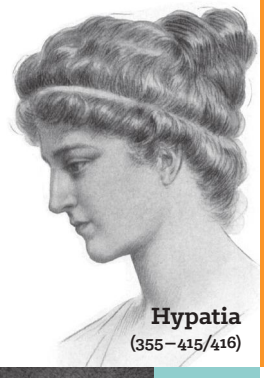
Women in Mathematics



Hypatia
(355–415/416)

BEST KNOWN FOR: being recognised as the first woman to make a substantial contribution to the development of mathematics.

Émilie du Châtelet
(1706–1749)

BEST KNOWN FOR: her translation of and commentary of Isaac Newton's Principia. Her translation and comments are still considered the standard French translation.

Maria Agnesi
(1718–1799)

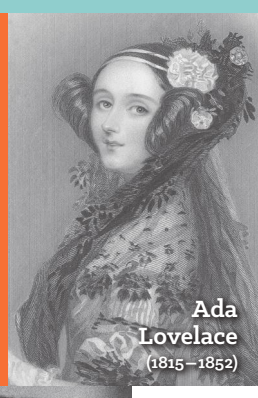
BEST KNOWN FOR: being the first woman to write a mathematics handbook. She was also the first woman appointed as a mathematics professor at a university.

Marie-Sophie Germain
(1776–1831)

BEST KNOWN FOR: her correspondence with Lagrange, Legendre, and Gauss under a male pseudonym. She was one of the pioneers of elasticity theory and did foundational work on Fermat's Last Theorem.

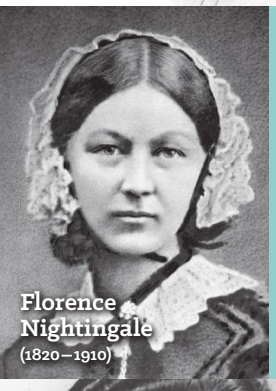
Mary Somerville
née Fairfax
(1780–1872)

BEST KNOWN FOR: being a polymath who studied mathematics and astronomy. She was one of the two females who were elected as first female Honorary Members of the Royal Astronomical Society. The Somerville College of the University of Oxford is named in her honour.



Ada Lovelace
(1815–1852)

BEST KNOWN FOR: working with Charles Babbage on his proposed analytical engine. She found that the machine could be used for more than calculations and wrote the first algorithm that could be carried out by such a machine.

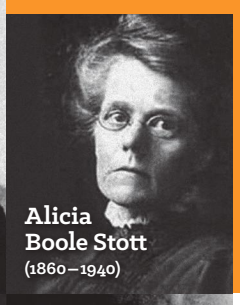


Florence Nightingale
(1820–1910)

BEST KNOWN FOR: (besides being the founder of modern nursing) her work in Statistics, such as inventing the polar area graph, which she used to translate the numbers to the public and politicians.

Sofya Vasilyevna Kovalevskaya
(1850–1891)

BEST KNOWN FOR: her work on analysis, partial differential equations, and mechanics. She was the first woman becoming a full professor in northern Europe and one of the first women editors of a scientific journal.



Alicia Boole Stott
(1860–1940)

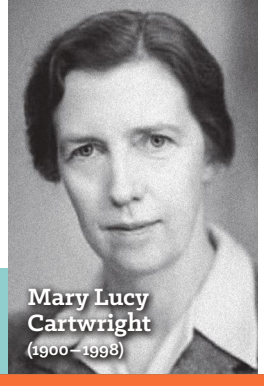
BEST KNOWN FOR: coining the term "polytope", a four-dimensional convex solid and discovering six regular ones.

Philippa Garrett Fawcett
(1868–1948)

BEST KNOWN FOR: being the first woman to obtain the top score in the Cambridge Mathematical Tripos exams. She did not receive the title of Senior Wrangler, as only men were then ranked.

