CREATING THE FUTURE
WITH SORBONNE UNIVERSITY
Sorbonne University broadens UPMC domains in science, engineering and medicine to include the arts, humanities, social sciences and technology. By bringing together the best talent in a wide array of disciplines, Sorbonne University represents an important change in French higher education, in that it offers new transversal academics and expertise.

Sorbonne University members also includes four major French national research organizations: the CNRS, INSEad, the IRD and INRIA.* This university group was selected as an Excellence Initiative by the French government and an international jury.

Sorbonne University welcomes 58,000 students, including 10,000 that are international, and more than 5,000 doctoral candidates. Of the 7,700 plus researchers and professor-researchers in its 200 laboratories and research centers, 24 are researchers supported by the European Research Council and 45 hold industry-sponsored research chairs.

* CNRS: National Center for Scientific Research
Inserm: National Health and Medical Research Institute
IRD: National Institute for Research and Development
INRIA: National Computing and Automation Research Center
A New Approach to Education
The Sorbonne Bachelor’s College offers programs that enable students to progressively define their education, by choosing a discipline as well as complementary studies aligned with their individual goals. Research-based teaching, an integral part of Sorbonne University master’s programs, is also included at the bachelor’s level. Doctoral research is professional employment, with tailored programs for emerging job profiles.

Multidimensional Research
Sorbonne University accelerates research with strategic projects that have been awarded funding from the French Investing for the Future initiative. It drives innovation through the sharing of technology platforms and resources.

Bringing Innovation into Society
Sorbonne University is developing innovation centers, including 15,000 square meters on the Jussieu campus that will house hosting companies, seed investors, technology transfer specialists and start-ups, playing a vital role in economic development.

International Partnerships
Sorbonne University has a broad network of partnerships in Europe and worldwide, and will focus on specific strategic alliances with leading research universities. This includes reinforcing its international campuses in Singapore and Abu Dhabi, and intensifying the recruitment of top international professors and students.
PIERRE AND MARIE CURIE

UPMC’S INTELLECTUAL AUTONOMY AND OPENNESS—QUALITIES THAT ARE ESSENTIAL TO RESEARCH AND EDUCATION—ARE THE CORNERSTONES OF ITS EXCEPTIONAL ROLE IN THE ACADEMIC WORLD. AUDACITY, CREATIVITY, AND SCIENTIFIC RIGOR ARE INTEGRAL ELEMENTS OF UPMC’S IDENTITY.

UPMC FACTS & FIGURES

30,500 students, of whom
20% are foreign students

3,300 doctoral candidates

5,000 staff, of whom
2,500 are professor-researchers

UPMC is ranked:
• The top French university
• 6th in Europe
• 4th in the world for mathematics
   by the Taiwan and Shanghai ratings

Higher education is at the heart of the knowledge and innovation-based global economy developing around us. UPMC (Pierre and Marie Curie University) is a key player in this development. Every day, UPMC demonstrates how education and research create important synergies.

UPMC comes from an academic tradition that dates back more than nine centuries. It is a direct continuation of the Sorbonne Faculties of Science and Medicine and embodies French excellence in higher education and research.

UPMC students come from all over France, and 20 percent are international. Despite their diverse cultural and economic backgrounds, they are united by academic excellence. Students also develop their talents by participating in campus life through cultural and sports activities or UPMC-supported outreach projects.

All full professor-researchers maintain teaching hours, making sure that their mastery of a subject—and their valuable research perspectives—are offered to all students at all levels.

International Commitment
UPMC is an active participant in European university policy development through the LERU, EUA* and other university associations. Internationally, UPMC is establishing long-term institutional partnerships with several leading research universities in developed and developing countries. By focusing on selected universities for comprehensive partnerships, UPMC, with the partner university, can leverage current joint activities to reinforce or create further collaboration in research, education and innovation.

* LERU, EUA: The League of European Research Universities and the European University Association, respectively.
FACULTY AND RESEARCHER AWARDS

- Nobel Prize for Physics in 1997 and 2012
- Henri Poincaré Prize in 2012
- Fields Medal in 1982, 2010 and 2014
- CNRS Gold Medals in 1996, 1998 and 2009, and numerous CNRS Silver Medals
- INSERM Grand Prize in 2007
- More than a quarter of the French Academies of Science and Medicine members come from UPMC’s faculty
- More than 45 ERC grants at UPMC from 2008 to 2014
Supporting Individual Excellence

As part of Sorbonne University, UPMC is committed to giving students solid knowledge in their chosen scientific discipline, but also introduces them to a broader context to understanding global issues. International exchanges are an integral part of this education. In addition, the first year of a bachelor’s program is designed to introduce students to various disciplines before they choose a specialization.

