



SCOR

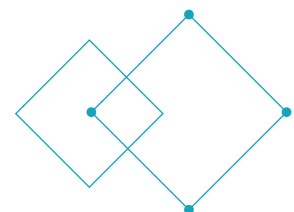


Corporate  
Foundation  
for Science

Created in late 2011 by SCOR,  
the SCOR Corporate Foundation for Science  
is a concrete example of SCOR's long-term  
commitment to supporting risk research and  
the dissemination of risk-related knowledge.

This commitment is an integral part of SCOR's DNA, as illustrated by the Group's tagline, "The Art & Science of Risk". Risk is indeed the "raw material" of reinsurance, and SCOR aims to be at the cutting edge of risk expertise and research thanks to its broad network of academic institutions and its support for a large number of disciplines: mathematics, actuarial, physics, chemistry, geophysics, climatology, economics, finance, and so on.

The creation of the SCOR Corporate Foundation for Science marked a new phase in SCOR's commitment to scientific disciplines, and beyond this to its contribution to Society, in line with its policy of Corporate Social Responsibility.





## AREAS AND MODES OF INTERVENTION

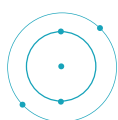
As its name indicates, the objective of the Foundation is to support scientific research. Thus the SCOR Corporate Foundation for Science may lend its support to different kinds of risk and (re)insurance-related projects, including university chairs, research projects, conferences and publications within the framework of its orientations and means.



### RESEARCH PROJECTS

The Foundation also supports multiyear research and technical cooperation programs. These projects involve a broad range of disciplines and address meaningful topics for society, such as:

- ◆ risk markets and value creation, through research chairs at the Toulouse School of Economics and the Risk Foundation
- ◆ modelling life expectancy at older ages
- ◆ analyzing the feasibility of earthquake forecasting
- ◆ understanding the risk management behavior of North-American Non-Life insurance companies
- ◆ facilitating research into Alzheimer's disease



### CONFERENCES

Since its early days, the Foundation has financed seminars on numerous scientific topics, such as:

- ◆ economy of risks and insurance (EGRIE)
- ◆ emerging infectious diseases
- ◆ Alzheimer's disease
- ◆ longevity risk
- ◆ anticipation in an economic and financial crisis context
- ◆ climate risk anticipation and insurability
- ◆ risks globalization





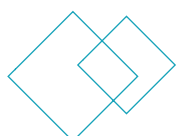
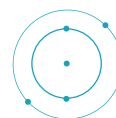
## AWARDS

To foster scientific vocations, the Foundation also sponsors scientific awards, such as the 2017 Europlace Institute of Finance Award for Best Young Researcher in Finance and Insurance, and the SCOR Foundation Young European Researcher Prize for Research into Alzheimer's disease. In partnership with the Institut des Actuaire, the Foundation sponsors the SCOR Actuarial Awards in France.



## TRAINING

The SCOR Corporate Foundation wishes to contribute to the dissemination of scientific knowledge and to training in the disciplines concerned. Thus, promotional or financing initiatives may be envisaged with regard to teaching and courses, along with financial support for students already studying or intending to study in these fields. In this context, the SCOR Corporate Foundation for Science develops actuarial sciences in Africa through an educational program.





## AREAS AND MODES OF INTERVENTION

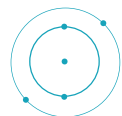
The SCOR Corporate Foundation for Science, of which the Group is the sole founder, is governed by a Board of Directors, chaired by André Lévy-Lang. The Board of Directors decides how the Corporate Foundation's resources are used, defines its orientations with the assistance of the Scientific Board, and ensures that the Foundation is functioning properly.

Each year, the Foundation undergoes a legal audit by statutory auditors appointed by the Board of Directors.

The Scientific Board of the SCOR Corporate Foundation for Science, which is composed of recognized scientists from various disciplines, is responsible for directing the Foundation towards suitable areas of intervention from the main projects submitted for consideration, in line with its long-term strategy.