Emmy Noether
(1882–1935)

BEST KNOWN FOR: her work in abstract algebra and theoretical physics. The theorems that she proved about general relativity and elementary particle physics are known as "Noether's Theorem".



Mary Lucy Cartwright
(1900–1998)

BEST KNOWN FOR: being one of the pioneers of chaos theory. Cartwright was the first woman becoming a Fellow of the Royal Society, receiving the Sylvester Medal, being President of the Mathematical Association and of the London Mathematical Society.

Gertrude Mary Cox
(1900–1978)

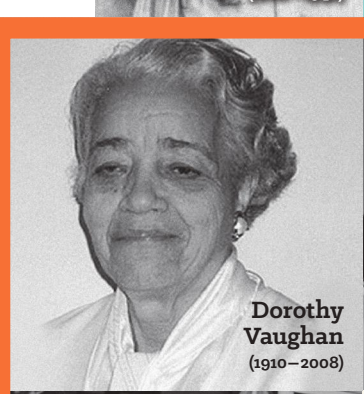
BEST KNOWN FOR: her work on experimental design in statistics. Cox became the first woman elected to the International Statistical Institute.

Marie-Louise Dubreil-Jacotin
(1905–1972)

Ruth Moufang
(1905–1977)

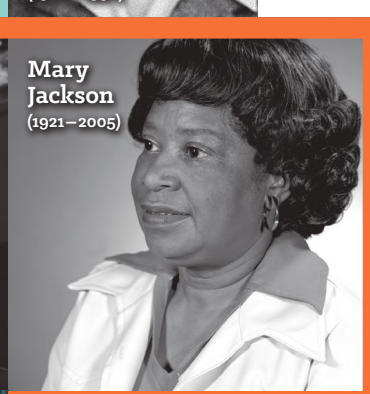
BEST KNOWN FOR: being the second woman to earn a doctorate in pure mathematics and the first woman to become a full professor of mathematics in France. In addition to her expertise in fluid mechanics and abstract algebra, she authored a work in the history of mathematics.

BEST KNOWN FOR: ground-breaking work on non-associative algebraic structures, including the Moufang loops named after her and a new branch of geometry called "Moufang planes".

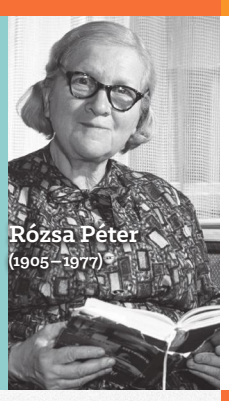


Dorothy Vaughan
(1910–2008)

Katherine Johnson
(1918–2020)



Mary Jackson
(1921–2005)



Rózsa Péter
(1905–1977)

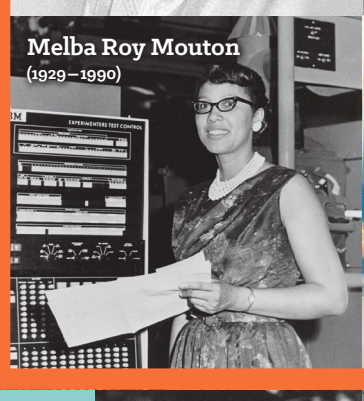
BEST KNOWN FOR: being the first Hungarian woman to become an Academic Doctor of Mathematics. She is known as the "founding mother of recursion theory". She was awarded several prizes and was the first woman to be elected to the Hungarian Academy of Sciences.

Grace Brewster Murray-Hopper
née Murray
(1906–1992)

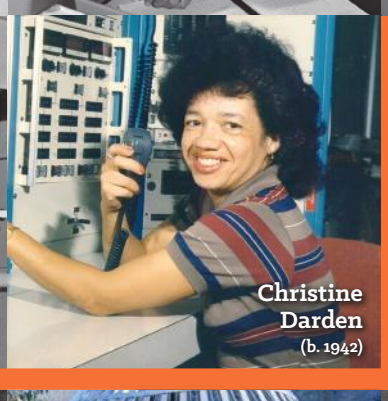
BEST KNOWN FOR: being a computer scientist with a PhD in Mathematics. She invented one of the first linkers (i.e. link editors), and was the first to originate the theory of machine-independent programming languages.

