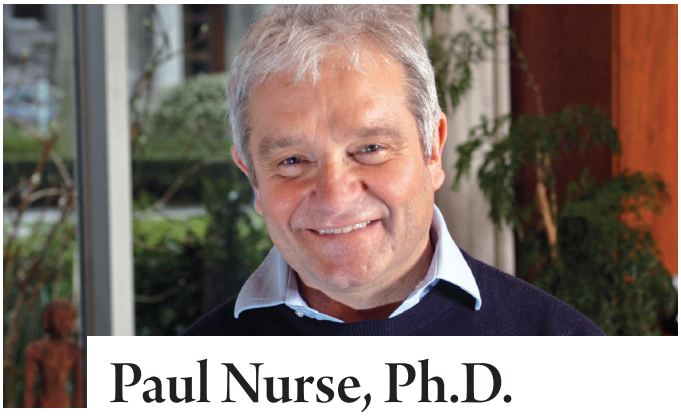


Paul Nurse, Ph.D.

PRESIDENT EMERITUS • PROFESSOR, LABORATORY OF YEAST GENETICS AND CELL BIOLOGY

Nurse's research focuses on how cyclin-dependent kinases (CDKs) and their networks control progression through the eukaryotic cell cycle—particularly the onset of S-phase and mitosis—and the regulation of CDKs by cell size and DNA ploidy. These studies are carried out the simple eukaryote, fission yeast.

Nurse is a geneticist and cell biologist who researches how the eukaryotic cell cycle is controlled. The cell cycle is made up of a set of ordered and temporally organized events that ultimately lead to the division of a cell into two daughters, a process fundamental to all life. The goal of his laboratory is to better understand the global cellular networks which regulate the eukaryotic cell cycle using the fission yeast Schizosaccharomyces pombe.

Using genetic screens in the fission yeast, a single-celled eukaryote, his group identified the Cyclin-dependent kinase (CDK1/cdc2) and have shown that its increasing activity acts like a rheostat to control cell cycle progression. This event is coordinated with cell growth so cells divide at a defined size and display cell size homeostasis between divisions.

Nurse expects that these studies in fission yeast will lead to an improved understanding of equivalent controls in human cells, which is important as uncontrolled cell growth and proliferation can lead to diseases such as cancer.

His laboratory at Rockefeller is developing use of fission yeast to investigate how CDK regulates onset and progression through cytokinesis.

Nurse is a faculty member in the David Rockefeller Graduate Program and the Tri-Institutional M.D.-Ph.D. Program.

EDUCATION

B.Sc. in biological sciences, 1970
University of Birmingham

Ph.D. in cell biology and biochemistry, 1973
University of East Anglia

POSTDOC

University of Bern, 1973

University of Edinburgh, 1974–1980

University of Sussex, 1980–1984

POSITIONS

Head of Laboratory, 1984–1987
Imperial Cancer Research Fund

Professor, 1987–1993
University of Oxford

Director of Research, 1993–1996
Director-General, 1996–2002
Imperial Cancer Research Fund

Director-General, 2002
Chief Executive, 2002–2003
Cancer Research UK

Professor, 2003–
President, 2003–2011
President Emeritus, 2011–
The Rockefeller University

President, 2010–2015
President, 2025–
The Royal Society

CEO and Director, 2010–2025
Honorary Life President and Principal Group Leader, 2025–
Francis Crick Institute

AWARDS

Canada Gairdner International Award, 1992

Lewis S. Rosenstiel Award, 1992

Louis Jeantet Prize, 1992

Royal Medal, The Royal Society, 1995

Alfred P. Sloan Jr. Prize, 1997

Albert Lasker Basic Medical Research Award, 1998

Knighthood, Great Britain, 1999

Nobel Prize in Physiology or Medicine, 2001

Legion d'Honneur, 2002

Copley Medal, The Royal Society, 2005

Albert Einstein World Award of Science, 2013

Henry G. Friesen International Prize, 2015

MEMBERSHIPS

Member, American Academy of Arts and Sciences

Fellow, American Association for the Advancement of Sciences

Member, American Philosophical Society

Foreign Member, The Chinese Academy of Microbiology

Fellow, European Academy of Microbiology

Member, European Molecular Biology Organization

Foreign Associate, National Academy of Sciences

President, The Royal Society

SELECTED PUBLICATIONS

Curran, J.F. et al. Control of CDK activity and the cell cycle by CKS proteins. bioRxiv DOI: 10.1101/2025.07.04.663185 (2025).

Kapadia, N. and Nurse, P. Spatiotemporal orchestration of mitosis by cyclin-dependent kinase. Nature 643, 1391–1399 (2025).

Zeisner, T.U. Phosphatase specificity influences phosphorylation timing of CDK substrates during the cell cycle. Nat. Commun. 16, 11604 (2025).

Basier, C. and Nurse, P. TOR regulates variability of protein