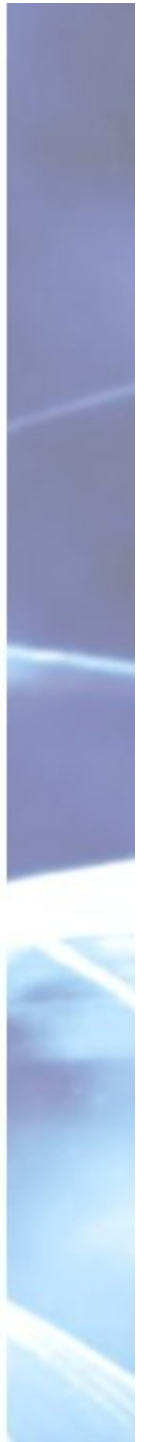




Lovelace Colloquium 2010
History of Women in Computing
Women @ BCS in Wales
Beti Williams



Timeline of women in computing

- **Ada Lovelace (1815–1852)** - analyst of Charles Babbage's analytical engine and described as the "first computer programmer"
- **Edith Clarke (1883–1959)** - one of the first women Electrical Engineers, designed and patented the first graphical calculator.
- **Henrietta Swan Leavitt (1868-1921)** - joins the Harvard computers, a group of women engaged in the production of astronomical data at Harvard; she is instrumental in discovery of the cepheid variable stars, which were evidence for the expansion of the universe.
- **Rozsa Peter (1905 –1977)** - founder of the Recursive Function Theory
- **Admiral Grace Hopper (1906–1992)** - first programmer for the Mark I Calculator, known as the "Mother of COBOL"
- **Hedy Lamarr (1913–2000)** - Hollywood diva and co-inventor of an early form of spread-spectrum broadcasting.
- **Adele Golstein (1920–1964)** – wrote the manual for one of the first computers being one of the first programmers in the world
- **Betty Jennings, Betty Snyder, Fran Bilas, Kay McNulty, Marlyn Wescoff, and Ruth Lichterman (1946)** original programmers of the ENIAC using its logical and electrical block diagram
- **Erna Hoover (1926 -)** – invented the computerised telephone switching mechanism
- **Jean E. Sammet (1928-)** - mathematician and computer scientist; developed FORMAC programming language. Was the first to write extensively about history and categorisation of programming languages (1969).
- **Mary Allen Wilkes (1937 -)** computer programmer; First person to use a computer in a private home and the first developer of an operating system (LAP) for the first minicomputer (LINC)
- **Barbara H. Liskov (1939-)** - first American female Doctorate of Computer Science (1968), winner of the Turing prize 2009

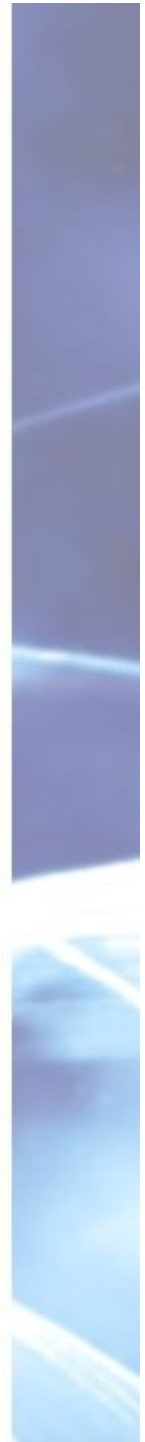
Timeline of women in computing

- **Karen Spärck Jones (1935–2007)** pioneer of information retrieval and natural language processing
- **Anita Borg (1949–2003)** - the founding director of the Institute for Women and Technology (IWT)
- **Frances E. Allen (1932-)** - first female recipient of the ACM's Turing Award
- **Carol Shaw** - is said to be the first female video game designer for her *3D Tic-Tac-Toe* game in 1979 and later her best known game, *River Raid*. With Keith Brewster she worked on the Atari Basic Reference Manual
- **Dona Bailey** - was one of the only female game programmers in the industry at that time and created in 1981, with Ed Logg, the video game *Centipede*. *Centipede* is one of the first video games to incorporate Artificial intelligence
- **Adele Goldberg (1945-)** one of the designers and developers of the Smalltalk language
- **Roberta Williams (1953-)** - pioneering work in graphical adventure games for personal computers, particularly the King's Quest series.
- **Susan Kare (1954-)** - created the icons and many of the interface elements for the original Apple Macintosh in the 1980s
- **Radia Perlman (1951-)** - invented the Spanning Tree Protocol. Has done extensive and innovative research, particularly on encryption and networking. USENIX Lifetime Achievement Award 2007, among numerous others.
- **Eva Tardos (1957-)** - recipient of the Fulkerson Prize for her research on design and analysis of algorithms
- **Shafi Goldwasser (1958-)** - theoretical computer scientist, two-time recipient of the Gödel Prize for research on complexity theory, cryptography and computational number theory, and the invention of zero-knowledge proofs
- **Barbara Liskov ,Jeannette Wing** developed the Liskov substitution principle
- **Sally Floyd (1953-)** - renowned for her work on Transmission Control Protocol
- **Dame Wendy Hall**, One of the first computer scientists to undertake serious research in multimedia and hypermedia, including digital libraries, the development of the Semantic Web, and the emerging research discipline of Web Science.

