

The Turing Award is known as the Nobel Prize of Computer Science. 24 Turing Award Laureates signed this letter to support the candidacy of former Vice President Joe Biden for President of the United States and Senator Kamala Harris for Vice President. It's the first time Turing Award Laureates have endorsed a candidate.

*Information technology is thoroughly globalized. Academic computer science departments attract talented students, many of whom immigrate and become American inventors and captains of industry. We celebrate open source projects, the lifeblood of our field, as exemplars of international collaboration. Computer Science is at its best when its learnings and discoveries are shared freely in the spirit of progress. These core values helped make America a leader in information technology, so vital in this Information Age.*

*Joe Biden and Kamala Harris listen to experts before setting public policy, essential when science and technology may help with many problems facing our nation today. As American computer scientists and as US citizens, we enthusiastically endorse Joe Biden for President and Kamala Harris for Vice President.*

The following 24 Turing Award laureates signed in their individual capacity as private citizens.

[Manuel Blum](#) was born in Caracas, Venezuela, where his parents settled after fleeing Europe in the 1930s. Blum began his teaching career at MIT as an assistant professor of mathematics and, in 1968, joined the faculty of the University of California at Berkeley. He became the Bruce Nelson University Professor of Computer Science at Carnegie Mellon University in 2001. His 35 doctoral students pepper almost every major computer science department in the country. He won the 1995 Turing Award in recognition of his contributions to the foundations of [computational complexity theory](#) and its applications to cryptography and program checking, a mathematical approach to writing programs that check their work.

[Ed Catmull](#), co-founder of Pixar, served as President of Pixar for 33 years, and President of Disney Animation for 13 of those 33 years, prior to retiring. He founded three centers of computer graphics research—including the Computer Division of Lucasfilm Ltd. and Pixar. These organizations produced some of the most fundamental advances in computer graphics. He is an architect of the [RenderMan](#) rendering software, which has been used in over 90% of Academy Award® winners for Visual Effects. He co-authored the book “Creativity, Inc.,” based on learnings gained over fifty years. His honors include two Oscars from the Academy of Motion Picture Arts and Sciences for technical achievement, the Von Neumann Medal from the Institute of Electrical and Electronics Engineers (IEEE), and the 2019 ACM Turing Award (shared with Pat Hanrahan). Catmull and Hanrahan are the newest Turing Award Laureates.

[Vinton Cerf](#) is vice president and Chief Internet Evangelist for Google. He served as chairman of the board of the Internet Corporation for Assigned Names and Numbers (ICANN) and he has been a Visiting Scientist at the Jet Propulsion Laboratory. With Robert Kahn, Vint is the co-designer of the architecture of the [Internet](#). They have received the U.S. National Medal of Technology, the Presidential Medal of Freedom, the Japan Prize, the Queen Elizabeth Prize for Engineering, and the 2007 Turing Award. He holds 29 honorary degrees.

[Whitfield Diffie](#) was the Chief Security Officer of Sun Microsystems and is best known for his 1975 invention of the concept of [public key cryptography](#) which he went on to develop with Martin Hellman. He is the co-author with Susan Landau of the book Privacy on the Line, which explores government attempts to limit private use of cryptography. Diffie is a member of the Royal Society of London and won the 2015 ACM Turing Award jointly with Martin Hellman.

[Shafi Goldwasser](#) is the Director of the Simons Institute for the Theory of Computing, and a professor of computer science at UC Berkeley. She is also the RSA Professor of Electrical Engineering and Computer Science at MIT, and a professor of computer science and applied mathematics at the Weizmann Institute of Science in Israel. She was the recipient of two Gödel Prizes, and won the 2012 Turing Award (shared with Silvio Micali) for [Probabilistic Encryption](#).

[Pat Hanrahan](#) is the CANON Professor of Electrical Engineering and Computer Science at Stanford University. He was a founding employee of PIXAR, where he was the Chief Architect of [RenderMan](#), a system for producing photorealistic images for the movies. He was a co-founder of Tableau Software, which produces easy-to-use analysis tools that enable people to use data to make informed decisions. He has received three Academy Awards for Science and Technology. He received the 2019 Turing Award (shared with Ed Catmull) for developing computer software that revolutionized the way artists and directors make films.

[Martin Hellman](#), Stanford Professor Emeritus of Electrical Engineering, has a deep interest in the ethics of technology development, and has written and lectured extensively on that subject. He is best known for his invention of [public key cryptography](#)—the technology that enables secure Internet transactions and that protects literally trillions of dollars in financial transactions every day. This work was recognized by induction into the National Inventors Hall of Fame and by the 2015 Turing Award (shared with Whitfield Diffie).

