#### **Brief Biography of Charles H Bennett**



Charles Henry Bennett (b. 1943) is a physicist, information theorist and IBM Fellow at IBM Research. He did his graduation from Brandies University, and completed his PhD from Harvard. He discovered, with Gilles Brassard, the concept of quantum cryptography and is one of the founding fathers of modern quantum information theory (see

Bennett's four laws of quantum information). In 1993 Bennett and Brassard, in collaboration with Claude Crepeau, Richard Jozsa, Asher Peres, and William Wootters, discovered "quantum teleportation". In 1995-7, working with Smolin, Wootters, IBM's David DiVincenzo, and other collaborators, he helped found the quantitative theory of entanglement and introduced several techniques for faithful transmission of classical and quantum information through noisy channels.

Bennett's recent work at IBM has concentrated on a reexamination of the physical basis of information, applying quantum physics to the problems surrounding information exchange. He has played a major role in elucidating the interconnections between physics and information, particularly in the realm of quantum computation, but also in cellular automata and reversible computing. He is an IBM Fellow, a Fellow of the American Physical Society, and a member of the National Academy of Sciences, USA.





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# Forging the Culture of Quantum Information Science

Professor Charles H. Bennett

Fellow, IBM Research Division Yorktown Heights, NY 10598,USA

Physicists, mathematicians and engineers, guided by what has worked well in their respective disciplines, have historically developed different scientific tastes, different notions of what constitutes an interesting, well-posed problem or an adequate solution. While this has led to some frustrating misunderstandings, it has invigorated the theory of communication and computation, enabling it to outgrow its brash beginnings with Turing, Shannon and von Neumann, and develop a coherent scientific taste of its own, adopting and domesticating ideas from thermodynamics and quantum mechanics that physicists had mistakenly thought belonged solely to their field, to better formalize the core concepts of communication and computation.



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