The European Research Council (ERC) at the Annual meeting of the World Economic Forum  
23 - 26 January 2018, Davos, Switzerland

PROGRAMME & SPEAKERS

The ERC will participate in 14 sessions (several open to the press) with 12 speakers:

- **Prof. Jean-Pierre Bourguignon**, President of the European Research Council
- **Prof. Ben Feringa**, Nobel Laureate in Chemistry (2016), Distinguished Professor of Molecular Sciences, University of Groningen
- **Prof. Sir Christopher Pissarides**, Nobel Laureate (2010), Regius Professor of Economics, London School of Economics; University of Cyprus
- **Prof. Flemming Besenbacher**, Chairman of the Supervisory Board, Carlsberg A/S, Aarhus University
- **Prof. Anne Magurran**, Professor of Biology, University of St Andrews
- **Prof. Yadvinder Malhi**, Professor of Ecosystem Science, University of Oxford
- **Prof. Erika von Mutius**, Head, Allergy & Asthma Dep., Dr von Hauner Children’s Hospital, Ludwig Maximilian University Munich
- **Prof. Jeremy O’Brien**, Director, Centre for Quantum Photonic, University of Bristol
- **Prof. Sir Christopher Pissarides**, Nobel Laureate (2010), Regius Professor of Economics, London School of Economics; University of Cyprus
- **Prof. Hélène Rey**, Professor of Economics, London Business School
- **Prof. Johan Rockström**, Executive Director, Stockholm Resilience Centre
- **Prof. Maja Schlüter**, Associate Professor, Stockholm Resilience Centre
- **Prof. Martin Vetterli**, President, Swiss Federal Institute of Technology of Lausanne

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As the programme may still change, please also consult the [WEF official programme](http://erc.europa.eu).

**ERC speakers are available for interviews.**

**Press contact:**
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Tuesday 23 January

9:45 – 11:00
Implementing strategies for Inclusive Growth
Xchange, Congress Centre

ERC Speaker: Sir Christopher Pissarides

In the last five years, median incomes declined by 2.4% in advanced economies, with half of the countries on the Inclusive Development Index sliding down the scale. How can economies successfully adopt and scale up policy instruments that have proven to make growth more equitable?

Moderated by Alessandra Galloni, Global News Editor, Thomson Reuters

15:30-16:00
Ask About: Forest Conservation
Science Hub, Congress Centre, level -1

ERC Speaker: Yadvinder Malhi

Forests are crucial to slowing climate change and reducing its effects on the planet. Come to the Science Hub to explore the latest research on forest conservation’s role in the fight against climate change.

Wednesday 24 January

10:45-12:00
ERC Ideas lab
Safeguarding our Planet’s Assets with the European Research Council
Ideas Lab, Congress centre

ERC Speakers: Yadvinder Malhi, Anne Magurran, Maja Schlüter
Introduction by: Jean-Pierre Bourguignon

Discover new ideas and insights with leading researchers.

- Building resilience through preserving ecosystem distinctiveness;
- Factoring human behaviour into new models for sustainability;
- Forest conservation as a critical buffer against climate change.

Available on demand on the Forum YouTube channel/ TopLink after the meeting.
11:30-12:00
One-to-one interview session
"An Insight, An Idea" - A journey of discovery with Ben Feringa
Betazone, Congress Centre

ERC Speaker: Ben Feringa

Ben Feringa, the 2016 Nobel Laureate in Chemistry, engineered molecular motors to power the future of nanotechnology. Join this session to learn from his journey of profound discovery.

Livestreamed on the Forum website/TopLink.

12:30-14:00
Lunch debate – ERC/WEF partnership
From Frontier research to Innovation
Morosani Posthotel, Davoserstube

EU/ERC speakers: Carlos Moedas, European Commissioner, Jean-Pierre Bourguignon, ERC President
ERC grantees: Ben Feringa, Erika von Mutius
Industry speakers: Martin Brudermüller, BASF SE, Flemming Ornskov, CEO Shire

Frontier research has the potential to radically transform our understanding of a field but also carries a high risk of failure. How can funding for these far-reaching visions be safeguarded and their market-creating potential be realized?