[John Hennessy](#), Stanford Professor of Electrical Engineering and Computer Science, served as President of Stanford University from 2000 to 2016. In 2017, he initiated the [Knight-Hennessy Scholars Program](#), the largest fully endowed graduate-level scholarship program in the world, and he currently serves as Director of the program. He was the founding board chair of Atheros Communications, and has served on the board of Cisco and Alphabet. He is the coauthor (with David Patterson) of two internationally used textbooks in computer architecture. His honors include the 2012 Medal of Honor from IEEE and the 2017 Turing Award (jointly with David Patterson). It was given for contributions to computer design used by 99% of the computers today called [Reduced Instruction Set Computers](#).

[John Hopcroft](#) is a Cornell University professor emeritus, where he served as department chair and dean of Engineering. Hopcroft has served on numerous advisory boards including the Air Force Science Advisory Board, NASA's Space Sciences Board, and the National Science Board, which oversees the National Science Foundation. His textbooks on theory of computation and data structures are regarded as standards in their fields. He has honorary degrees from six universities and in 1986 he was awarded the Turing Award (joint with Robert Tarjan) for "for fundamental achievements in the design and [analysis of algorithms](#) and data structures."

[Richard Karp](#) is a University Professor Emeritus at the University of California, Berkeley where he was the first chair of the UC Berkeley Computer Science Division and Founding Director of Simons Institute for the Theory of Computing. His honors include the Berkeley Distinguished Teaching Award, National Medal of Science, Harvey Prize, Benjamin Franklin Medal, Kyoto Prize, and nine honorary doctorates. He received the 1985 Turing Award for creating numerous combinatorial algorithms and developing methodology of [NP-completeness](#) reductions for identifying theoretical and practical problems as [computationally intractable](#).

[Alan Kay](#) is a pioneer computer scientist and designer who helped invent computing as we know it. He says: "No one owes more to his research community". Honors include: Draper Prize (with Butler Lampson, Charles Thacker, and Robert Taylor) "for the vision, conception, and development of the first practical [networked personal computers](#)," Kyoto Prize "for creation of the concept



of modern personal computing and contribution to its realization," and the 2003 Turing Award "for pioneering many of the ideas at the root of contemporary [object-oriented programming languages](#), etc., and for fundamental contributions to personal computing", including [graphical user interfaces](#).

[Donald Knuth](#), Professor Emeritus at Stanford University, is the author of the multi-volume work [The Art of Computer Programming](#) and is called the father of the [analysis of algorithms](#). Knuth is also the creator of the widely used [TeX](#) computer typesetting system. He won the National Medal of Science and the Turing Award "For his major contributions to the analysis of algorithms and the design of programming languages, and in particular for his contributions to the 'art of computer programming' through his well-known books in a continuous series by this title." He won it in 1974, which makes him the longest tenured Turing Award Laureate.

[Leslie Lamport](#), Distinguished Scientist, Microsoft Research, is the author of a paper considered to have founded the theory of [distributed computing](#). He invented several influential concurrent and distributed algorithms, including one that is the basis for fault tolerance in most systems of networked computers. He received the IEEE von Neumann Medal and the 2013 Turing award, for fundamental contributions to the theory and practice of distributed and concurrent systems.

[Butler Lampson](#), Microsoft Research Technical Fellow and MIT Adjunct Professor does research in computer systems and cybersecurity. He is in the National Cyber Security Hall of Fame and a Foreign Member of the Royal Society. His honors include the von Neumann Medal from IEEE, the Draper Prize (jointly with Alan Kay, Robert Taylor, and Charles Thacker), and the 1992 Turing Award, given for the development of [networked personal computers](#), [graphical user interfaces](#), [what-you-see-is-what-you-get word processors](#), the [Ethernet](#), and [laser printing](#) at Xerox PARC.

[Yann LeCun](#) is the Vice President and Chief AI Scientist at Facebook and the Silver Professor of the Courant Institute of Mathematical Sciences at New York University,. He is a Chevalier de la Légion d'Honneur and received the 2018 ACM Turing Award (with Geoffrey Hinton and Yoshua Bengio) for "conceptual and engineering breakthroughs that have made deep neural networks a critical component of computing."

[Barbara Liskov](#) is an Institute Professor at MIT. She is widely recognized for her work in programming languages, programming methodology, and distributed systems. Her work in programming languages and methodology led to inventions ([Liskov substitution principle](#), [Abstraction](#)) that form the basis for how computer programs are designed and organized today. Her work in distributed systems led to the invention of replication techniques ([Byzantine fault](#), [Paxos](#)) that ensure that online information is stored reliably in spite of failures and malicious attacks. She is coauthor of two internationally used textbooks on software design. Her awards include the IEEE Von Neumann Medal, the IEEE Pioneer Award, and the 2009 Turing Award.