Ada Lovelace

Ada, Countess of Lovelace
1815 -1852

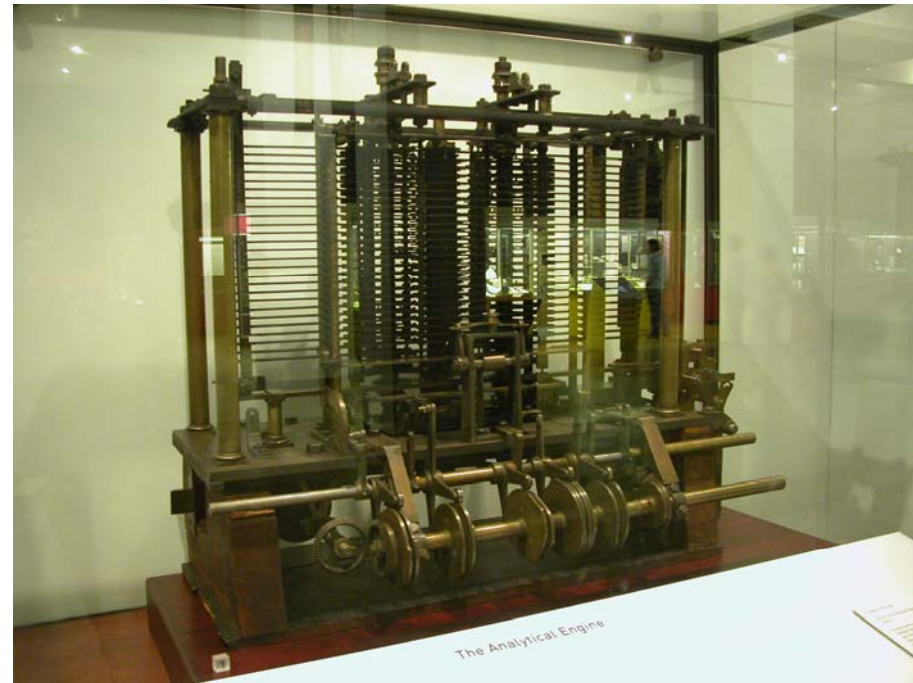
**In 1848 she wrote the
first significant text on
Computer Science
programming**





Charles Babbage

1792 - 1871



Trial model of a part of the Analytical Engine, built by Babbage as displayed at the Science Museum (London)

Ada Lovelace

The enchantress of numbers

Ada Lovelace Day
24th March

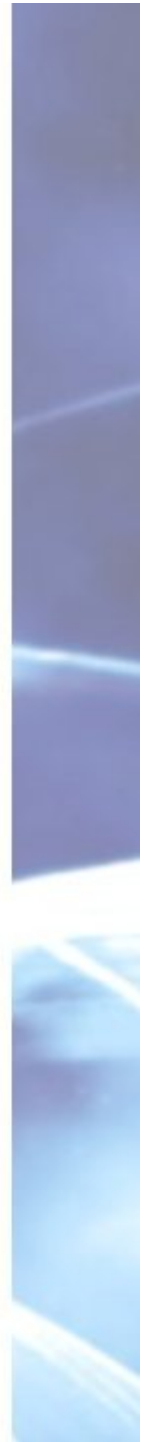


Grace Hopper

Grace Murray Hopper
(1906-1992)

Inventor of the Compiler

(a tool to make programming
languages work)



Grace Hopper

Grace originated the term **Bug** when she found a real moth in a computer

The remains of the moth can be found in the group's log book at the Smithsonian Institution's National Museum of American History in Washington, D.C

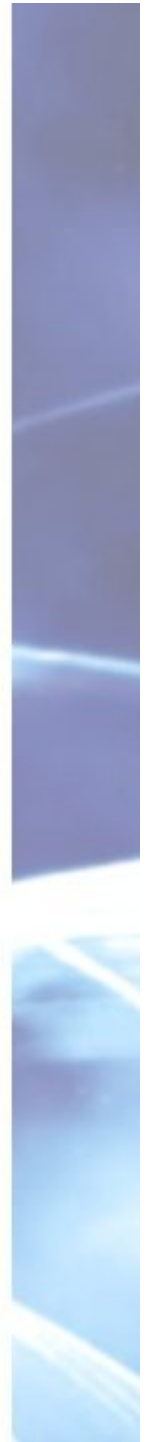


Grace Hopper

Developed a compiler
called FLOW MATIC

COBOL

Common
Business
Oriented
Language



Grace Hopper

- Grace Hopper Award for Outstanding Young Computer Professionals
- Distinguished Fellow of the BCS
- Computer History Museum Fellow
- Hoppers



