

We invite applications to participate in the  
4<sup>th</sup> **Intercontinental Academia** dedicated to

## **Intelligence and Artificial Intelligence**

Opening online session: 13-18 June 2021

1<sup>st</sup> workshop in Paris, France: 18-27 October 2021

2<sup>nd</sup> workshop in Belo Horizonte, Brazil: 6-15 June 2022



INTERCONTINENTAL ACADEMIA

### **Call for fellows**

**Deadline: March 15, 2021 (6pm CET)**

**Applications should be submitted to:**

[applications-ica4@rfiea.fr](mailto:applications-ica4@rfiea.fr)

The Intercontinental Academia (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 In 2021-2022 a stimulating framework for intellectual exchange. 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 lately. **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 Academia is based on two intensive workshops held on different continents which provide time and space for learning about the inward perspective of each "subject", performing a comparative analysis of the panorama and searching for correlations among different views and 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 13<sup>th</sup>-18<sup>th</sup>, 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 AI and cognitive sciences
  - B. Robots and emotions
  - C. Intelligence and rationality
  - D. Ethics in AI and cognitive sciences
  - E. Learning

The first workshop in Paris (France) will be held at the Institute for Advanced Study from October 18<sup>th</sup> to October 27<sup>th</sup>, 2021. The second workshop in Belo Horizonte (Brazil) will take place at the Institute for Advanced Study from June 6<sup>th</sup> to June 15<sup>th</sup>, 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](mailto: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 Boucekkine**, 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

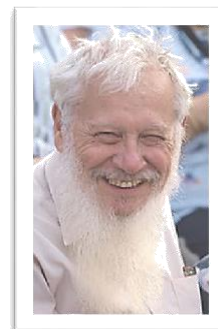
- **François-Xavier Alario**, CNRS Research director, Institute of Language, Communication and Brain, Aix-Marseille University
- **Olivier Bouin**, Director, French network of institutes for advanced study (RFIEA)
- **Mario F. Montenegro Campos**, Research Provost, Universidade Federal Minas Gerais
- **Frederico Gadelha Guimarães**, Professor at the School of Engineering and Head of MINDS Laboratory, Universidade Federal Minas Gerais
- **Thibault Gajdos**, CNRS Research Director, Laboratory of Cognitive Psychology, Aix-Marseille University
- **Sue Gilligan**, Deputy Director & Manager, Institute of Advanced Studies, the University of Birmingham
- **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
- **Guilherme 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 Academia on Intelligence and Artificial Intelligence as mentors. These include:

### [Robert Aumann](#)

2005 Nobel Memorial Prize in Economic Sciences for his work on conflict and cooperation through game-theory analysis, 2005 Jon Von Neumann Theory Prize, 1994 Israel Prize in economics. Robert Aumann is a 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.



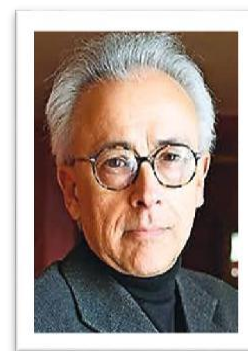
### [Jack Copeland](#)



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](#)

1992 Pessoa Prize, 1995 Golden Brain Award, 2005 Prince of Asturias Prize, 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 highly cited neuroscientists and one of the most eminent psychologists of the modern era.



### [Toshio Fukuda](#)



2019 IEEE President-Elect, 1997 Dr.-Ing. Eugene Mittelmann Achievement Award, 2000 IEEE Third Millennium Medal, 2011 IEEE/RSJ IROS Harashima Award for Innovative Technology. Toshio Fukuda is professor in the Beijing Institute for Technology, and Emeritus professor at Nagoya University. 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, where she studied. She was a senior research scientist at Google co-leading the Ethical Artificial Intelligence research team.



[William Hopkins](#)



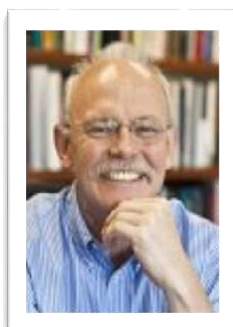
William Hopkins is professor at MD Anderson · Michael E. Keeling Center for Comparative Medicine and Research, University of Texas. He is one of the world leading researchers in primates cognition. His behavioral research in chimpanzees has been focused on gestural and vocal communication, particularly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

[Marc Mézard](#)

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



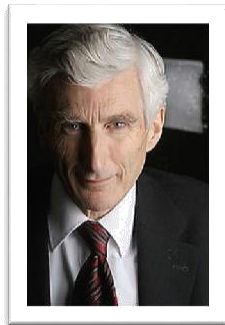
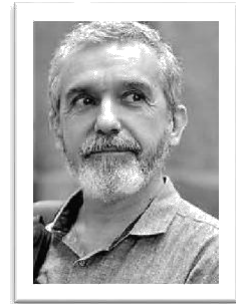
[Jay McClelland](#)



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, Jay 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).

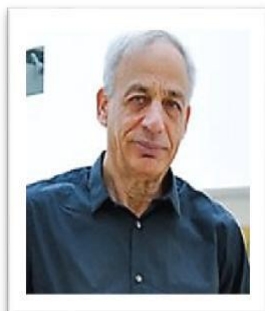


[Martin Rees](#)

President of the Royal Society, 2005-2010, 1984 Heineman Prize, 2005 Crafoord Prize, 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](#)

2008 Rumelhart Prize, 2015 Israel Prize in Mathematics and Computer Science, 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](#)

2017 Swartz Prize for Theoretical and Computational Neuroscience, 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.



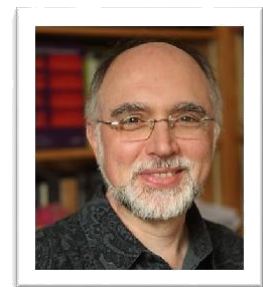
[Karen Yeung](#)



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](#)

2011 IPSEN foundation prize in neuronal plasticity, 2013 Knowles prize in hearing research. Robert Zatorre is professor in McGill University. He is a leading cognitive neuroscientist whose laboratory studies the neural substrate for auditory cognition, with special 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.



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