[David Patterson](#), University of California, Berkeley Professor of Computer Science Emeritus, served as Chair of the U.C. Berkeley Computer Science Division, Chair of the Computing Research Association, and President of the Association for Computing Machinery, the largest computer society. He is the coauthor of seven books, including two internationally used textbooks in computer architecture (with John Hennessy). His honors include the IEEE Education Medal, the IEEE Von Neumann Medal, and the 2017 Turing Award (jointly with John Hennessy). The award was given for contributions to computer design used by 99% of the computers today called [Reduced Instruction Set Computers](#).

[Raj Reddy](#) is a University Professor of CS and Robotics and Moza Bint Nasser Chair in the School of Computer Science at Carnegie Mellon University, where he served as the founding Director of

the Robotics Institute and as the Dean of the School of Computer Science. He served as co-chair of the President's Information Technology Advisory Committee and has been awarded 11 honorary doctorates. Dr. Reddy is the recipient of the Legion of Honor, Padma Bhushan, Honda Prize, Vannevar Bush Award, and the 1994 Turing Award (jointly with Edward Feigenbaum) "for pioneering the design and construction of large scale [artificial intelligence](#) systems, demonstrating the practical importance and potential commercial impact of artificial intelligence technology."

[Ronald Rivest](#) is an Institute Professor at MIT. He is perhaps best-known for his co-invention (with Len Adleman and Adi Shamir) of the [RSA public-key cryptosystem](#), based on the difficulty of factoring the product of two large randomly chosen primes. He is a co-founder of RSA Security and of Verisign. He has served on the Technical Guidelines Development Committee (advisory to the Election Assistance Commission), in charge of the Security subcommittee. He is a co-author of the best-selling textbook on algorithms and is a recipient of the National Inventors Hall of Fame membership, the Marconi Prize, and the 2005 Turing Award (with Adleman and Shamir).

[Richard Stearns](#) is a Distinguished Professor Emeritus at the State University of New York, Albany where he was chair of the Computer Science Department. He received the Lanchester Prize in Operations Research and the 1993 Turing Award (with Juris Harmanis) "in recognition of their seminal paper which established the foundations for the field of [computational complexity theory](#)."

[Michael Stonebraker](#) is an Adjunct CS Professor at MIT. Before 1999, he was a CS Professor at UC Berkeley. He built several influential database systems, including Ingres, Postgres, Vertica, and SciDB. He has also founded 10 startups during his career to commercialize his academic prototypes. He received the 2014 Turing Award for fundamental contributions to the concepts and practices underlying modern database systems. However, he suggests his main claim to fame is riding a tandem bicycle across the USA in 1988 with his wife and remaining married.

[Ivan Sutherland](#) is currently a Visiting Scientist at Portland State University. He was chair of computer science at Caltech, taught at Harvard and University of Utah, was director of the Information Processing Techniques Office of the Defense Advanced Research Projects Agency (DARPA), and co-founded Evans and Sutherland Computer Corporation. He is considered the father of [interactive computer graphics](#), for which he received the 1988 Turing Award.

[Robert Tarjan](#) is the James S. McDonnell Distinguished University Professor of Computer Science at Princeton University and a Senior Fellow of Intertrust Technologies. He has held academic positions at Cornell, Berkeley, Stanford, and NYU, and industrial research positions at Bell Labs, NEC, HP, and Microsoft. He has invented or co-invented many of the most efficient known data structures and graph algorithms. He was awarded the first Nevanlinna Prize from the International Mathematical Union for "for outstanding contributions to mathematical aspects of information science," the Paris Kanellakis Award in Theory and Practice (with Daniel Sleator) for the invention of [splay trees](#), and the Turing Award in 1986 with John Hopcroft for "fundamental achievements in the design and [analysis of algorithms](#) and data structures."

[Leslie Valiant](#) is the T. Jefferson Coolidge Professor of Computer Science and Applied Mathematics at Harvard University. He is a founding contributor to the [theory of machine learning and artificial intelligence](#), devised the [bulk synchronous model](#) of parallel computation, invented randomized communication methods for data centers, and developed fundamental theories of the inherent limits of computational feasibility. He is the recipient of the Nevanlinna Prize from the International Mathematical Union in 1986, and of the 2010 Turing Award, which cited transformative contributions in these several areas.