Degree programs follow the European bachelor’s/master’s/doctorate system. Bachelor’s and Master’s classes are taught primarily in French. UPMC offers a variety of academic programs for its diverse student body. Learning through apprenticeship is included at the bachelor’s and master’s levels.

Diversified Bachelor’s Programs

Following the introductory year of the bachelor’s program, UPMC students can choose a degree in a single area of study, a major/minor, or a reinforced/double major. Bachelor’s programs ensure both in-depth mastery of the major discipline of study while enabling flexibility in the choice of options and minors to anticipate new professions. Students are encouraged to become active participants in their degree program. Research-based workshops, courses in transversal skills, career guidance and English complete the bachelor education.

A Research-based Master’s Degree

Master’s degrees have a larger research component, and include a semester of practical experience. International internships are also available. Our graduates are therefore particularly employable. An overwhelming majority of UPMC graduates are either employed at management level and with long-term contracts or in a PhD program within 18 months after graduation.

Medical and Healthcare Studies

The Pierre and Marie Curie Faculty of Medicine is one of the largest university medical complexes in Europe, with more than 730 faculty physicians. The Faculty of Medicine also offers programs in speech therapy, psychomotor education and orthoptics, a school of midwifery, and nursing institutes. UPMC has more than 11,700 students in medicine and healthcare sciences.

PASSPORT TO A MASTER’S

The UPMC Foundation now awards scholarships to distinguished incoming students, sponsored by the Safran group.

Designed to cover living expenses, the scholarship lasts for a full five years—during both bachelor’s and master’s programs.

Designated Safran employees mentor each scholarship student to guide them in their career development.

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SORBONNE
BACHELOR’S COLLEGE

The Bachelor’s College leverages the expertise of Sorbonne University (SU) member institutions to implement innovative interdisciplinary degree programs.

The major/minor structure can open the door to a broader understanding of a field. Innovative program combinations can prepare students for broader careers, either geographically, with Science/Chinese or Science/German, or professionally, such as forensic research or bio-archeology.

These programs use a common framework to implement the SU Excellence initiative, to:
- Develop major/minor programs
- Reinforce student access to tutoring
- Increase participation in one semester of studies abroad
- Deliver Sorbonne University diplomas to certify this education
An Enriching Experience
UPMC promotes study-abroad programs as a valuable educational and cultural asset. Twenty-eight international master’s and bachelor’s programs are offered by UPMC in partnership with universities throughout the world. Most of these offer courses taught in English. Students receive financial support to facilitate their international travel as well as linguistic preparation.

Study-abroad programs are integrated with several universities, with common admission criteria, an evaluation system recognized by each partner university, and full recognition of the study-abroad period, leading to a double degree.

Supporting Academic Mobility
Sorbonne University is now expanding UPMC’s international reach by promoting the exchange of professors, researchers and students. This includes international mobility grants intended to fund the inbound and outbound student mobility at all levels and disciplines. Sorbonne University also supports academic mobility for professor-researchers, including hosting visiting professors from abroad for periods ranging from one to nine months.

The SUNRISE Approach
To maximize the impact of its strategic partnerships, Sorbonne University has established “SUNRISE” funding to help expand the existing programs at each partner institution. SUNRISE is designed to move from student exchanges to establishing international schools; or from research collaboration between labs to co-supervision of doctoral students. SUNRISE approved projects are given a specific budget to implement additional cooperation as well as seeking reciprocal contributions from our strategic partners.
Located in the heart of the historic Latin Quarter of Paris and steps away from the Natural History Museum’s botanical gardens, students at UPMC are surrounded by the art, fashion and food of one of the most cultured cities of the world. Regularly rated one of Europe’s most livable cities, Paris also has a rich concentration of higher education students and an abundance of green spaces within the city.

On-campus activities include sports at all levels—as a class, a competition, or within the special programs designed to accommodate academic schedules to top-level athletes. UPMC offers more than 35 entertainment and cultural activities per year, outreach programs, and more than 80 student associations.

Student representatives are elected to the University’s Administrative Board and make up more than a third of the Studies and University Life Council.
Doctoral programs

SORBONNE UNIVERSITY SUPPORTS INTERNATIONAL STUDENTS AND INVITED STAFF BY OFFERING:

• An International Welcome Office, where international students and professors are provided with information on arranging their stay in France, such as applying for a residence permit or living accommodation.

• Courses in French as a foreign language, through either intensive programs or classes given over the course of a year.

• Aid for visiting professors and their families in settling into a new environment, including employment possibilities, and information on work permits, taxes, daycare and schools.