The SCOR Corporate Foundation for Science is run on a day-to-day basis by a management team that passes the projects presented for consideration on to the Board of Directors and/or the Scientific Board, implements any decisions made by them and keeps them informed of progress with regard to projects already underway.

*(See composition of Board of Directors and Scientific Board in the appendix)*





## FINANCES

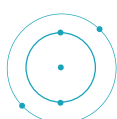
In accordance with the procedure for any corporate foundation, SCOR has allocated funds to the Foundation for Science for a multi-year research program renewable every 5 years. The initial amount allocated is EUR 300,000.

The Foundation will receive funding from SCOR for a range of commitments amounting to around EUR 1.5 million per year minimum. These commitments will include the transfer of responsibility from the Group to the Foundation for existing actions to promote scientific research, and any new projects in which it decides to intervene.

SCOR notably chose the status of corporate foundation for its flexibility in terms of management and for the possibilities it presents in terms of additional funding. Depending on the projects submitted to the Foundation and the recommendations made by the Board of Directors and the Scientific Board, SCOR will regularly examine the possibility of making any additional budgetary contributions.

Projects seeking the support of  
the SCOR Corporate Foundation  
may be addressed to:

**SCOR Corporate Foundation**  
5, avenue Kléber  
75795 Paris Cedex 16  
fondation@scor.com





## APPENDIX

### SCOR FOUNDATION'S BOARD OF DIRECTORS

#### André Lévy-Lang, Chairman

André Lévy-Lang, a French citizen and former student of the Ecole Polytechnique (1956), holds a PhD in Business Administration from the University of Stanford. He began his career in 1960 as a physicist at the French Atomic Energy Commission. From 1962 to 1974 he held various technical and managerial positions at the Schlumberger group, both in France and the United States. He joined the Paribas group in 1974 and in 1982 was appointed Chairman of the Board of Directors of Compagnie Bancaire, a specialised financing subsidiary of Paribas, before becoming Chairman of the Board of Directors of the Paribas group in 1990. He held these positions until the merger with BNP in 1999. André Lévy Lang is an associate professor emeritus at the University of Paris-Dauphine, Chairman of the Supervisory Board of Les Echos, Chairman of both the Risk Foundation and the Louis Bachelier Institute, Vice-Chairman of the Europlace Finance Institute and Vice-Chairman of the French Institute for International Relations. He is also a member of the boards of the Institut des Hautes Etudes Scientifiques and the American Hospital in Paris.

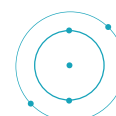


#### Jean-Luc Besson

Jean-Luc Besson, a French citizen, is an actuary and holds a PhD in Mathematics. He was a Professor of Mathematics at university level and Director of Research, Statistics and Information Systems at FFSA. He was appointed Chief Reserving Actuary at SCOR in January 2003 and was Chief Risk Officer from July 2004 to June 2010.

#### Bruno Latourrette

Bruno Latourrette, a French citizen, is a graduate of the Ecole Polytechnique and the Ecole Nationale de la Statistique et de l'Administration Economique (ENSAE) and holds a Master of Science in Economics from the London School of Economics. Bruno Latourrette began his career at SCOR Global Life in 1996, in charge of actuarial studies. He was subsequently Chief Actuary at SCOR's Dallas subsidiary between 2001 and 2004, before becoming Senior Actuary at the Paris office in 2004. He was appointed head of Legal & General's actuarial department in France in 2005, before becoming Chief Actuary of SCOR Global Life in April 2008. Bruno Latourrette is a member of the French and American Societies of Actuaries.





## Ecaterina Nisipasu

Ecaterina Nisipasu, a Romanian citizen, graduated in Mathematics from the University of Craiova and received her Ph.D in Applied Mathematics at the University of Paris IX Dauphine. She also pursued Actuarial Professional Studies at the Centre d'Etudes Actuarielles. Ecaterina Nisipasu joined SCOR in 2001 as Reserving Actuary. In 2003, she became Head of Group P&C Reserving. Since 2010, she has been Head of Actuarial Modelling, where she manages the Pillar I project which is part of SCOR's Solvency II program. Ecaterina Nisipasu defined and implemented the processes and tools used to validate SCOR's internal model. Throughout her career, she has written and coordinated numerous scientific studies on risk modelling.



