

## Call for applications "Grand Prix scientifique" 2017 Simone and Cino Del Duca Foundation

Every year, alternatively under the disciplines of the two divisions<sup>(1)</sup> 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 members of the Institut de France. The Grand Prix will be awarded to a French or European scientist working in a French laboratory and his/her team<sup>(2)</sup> that will propose an ambitious research project on promising theme :

In 2017, the theme retained for the 1<sup>st</sup> division is "**Networks**".

Either theoretical, experimental or numerical, network studies are ubiquitous in scientific news. Some authors refer to "the" theory of networks, but the unity of this wide domain remains to be demonstrated. Indeed it concerns systems, which may appear rather different. Examples are:

- Networks of fractures, especially their dynamics, from materials to geophysics (earthquakes).
- Virtual networks that can be studied numerically as a function of the nature of their interactions and where the emergence of universal behaviors would be interesting to demonstrate.
- Transport or information networks whose size and flux are rapidly increasing today.
- The optimization of electricity grids, which one hopes to make "smart".
- Optical networks where various quantum systems show original properties, for example transitions between localized and delocalized states.
- Etc. (this list is not exhaustive)

The "Grand Prix Del Duca" will be attributed to a researcher, either French or European, and his/her team, who apply with an ambitious project. Some preference will be given to projects that combine at least two different approaches which could be theoretical, experimental or numerical.

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 on supporting) towards the hiring of one or more French or foreign postdoctoral researchers to be selected by the group director, in the two years following the award of the prize.

An agreement will be established between the laboratory and the Foundation Del Duca to define the conditions of payment a) and c).

The applications must be sent on line not later than Tuesday January 10, 2017 before midnight to the following electronic address:

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

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

[http://www.academie-sciences.fr/activite/prix/gp\\_duca.htm](http://www.academie-sciences.fr/activite/prix/gp_duca.htm)

The files should be written in English and possibly in French.

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

*2<sup>nd</sup> 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. It should clearly be specified in the application, the role of each member of the team.*

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-page maximum),
- 5) an abridged CV of team member,
- 6) description of results obtained by the team (5-page maximum),
- 7) a description of the research proposal and the intended use of the Grand Prix (3-5 pages),
- 8) a letter of recommendation or sponsorship of an international scientist of

renown. The deadline for submissions is, **Tuesday January 10, 2017, 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 7, 2017.**  
For questions, please contact:

**Academy of sciences**

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<p><b>Cino Del Duca Grand Prize for Science – Previous Years in the areas covered by this call of applications for the 1<sup>st</sup> division</b></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.