

# Plenaries

## Opening Ceremony & Plenary 1: Climate Change and Microbial Life

Wednesday, July 20, 2022 from 09:00 CEST – Hall 1

### Prof. Sarah Gurr

**Chair in Food Security at the Exeter University,  
Exeter, UK**

Sarah Gurr holds the Chair in Food Security at Exeter University. She studied at Imperial College of Science, Technology and Medicine (BSc, ARCS, DIC and PhD (Plant Pathology)), where she was awarded The Huxley Medal for her outstanding record of achievement (and a Social Blue). She was a post-doctoral Fellow at St Andrews University and thence an independent Royal Society University Research Fellow. She was appointed, as Lecturer, promoted to Reader and Professor at Oxford University (21 years, and Fellow of Somerville College), where she held a Leverhulme Trust Royal Society Senior Research and a NESTA (Science, Technology and the Arts) Fellowship. She was a curator of the Oxford Botanic Garden for 20 years. Sarah was Head of School (Biosciences, Exeter – 2015 – 2017). She was formerly the first woman President of The British Society of Plant Pathology (2011), member of the Board of Directors of Rothamsted Research (7 years) and BBSRC Council (Biotechnology and Biosciences Research Council (2012 – 2018)). She was recently appointed to The International Advisory Board at SLU University, Uppsala (2019) and as Advisor to The Scottish Government on Plant Health (RESAS, 2018) and as a member of Plant Health Scotland (James Hutton Institute), and elected to Board of Trustees of The Rank

Foundation (2019). Sarah held the Donder's Chair (Honorary) at Utrecht University (2016 – 2017), appointed Visiting Prof at Utrecht (2018) and was awarded the President's prize by the British Mycological Society in 2018. She became a Fellow of the Canadian Institute for Advanced Research (CIFAR, 2019), Fellow of American Academy of Microbiology (2020), is Senior Research Fellow at Somerville College, Oxford and Fellow of The Royal Botanic Gardens, Kew and The James Hutton Institute, Dundee, and awarded an Honorary Doctorate by SLU Uppsala (2020).

Her interest is in plant disease – with particular emphasis on fungal infestations and in their global movement and control. Sarah has been invited to speak about this work all over the world – in plenary and keynote conference lectures, and on national and international radio. She has authored or co-authored over 170 publications, including 12 high profile papers in Science, Nature and Nature Journals and a contribution to the Government Foresight report on “Biological Hazards”. In 2019, she was listed amongst the most highly cited researchers worldwide (Clarivate Analytics). Her passion for plants and for raising public awareness of the plight of plants to disease has led her to speak at schools, to the U3A, “Science of Gardening” lectures at Oxford Botanic Garden, charity fund-raising events, to write general “plant” articles and design (with Timothy Walker, former Director Oxford Botanic Garden and Dr Josephine Peach) 3 gold medal winning displays at the Chelsea Flower Show, on the science underpinning some aspects of plant biology.

## **Plenary 2:**

# **Complex Systems, Disturbances and Disruption**

**Thursday, July 21, 2022 from 09:00 CEST – Hall 1**

## **Prof. Stuart Kauffman**

**Theoretical Biologist**

**Complex Systems Researcher**

**The Institute for Systems Biology, Seattle, USA**

Stuart Alan Kauffman is an American theoretical biologist and complex systems researcher who studies the origin of life on Earth. Kauffman graduated from Dartmouth in 1960, was awarded the BA (Hons) by Oxford University (where he was a Marshall Scholar) in 1963, and completed a medical degree (MD) at the University of California, San Francisco in 1968. After completing his residency in Emergency Medicine, he moved into developmental genetics of the fruitfly, genetic regulatory networks, and origin of life, holding appointments first at the University of Chicago 1969-1973, National Cancer Institute 1973-1975, then at the University of Pennsylvania from 1975 to 1995, where he served as Professor of Biochemistry and Biophysics. Kauffman held a MacArthur Fellowship, 1987–1992. He is a Fellow of the Royal Society of Canada. He also holds an Honorary Degree in Science from the University of Louvain; and was awarded a Gold Medal of the Accademia Lincea in Rome.

Kauffman is among the founders of “Complexity Theory”. With M. Ballivet, in 1985, he filed and held the founding patents on high diversity molecular libraries, now a world- wide industry worth hundreds of billions of dollars.

Recently, Kauffman and Andrea Roli have published “The World Is Not A Theorem”, in Entropy (2021), maintaining that the evolving biosphere is a propagating construction, not an entailed deduction, and that no mathematics based on set theory can be used to deduce the diachronic emergence of adaptations in evolution. The implication is that there can be

no Final Theory that entails the becoming of the universe.

With Leroy Hood, Sui Huang, Ingemar Ernberg, Lars Larsson, Anders Harfstrand, Sonia Lain, Erik Moberg, and Soren Gyll, he has founded P4Bios, 2021, with hopes to create antivirals for Covid-19, other viruses and pathogens, and new approaches to cancer therapy and regenerative medicine.

With a group of ten major scientists and a team of TV science producers and directors, Kauffman has founded THE SHAPE OF HISTORY that is now seeking funding for a 3 part TV series, THE NATURE OF NATURE.

Dr. Kauffman has published over 400 articles and 6 books: The Origins of Order (1993), At Home in the Universe (1995), Investigations (2000), Reinventing the Sacred (2008), Humanity in a Creative Universe (2016) and A World Beyond Physics (2019). [View the Program](#)