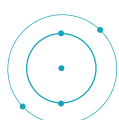
## Paul Nunn

Paul Nunn, a British citizen, graduated from the University of Newcastle Upon Tyne with honors in Mathematics and Economics. He joined SCOR in 2011 as Head of Catastrophe Risk Modelling at SCOR Global P&C; he is responsible for the assessment and management of natural hazard risk globally. A key aspect of the role is the provision of analytics and data for internal and external stakeholders including SCOR's internal model, rating agencies, regulators and retrocessionaires. Before joining SCOR Global P&C, Paul Nunn was Head of Exposure Management at Lloyd's and also worked at catastrophe modelling specialist firm, AIR Worldwide Ltd. In addition to his role in the management team of SCOR's P&C division, he is a director of the non-profit Oasis Loss Modelling Framework company.



## Philippe Trainar

Philippe Trainar, a French citizen, is a graduate of the Ecole nationale d'administration (ENA) and has a BA in Economics. He held various senior positions in the French civil service from 1981 to 1999, notably as financial attaché to the French embassy in Germany (1985-1987), adviser in the Prime Minister's cabinet (1993-1995) and deputy-director in charge of international economic issues at the French Ministry of Finance. He was also in charge of macroeconomic modelling at the Ministry of Finance. In 2000 he joined the Fédération française des sociétés d'assurance (FFSA) as Director of Economic, Financial and International Affairs. In February 2006, he was appointed Chief Economist of the SCOR group. Philippe Trainar is Chairman of the Risk Analysis and Management Commission of the FFSA. He is a member of the National Economic Commission. He has also written many scientific works on the economy, risk, insurance and solvency, which have been published in scientific journals such as the Journal of Risk and Insurance, the Geneva Papers, Economie & Statistique and Risques. He is also editor-in-chief of the Revue Française d'Economie.







### Laurent Abel

Laurent Abel, a French citizen, is Director of Research at INSERM. He received his M.D. from the University of Paris Descartes in 1988 and his Ph.D. in genetic epidemiology from the University of Paris Sud in 1993. In 2000, he co-founded the Laboratory of Human Genetics of Infectious Diseases (University of Paris Descartes/INSERM Unit 980) at the Necker Medical School with Jean-Laurent Casanova who has been his co-director since the outset. He is studying the human genetics of infectious diseases with the goal of identifying the main human susceptibility/resistance genes that control the response to infection caused by various microbes (in particular, mycobacteria and oncogenic viruses), and the development of the associated infectious diseases. He is author or co-author of more than 200 publications that have appeared in peer-reviewed journals since 1986. He was awarded the André Lwoff Prize from the Pasteur-Weizmann Council and the French Academy of Sciences in 1999, and the Jean Valade Prize from the Foundation of France and the French Academy of Medicine in 2009. In the same year, he was appointed visiting professor at The Rockefeller University of New York. In 2011, he obtained an ERC-Advanced grant.

### Thibault Damour



Thibault Damour, a French citizen, has been a theoretical physics professor at the Institut des Hautes Etudes Scientifiques (IHES) since 1989 and a member of the French Academy of Science since 1999. He was a visiting professor at the Conservatoire National des Arts et Métiers (CNAM) in 2000. A graduate of the Ecole Normale Supérieure with a PhD in Physical Science, he has won many awards, including the "Paul Langevin" prize for theoretical physics from the Société Française de Physique (1984), the First Award from the Gravity Research Foundation (United States, 1994), the Albert Einstein Medal from the Albert Einstein Gesellschaft in Berne (Switzerland, 1996), the Cecil F. Powell Memorial Medal from the European Physical Society (2005), the Amaldi Medal (2010) and the CNRS Gold Medal (2017).