Dimensions to be addressed:
- Rethinking research culture;
- Connecting scientists and investors;
- Streamlining the path from lab to market.

Moderated by Mariette DiChristina, Editor-in-Chief, Scientific American

12:30-14:00
New Economy, New Thinking
Vetschstube, Central Sporthotel

ERC Speakers: Hélène Rey, Johan Rockström

What fundamental changes in economic policy-making can better manage the upheavals caused by technological disruptions and environmental degradation?

Moderated by Greg Ip, Chief Economics Commentator, WSJ
13:30-14:00
Ask About: Human-environment Systems
Science Hub, Congress Centre, Level -1

ERC Speaker: Maja Schlüter

Human societies shape today’s ecosystems at an unprecedented scale while at the same time depending on them for their well-being. Come to the Science Hub to explore the latest research in synergetic human-environment systems.

14:00-15:30
Building Sustainable Economic Systems
Atelier, Congress Centre

ERC Speaker: Johan Rockström

Global economies consumed 170% of the world’s natural resource budget in 2017. Which approaches show the greatest potential to move towards an inclusive and sustainable future?

Facilitated by Aron Cramer, President and Chief Executive Officer, Business for Social responsibility

Thursday 25 January

09:00-10:15
Deciphering Biological and Digital Networks with Princeton University
Ideas Lab, Congress Centre

Facilitated by Jeremy O’Brien

Discover new ideas and insights with leading researchers in the IdeasLab.
- Future-proofing internet infrastructure for a planet of 9 billion;
- Re-laying the foundations of effective machine learning;
- The connectome: Reverse-engineering the brain’s wiring.

Available on demand on the Forum YouTube channel/TopLink after the meeting.
10:30-12:00
**Preventing Cancer, Heart and Lung Disease**
Atelier, Congress Centre

**ERC Speaker: Erika von Mutius**

While the hope for breakthrough cures captures public imagination, researchers have been making steady progress on the science of disease prevention. Join leading experts to learn the latest prevention strategies science has to offer.

Facilitated by Jeffrey M. Drazen, Editor-in-Chief, New England Journal of Medicine

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20:00-22:00
**The State of the World with Nobel Laureates in Economics**
Säumerstube, Central Sporthotel

**ERC Speaker: Sir Christopher Pissarides**

"If you can look into the seeds of time, and say which grain will grow and which will not, speak then unto me." – William Shakespeare

Informal conversation with Nobel Laureates on the economic imperatives for 2018.

Moderated by Stephanie Flanders, Senior Executive Editor, Economics, Bloomberg LP

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**Friday 26 January**

09:15-10:00
**A new narrative of Progress**
Hub B, the Loft

**ERC Speaker: Johan Rockström**

From carbon pricing to sustainable land use, the global economy is starting to transition towards a more sustainable operating model. How can we rewrite our story of progress to ensure long-term prosperity for people and the planet? This session will explore innovative approaches to overcoming divisions in society.
10:30-11:00
Ask About: Ecosystem distinctiveness
Science Hub, Congress Centre, Level -1

ERC Speaker: Anne Magurran

From Arctic tundra to tropical rainforests, the key to sustaining biodiversity varies across ecosystems. Come to the Science Hub to explore the latest research on ecosystem distinctiveness.

11:45-12:45
A Code of Ethics for Science
Morosani Posthotel, Arvensstube

ERC Speaker: Jean-Pierre Bourguignon

The pace of change brought about by the Fourth Industrial Revolution is drastically altering the research landscape. How can a new universal code of ethics help researchers navigate this complex new world? Join this panel session to learn about and contribute to the Code of Ethics, recently produced by the WEF’s Young Scientists community.
ERC SPEAKERS' BIOGRAPHIES
Jean-Pierre Bourguignon was the Director of the Institut des Hautes Études Scientifiques (IHÉS) from 1994 till 2013. This international research institute located near Paris, France, was built as the European counterpart of the Institute for Advanced Study in Princeton. He was also the first ERC Panel Chair in Mathematics, for Starting Grants.

