

## Imperial College London – CNRS PhD joint programme

### Scientific Areas

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#### **Mathematics, data and their applications across all areas of science**

The CNRS and Imperial College London (Imperial) are launching a joint call for proposals between the two institutions in order to develop cooperation in the area of '*Mathematics, data and their applications across all areas of science*'. This offers the opportunity to build on our CNRS-Imperial international research laboratory *Abraham De Moivre* and expand links between mathematical sciences, modern statistics, AI and machine learning and their application in key disciplines.

#### **Strategic rationale for focusing on mathematics, data and their applications in all areas of sciences**

- Data and technology are transforming the global economy, our societies, science and discovery. In less than a year's time: the global volume of data will reach 240 trillion gigabytes, a forty-fold increase on 2015; data-driven technologies will contribute £60+ billion to the UK economy, while Europe's €739 billion data economy will constitute four percent of the continent's GDP; and medical knowledge will double every 73 days.
- There is a depth of UK knowledge in data science, statistics and mathematical modelling that complements the strengths of French science and mathematics. Mathematics and statistics are at the heart of the data revolution sweeping across much of science and broadening Imperial-CNRS to include the interplay between e.g. data and physics, engineering, medicine and life sciences allows far greater, and more rapid, scientific reach.
- The call would be open to projects which deploy mathematics, data, modern statistics, or AI and machine learning to scientific challenges across all disciplines .

**The joint call is intended to fund 3 years of a PhD fellowship on each side and travel.**

## Call guidelines

### Eligibility

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- Scientists from Imperial; Researchers working in a CNRS unit holding an accreditation to supervise PhD students (HDR)
- A PI cannot submit more than one application in the framework of this call.

There must be one PI from Imperial and one PI from a CNRS laboratory. Those who do not already have a collaborator may consult Imperial website or the CNRS website to find information on the research groups and projects being carried out in either institution.

### Funding

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Each selected project will be allocated two PhD students (one at CNRS & one at Imperial) Additional funds will cover mobility costs for visits to France & UK for the PIs and the PhD students.

Number of awards

Five projects are expected to be funded jointly by Imperial & CNRS.

Support period

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3 years

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### Deadline and start dates

Open date: November 15<sup>th</sup>, 2019

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Closing date: January 20<sup>th</sup>, 2020

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Notification date: March 2020

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Beginning of the projects: October 2020

### Evaluation

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Proposals will be evaluated and ranked by an Imperial-CNRS committee according to the following criteria:

- Scientific quality & originality of the project
- Scientific merit of the teams
- Synergy between the teams

The proposals should also include an outlined plan for raising external competitive funding.

### How to apply

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Imperial applicants should submit in electronic format (Microsoft Word or Adobe PDF) to [globalseedfunds@imperial.ac.uk](mailto:globalseedfunds@imperial.ac.uk);

CNRS applicants should submit the same file via the dedicated Website:  
<https://www.cooperation.cnrs.fr>

The joint proposal must consist of the following parts, in one single file (up to 5 pages, not including references – parts F & G):

PART A: Title Page

*Title of the proposal, names of the principal investigators and their laboratories, their addresses, telephone, and e-mail.*

PART B: Description of the scientific project

*State of the art of the research area, description of the scientific project and its interest, historical context of application (if applicable), quality and originality of the project, objectives, scientific methodology, expected results and their meaning, future perspectives. Explain the added value of the PhD fellowships in the project. Explain the relation between the project and the research themes of the laboratory.*

PART C: Added-value of the international cooperation

*Describe the added-value of the international cooperation to fulfill the aims of the project (explain why the project cannot be carried out at a national level only). Describe the expected benefits for the British and French teams. Describe the balance between the contributions of the British and French teams.*

PART D: Planned activities

*Describe the planned activities in the framework of the project and provide a timetable. Explain how these activities will help achieve the aims of the project.*

*This part should include explicit lines regarding the planned travel of the PIs & the PhD students to the other country.*

PART E: Perspective & external funding

*Outline the proposed plan for raising external competitive funding.*

PART F: Scientific quality of the teams

*Please attach in annex a list of complete citations of no more than 10 publications related to the project for each team. This list is not taken into account for the page limit.*

PART G: Short curriculum vitae (not taken into account for the page limit)

PART H: Ethics

*Does the project raise ethical questions? If yes, please describe them and how they are dealt with.*