

## / LIFE ON THE CAMPUS

The Department of Physics is located at 24 rue Lhomond, at the heart of the Latin Quarter on the Sainte-Geneviève hill. In the same building are the Department of Chemistry and the Department of Geosciences. It is close to the ENS at rue d'Ulm, which houses the main literature departments as well as the Departments of Mathematics, Computer Science, Biology and the DEC (Département d'Etudes Cognitives).

Life at the ENS is punctuated by many cultural, artistic, and sport events organized either by the school or by the numerous associations of *normaliens*, who know how to keep the fun going!

The Party Organisation Committee (Comité d'Organisation des Fêtes - CFO) gathers some 50 clubs offering a wide range of activities, from comic books to capoeira, films, environmental commitment, rugby,...

Want to learn more about admission  
(entrance examination, application)?

Find more information and a presentation video at:

[www.phys.ens.fr](http://www.phys.ens.fr) (/Education)



PSL

The ENS is a member of Paris Sciences et Lettres Research University (PSL). Created in 2011 and awarded "Investments for the Future" funding from the French government, PSL encompasses a rich array of prestigious schools and institutions that in celebration of their historical relationships and their cultural and geographic proximity decided to together create a new university that promotes breakthrough thinking and the spirit of experimentation.

Photo credit:  
© Département de physique – ENS / Hubert Raguet  
except photo Serge Haroche : © Christophe Lebedinsky / CNRS  
Photothèque



## / STUDYING PHYSICS AT THE ÉCOLE NORMALE SUPÉRIEURE



## / EXCEPTIONAL LIVING CONDITIONS

Ideally located on the Sainte-Geneviève hill, the ENS is a place where students from other *grandes écoles* and universities can meet. As a member and co-founding institution of Paris Sciences et Lettres (PSL), the ENS provides students with the resources to organise events involving other PSL students.



