



FONDATION
SIMONE ET CINO
DEL DUCA
INSTITUT DE FRANCE

“Grand Prix scientifique” 2021
Call for applications
Simone and Cino Del Duca Foundation

Every year, alternatively under the disciplines of the two divisions⁽¹⁾ of Academy of Sciences, the Simone and Cino Del Duca Foundation of the Institut de France awards a scientific prize based on the recommendations of a jury of the Institut de France members. The Grand Prix will be awarded to a French or European scientist and his/her team⁽²⁾ that will propose an ambitious research project on promising theme.

In 2021 the Prize topic is :

Diffusion phenomena: mathematical theory and applications

Diffusion phenomena are present in most sciences, from physics, where these phenomena occur in particular in heat conduction, materials science or chemistry, up to ecology, epidemiology, which studies the spread of an infection in a spatial population, and even social sciences. Mathematical tools for the study of these phenomena are diverse, and include the theory of partial differential equations, whose prototype is the heat equation, probability theory, with models based on Brownian motion and stochastic differential equations, and mathematical statistics, which analyze data coming from observations. Models from statistical physics are also important tools. This is therefore a very interdisciplinary theme, with emphasis on new contributions of mathematical methods to the understanding of problems from the real world.

The prize is as follows:

- a) 200,000 € to finance the work of the award-winning group,
 - b) 25,000 € awarded to the director of the research group,
 - c) 50,000 € (maximum amount paid upon presentation of supporting documents) towards the hiring of one French or foreign postdoctoral researcher to be selected by the group director, in the two years following the award of the prize. An activity report must be sent within two months after the end of the contract.
- An agreement will be established between the laboratory and the Del Duca Foundation to define the conditions of payment.

The applications must be sent on line not later than Wednesday January 20, 2021 before midnight to the following electronic address:

<http://prix.academie-sciences.fr>

For further informations, you can consult this call for application on the website of the French Academy of sciences at the adress below:

[Call for application](#)

⁽¹⁾ **1st division: Mathematics; Physics; Sciences of the Universe; Mechanical and Computer Sciences.**

2nd division: Chemistry; Molecular and Cellular Biology, Genomic; Integrative Biology; Human Biology and Medical Sciences.

⁽²⁾ **The research team isn't necessarily the administrative team. The team members don't necessarily work in the same laboratory. The role of each member of the team should be clearly defined in the application.**

The files should be **written in English**.

The applications must contain:

- 1) **the application form**, completed online (<http://prix.academie-sciences.fr>)
- 2) **an executive summary** (title of the project, abridged CV of the project head, main past scientific achievements and a short description of the research proposal, a list of 10 major publications) (2-3 pages) (**completed online**),
- 3) **a cover letter** signed by the head of the team,
- 4) **the complete CV of the head of the team** (2-pages maximum),
- 5) **an abridged CV of team members**,
- 6) **a description of results obtained** by the team (5-pages maximum),
- 7) **a description of the research proposal** and the intended use of the Grand Prix (3-5 pages),
- 8) **one or two letters of recommendation** or sponsorship of a international scientist of renown (name and contact of the personality should be completed online).

The deadline for submissions is, **Wednesday January 20, 2021 before midnight**.

Applications will be examined by a jury composed of members of the Academy of sciences. The jury will seek the opinion of French and foreign experts.

The Grand Prix will be awarded at the Institut de France, under the Dome, **on Wednesday, June 2, 2021**.

For any questions, please contact:

Academy of sciences

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<p>Simone and Cino Del Duca Foundation Grand Prize for Science – Previous Years in the areas covered by this call of applications for the 1st division</p>
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2005: Pr Massimo Inguscio, Professor at the University of Florence for his works on research on degenerate fermionic gases.

2007: Pr Jacques Prost, General Director of the Industrial Physics and Chemistry Higher Educational Institution of Paris and **Pr Jean-François Joanny**, Director of the Unit of Physical Chemistry, UMR 168 CNRS- Curie Institute, for their research works on the theme “Concepts and physical techniques implemented in the following: process studies on molecules of the living”.

2009: Pr Michael Harris, Professor of mathematics at Denis Diderot University in Paris for his research works on automorphic representations and Galois representations.

2011: Pr Romain Teyssier, Professor at the University of Zürich and Head of the Computational Astrophysics group in CEA Saclay, for his works on numerical simulations in astrophysics.

2013: Pr Michel Campillo, Professor at Joseph Fourier University of Grenoble, researcher at the institute of earth sciences in Grenoble, for his work on environmental noise for imaging earth structures and monitor their changes over time.

2015: Pr Guy Perrin, astronomer in the Laboratory of Spatial Studies and Instrumentation in Astrophysics (LESIA), for its project of study of a black hole thanks to the instrument GRAVITY, and **Pr Patrice Hello**, university professor in the Laboratory of the linear accelerator (LAL), for his research in gravitational astronomy with the network LIGO-Virgo.

2017: Pr Laurent Massoulié Director of the Microsoft Research – Inria Joint Center, for his research on Social Information Networks.

2019: Brigitte Senut Professor of Palaeontology, *Muséum National d'Histoire Naturelle*, Department Earth History, Paris.

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