



FOUNDATIONAL QUESTIONS INSTITUTE

Exploring the Foundations and Boundaries of Physics and Cosmology

WHO IS FQXi?

SCIENTIFIC DIRECTORATE

Scientific Director: **Max Tegmark**, *Associate Professor, MIT*

A native of Sweden, Tegmark earned his Ph.D. in physics at Berkeley in 1994. He then worked as a research associate at the Max-Planck-Institut für Physik in Munich, as a Hubble Fellow and member of the Institute for Advanced Study in Princeton, and as faculty at the University of Pennsylvania before joining MIT in 2004 as an Associate Professor. Tegmark's research has focused on cosmology theory and phenomenology, but has also included diverse topics such as interpretations of quantum mechanics, predictions of inflation, and parallel universes.

Associate Scientific Director: **Anthony Aguirre**, *Associate Professor, UC Santa Cruz*

Aguirre received his Ph.D. in Astronomy in 2000 from Harvard University. He then spent three years as a member of the Institute for Advanced Study in Princeton (narrowly missing Tegmark) before accepting an Assistant Professorship at the physics department of the University of California at Santa Cruz. Aguirre has worked on a wide variety of topics in theoretical cosmology, ranging from intergalactic dust to galaxy formation to gravity physics to the large-scale structure of inflationary universes and the arrow of time.

ADVISORY COUNCIL

John Barrow, *Professor of Mathematical Sciences, Cambridge University*

Barrow's research interests are cosmology, the foundations of physics, gravitational and particle physics. Barrow has written a number of popular books on these topics.

Nick Bostrom, *Director, Oxford Future of Humanity Institute, Oxford University*

Bostrom's research interests are philosophy of science, ethics, transhumanism, and probability theory.

Gregory Chaitin, *Researcher, IBM T.J. Watson Research Center*

Chaitin's research interests include physical and mathematical complexity, algorithmic information theory, meta-mathematics, and philosophy of science.

David Chalmers, *Director, Centre for Consciousness & Professor of Philosophy, Australian National University*

Chalmers' research interests include the philosophy of mind, cognitive science, and the foundations of physics.

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Christopher Chyba, *Professor of Astrophysics & International Affairs, Princeton University*

A MacArthur Fellow, Chyba's research interests include astrobiology, planetary science, and international security.

Patricia M. Gruber, *President, Peter and Patricia Gruber Foundation*

Previously a psychotherapist in private practice in California, she now devotes herself full time to the Foundation, which she has guided since its inception in 1993, and has been its full-time president since 2000.

Alan Guth, *Professor of Physics, MIT*

Guth's research interests are cosmology and particle physics, especially inflationary theory.

Robert Lawrence Kuhn, *Creator, Producer, and Host, "Closer to Truth"*

Kuhn has a doctorate in brain science and the author or editor of more than 25 books. He is recognized as an international investment banker and expert on China. He is chairman and founder of The Kuhn Foundation.

Christopher Liedel, *Executive Vice President and Chief Operating Officer, National Geographic Society*

A business leader with strategic planning expertise, Liedel is responsible for financial administration and reporting, overseeing \$700 million in investments, information systems, print manufacturing, distribution, and photographic processing for the National Geographic Society.

Bruce McWilliams, *Chairman of Board of Directors, Tessera*

McWilliams is a leader in the business sector with more than 20 years of executive and technical management experience in the semiconductor industry. He also holds a doctorate in physics from Carnegie Mellon University.

Martin Rees, *Professor of Cosmology & Astrophysics, Cambridge University*

Master of Trinity College and President of the Royal Society, Rees' research interests include understanding the large-scale structure of the Universe (for which he was awarded the 2005 Crafoord Prize) and high-energy astrophysics.

Eva Silverstein, *Associate Professor of Physics, SLAC & Stanford University*

An ex-MacArthur Fellow and Sloan Fellow, Silverstein's research interests include string theory, gravity and particle physics.

Lee Smolin, *Researcher, Perimeter Institute for Theoretical Physics*

Smolin's research interests center on quantum gravity and also include cosmology, particle physics, string theory and the foundations of quantum mechanics.

Melanie Swan, *Principal, MS Futures Group*

Swan is a researcher and hedge fund manager based in Silicon Valley. She specializes in finance, research, and entrepreneurship, including founding a technology startup company, GroupPurchase, which aggregated small business buying groups.

Frank Wilczek, *Professor of Physics, MIT*

Wilczek's research interests include particle physics, cosmology, condensed matter physics and the quantum theory of black holes. His work on asymptotic freedom was awarded the 2004 Nobel Prize.

Dieter Zeh, *Professor Emeritus of Physics at University of Heidelberg*

His research interests include quantum decoherence (which he discovered) and the arrow of time.