Grace Brewster Murray Hopper

Computer Scientist & United States Navy Rear Admiral
Address · Arlington · VA 22205
FLOW-MATIC@cobol hopper wikipedia.org/wiki/Grace_Hopper | *Updated:* September 7, 2018

EDUCATION

Yale University, Ph.D. Mathematics 1934

Yale University, M.S. Mathematics 1930

Vassar College, B.S. Mathematics & Physics 1928

EMPLOYMENT

United States Naval Reserve:

Naval Reserve Midshipmen's School 1943–1944

Bureau of Ships Computation Project (Harvard):

Research Fellow 1945-1949 Lieutenant, Jr Grade 1944

Eckert–Mauchly Computer Corporation:

Senior Mathematician 1949—1967

Navy Programming Languages Group, Navy Office of Information Systems Planning:

Director (and promoted to Captain) 1967–1977

TEACHING

Associate Professor, Mathematics, Vassar 1931–1941

Teach students about math, began career in programming and largely developed design and implementation of a computer compiler.

Director, Navy Programming Languages Group 1967–1977

She developed validation software for COBOL and its compiler as part of a COBOL standardization program for the entire Navy. Hopper advocated for the Defense Department to replace large, centralized systems with networks of small, distributed computers. Any user on any computer node could access common databases located on the network. She developed the implementation of standards for testing computer systems and components, most significantly for early programming languages such as FORTRAN and COBOL. The Navy tests for conformance to these standards led to significant convergence among the programming language dialects of the major computer vendors. In the 1980s, these tests (and their official administration) were assumed by the National Bureau of Standards (NBS), known today as the National Institute of Standards and Technology (NIST). (Source: https://en.wikipedia.org/wiki/Grace_Hopper)

PUBLICATIONS

Journal Articles

G. M. Hopper and O. Ore. 1934. "*New types of irreducibility criteria*." Bull. Amer. Math. Soc. 40 (216).

Books

Beyer, Kurt W. 2009. *Grace Hopper and the Invention of the Information Age*. Cambridge, Massachusetts: MIT Press. ISBN 978-0-262-01310-9.

Williams, Kathleen Broome. 2004. *Grace Hopper: Admiral of the Cyber Sea* (1st ed.). Annapolis, Maryland: Naval Institute Press. ISBN 978-1-55750-952-9.

PUBLIC MEDIA

"Nano-seconds" lecture by Grace Hopper. https://www.youtube.com/watch?v=JEpsKnWZrJ8

AWARDS

1964 *Society of Women Engineers Achievement Award*, the Society's highest honor, "In recognition of her significant contributions to the burgeoning computer industry as an engineering manager and originator of automatic programming systems."

1969 *Data Processing Management Association Man of the Year* (now called the Distinguished Information Sciences Award)

1973 *Distinguished Fellow of the British Computer Society*. First American and the first woman of any nationality to be given award.

1982 *American Association of University Women Achievement Award*

1987 *Computer History Museum Fellow Award Recipient* First to receive this award, for contributions to the development of programming languages, for standardization efforts, and for lifelong naval service.

1991: *National Medal of Technology*

1996: *USS Hopper (DDG-70) was launched*. Nicknamed Amazing Grace, it is on a very short list of U.S. military vessels named after women.

2009: The Department of Energy's National Energy Research Scientific Computing Center named its flagship system "Hopper"

2016: Posthumously awarded a *Presidential Medal of Freedom* for her accomplishments in the field of computer science