A mathematician by training, he spent his whole career as a fellow of the Centre National de la Recherche Scientifique (CNRS). He held a Professor position at École polytechnique from 1986 to 2012. From 1990 to 1992, he was President of the Société Mathématique de France and President of the European Mathematical Society from 1995 to 1998. He is a former member of the Board of the EuroScience organisation (2002-2006) and served on EuroScience Open Forum (ESOF) committees since 2004.

Prof. Bourguignon received the Prix Paul Langevin in 1987 and the Prix du Rayonnement Français in Mathematical Sciences and Physics from the Académie des Sciences de Paris in 1997. He is a foreign member of the Royal Spanish Academy of Sciences. In 2005, he was elected honorary member of the London Mathematical Society and has been the secretary of the mathematics section of the Academia Europaea. In 2008, he was made Doctor Honoris Causa of Keio University, Japan, and, in 2011, Doctor Honoris Causa of Nankai University, China.
Ben Feringa is the pioneer of rotary molecular motors. His breakthrough work on molecular machines earned him the 2016 Nobel Prize in Chemistry together with Jean-Pierre Sauvage and Sir James Fraser Stoddart. He created the first molecular motor (a unidirectional rotating molecule powered by light) in 1999, thus paving the way for the development of molecular nanomachines, such as nanorobots, with possible applications in cancer therapy and drug administration.

Prof. Feringa received his PhD in chemistry from the University of Groningen in 1978. After working for some time as a research scientist for Shell first in the Netherlands and then in the UK, he was appointed lecturer of organic chemistry at the University of Groningen in 1984. He has held the position of Professor of organic chemistry at Groningen since 1988. In 2003 the University established the Jacobus H. van't Hoff Distinguished Chair in Molecular Sciences in his honour and in 2008 he was knighted by Her Majesty the Queen of the Netherlands.

Prof. Feringa's research interests include stereochemistry, organic synthesis, asymmetric catalysis, molecular switches and motors, self-assembly, molecular nanosystems and photopharmacology. His research has been recognised with numerous awards, including the Spinoza Award (2004).

He received two ERC Advanced Grants over the past decade.
Sir Christopher Pissarides specialises in the economics of labour markets, macroeconomic policy, economic growth and structural change. He was awarded the 2010 Nobel Prize in Economics, jointly with Dale Mortensen and Peter Diamond, for his work in the economics of markets with frictions. Prior to that, in 2005, he became the first European economist to win the IZA Prize in Labor Economics, sharing it again with his collaborator Dale Mortensen. He has written extensively in professional journals, magazines and the press and his book Equilibrium Unemployment Theory is an influential reference in the economics of unemployment that has been translated in many languages. He is frequently quoted in the press on issues concerning the Eurozone and the future of European integration.

Sir Christopher is the Regius Professor of Economics at the London School of Economics, a Professor of European Studies at the University of Cyprus and the Helmut & Anna Pao Sohmen Professor-at-Large of the Hong Kong University of Science and Technology. He was educated at the University of Essex and the London School of Economics (LSE), and he spent the bulk of his career at the LSE. He had long visits in the US Universities of Harvard, Princeton and California at Berkeley.

He is an elected Fellow of the British Academy, the Academy of Athens, the Academia Europaea and several other learned societies, and he is a Lifetime Honorary Member of the American Economic Association. In 2011 he served as the President of the European Economic Association. In 2011 he received the Grand Cross of the Republic of Cyprus, the highest honour of the Republic. He was knighted in 2013.
Flemming Besenbacher’s current research focuses on the development of microscopy techniques to **observe material surfaces at the nano-level, chemical reactions and biomolecular processes**. With his ERC Grant (2008-2013), he has developed a high-speed and miniaturised “scanning tunnelling microscope”, which is currently commercialised.

Prof. Besenbacher is Chairman of the Carlsberg Group, the Carlsberg Foundation and the Tuborg Foundation. He is Deputy Chairman of Innovation Fund Denmark, and board member of Unisense A/S. In 2016, he was appointed Chairman of the Danish Government’s Advisory Board for Circular Economy and was also appointed a member of the Danish Government’s Digital Growth Panel. He is a professor of Nanoscience, Aarhus University, and was the founding director of the Interdisciplinary Nanoscience Center (iNANO) from 2002-2012. Prof. Besenbacher is an international leading scientist within the field of nanoscience, he has published more than 670 scientific articles in international journals, several in *Science* and *Nature* and he is one of the most cited Danish scientists.

