

The Edinburgh Family of Science and Engineering

The names in the adjacent floor display are just a small selection of people from Edinburgh's vast and distinguished scientific family, whether as former staff or students of the University, or associated people from the locality, who have made an impact in their chosen spheres of activity.

Biological Sciences

Chemistry

Engineering

GeoSciences

Informatics

Mathematics

Physics and Astronomy

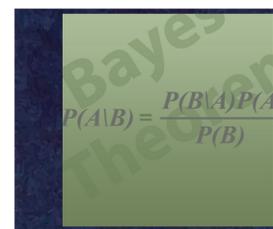
Key to floor colours, by School with closest association.

18th Century



Colin Maclaurin
1698-1746

Minister's son from Argyll. Professor at age 19 and FRS by 21. On the recommendation of Sir Isaac Newton appointed 6th Professor of Mathematics 1725 (jointly until 1742). Best known today for "Maclaurin Series". Did much to promote learned societies leading to the Royal Society of Edinburgh. Less successful in fortification of the City against the Jacobite army 1745.



Thomas Bayes
1701-1761

Born Hertfordshire. Studied logic and theology at the University 1719-22. Presbyterian minister in Tunbridge Wells. Later became interested in probability theory. Posthumously published manuscript contains special case of what we now know as Bayes Theorem, the basis of the Bayesian interpretation of probability (although he would probably not have recognised it).



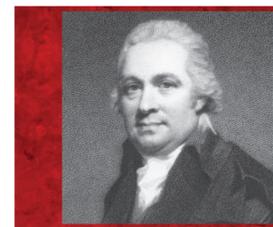
James Hutton
1726-1797

Born Edinburgh. Remarkably varied career including farming in Berwickshire and experimentation in crop and animal husbandry. Ever increasing interest in landforms and geology, studying sites all over Scotland. Great work "The Theory of the Earth" on the processes by which the earth's surface evolves. Key figure in the Scottish Enlightenment. Strong associations, but not employed by the University.



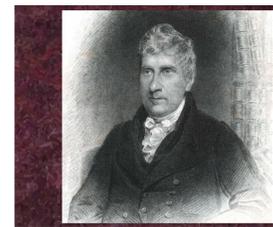
Joseph Black
1728-1799

Born Bordeaux of Scottish descent. Early work on "fixed air" (carbon dioxide) as part of MD thesis at the University. Chairs in Glasgow and major work on latent and specific heats. Appointed 4th Professor of Chemistry 1766. Major influence on contemporary science. With Hutton, Hume and others, a major figure in the Scottish Enlightenment. Practising doctor.



Daniel Rutherford
1749-1819

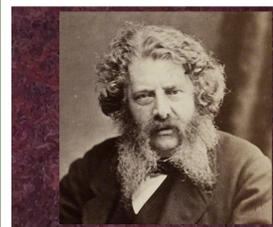
Son of an Edinburgh professor of medicine. Student of Joseph Black. MD thesis 1772 established distinction between carbon dioxide and nitrogen in air. Appointed 6th Regius Professor of Medicine and Botany and Keeper of the Royal Botanic Gardens 1786. Usually regarded as the discoverer of nitrogen.



John Rennie
1761-1821

Born Phantassie, East Lothian of farming stock. Mechanical prodigy, established as master millwright by age 19. Studied Natural Philosophy at the University 1780-1783. Associate of James Watt at the Soho Factory. Great pioneer of the civil engineering profession with spectacular list of achievements including docks, lighthouses, canals and bridges e.g. the 19th century London Bridge, now in Arizona.

19th Century



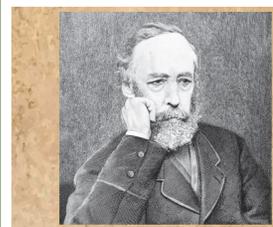
William Rankine
1820-1872

Born Edinburgh. Studied Natural History and Natural Philosophy at the University 1836-38. Subsequent career at the University of Glasgow. Massive and wide-ranging output including founding contributions to thermodynamics (with the future Lord Kelvin), theory of the steam engine (Rankine cycle), shock wave propagation (Rankine-Hugoniot equations). Practising civil engineer. Also wrote songs and poetry.



