

FURTHER READING

- Britton, J. L., R. O. Gandy, C. E. M. Yates, D. C. Ince, and P. T. Saunders, eds. *The Collected Works of A. M. Turing*. New York: Elsevier, 1992. These volumes include most of Turing's unpublished work.
- Carpenter, B. E., and R. W. Doran, eds. *A. M. Turing's ACE Report of 1946 and Other Papers*. Cambridge, Mass.: MIT Press, 1986.
- Herken, R., ed. *The Universal Turing Machine*. London: Oxford University Press, 1988; 2nd ed., New York: Springer-Verlag, 1994.
- Hodges, Andrew. *Turing: A Natural Philosopher*. No. 3 of the Great Philosophers Series. London: Phoenix, 1997; New York: Routledge, 1997.
- . *Alan Turing: The Enigma*. New York: Walker Books, 2000.
- Andrew Hodges maintains a Turing website at:
<http://www.turing.org.uk/turing/>

—Andrew Hodges

Turing Award

The A. M. Turing Award is the most prestigious technical recognition in the **computer science** field; it is sometimes referred to as the “Nobel Prize” of computer science. The **Association for Computing Machinery** started bestowing this honor in 1966 to persons selected for their contributions to computing. The prize was named for **Alan M. Turing** (1912–54), who first described a universal computing device in 1936.

Some early pioneers of computing have received the award, as is the case of **Maurice V. Wilkes** (1913–), who was the chief designer of the first stored program computer, the **EDSAC**, built at Cambridge University in 1949. Others have made contributions to the development of programming languages; examples include **John McCarthy** (1927–) for **LISP**, **John Backus** (1924–) for **Fortran**, **Kenneth E. Iverson** (1920–) for **APL**, **Dennis Ritchie** (1941–) and **Ken Thompson** (1943–) for **C**, and **Niklaus Wirth** (1934–) for **Pascal** and **Modula**. **Richard Karp** (1944–), **Stephen A. Cook** (1939–), **Michael O. Rabin** (1931–), and **Manuel Blum** (1938–) were honored by their contributions to theoretical computer science, while **Marvin Minsky** (1927–), **Allen Newell** (1927–92) and **Herbert Simon** (1916–),

TURING AWARD RECIPIENTS

1966 A.J. Perlis	1984 Niklaus Wirth
1967 Maurice V. Wilkes	1985 Richard M. Karp
1968 Richard Hamming	1986 John Hopcroft
1969 Marvin Minsky	1986 Robert Tarjan
1970 J.H. Wilkinson	1987 John Cocke
1971 John McCarthy	1988 Ivan Sutherland
1972 Edsger W. Dijkstra	1989 William Kahan
1973 Charles W. Bachman	1990 Fernando Corbató
1974 Donald E. Knuth	1991 Robin Milner
1975 Allen Newell	1992 Butler W. Lampson
1975 Herbert A. Simon	1993 Juris Hartmanis
1976 Michael O. Rabin	1993 Richard E. Stearns
1976 Dana S. Scott	1994 Edward Feigenbaum
1977 John Backus	1994 Raj Reddy
1978 Robert W. Floyd	1995 Manuel Blum
1979 Kenneth E. Iverson	1996 Amir Pnueli
1980 C. Antony R. Hoare	1997 Douglas Engelbart
1981 Edgar F. Codd	1998 James Gray
1982 Stephen A. Cook	1999 Frederick Brooks
1983 Ken Thompson	2000 Andrew Chi-Chih Yao
1983 Dennis M. Ritchie	

and **Edward Feigenbaum** (1936–) received the prize for their work in the area of **artificial intelligence**.

The accompanying table shows the recipients of the Turing Award by year. Although the award is an international prize, only Wilkes, J. H. Wilkinson, **Edsger Dijkstra**, **C. Antony R. Hoare**, Wirth, Robin Milner, and Amir Pnueli did most of their work outside the United States or Canada.

FURTHER READING

- ACM Turing Award Lectures: The First Twenty Years, 1966 to 1985*. New York: ACM Press; Reading, Mass.: Addison-Wesley, 1987.

—Raúl Rojas

Turing Machine

The Turing machine is a mathematical construct, devised by the British mathematician **Alan M. Turing** (1912–54) to specify precisely what should be understood by a *mechanical process*, what would nowadays generally be called an **algorithm**. The