

We invite applications to participate in the
4th **Intercontinental Academia** dedicated to



INTERCONTINENTAL ACADEMIA

Intelligence and Artificial Intelligence

Opening online session: 13-18 June 2021
1st workshop in Paris, France: 18-27 October 2021
2nd workshop in Belo Horizonte, Brazil: 6-15 June 2022

Call for fellows

Deadline: March 15, 2021 (6pm CET)

Applications should be submitted to:

applications-ica4@rfiea.fr

The Intercontinental Academy (ICA) seeks to create a **global network of future research leaders in which some of the very best early/mid-career scholars will work together on paradigm-shifting cross-disciplinary research, mentored by some of the most eminent researchers from across the globe**. In order to achieve this high objective, we organize in a year three immersive and intense sessions. The experience is expected to transform the scholar's own approach to research, enhance their awareness of the work, relevance and potential impact of other disciplines, and to inspire and facilitate new collaborations between distant disciplines. Our aim is to make a real, yet volatile, intellectual cocktail that leads to meaningful exchange and long-lasting outputs.

The theme

Intelligence and Artificial Intelligence has been selected to provide a framework for stimulating intellectual exchange In 2021-2022. The past decades have witnessed an impressive progress in cognitive science, neuroscience and artificial intelligence. Beside the decisive scientific advances that have been accomplished in the analysis of brain activity and its behavioral counterparts or in the information processing sciences (machine learning, wearable sensors...), several fundamental and broader questions of deep interdisciplinary nature have been arising. **As artificial intelligence and neuroscience/cognitive science seem to show significant complementarities, a key question is to inquire to which extent these complementarities should drive research in both areas and how to optimize synergies. More broadly speaking, the fantastic progress in these areas raises a series of major ethical and societal questions, and tremendous challenges and opportunities for humanity that deserve wide and deep interdisciplinary discussions.**

The Structure

The Intercontinental Academy is based on two intensive workshops held on different continents which provide time and space for learning about the inward perspectives of “Intelligence and Artificial Intelligence”, performing a comparative analysis of the current research panorama and searching for correlations among different perspectives. Due to the exceptional epidemic crisis, an opening online session has been added to the agenda. The scholars are guided during these workshops by an array of mentors who are themselves some of the most outstanding disciplinary and interdisciplinary researchers of our time. The participants will have ample leeway to define the precise workshop structure as well as the outputs from the project (for example, a collective volume or a collaborative research initiative may be envisaged).

The Programme

An opening online session will be organized on June 13th-18th, 2021 as follows:

- June 13 (from 1:30pm to 4pm CET time) - **Kick-off for fellows**
Introduction of Academy by the co-chairs and short individual presentations by the fellows
- June 14-18 (from 1:30pm to 4pm CET time) - **Plenary sessions**
Each day will be devoted to a theme and will include short presentations by mentors and a general discussion with the fellows. Daily themes selected are:
 - A. Foundations of artificial intelligence and cognitive sciences
 - B. Robots and emotions
 - C. Intelligence and rationality
 - D. Ethics in artificial intelligence and cognitive sciences
 - E. Learning

The first workshop in Paris (France) will be held at the Institute for Advanced Study from October 18th to October 27th, 2021. The second workshop in Belo Horizonte (Brazil) will take place at the Institute for Advanced Transdisciplinary Studies from June 6th to June 15th, 2022. During the two workshops, top-level partnering scientific institutions will co-host some of the events.

Detailed programming will be available at a later stage. Fellows, co-chairs and Steering Committee members will actively contribute to the design and structure of the workshops as well as of the related events.

The Fellows

We invite applications from outstanding early/mid-career researchers, normally within 15 years of achieving their PhD, who hold a research position in academia, industry, charity, arts or other organisations, which are equivalent to an academic level of Lecturer or above, or an individual principal investigator. The candidates should be willing and able to:

- explore ideas in the theme outside their direct line of research
- challenge world leaders of respective areas of knowledge
- play a role in forging the programme and its academic outcomes

Candidates are asked to provide:

- a summary of their interest in the topic, their expectations and a project presentation outlining how they will contribute to the Intercontinental Academia (max. 2 pages)
 - a detailed and updated CV
 - a letter of endorsement from their institution/organisation with confirmation of financial support for travel.
- **Applicants must commit to attending the opening online conference and both workshops.**
 - Accommodation and subsistence will be provided by the host Institutes for Advanced Study in France and Brazil.
 - Applicants from LMIC countries who would like to participate but are unable to find funds for travel should contact (info-ica4@rfiea.fr) for further advice.
 - **Presentations and discussions will be conducted in English** and there will be no translation.