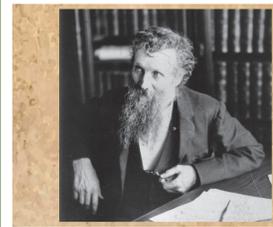
Charles Darwin
1809-1882

Born Shrewsbury. By family tradition, came to the University 1825, but neglected his medical studies. While in Edinburgh, assisted investigations on animal invertebrates in Firth of Forth, first encountered evolutionary ideas, learned plant classification and taxidermy. Voyage of HMS Beagle 1831-36. Galapagos observations. World-changing ideas on natural selection published in "On the Origin of Species", 1859 and thereafter.



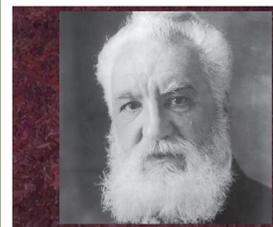
James Croll
1821-1890

Born on a farm in Perthshire, largely self-taught, various jobs. Caretaker in Andersonian Museum 1859 gave access to books. Developed ideas on how ice ages link to variations in the Earth's orbit. Led to position at the Geological Survey of Scotland, Edinburgh. Ideas on orbitally-forced insolation and feedback through ice-albedo anticipated Milankovitch cycles, (vindicated by the CLIMAP Project 1976).



John Muir
1838-1914

Born Dunbar, East Lothian. Emigrated to U.S. at age 11. Author and early advocate of preservation of wilderness in U.S. Founded Sierra Club. Father of the National Parks, especially influential in founding Yosemite Valley and Sequoia NPs. Recognised in the names of many institutions and walking trails in the U.S., U.K. and elsewhere, including Scotland's John Muir Trust.



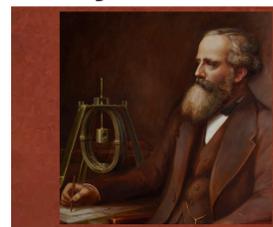
Alexander Graham Bell
1847-1922

Born Edinburgh. Briefly attended the University before family move to London then Canada. Expert in elocution and communication for the deaf. Experiments on creation and transmission of sound led to acoustic telegraphy and the invention of the telephone. Co-founder of Bell Telephone Company. Widely honoured including Honorary LL.D. at the University 1906.



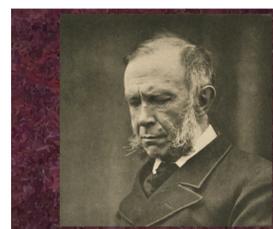
James Dewar
1842-1923

Son of an innkeeper in Kincardine. Student of Chemistry at the University 1859-1862, assistant to the professors of chemistry and lecturer at Dick's Edinburgh Veterinary School 1869. Chairs at Cambridge 1875 and Royal Institution 1877. Famous for work on spectroscopy, cryogenics, liquefaction of "permanent" gases and invention of the Vacuum Flask.



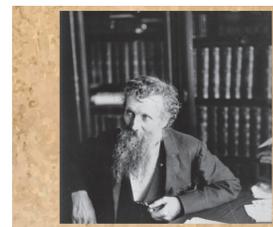
James Clerk Maxwell
1831-1879

Born Edinburgh. Classes in Mathematics and Natural Philosophy at the University from 1847. Unsuccessful applicant for Chair at Edinburgh. Founder of modern electro-magnetic theory through "Maxwell's Equations", predicting electro-magnetic waves travelling at the speed of light. The equations' invariance properties set scene for relativity theory. Fundamental work in colour vision/photography and thermodynamics.



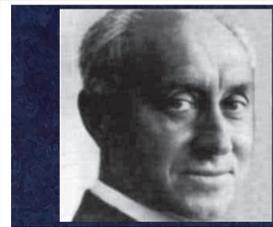
H C Fleeming Jenkin
1833-1885

Peripatetic early life, included schooling in Edinburgh. Made career in mechanical engineering, especially sub-sea cable-laying, forming partnership with the future Lord Kelvin. Appointed 1st Regius Professor of Engineering 1868. Atlantic cable-laying cruises on Brunel's SS Great Eastern. Friend of R L Stevenson, he also made forays into economics and the debate on Darwinian natural selection.