Rear Admiral Grace Hopper

Rank - Rear Admiral

Awards

Defence Distinguished Service Medal
Legion of Merit
Meritorious Service Medal
American Campaign Medal
World War II Victory Medal
National Defence Service Medal
Armed Forces Reserve Medal
with two Hourglass Devices
Naval Reserve Medal



USS Hopper (DDG-70)



Launched: 6 January 1996

Homeport: Pearl Harbour Hawaii

In active service, as of 2010

Adele Goldstine

Adele Goldstine

Betty Jennings

Betty Snyder

Fran Bilas

Kay McNulty

Marlyn Westoff

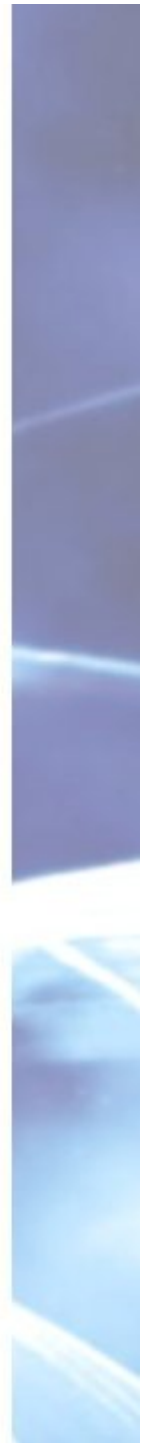
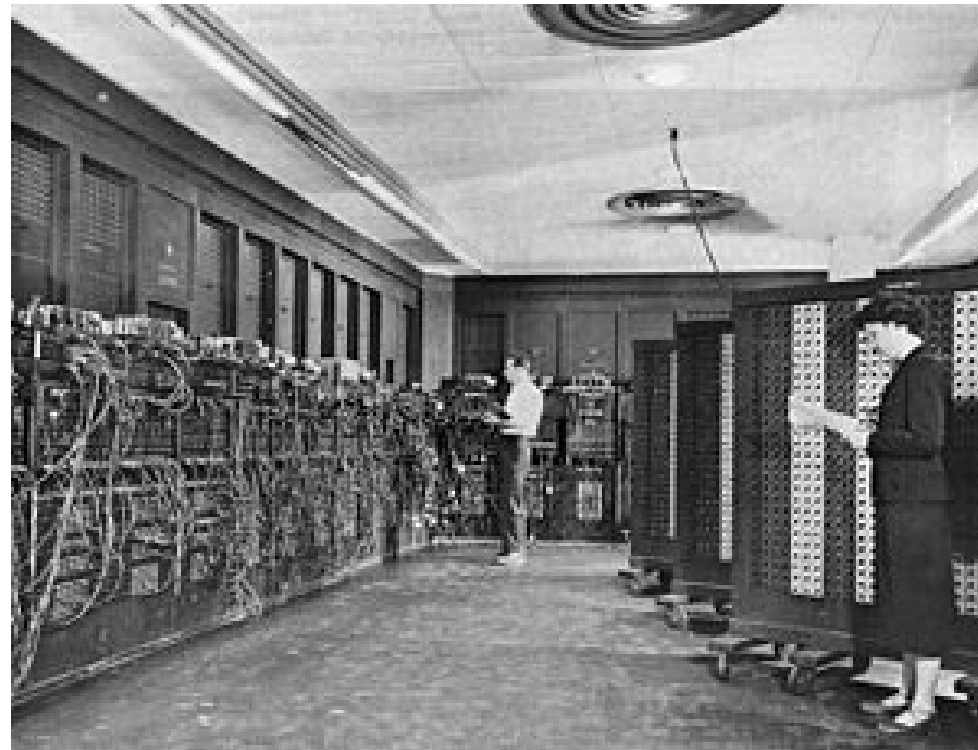
Ruth Lichterman



Adele Goldstine

ENIAC

- **E**lectronic
- **N**umerical
- **I**ntegrator
- **A**nd
- **C**omputer



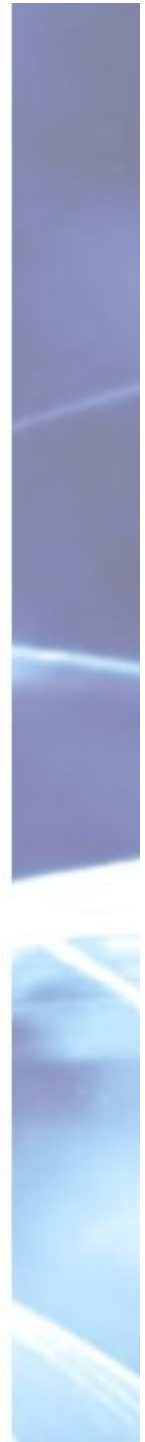
Dame Wendy Hall

Professor of Computer Science at
Southampton University

University's first female professor of
engineering in 1994

Her research interests

- the development of web technologies
(particularly the Semantic Web),
- hypermedia systems and link services,
- advanced knowledge technologies,
- digital libraries,
- decentralized information systems,
- human computer interaction.