Prof. Besenbacher is an honorary doctor at 13 Chinese Universities and he has received several distinctions in Denmark and abroad for his research, for instance “The Chinese Government Highest International Scientific and Technological Cooperation Award” of the People’s Republic of China. He is also foreign member of the Chinese Academy of Science and holds the title of Knight 1st Class of the Order of Dannebrog.
Anne Magurran is interested in the measurement, evolution and conservation of biological diversity, with particular emphasis on freshwater fish assemblages. Her work on fish is revealing how diversity at intra- and interspecific levels evolves.

Prof. Magurran's interest in biological diversity started in her PhD years at the University of Ulster and has accompanied her throughout her career, first as Postdoctoral Fellow at the universities of Bangor and Oxford and, then, as Professor of biology at the University of St. Andrews, Scotland.

She is also the director of the Centre for Biological Diversity and runs international collaborative projects in Brazil, Trinidad, Mexico, India and Scotland. She has published many papers and several influential books on biological diversity and its quantification, which are widely cited and used in conservation management as well as in academic research.

In 2009, she was awarded an ERC Advanced Grant. Her ERC BioTIME project focused on changes in biological diversity through time, both in terms of the ongoing turnover that characterizes every ecological community, and the changes that arise as a consequence of natural disturbance and anthropogenic change. In 2016, she obtained an ERC Proof of Concept Grant to carry out further research on the topic. Her work on diversity in time and space contributes to the conservation of biological diversity on the planet.
Yadvinder Malhi’s research interests lie in the study of tropical forests, tropical deforestation and climate change, and in understanding how tropical forests respond to climate change, as well as how tropical development and conservation can be managed in the context of climate change.

Over his career, Prof Malhi’s focus has ranged through physics, meteorology, ecology and geography. Prof Malhi’s received his first degree in physics from Queens’ College, University of Cambridge, and a PhD in Meteorology from the University of Reading. During his post-doctoral years at the University of Edinburgh, he developed a keen interest in the ecology and dynamics of tropical rainforests. He co-founded the Amazon rainforest forest inventory network (RAINFOR) and more recently the Global Ecosystems Monitoring (GEM) network (GEM), which have been revealing fundamental insights into the functioning of tropical forests, and how they are responding to global atmospheric change. He is founding Director of the Oxford Centre for Tropical Forests, which takes a multidisciplinary approach to the functioning and conservation of tropical forests.

Prof. Malhi is a member of various committees including the Royal Society Advisory Committee on Climate Change and Ocean Acidification and the Royal Society Environmental Research Committee. He has published two books, and numerous book chapters and articles in prestigious journals. In 2017 he was elected a Fellow of the Royal Society, and he is currently President of the Association for Tropical Biology and Conservation.

In 2013 he was awarded an ERC Advanced Grant GEM-TRAIT to establish a global monitoring system to understand the relationship between tropical forest diversity and resilience to climate change.
Erika von Mutius is a German pediatrician. Her research focuses on investigating the potential role of genetic and environmental factors for the development of asthma and allergic diseases.

She studied medicine at the Ludwig-Maximilians-University Munich from 1976 to 1984 and then specialized in pediatrics at the Von Hauner Children's Hospital from 1984 to 1992. From 1992 to 1993 she held a research Fellowship at the Respiratory Science Centre at the University of Arizona (USA). She has been a senior physician and the head of the Allergy and Asthma Department at the Von Hauner Children's Hospital of the Ludwig-Maximilians-University Munich since 1993. In 1997 and 2000, she underwent training in Clinical Effectiveness at the Harvard School of Public Health, where she obtained a degree in Epidemiology in 2000. In 2004, she was appointed Professor of Pediatric Allergology at University of Munich and in 2017 she took over the management of the new Institute for Asthma and Allergy Research at the Helmholtz Center in Munich. She is member of the Board of Directors of the German Centre for Lung Research.