Selection Procedure

Selection is based on a competitive application process. The scientific excellence of the applicant as well as the quality of his/her project are the key criteria. The selection is supervised by the international Steering Committee. Fifteen to twenty fellows will be invited to participate in the programme.

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ICA 4 — Co-chairs

- **Raouf Boucekkin**, Professor, Aix-Marseille School of Economics and Special Counsellor to the French Network of Institutes for Advanced Study
- **Estevam de Las Casas**, Director, Institute for Advanced Study (IEAT), Universidade Federal Minas Gerais
- **Eliezer Rabinovici**, Leon H. and Ada G. Miller Chair of Science, Professor Racah Institute of Physics, Hebrew University of Jerusalem, initiator of the ICA concept and Vice President of SESAME Council.

ICA 4 — Steering Committee

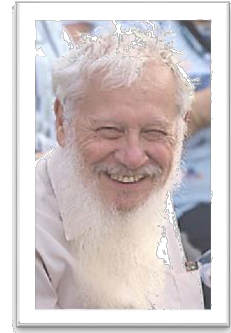
- **François-Xavier Alario**, CNRS Research director, Institute of Language, Communication and Brain, Aix-Marseille University
- **Olivier Bouin**, Director, French network of institutes for advanced study (RFIEA) and Secretary, Network of European Institutes of Advanced Studies
- **Mario F. Montenegro Campos**, Research Provost, Universidade Federal Minas Gerais
- **Frederico Gadelha Guimarães**, Professor at the School of Engineering and Head of MINDS Laboratory, Universidade Federal Minas Gerais
- **Frederico Gadelha**, Professor at the Engineering School, Universidade Federal Minas Gerais
- **Thibault Gajdos**, CNRS Research Director, Laboratory of Cognitive Psychology, Aix-Marseille University
- **Sue Gilligan**, Research Development Manager (Interdisciplinary), University of Birmingham, Institute of Advanced Studies
- **Marc Henneaux**, Professor, Collège de France
- **Saadi Lahlou**, Director, Paris Institute for Advanced Study and Professor, London School of Economics and Political Science
- **Ana Flavia Machado**, Director, Center for Institutional Relations, Universidade Federal Minas Gerais
- **Wagner Meira**, Head, Computer Science Department, Universidade Federal Minas Gerais
- **Ary Plonski**, Professor, University of Sao Paulo and Chief coordinator, UBIAS
- **Aziz Tuffi Saliba**, Director, Office of International Affairs, Universidade Federal Minas Gerais
- **Carmen Flores-Mendoza**, Laboratory of Individual Differences Assessment, Universidade Federal Minas Gerais

ICA 4 — Mentors

Eminent researchers have expressed interest in joining the Intercontinental Academy on Intelligence and Artificial Intelligence as mentors. These include:

Robert Aumann

Laureate of the 2005 Nobel Memorial Prize in Economic Sciences for his work on conflict and cooperation through game-theory analysis, 2005 Jon Von Neumann Theory Prize and 1994 Israel Prize in economics, Robert Aumann is Professor at the Center for the Study of Rationality in the Hebrew University of Jerusalem. He is widely recognized for his fundamental contributions to game theory and related areas.



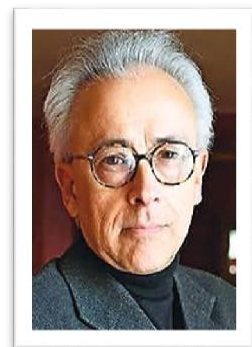
Jack Copeland



Jack Copeland is Professor of Philosophy at the University of Canterbury, Christchurch, New Zealand, and Director of the Turing Archive for the History of Computing, an extensive online archive on the computing pioneer Alan Turing. He is one of the people responsible for identifying the concept of hypercomputation and machines more capable than Turing machines. Copeland is also President of the US Society for Machines and Mentality and the founding editor of The Rutherford Journal, an open-access peer-reviewed online academic journal.