John Murray
1841-1914

Born Canada of Scottish descent. Entered the University to study medicine 1868, left on whaling expedition, returned to study natural philosophy. Assistant scientist on HMS Challenger expedition to survey the deep oceans; curator and editor of findings. Founded Marine Station, Granton, forerunner of Scottish Association for Marine Science. Father of modern oceanography, e.g. noted mid-Atlantic ridge and ocean trenches.



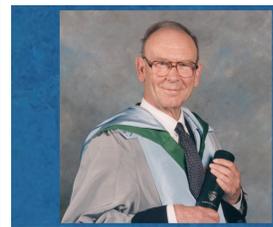
Arthur Erdélyi
1908-1977

Born Budapest and educated Czechoslovakia. Assisted by Whittaker to escape to Edinburgh 1938. Moved to Caltech 1947 to lead Bateman Manuscript Project producing 5-volume standard reference works on special functions and integral transforms. Returned to Edinburgh as 16th Professor of Mathematics 1964. Greatly respected as an analyst and leader of the mathematical community.



Nicholas Kemmer
1911-1998

Born St Petersburg. Educated (mainly) in Germany. Moved to London 1936 and Cambridge 1940. Prediction of π -mesons 1938. Having rare (at the time in the UK) knowledge of advances in Continental physics, became a hugely influential teacher; mentor to 4 FRSs and 217 "academic descendants". 3rd Tait Professor of Natural Philosophy / Mathematical Physics 1953.



Donald Michie
1923-2007

Born Rangoon. War-critical inventions for automatic decoding at Bletchley Park 1944; discussions with Turing on artificial intelligence. Post-war work in mammalian genetics. Came to Edinburgh 1958. Interests returned to AI. Personal Chair of Machine Intelligence, co-founder and Head of Dept of Machine Intelligence & Perception 1967. Founded Turing Institute, Glasgow 1986.

20th Century



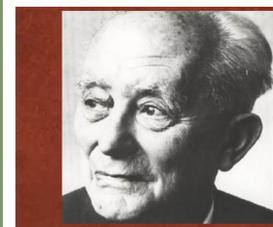
J Chrystal Macmillan
1872-1937

Born Edinburgh. Entered the University 1892. First woman science graduate 1896; first woman with first class honours, Mathematics & Natural Philosophy 1900; also graduated in Moral Philosophy & Logic. Became famous in the cause of women's suffrage. Active pacifist in the 1914-18 War. Entered legal profession; first woman to plead a case before House of Lords 1908; called to the bar 1924.



Charles G Barkla
1877-1944

Born Widnes. Worked on the laws of X-ray scattering and spectroscopy, transmission of X-rays through matter and excitation of secondary X-rays at Cambridge, Liverpool and London. Awarded the Nobel Prize for Physics 1917 for his discovery of the secondary X-ray characteristics of elements. Appointed 11th Professor of Natural Philosophy at the University 1913.



Max Born
1882-1970

Native of Breslau in German Silesia, Born's education and career placed him among the great names of German physics and mathematics. With Heisenberg, he formulated the matrix mechanics representation of quantum mechanics 1925, nominated for a Nobel Prize by Einstein 1928. Escaped Germany in 1933. Appointed 2nd Tait Professor of Natural Philosophy 1936. Nobel Prize for Physics 1954.



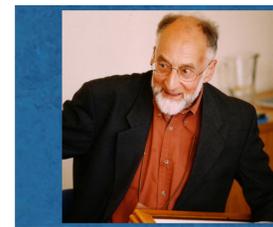
Sidney Michaelson
1925-1991

Born London East End. Early work in numerical analysis and computer design. Director of the University's new Computer Unit 1963. 1st Professor of Computer Science 1967. Prime mover of project to develop Edinburgh Multi Access System (EMAS) operating system. Other interests in VLSI and stylometry (textual analysis). Respected for key contributions to profession of computer science in its formative years.