Dame Wendy Hall

Founder of the Web Science Institute

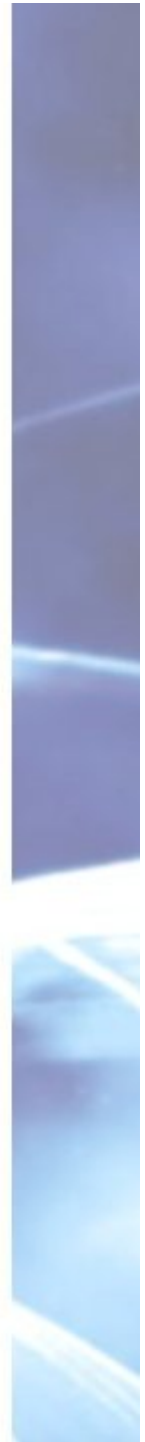
Sir Tim Berners-Lee

Prof Nigel Shadbolt

Daniel J Weitzer

Published over 350 papers

- hypermedia, multimedia
- digital libraries
- distributed information systems.



Dame Wendy Hall



2009 Dame of the British Empire

2000 CBE

Fellow of the Royal Academy

Fellow of the BCS

Fellow of the IET

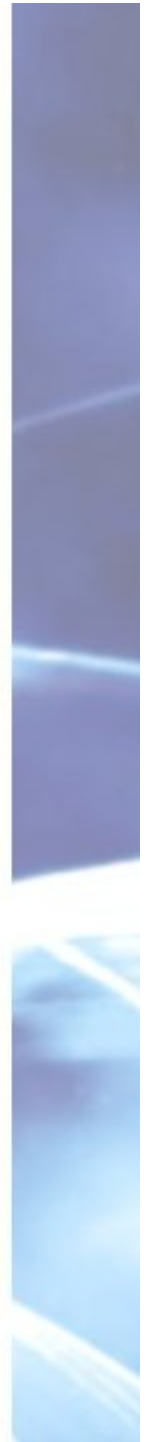
Fellow of the CGI

Fellow of the Royal Society

President of the ACM

More famous women

- **Edith Clarke 1883 – 1959** filed a patent in 1921 for a graphical calculator
- **Evelyn Boyd Granville** developed programmes used on the Mercury project (1st US unmanned mission in space) and the Apollo Project which sent US astronauts to the moon
- **Barbara Liskov** winner of the 2009 Turing Prize



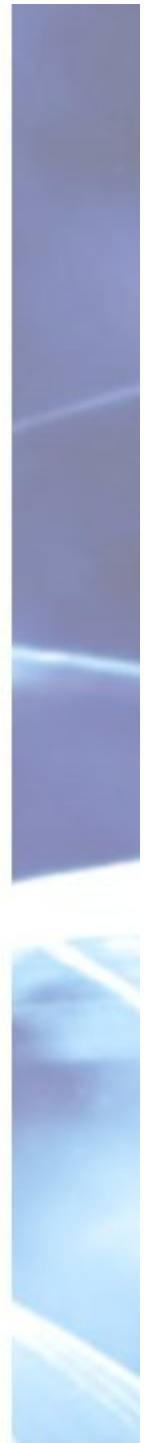


BCS in Wales

- 70,000 members in UK and internationally
- 3,000 members in Wales

- South Wales Branch
- North Wales and Chester Branch
- Mid Wales Branch

- SIGs
- ICT and Health
- Universities Forum
- Women@BCS in Wales



Women @ BCS in Wales

for women in IT & computing across the country

- Launched 9th March 2010
- <http://www.cs.cf.ac.uk/WomenBCSWales/>

Women @ BCS in Wales

Mission statement:

“To motivate change in the perceived relevance and value of ICT and computing skills”

Objectives:

- Provision of information to women across Wales, particularly those wanting to upgrade their skills and return to work.
- Creating an awareness of IT-related job roles, e.g. Human Resources and educating them about the range of jobs available.
- Building upon this awareness of IT as a career with particular focus on the inclusion of girls and women.
- Providing input and response to policy from BCS in Wales

Contact 01792 295881

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www.itwales.com

Thanks for listening