Antonio Damasio

Laureate of the 1992 Pessoa Prize, 1995 Golden Brain Award, 2005 Prince of Asturias Prize and 2014 Grawemeyer award in Psychology, Antonio Damasio is David Dornsife Chair in Neuroscience, as well as Professor of Psychology, Philosophy and Neurology at the University of Southern California. He is widely known for his pioneering research in neuroscience and for his studies on feeling, emotions and consciousness. He holds Honorary Doctorates from the École Polytechnique de Lausanne and The Sorbonne. He is one of the most cited neuroscientists and one of the most eminent psychologists of the modern era.



Toshio Fukuda



Laureate of the 1997 Dr.-Ing. Eugene Mittelman Achievement Award, 2000 IEEE Third Millennium Medal and 2011 IEEE/RSJ IROS Harashima Award for Innovative Technology, Toshio Fukuda is Professor at the Beijing Institute for Technology, and Emeritus professor at Nagoya University. 2019 IEEE President-Elect, he is a world-leading researcher in robotics, with special interest in intelligent robotic system, micro-nano robotics, bio-robotic system and neuromorphic intelligent control.

Timnit Gebru

Timnit Gebru focuses on the ethical implications of data mining and on mitigating the potential negative impacts of machine learning based systems and of algorithmic bias. She is the co-founder of *Black in AI*, a non-profit supporting Black researchers and practitioners. Ph.D. from the Stanford Artificial Intelligence Laboratory, she did a postdoc at Microsoft Research, New York City in the Fairness Transparency Accountability and Ethics in AI group. She was a senior research scientist at Google co-leading the Ethical Artificial Intelligence research team.



William Hopkins



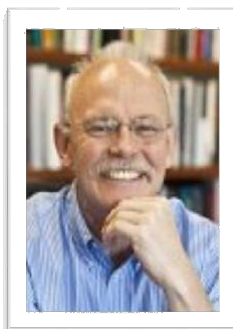
William Hopkins is professor at MD Anderson · Michael E. Keeling Center for Comparative Medicine and Research, University of Texas. He is one of the world leading researchers in primates cognition. His behavioral research in chimpanzees has been focused on gestural and vocal communication, particularly the functional use of communicative signals in chimpanzees. In 2014, William Hopkins was named Science Director at the Iowa Primate Learning Sanctuary (IPLS).

Marc Mézard

Laureate of the 1996 Ampère Prize of the French Academy of Sciences, 2009 Humboldt Prize and 2016 Lars Onsager Prize of the American Physical Society, Marc Mézard is a physicist and director of the *Ecole Normale Supérieure* in Paris. His research is essentially rooted in statistical physics with broad applications in physics and beyond physics, including spin glass theory, biology, neural networks or information theory.



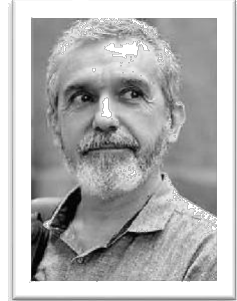
Jay McClelland



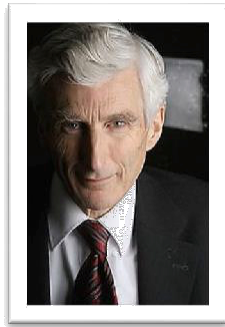
Laureate of the 2005 Mind & Brain Prize, 2010 Rumelhart Prize, 2014 de Carvalho-Heineken Prize, Jay McClelland is the Lucie Stern Professor at Stanford University, where he co-directs the Center for Mind, Brain, Computation, and Technology. He is best known for his work on statistical learning and parallel distributed processing, applying neural networks to explain cognitive phenomena such as spoken word recognition, language processing, and memory. Currently, he focuses on the development of mathematical cognitive abilities.

Zaven Paré

Zaven Paré is a new media artist, internationally known for his art work on electronic marionettes and robots. He is in particular actively involved in the Robots Actors Project of the laboratory of Professor Hiroshi Ishiguro (Osaka University). He designed his first electronic marionette in 1996 from a source of video retro-projection in Canada, followed in 1999 by the digital version at the Cotsen Center for Puppetry of Cal Arts (California Institute of the Arts).