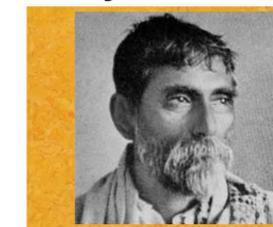
Christina C Miller
1899-2001

Born Coatbridge. Read Chemistry at the University from 1917 (simultaneous Diploma course at Heriot Watt College). PhD student, Fellow, Assistant, DSc 1929, Lecturer and Director of the teaching laboratory. First preparation of pure phosphorus trioxide. In the first group of women Fellows of Royal Society of Edinburgh. Despite poor hearing and sight, a greatly appreciated teacher.



A J Robin G Milner
1934-2010

Born Yealmpton, Devon. Appointed Lecturer at Edinburgh 1973; Personal Chair of Computation Theory 1984; Co-founded Laboratory for Foundations of Computer Science 1986. Turing Award 1991. Leader in computer science development. Created large parts of rigorous language Standard ML and models for concurrent systems, CCS and Pi-Calculus - the basis and tools for much later research.



Prafulla Chandra Roy
1861-1944

Born Raruli-Katipara, a village in Bangladesh. Won a scholarship to attend the University 1882; studied widely, graduating in Chemistry 1885 and DSc 1887. Known for isolation of mercurous nitride 1896. Founder of the Indian school of modern chemistry and pioneer of chemical industries in India. Self-denying and dedicated worker for educational and social reform. Known and respected by Gandhi and Nehru.



Edmund T Whittaker
1873-1956

Born Southport. After periods at Cambridge and as Astronomer Royal for Ireland, appointed 14th Professor of Mathematics at the University 1912. Worked in classical and numerical analysis, mathematical physics, astronomy and history of mathematics and physics. Co-wrote five standard treatise. Hugely influential upon mathematics in Scotland and beyond.



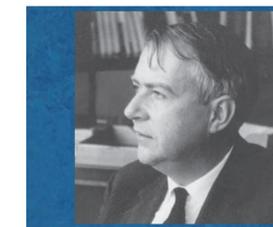
Conrad H Waddington
1905-1975

Born Evesham. Broad interests in arts, natural sciences and social issues. Work in embryology and developmental genetics led to discovery of mutations affecting cell phenotypes. Coined terms Epigenetics and epigenetic landscape 1940, precursor of modern systems biology. Appointed 2nd Buchanan Professor of (Animal) Genetics 1946. Research Organisation (NABGRO) made Edinburgh a world centre for genetics.



Charlotte Auerbach
1899-1994

Born Krefeld and educated at various German institutions. Escaped to Edinburgh 1933 to complete PhD. Research on Chemical Mutagenesis to probe the nature and properties of genes. Work throughout the war on effect of mustard gas in causing mutation of fruit flies brought immediate fame on publication 1946. Lecturer 1946, Honorary Director of Mutagenesis Research Unit 1959-1969, Personal Chair 1967.



H Christopher Longuet-Higgins
1923-2004

Born Lenham, Kent. Spectacular career in theoretical chemistry led to Cambridge Chair 1954. Changed field to artificial intelligence 1967. Royal Society Research Professor 1968-1974 in Edinburgh. Co-founded Dept of Machine Intelligence & Perception and School of Epistemics. Coined term "cognitive science" 1973. Distinguished amateur pianist, conductor and composer.

Science & Engineering at the University – a few key dates

- First chairs of Mathematics and Natural Philosophy 1583, Engineering 1868, Geology 1871 (in Faculty of Arts); Botany 1695 and Chemistry & Medicine 1713 (in Faculty of Medicine).
- Formation of Faculty of Science 1893; First chair of Computer Science 1967
- Foundation stone laid by King George V and gracious agreement to name "The King's Buildings" 1920.
- Most departments move to KB 1922-1975.
- Noreen & Kenneth Murray Library opens at KB 2012