Joan Elisabeth Lowther Murray
née Clarke
(1917–1996)

BEST KNOWN FOR: being the only female practitioner of Banburismus (i.e. a cryptanalytic process developed by Alan Turing during World War II) during her recruitment at the Government Code and Cypher School. She became the deputy head of her section afterwards.



Melba Roy Mouton
(1929–1990)



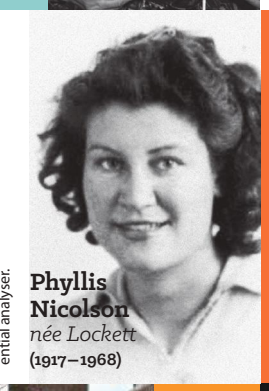
Christine Darden
(b. 1942)

The Women Computers of NASA

A group of women mathematicians, human computers and later programmers at NACA, NASA and Langley Research Centre who contributed considerably to the American Space race.

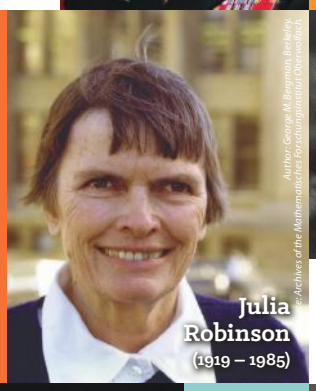
Starting with 5 female mathematicians on staff in 1935, in 1946 there were 400.

NOTABLE MEMBERS ARE:
Dorothy Vaughan,
Katherine Johnson,
Mary Jackson,
Melba Roy Mouton, and
Christine Darden.



Phyllis Nicolson
née Lockett
(1917–1968)

BEST KNOWN FOR: her work in numerical analysis with John Crank on the Crank-Nicolson method. During her PhD studies at the University of Manchester, she became a proficient user of Hartree's differential analyser.



Julia Robinson
(1919 – 1985)

Author: George M. Bergman, Berkeley. Archives of the Mathematisches Forschungsinstitut Oberwolfach.

BEST KNOWN FOR: her contributions to computability theory and computational complexity theory.

Olga Aleksandrovna Ladyzhenskaya
(1922–2004)

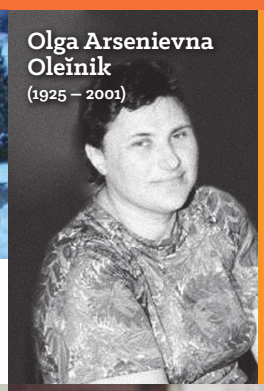
BEST KNOWN FOR: her work on partial differential equations, fluid dynamics, and the convergence of a finite difference method for the Navier–Stokes equations. She was in the shortlist for the Fields Medal in 1958.

Anneli Lax
(1922–1999)

BEST KNOWN FOR: her contributions to mathematical education and mathematical publishing. She introduced the inclusion of language skills in mathematical education.

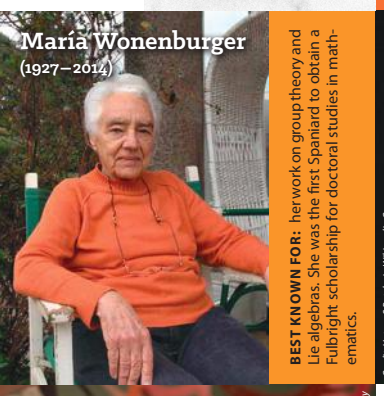
Yvonne Choquet-Bruhat
(b. 1923)

BEST KNOWN FOR: her contributions to the study of Einstein's general theory of relativity. She was the first woman to be elected as a full member of the French Academy of Sciences and is the Grand Officer of the Légion d'honneur.