**166** RESEARCHERS

**5** LABORATORIES

**150** DOCTORAL CANDIDATES

**200** STUDENTS

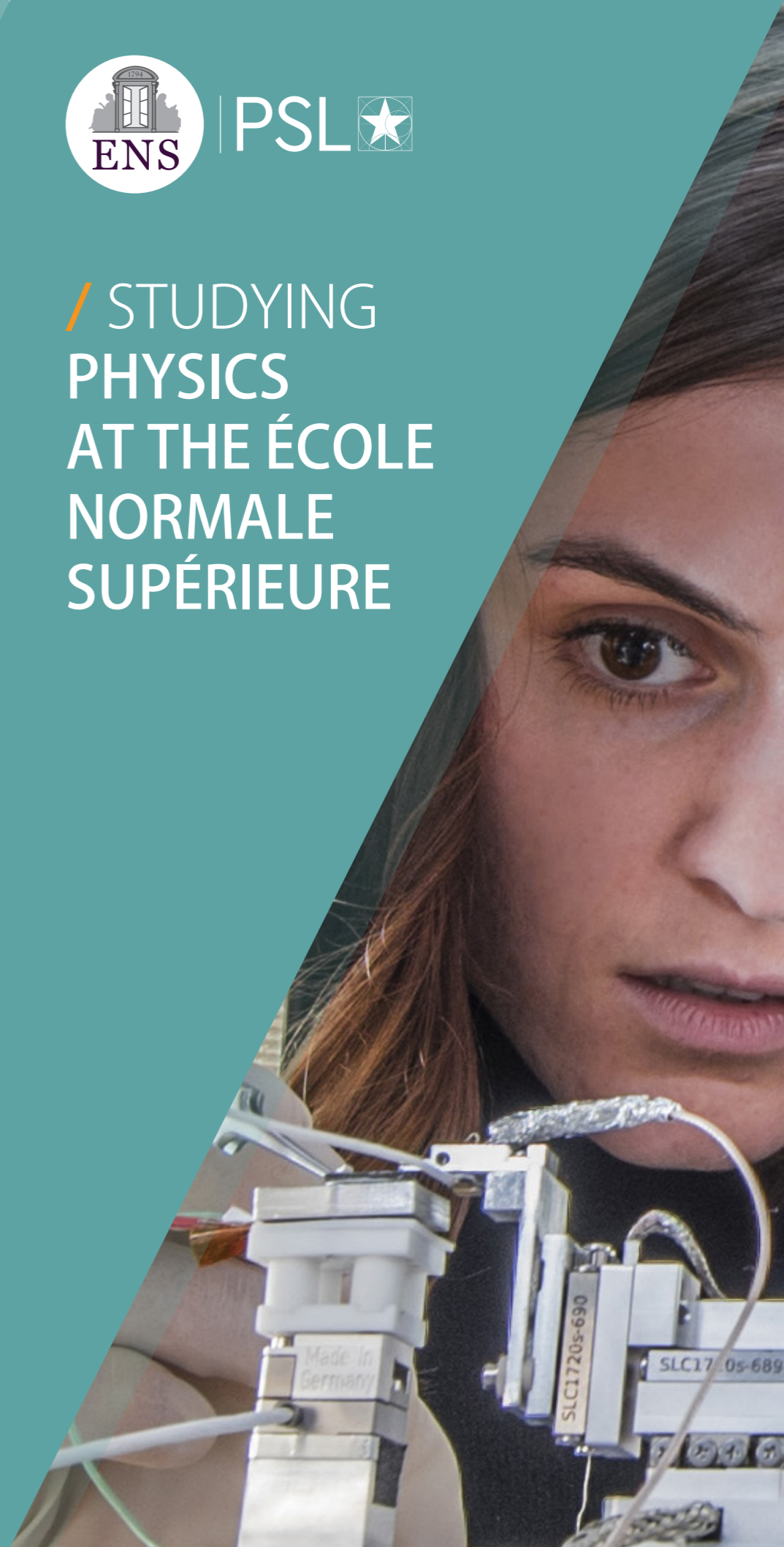
École normale supérieure  
Department of Physics

Director: Jean-Marc BERROIR  
Head of studies: Frédéric CHEVY

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[www.phys.ens.fr](http://www.phys.ens.fr)





« The most important thing is to pass on our enthusiasm to young people. »

**Claude Cohen-Tannoudji**  
Nobel Prize in Physics 1997  
(ENS-Physics class of 1953)



## / WORDS FROM THE DIRECTOR

Being a student in our department you will discover a unique place where researchers and students share their passion for physics. A place steeped in history, which has achieved international reputation for its excellence in scientific research. A place where research and teaching go hand in hand and where collaboration with other disciplines is the rule. A place that promotes creativity and innovation, one where nothing is impossible, and where you will be guided and supported all the way to complete your personal scientific project.

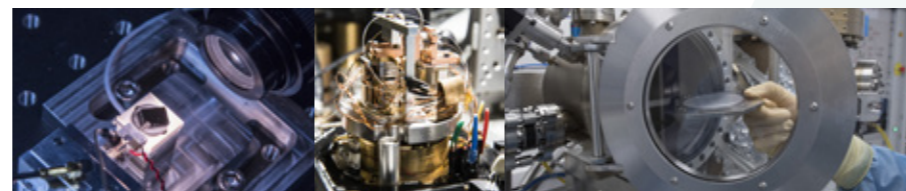
An international environment where you will be in contact with students and researchers from all origins. A place whose high reputation will help you secure internships in the most prestigious laboratories abroad. The scientific education that we offer will provide you with a wide range of career opportunities in all activity sectors. We are convinced that you will thus be able to contribute significantly to meeting the great challenges, scientific or otherwise, facing our society!

**Jean-Marc Berroir**  
Director of the Department of Physics at the ENS

## / RESEARCH

### Fundamental research in a wide range of fields

From the infinitely small to the infinitely large, including the infinitely complex, the research carried out by members of the department spans almost every field of fundamental physics: string theory, cosmology, cold atoms, quantum optics and electronics, soft matter, field theory... Its privileged technological environment includes mechanical and electronic facilities, a Fab Lab, a clean room and a helium liquefier. The department also collaborates successfully on multiple occasions with other scientific disciplines: quantitative biology, big data, machine learning, quantum information, etc.