In a rapidly changing world, being able to adapt and to work in a team is an undeniable advantage in an international environment. Doctorate holders play a key role in the development of societies that are based on knowledge and innovation. The practice of research and the creation of innovative solutions give a PhD the experience and tools to confront complex problems, manage multiple variables and find innovative solutions.

For this reason, UPMC prepares its doctoral candidates not only for careers in research, but also for high-level executive positions. A doctorate from UPMC ensures that graduates are well positioned for employment in a wide variety of fields, and contribute to the renewal of professional and industrial practices.

At UPMC, a doctoral project is a first professional employment, including a recruitment process, a starting salary, and ongoing training.

The Doctoral Education Institute
This Institute coordinates the work of the doctoral schools, monitors indicators pertaining to doctoral candidates, and develops regional, European and international cooperation. The Institute directly supports doctoral candidates preparing for their professional future though its Training and Careers Department.

UPMC’s 16 doctoral schools oversee the quality of each research project and its professional environment proposed by a laboratory, and they are also in charge of recruiting the doctoral candidates. Even after matching a research project and candidate, the doctoral school supervises the progress and reviews the results.

International Doctoral Programs
Another example of UPMC’s commitment to multidisciplinary training and cross-cultural perspectives is the International Doctorate. There is co-supervision of the doctoral candidate’s research project between UPMC and the partner institution. This program attracts more than 300 doctoral candidates who benefit from this joint doctorate accreditation by international and European doctoral schools.
Innovative programs for emerging job profiles are currently being developed, such as: a PhD/MBA in science and management; a PhD/MBA in science and industrial strategy; or an Executive Doctorate offered in partnership with industry.

The Doctoral College of the Sorbonne will expand the training offered among the member institutions and promote trans-, multi-, or inter-disciplinary doctoral seminars. This will facilitate work in environments that require expertise in very different specialties.
UPMC has structured its research laboratories into four divisions, increasing synergies across scientific domains.

**Modeling & Engineering**
UPMC is one of the premier centers for mathematics worldwide. It also plays a preponderant role in simulation and modeling, robotics technology, the Internet architecture of the future, and the reduction of noise pollution in transportation.

**Energy, Matter & the Universe**
Chemistry is one of the major levers of sustainable development, offering new materials, products that better respect the environment, and less polluting and less energy-intensive processes. A broad range of applications are also developed in the field of nanoscience, astrophysics and quantum physics.

**Living Earth & Environment**
UPMC’s highly multidisciplinary approach brings together internationally recognized laboratories in the physical chemistry of the Earth; ecology, biodiversity and biology; and atmospheric and oceanographic research.

**Life & Healthcare Sciences**
The expertise in the field of medical and biological research at UPMC associates clinical, translational and fundamental research. This division also set up a network of technology platforms, open to the entire scientific community. Its research includes fields ranging from development and stem cells to the major morbidities associated with aging and organ pathologies.

*CNRS: National Center for Scientific Research
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INRIA: National Computing and Automation Research Center*
Important issues of sustainable development are the major challenges of our society in the 21st century, including health, climate change, water, biodiversity, energy, and communications.

To meet these challenges, UPMC research has focused particularly on multidisciplinary approaches to boost innovation potential. Research projects within the main areas of development were recognized for their high quality during the French national Investing for the Future initiative.
The French Excellence Initiative has awarded funding to an exceptional number of cross-disciplinary projects at Sorbonne University. These include joint laboratories, shared equipment investments, and biotechnology consortiums.

**LABORATORIES OF EXCELLENCE (LABEX) TRANSFORMING SCIENCE**
Sorbonne University is directing fifteen laboratory projects across numerous domains, such as: Bio-Psy, on biological psychiatry; CalSimLab, on modeling and numerical simulation; ILP, on dark matter and energy; MATISSE, the study of matter and the environment; SMART, on human machine interaction; and Transimmunom, to study immunity—to name just a few.

**EQUIPEX: FOR ADVANCED EQUIPMENT**
The entire French scientific community, as well as industry, will benefit from these facilities. These projects include a network to test the Internet of the future (FIT); an observatory for the ocean, ice and atmosphere composed of fifteen platforms floating in the Arctic Ocean (IAOOS); coordinated mesocenters for petaflop computing; and global ocean observatories for climate research.

**BIOTECHNOLOGY TO ADDRESS MAJOR SOCIETAL CHALLENGES**
The three UPMC marine stations are at the core of a research consortium on marine biology and ecology, EMBRC-France, which is both a national and a European infrastructure for biology and health. The University is also managing a bioinformatics project, MAPPING, which focuses on high-resolution mapping of protein interactions in genomes.
Sorbonne University’s development strategy is firmly anchored in a bottom-up approach, by calling on its scientific and educational communities for proposals. The Convergence program mobilizes researchers from all Sorbonne University member institutions. Each theme has a defined scope and following a multidisciplinary symposium, a call for projects is used to designate funding to initiate the best projects in each theme.