Prof. von Mutius is a member of numerous scientific associations, as well as a member of the editorial board of the New England Journal of Medicine. She was also an Associate Editor of Journal of Allergy and Clinical Immunology from 2010 to 2015.

In 2010, she received an honorary doctorate from the University of Helsinki and in 2013 she was awarded the Leibniz Prize for her insights into the causes of childhood lung diseases - in particular epidemiological studies on allergic asthma.
Jeremy O'Brien

Director of the Centre for Quantum Photonics (CQP), University of Bristol

ERC Starting Grant; ERC Consolidator Grant; ERC Proof of Concept Grant

Professor Jeremy O'Brien is focused on bringing quantum computing into reality and the market to transform artificial intelligence, healthcare, energy, finance, cyber security and the internet. He heads the University of Bristol's Centre for Quantum Photonics that his ERC Starting Grant helped establish.

Jeremy O'Brien received his Ph.D. in physics from the University of New South Wales in 2002 for experimental work on correlated and confined electrons in organic conductors, superconductors and semiconductor nanostructures, as well as progress towards the fabrication of a phosphorus in silicon quantum computer. As a research fellow at the University of Queensland (2001-2006), he worked on quantum optics and quantum information science with single photons. CQP's efforts are focused on the fundamental and applied quantum mechanics at the heart of quantum information science and technology, ranging from prototypes for scalable quantum computing and communication to generalised quantum measurements, quantum control, and quantum metrology. Currently he is Professor of Physics and Electrical Engineering, Stanford and Bristol.

Prof O'Brien was awarded an ERC Starting Grant (2009) that established the field of integrated quantum photonics. He received an ERC Proof of Concept Grant (2011) for a project that developed quantum secure mobile communication systems.
Hélène Rey's research focuses on the functioning of the international monetary system, capital flows and the behaviour of the financial sector. In particular, she has analysed the international transmission of US monetary policy via asset markets around the world and the degree of monetary independence enjoyed by emerging markets, as well as advanced economies. The research, which has potential implications for the conduct of monetary and macroprudential policies, has raised interest from academics, central banks and policy-makers.

She received an ERC Advanced Grant in 2016. Prior to that, in 2007, she was awarded an ERC Starting Grant, which encouraged her to return to Europe from Princeton University, where she was a Professor.

Named “The economist to watch in 2016” by the Economist, Prof. Rey has also received numerous prestigious awards, including the 2006 Bernácer Prize (best European economist working in macroeconomics and finance under the age of 40). She holds an undergraduate degree from ENSAE, a Master from Stanford University and PhDs from the London School of Economics and the École des Hautes Études en Sciences Sociales.

She is on the board of the Review of Economic Studies and associate editor of the AEJ: Macroeconomics Journal. She is a Fellow of the British Academy, of the Econometric Society and of the European Economic Association. She is a Board member of the French Macroprudential Authority.

She is a Fellow of the British Academy, of the Econometric Society and of the European Economic Association. She is on the board of the Review of Economic Studies and associate editor of the AEJ: Macroeconomics Journal. She is a CEPR Research Fellow and an NBER Research Associate. She writes a regular column for the French newspaper Les Echos.
Johan Rockström’s research focuses on **global sustainability** and freshwater resources. His work on global sustainability issues has gained him international recognition and, in 2009, he led an international team of academics, who proposed the nine planetary boundaries framework for government and management agencies, as a precondition for sustainable development.

After completing a PhD at Stockholm University’s Systems Ecology Department in 1997, Rockström spent nearly two decades working on applied water research in tropical regions. From 2004 to 2012 he was Executive Director of the Stockholm Environment Institute. He also acts as an advisor to several governments and business networks and meetings, including the United Nations General Assemblies, the World Economic Forums, and the United Nations Framework Convention on Climate Change Conferences.

