



## Biography of Peter Rowlands

Peter Rowlands (born 30 April 1949 in Warrington, near Manchester) is a UK physicist. He graduated BSc (Hons) and PhD in physics from the University of Manchester. Now Peter Rowlands is a Member of the Institute of Physics and a Chartered Physicist, and also a Member of the British Computer Society. Since 1987 he has been a Research Fellow in the Department of Physics, University of Liverpool and an Governor and Honorary Governor of Manchester College, Oxford since 1993. Prior to this, he worked for ICI and lectured in physics at a number of academic institutions.

Peter Rowlands has pursued several different lines of research, all of which are still ongoing:

- Fundamental symmetries foundational to physics, in particular a group structure relating the fundamental parameters space, time, mass and charge.
- A universal rewrite system derived from the concept zero, in collaboration with computer scientist Bernard Diaz.
- A nilpotent version of relativistic quantum mechanics, with significant applications in particle physics and cosmology.
- Fundamental mathematical structures relating to physics and biology, in collaboration with biologist Vanessa Hill.
- Application of rewrite concept to analysis of large-scale systems in physics, biology, theoretical computing, etc., in collaboration with Peter Marcer.

He has also done work on the history of science, including books and articles on Isaac Newton, Oliver Lodge, Herbert Fröhlich, Joseph Rotblat and others, and work on the epistemology of science (*Why does physics work?*).

Peter Rowlands has written nine books as sole author (together with three in the process of publication):

- Oliver Lodge and the Liverpool Physical Society, Liverpool University Press, 1990.
- Newton and the Concept of Mass-Energy, Liverpool University Press, 1990.

- The Fundamental Parameters of Physics: An Approach towards a Unified Theory, PD Publications, Liverpool, 1991.
- Waves Versus Corpuscles: The Revolution That Never Was, PD Publications, Liverpool, 1992.
- A Revolution Too Far: The Establishment of General Relativity, PD Publications, Liverpool, 1994.
- 120 Years of Excellence, The Physics Department at The University of Liverpool 1881-2001, U-P L Communications, Liverpool, 2001, second edition as 125 Years of Excellence, The Physics Department at The University of Liverpool 1881-2006, 2006.
- Zero to Infinity: The Foundations of Physics, World Scientific, Singapore, 2007.
- The Foundations of Physical Law, World Scientific, Singapore, 2014.
- How Schrödinger's Cat Escaped the Box, World Scientific, Singapore, 2015.

He has co-edited three others, together with several Conference Proceedings, and have authored about 200 papers, articles and book reviews. He has been a guest or invited speaker on a number of International Scientific Meetings.

Peter Rowlands received the awards for best paper at:

- The Symposium on The Fundamental Semantic Foundations of the Sciences: Computational Rewrite Systems at VII CASYS Conference, Liège, 2005;
- The Symposium on Rewrite Science – the Universal Semantic Calculus and Grammatical Cosmos at VIII CASYS Conference, Liège, 2007, with Vanessa Hill;
- The Symposium on Rewrite Science – at IX CASYS Conference, Liège, 2009, with Peter Marcer.