Thibault Damour is a theoretical physicist who works on relativistic gravitation (Einstein's general relativity theory), cosmology and the new gravitation concepts suggested by combining the general relativity theory and the quantum theory defined by the string theory. He has made innovative contributions to the black hole theory. In particular, his work resulted in the first prediction of the gravitational signal emitted by the last orbits and the coalescence of a two-black-hole binary system, and was used by the LIGO-Virgo collaboration to analyze and interpret the gravitational waves observed since September 2015. He is also currently studying hidden symmetries in the chaotic dynamics near a big crunch, which seem to involve hyperbolic Kac-Moody algebras, in particular the "exceptional" E10 algebra.

### Georges Dionne



Georges Dionne, a Canadian citizen, holds the Canada Research Chair in Risk Management and is a member of the board of HEC Montréal, Canada. He is President of the Canadian Economics Association and first vice-president of the European Group of Risk and Insurance Economists (EGRIE). Georges Dionne's awards include the Les Échos (2001) and Kulp-Wright awards (2002) for his Handbook of Insurance, the PRMIA award (2006), the Bank of Canada's NFA Conference award (2006), an Honorary PhD conferred by the University of Orléans, France (2006), the Innis-Gérin Medal from the Royal Society of Canada (2011), the Marcel-Dagenais Award (1991, 2012) and the John S. Bickley Founder's Award in 2017

Professor Dionne has edited five books and is author of more than 150 peer-reviewed articles. He was the Editor of the Journal of Risk and Insurance from January 2007 to December 2012.

One of his main achievements was to propose (with Marcel Boyer) a new model for automobile insurance pricing based on drivers' demerit points. This model was adopted by the Société de l'Assurance Automobile du Québec in 1992 and is still used in Quebec today.





## Erwann O. Michel-Kerjan

Dr. Erwann O. Michel-Kerjan, a French citizen, is an authority on managing the risks, financial impact and public policy challenges associated with catastrophic events. Dr. Michel-Kerjan teaches Value Creation in the Wharton School of Business' MBA program in Philadelphia (US), and is the Managing Director of the Wharton Risk Management and Decision Processes Center. Dr. Michel-Kerjan is also Chairman of the OECD Secretary-General Board on Financial Management of Catastrophes. He was named as a Young Global Leader by the World Economic Forum (Davos). Dr. Michel-Kerjan is the author of several acclaimed books, including *The Irrational Economist* (PublicAffairs Books, with P. Slovic, 2010) and *At War with the Weather* (MIT Press, with H. Kunreuther, 2009; paperback 2011) which received the prestigious Kulp-Wright Award. He has studied at Polytechnique in France, McGill and Harvard.

## Pierre-Louis Lions

Pierre-Louis Lions, a French mathematician, has worked extensively on partial differential equations and their applications. He received the Fields Medal in 1994 when he was teaching at the Paris-Dauphine University. Pierre-Louis Lions was also the first mathematician to give a complete solution to the Boltzmann equation and introduced, in conjunction with Michael Crandall, the notion of viscosity solutions, which have multiple applications. Over the past few years, in collaboration with Jean-Michel Lasry, Pierre-Louis Lions has introduced and developed mean field game theory and its applications, notably in the fields of economics and finance. Pierre-Louis Lions has received several awards, including the IBM Award in 1987, the Ampère Prize from the Paris Academy of Science in 1992 and the Grand Prize INRIA in 2012. He has honorary doctorate degrees from Heriot-Watt University (Edinburgh), the City University of Hong-Kong, Ecole Polytechnique Fédérale of Lausanne and the University of Bucharest. He is currently a professor at the prestigious Collège de France, where he holds the chair in Partial Differential Equations and their applications, as well as teaching applied mathematics at École Polytechnique.



