

JOHN PRESKILL

University Degrees:

Princeton University, A.B. in Physics, *Summa Cum Laude*, 1975
Harvard University, Ph.D. in Physics, 1980

Positions:

Junior Fellow, Harvard Society of Fellows, 1980-81
Assistant Professor, Harvard University, 1981-82
Associate Professor, Harvard University, 1982-83
Associate Professor of Theoretical Physics, Caltech, 1983-90
Professor of Theoretical Physics, Caltech, 1990-2002
John D. MacArthur Professor of Theoretical Physics, 2002-2009
Richard P. Feynman Professor of Theoretical Physics, 2010-

Honors:

Alfred P. Sloan Foundation Fellowship, 1982-86
NSF Presidential Young Investigator, 1984-89
Associated Students of Caltech Teaching Award, 1990-91, 2001-02
Fellow, American Physical Society, 1991-
Andrejewski Lecturer (Humbolt, 2001), Lorentz Chair (Leiden, 2002), Ball Lecturer (Cambridge, 2005),
Biedenharn Lecturer (Texas, 2005), Loeb Lecturer (Harvard, 2006), Welsh Lecturer (Toronto, 2009), Aisenstadt
Chair (Montreal, 2011).

Current Research Interests:

Quantum information and quantum computation

Administrative Responsibilities:

Founding Director, Institute for Quantum Information, 2000-2013
Co-Director, Institute for Quantum Information and Matter, 2011-

Synergistic Activities:

Chair, APS Topical Group on Quantum Information
Advisory Board, Kavli Institute for Theoretical Physics
Scientific Advisory Committee, Perimeter Institute

Five Most Significant Publications:

Cosmological production of superheavy magnetic monopoles, *Phys. Rev. Lett.* 43, 1365-1368 (1979).
Reliable quantum computers, *Proc. Roy. Soc. Lond.* A454, 385-410 (1998).
Simple proof of security of the BB84 quantum key distribution protocol (with P. W. Shor), *Phys. Rev. Lett.* 85, 441-444 (2000).
Topological quantum memory (with E. Dennis, A. Kitaev, and A. Landahl), *J. Math. Phys.* 43, 4452-4505 (2002).
Topological entanglement entropy (with A. Kitaev), *Phys. Rev. Lett.* 96, 110404 (2006), hep-th/0510092.

Five Most Recent Publications:

Fault-tolerant quantum computation with asymmetric Bacon-Shor codes (with P. Brooks), submitted to *Phys. Rev. A*, arXiv:1211.1400 (2012).
Optimal Bacon-Shor codes (with J. Napp), *QIC* 13, 490-510 (2013), arXiv:1209.0794.
Sufficient condition on noise correlations for scalable quantum computing, *QIC* 13, 181-194 (2013), arXiv:1207.6131.
Quantum computing and the entanglement frontier, *Proceedings of 25th Solvay Conference on Physics*, arXiv:1203.5813 (2012).
Quantum algorithms for quantum field theories (with S. P. Jordan and K. S. M. Lee), *Science* 336, 1130-1133 (2012), arXiv:1111.3633.
Quantum computation of scattering in scalar quantum field theories (with S. P. Jordan and K. S. M. Lee), submitted to *QIC*, arXiv:1112.4833 (2011).