Olga Arsenievna Oleĭnik
(1925 – 2001)

BEST KNOWN FOR: her pioneering work on the theory of algebraic geometry, partial differential equations, the theory of strongly inhomogeneous elastic media, and the mathematical theory of boundary layers.



Maria Wonenburger
(1927–2014)

BEST KNOWN FOR: her work on group theory and Lie algebras. She was the first Spaniard to obtain a Fulbright scholarship for doctoral studies in mathematics.

Shakuntala Devi
(1929–2013)

Credit: Hetvee S Patel, via Wikimedia Commons

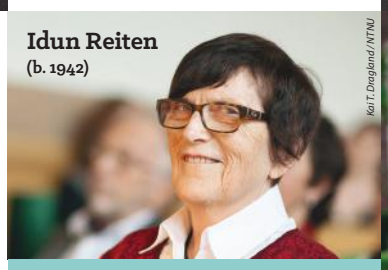
BEST KNOWN FOR: earning a place in the 1982 edition of The Guinness Book of World Records for her arithmetic abilities. She was known as the "Human Computer" (e.g. she mentally calculated the multiplication of two 13-digit numbers in 28 seconds).

Marina Evseevna Ratner
(1938–2017)

BEST KNOWN FOR: her work on ergodic theory. She proved theorems concerning unipotent flows on homogeneous spaces, known as "Ratner's theorems", and received numerous prizes for her work.

Nancy Jane Kopell
(b. 1942)

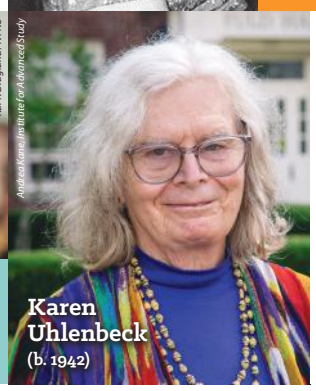
BEST KNOWN FOR: her work in the area of applied biomathematics with contributions into over 200 published research articles. She is the Director and Co-Founder of the Cognitive Rhythms Collaborative. She received several honours including the John von Neumann Prize.



Idun Reiten
(b. 1942)

Kai T. Dragland / NTNU

BEST KNOWN FOR: her work in representation theory. She received multiple awards and recognitions for outstanding research. In 2014, she was appointed as commander of the Order of St. Olav by the Norwegian King for her work in mathematics.



Karen Uhlenbeck
(b. 1942)

Andrea Kane, Institute for Advanced Study

BEST KNOWN FOR: being the founder of modern geometric analysis and the first woman to receive the Abel Prize.

Ingrid Daubechies
(b. 1954)

Les Todd, Duke Photography

BEST KNOWN FOR: her work in using mathematical methods to develop image processing techniques. Her name is associated with wavelets which are used in the JPEG 2000 standard. She received several recognitions and awards, including Princess of Asturias Award (in 2020) for Technical and Scientific Research.

Claire Voisin
(b. 1962)

With friendly permission from Claire Voisin

BEST KNOWN FOR: her work in algebraic geometry especially Hodge theory and its application to concrete classical problems.

Maryam Mirzakhani
(1977–2017)

Courtesy: National Science Foundation

BEST KNOWN FOR: being the first Iranian and the first woman to receive the Fields Medal. Her research topics included Teichmüller theory, hyperbolic geometry, ergodic theory, and symplectic geometry.

The Netherlands

UNIVERSITY OF EXETER

The project was developed and coordinated by Ms. Silvy Hendriks, Dr. Houry Melkonian, and Prof. Maria Vlasiou. Additional contributions were made by Dr. Tom Ritchie and the following students of the University of Exeter: Amber Ellis, Sophia Jaffer, Anila Navaratnam, and Sophie Peel.

Design by Jana Kleineberg | kleineberg.co.uk