Martin Rees



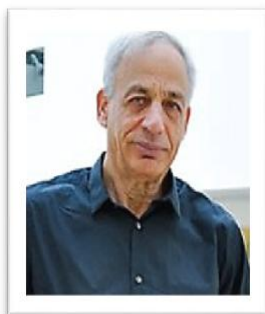
President of the Royal Society (2005-2010), laureate of the 1984 Heineman Prize, 2005 Crafoord Prize and 2011 Templeton Prize, Sir Martin Rees is a cosmologist and astrophysicist. He has been Astronomer Royal since 1995 and was Master of Trinity College, Cambridge from 2004 to 2012. Aside from his outstanding contributions to astrophysics and cosmology, Sir Martin Rees has written and spoken extensively about the problems and challenges of the 21st century, in particular within the Centre for the Study of Existential Risk he co-founded at the University of Cambridge.

Oron Shagrir

Oron Shagrir is Schulman Chair of Philosophy and Cognitive Science at the Hebrew University of Jerusalem. He has been working on the conceptual foundations of cognitive and brain sciences, the history and philosophy of computing and computability, and supervenience. He is one of the contributors to *The Turing Guide* (Oxford University Press, 2017).



Shimon Ullman



Laureate of the 2008 Rumelhart Prize, 2015 Israel Prize in Mathematics and Computer Science and 2019 Azriel Rosenfeld Lifetime Achievement Award in the field of computer vision, Shimon Ullman is Samy and Ruth Cohn Professor of computer science at the Weizmann Institute of Science. Ullman's main research area is the study of vision processing by both humans and machines. Specifically, he focuses on object and facial recognition, and has made a number of fundamental insights in this field.

Xiao-Jing Wang

Laureate of the 2017 Swartz Prize for Theoretical and Computational Neuroscience and 2018 Goldman-Rakic Prize for Outstanding Achievement in Cognitive Neuroscience, Xiao-Jing Wang is Distinguished Global Professor of Neural Science, director of the Swartz Center for Theoretical Neuroscience, at New York University. Xiao-Jing Wang is a world leading researcher in the theory and mathematical modeling of neural circuits dedicated to cognitive functions such as working memory and decision-making.

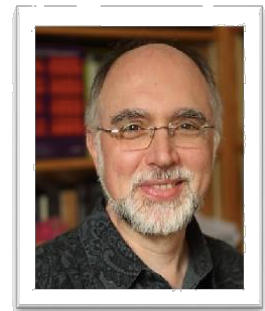


Karen Yeung

Interdisciplinary Professorial Fellow in Law, Ethics and Informatics Birmingham Law School and the School of Computer Science. Karen Yeung is involved in several technology policy initiatives worldwide, notably those concerned with the governance of AI. She is involved in the UN Global Judicial Integrity Network and is a former member of the EU's High Level Expert Group on Artificial Intelligence and the Council of Europe's Expert Committee on human rights dimensions of automated data processing and different forms of artificial intelligence (MSI-AUT).

Robert Zatorre

Laureate of the 2011 IPSEN foundation prize in neuronal plasticity and 2013 Knowles prize in hearing research, Robert Zatorre is professor at McGill University. He is a leading cognitive neuroscientist whose laboratory studies the neural substrate for auditory cognition, with emphasis on two complex and characteristically human abilities: speech and music. In 2006, he became the founding co-director of the international laboratory for Brain, Music, and Sound research (BRAMS), a unique multi-university consortium with state-of-the-art facilities dedicated to the cognitive neuroscience of music.



The French Network of Institutes of Advanced Studies and Universidade Federal de Minas Gerais are part of UBIAS – the network of IAS across the world. One of the most successful initiatives of the UBIAS network is the Intercontinental Academia (ICA) where scientific exchange between generations, disciplines, cultures and continents takes place around a major theme. ICA 1 on *Time* was held at the University of Sao Paulo (2015) and Nagoya University (2016). ICA 2 on *Human Dignity* was held at the Hebrew University of Jerusalem (2016) and Bielefeld University (2016). ICA 3 on *Laws: Rigidity and Dynamics* was held at the Nanyang Technological University (2018) and then University of Birmingham (2019).

More information on www.ubias.net