He has published over 100 research articles, including papers in *Science* and *Nature*, as well as 20 book chapters and four books. In recognition for his work communicating climate science to decision-makers, in 2009, Focus magazine named him Swede of the year.
Maja Schlüter's research focuses on creating theories of the co-evolutionary dynamics of social-ecological systems, conceived as systems where humans and ecosystems are tightly intertwined, and on developing policy-relevant insights into real-world problems. In collaboration with members of the SES-LINK team, she studies how the interactions between people and ecosystems cause emergent SES phenomena, such as the collapse of the Baltic Sea cod or poverty traps in Central Asia. Her aim is to identify critical interactions and leverage points to improve management and governance of social-ecological systems.

Prof. Schlüter has a background in ecology and a PhD in Applied System Science. She has worked at the UFZ-Helmholtz Centre for Environmental Research Leipzig/Halle, Princeton University, the Leibniz Institute for Freshwater Ecology and Inland Fisheries Berlin and the Stockholm Resilience Centre (SRC) at Stockholm University. She is a member of the editorial board of Ecology and Society and the Journal of Socio-environmental Modelling and has authored or co-authored more than 50 papers, as well as being the recipient of several awards and honours, including an ERC Starting Grant in 2012 and an ERC Consolidator Grant in 2017.

She has been leading or working in several projects with strong stakeholder participation or action research components involving water management and fisheries practitioners and stakeholders in Uzbekistan, Germany and Sweden with the aim to co-develop solutions to pressing management issues.
Martin Vetterli works in the areas of electrical engineering, computer sciences and applied mathematics. Supported by the ERC, he developed a theory and framework for signal processing and communications with wide ranging applications. He showed that we can “hear” the shape of a room, using a microphone and algorithms that make sense of echoes. This could have applications for indoor location devices or assistive devices for both the visually and hearing impaired people.

Prof. Vetterli received a Dipl. Ing. degree from Eidgenössische Technische Hochschule (ETHZ) in 1981, a Master of Science from Stanford University in 1982, and a Doctorate in Sciences from the Ecole Polytechnique Fédérale de Lausanne (EPFL) in 1986.

After his dissertation, he was an Assistant and Associate Professor in Electrical Engineering at Columbia University in New York, and in 1993, he became an Associate and then Full Professor at the Department of Electrical Engineering and Computer Sciences at the University of California at Berkeley. In 1995, he joined the EPFL as a Full Professor. He held several positions at EPFL, including Chair of Communication Systems and founding director of the National Competence Center in Research on Mobile Information and Communication systems (NCCR-MICS). From 2004 to 2011, he was Vice President of EPFL for international affairs, and from 2011 to 2012, he was the Dean of the School of Computer and Communications Sciences. From 2013 to 2016 he was President of the National Research Council of the Swiss National Science Foundation.

His work won him numerous prizes, like best paper awards from EURASIP in 1984 and of the IEEE Signal Processing Society in 1991, 1996 and 2006, the Swiss National Latsis Prize in 1996, the SPIE Presidential award in 1999, the IEEE Signal Processing Technical Achievement Award in 2001 and the IEEE Signal Processing Society Award in 2010. He is a Fellow of IEEE, ACM and EURASIP, was a member of the Swiss Council on Science and Technology (2000-2004), and is a ISI highly cited researcher in engineering.
The ERC at the World Economic Forum, Davos, 23-26 January 2018

For the sixth year, the European Research Council (ERC) participates in the World Economic Forum in Davos and takes part in 14 sessions.

The ERC, which celebrated its tenth anniversary in 2017, is the first funding organisation for excellent frontier research set up by the EU. Every year, it selects and funds the very best, creative researchers of any nationality and age to run five-year projects based in Europe. The ERC strives to attract top researchers from anywhere in the world to come to Europe. To date, it has funded nearly 8,000 top researchers at a variety of stages in their careers. The ERC consists of an independent Scientific Council and an Executive Agency. The Scientific Council, the ERC’s governing body, is composed of distinguished scientists and scholars led by ERC President Prof Jean-Pierre Bourguignon. Under the EU research and innovation programme, Horizon 2020, of which European Commissioner for Research, Science and Innovation Carlos Moedas is responsible, the ERC has a budget of over €13 billion from 2014 - 2020.

Follow the ERC activities at the Davos summit on Twitter (@ERC_research)