## Nikolai Shapiro

Nikolai Shapiro, a citizen of Russia and France, is Director of Research at CNRS (French National Scientific Research Center) and works at the IGP's Seismology Laboratory in Paris. He graduated from the Moscow Physics and Technology Institute and received his PhD from University Joseph Fourier in Grenoble (France). His research interests are theoretical, computational and observational seismology, seismic tomography, seismic wave propagation in heterogeneous media, random seismic wavefields, seismic surface waves, the structure of the Earth's interior, the interpretation of seismic tomographic models, regional seismic phases, CTBT monitoring, seismic sources, site effects, and the application of numerical modeling.

## Didier Sornette

Didier Sornette, a French citizen, studies the predictability and control of crises and extreme events in complex systems (earthquakes, epilepsy, mechanical failures, etc.), the dynamics of success on social networks and, in particular, the advanced diagnosis of financial bubbles, the predictability of financial crashes and systemic crises. In 2008, he created the Observatory of Financial Crises to rigorously test the hypothesis that financial bubbles can be diagnosed in advance and that their end result in the form of crashes can be predicted using probabilistic methods. He is the author of more than 500 research papers in peer-reviewed international journals and 7 books.





## Jean Tirole

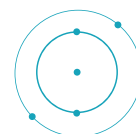
Jean Tirole, a French citizen, is chairman of the Toulouse School of Economics (TSE), scientific director of the Institute for Industrial Economics (IDEI) in Toulouse, a founding member of the Institute for Advanced Study in Toulouse (IAST), a visiting professor at MIT and an academic advisor at Ecole des Hautes Etudes en Sciences Sociales (EHESS). He is also a member of the Académie des Sciences Morales et Politiques and Conseil d'Analyse Economique (CAE). He has engineering degrees from Ecole Polytechnique (1976) and Ecole Nationale des Ponts et Chaussées (1978), a Master Degree in decision mathematics from the University Paris IX (1978) and a PhD in economics from MIT (1981). He was a professor at Ecole Nationale des Ponts et Chaussées (1981-1984) and MIT (1984-1991) and has been a visiting professor at numerous universities. He has published more than 180 articles in international journals and 10 books.

A former Sloan fellow and Guggenheim fellow, Jean Tirole holds honorary doctorate degrees from the Free University in Brussels (1989), the London Business School (2007), HEC Montreal (2007), the University of Mannheim (2011), the Athens School of Business and Economics (2012) and the University of Rome 2 (2012). In 1993, he was elected as a foreign honorary member of the American Academy of Arts and Sciences and the American Economic Association. He was chairman of the Econometric Society in 1998 and the European Economic Association in 2001. He received the European Economic Association's Yrjö Jahnsson Award in 1993 (granted every other year to the best European economist under 45) and Munich University's Distinguished-Fellow Prize in 1996. In 2007, he was awarded the CNRS' gold medal, the only economist, along with Maurice Allais, to have received this honor. In 2008, he was the inaugural winner of the BBVA Frontiers of Knowledge Award in economics, finance and management. In 2010 he received the CME-MSRI award for economics and the Levi-Strauss prize. In 2014, he won the Nobel Prize for Economics.

Jean Tirole has given over seventy distinguished lectures. In Combes & Linnemer's weighting system for the ranking of scientific journals, he ranked first among French economists. In Coupé's system, he was first-ranking European and second-ranking world economist (articles published in the Journal of the European Economic Association 2003).

## James W. Vaupel

James W. Vaupel, a citizen of the United States, is Director of the Max Planck Institute for Demographic Research, which he founded in 1996. He is also Professor of Demography and Epidemiology at the Institute of Public Health at the University of Southern Denmark, and Research Professor at Duke University's Population Research Institute. He is a scientific member of the U.S. National Academy of Sciences, the American Academy of Arts and Sciences, the German Leopoldina National Academy of Sciences and the Max Planck Society. He was the recipient of the Population Association of America's two highest awards, the Taeuber prize for innovation in biodemography and the Sheps prize for developing the mathematics of heterogeneous populations. He won the IPSEN Foundation Award and the Seneca Medal for his research on longevity. In 2011 he was awarded the European Latsis Prize by the European Science Foundation.





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