### What does it mean to be a physicist?

Being a theorist means letting your curiosity run free: the most naive questions often result in the most valuable discoveries.

It also means pursuing new ideas, being the first to understand a phenomenon, answering an open question, creating unprecedented partnerships between disciplines through close collaboration with researchers from other academic backgrounds.

To be an experimental physicist is to be faced with the task of unifying the conception of experiments and theoretical models, of undertaking data analysis while facing technical and technological challenges... It means working collectively with colleagues and doctoral students. It is an ever renewed intellectual challenge.



## / AN AWARD-WINNING DEPARTMENT!

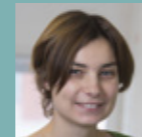
The department's international reputation lies in part in the many awards and honours received by physicists working at the ENS, who are regularly recognized for their innovative and outstanding work. 2 researchers are professors at the Collège de France, 10 are members of the Académie des Sciences.



3 researchers won the Nobel Prize: Serge Haroche in 2012 (picture), Claude Cohen-Tannoudji in 1997, and Alfred Kastler in 1966.



Lyderic Bocquet, who held PSL Excellence Chair in 2014, was awarded the CNRS silver medal 2017 for his work at the interface of soft condensed matter, hydrodynamics and nano-science. He combines experiments, theory, and molecular simulations. He is director of the Master of Physics.



Aleksandra Walczak, winner of the Jacques Herbrand Prize of the Académie des Sciences in 2014 and CNRS bronze medallist in 2016, works on the application of statistical physics to the study of biological systems. She teaches at the department.

## / RESEARCH FOCUSED TEACHING

### The specificity of the physics teaching programme...

The first year is focused on the major theories at the core of modern physics (quantum physics and statistical physics, relativity), while in the second year students start on their specialisation. A more practical side of our programme prepares them to address research challenges (participation to the International Physicists Tournament, internships in laboratories in France or abroad). What is specific to the ENS is the integration of other disciplines, scientific or literary, in the curriculum. Most students complete their studies with a PhD degree.



### ...as seen by a PhD candidate

« I joined the Department of Physics with no particular intention of going into research. Today I realize that a curriculum centred on a scientific discipline provides students with strong knowledge and skills and invites them to specialize. At the same time I was able to take amazing art history classes and attend intense political discussions that forced me out of the cocoon of the classes préparatoires. After three years, out of curiosity, I decided to do an experimental thesis in mesoscopic physics, which combines cutting-edge technologies and theoretical analysis. I am convinced that what we do in our labs has meaning and participates in improving the society we live in, if only by small steps. As for the future, I am taking time to think about career options in research, industry, or other! »  
- Lauriane Contamin



## / CAREERS AND OPPORTUNITIES

CNRS researcher / scientific journalist / lecturer-senior lecturer / business executive / laboratory director / teacher in classes préparatoires / start-up creator / high-ranking state official / Ingénieur des Corps d'Etat / R&D researcher or executive in the private sector...



Virgile Viasnoff joined the department between 1995 and 1999. He defended his PhD in 2003 and was then a postdoctoral student at Harvard. He is now a CNRS Research Director and Associate Professor at the National University of Singapore (NUS), where he is the director of an international lab of biophysics (CNRS-NUS).



Elsa Couderc studied at the department from 2005 to 2008. After completing her PhD on photovoltaics at the CEA and several postdoctoral internships in California and at Cambridge, she joined Nature Research, which publishes *Nature*, in 2015. She is now a scientific editor specialised in renewable energies.



Jean-François Morizur, a student at the department from 2004 to 2008, co-founded a start-up after completing his PhD. CAILabs develops and commercializes a technology of optical beam shaping that multiplies by 400 the fibre data flow rates.