This strategy fosters both innovative multidisciplinary research and educational projects, and encourages synergies across member institutions.

The first four research themes are:

- Society and the Environment
- Decision Making: Process and Dynamics
- Science and Cultural Heritage
- Life Cycles
Sorbonne University has comprehensive medical institutes that unify the research, medical, patient care and teaching communities.

THE VISION INSTITUTE
Established in the heart of Paris, near the Quinze-Vingts National Eye Hospital, the Vision Institute is one of the largest research centers in Europe for eye diseases. Its researchers, clinicians and industrial partners can share ideas and skills to facilitate the translation of fundamental discoveries into new treatments. Its research teams study visual system development, visual information processing, genetics of eye diseases and innovative therapeutic strategies.

ICAN: The Institute of Cardiometabolism And Nutrition
ICAN delivers healthcare, performs clinical & translational research and educates professionals to mitigate heart, metabolism & nutrition disorders (obesity, diabetes, NASH, atherothrombosis & myocardial diseases), thus impacting society at large. It brings together 14 research teams interfacing with clinical care and supported by core facilities enabling personalized medicine through specific phenotyping.

A-ICM
This research institute for translational neuroscience is focused on the study of nervous system diseases (Neurology and Psychiatry). Areas studied include Parkinson’s, Alzheimer’s, multiple sclerosis and epileptic seizures. A-ICM also aims to improve the transfer of treatments from hospital to the home, as well as the training of future professionals in healthcare management.

IUC: The University Institute of Oncology
The IUC increases the awareness of the quality healthcare facilities and high-level treatment while bringing together all the healthcare providers. The multidisciplinary strengths and excellence in research, medical care and education enable innovative treatments for cancer patients. Exchanges between university and the national scientific and technological organizations reinforce the capacity for therapeutic advances.
IUIS: THE UNIVERSITY INSTITUTE FOR HEALTH ENGINEERING

Combining capabilities in engineering, medicine, technology and social sciences, IUIS will coordinate and develop research, development, innovation and technology transfer, as well as educating transdisciplinary professionals in this increasingly important area.

With the laboratories in UTC and UPMC’s Faculties of Engineering and Medicine, Sorbonne University is fully equipped to:

- Modeling and simulation of healthy and pathological subjects
- Design biomedical devices
- E-health, including home maintenance and telemedicine
- Processing and analysis of signal and image (multi-modality and interaction)

This scientific project includes an educational component that spans the bachelor’s to the doctorate.
INNOVATION

FACTS AND FIGURES*

171 invention disclosures

514 patent families

50 software programs

55 spinoff companies in the last 10 years

1.07 million euros per year in licensing revenues * Data 2014

UPMC is one of the few French universities with a complete range of sciences and medicine, offering a comprehensive view of both the research challenges and their possible solutions. It has been developing research results and contributing to economic development for decades.

Patented Quality
UPMC works with private-sector organizations and files approximately 20 patents each year. In total, UPMC has a portfolio of intellectual property of more than 500 patent families and 50 software IPs. These technologies now generate annual license fees worth one million euros for the University.

End-to-End Transfer Support
The University encourages faculty and students to create spin-off companies and has recently established a complete range of independent structures to facilitate its technology transfer activities: SATT LUTECH for maturing technology, Agoranov for startup incubation, and Quadrivium venture capital. It also welcomes entrepreneurs who would like to develop a project with the University. Both the Vision Institute and the Brain & Spinal Cord Institute (ICM) have earned Carnot status for their work with industry.

Partnering with Industry
UPMC also partners with the government ministry, research organizations, private companies, foundations, associations, and laboratories. Research cooperation agreements have been set up with leading industrial groups through the Research and Technology Transfer Department. This department implements the University’s science policy, monitors the activities of research and technology transfer, and supports University research organizations.
ACCELERATING TECHNOLOGY TRANSFER

A partnership between UPMC and the Fraunhofer Gesellschaft (FhG) has been created to develop a new approach to working with business. By focusing research on industry objectives—and thereby anticipating industry needs—university research will be more directly connected to economic development.

ANTICIPATING INDUSTRY’S NEEDS

Launched in 2012 after winning a call for projects from the French government, SATT LUTECH is a private company with public and private sector stakeholders, including UPMC. SATT LUTECH analyzes the potential of scientific results and manages the commercial, legal or technological maturation necessary for technology or knowledge transfer into the market. This can be done through the creation of start-ups or through licensing agreements to companies. Having a dedicated technology transfer team will significantly increase the volume and impact of UPMC’s research results, which will benefit society as a whole.