervised and championed as chairman of the Aeronautical Research Committee in the run-up to World War II.

### HG Wells • 1866–1946

HG Wells, student of the Normal School of Science (later the Royal College of Science) 1883–1887, went on to become a pioneer of science fiction, famous for works including *The Time Machine* and *The War of the Worlds*. As an alumnus he helped to set up the Royal College of Science Association, of which he became the first president in 1909. Imperial gets a mention in his novel *Ann Veronica* when the proto-feminist heroine announces her intention "to go on with her studies, not at the Tredgold Schools but at the Imperial College".

### Almroth Wright • 1861–1947

Almroth Wright, Professor of Pathology at St Mary's Medical School 1902–1946, was a pioneer of vaccination. By 1896 he had developed an effective anti-typhoid vaccine successfully trialled on troops of the Indian Army and subsequently used among British soldiers in the Boer War.