

ParisTech

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CHRISTIAN LERMINIAUX
President of ParisTech

ÉDITORIAL

« I am pleased to present the second issue of our ParisTech newsletter.

When I was elected President on September 12th, I already had strong faith in our network because of the many common values our schools share.

Whether the issue is training (curriculum based on these same principles, with strong interaction with companies and a heavy emphasis on research, recruiting of our students at similar levels, whether in France or abroad, the promotion of diversity, pursuit of doctoral studies, ongoing-education actions for teaching staff...), international projection (coordinated recruiting, partnership agreements with higher education institutions of excellence or funding agencies...), or corporate relations (chairs, joint institutes...), ParisTech has been able to rely on these values to implement many projects of interest to our institutions, in total congruence with their respective site policies.

This issue, dedicated specifically to international strategy, shows once again that for 20 years, the actions we are conducting together have allowed us to be a frontrunning partner of major universities and companies around the world. »

HEADLINES Recruiting international students: How to stay competitive



While international mobility has undergone significant changes in recent years, what mechanisms has ParisTech implemented to remain competitive and recruit the best? What have been the main flows in recent years, the modes of selection, the common actions carried out by our schools, and with what perspectives in mind?

Joint interview with JEAN-FRANÇOIS NAVINER, Director of International Relations at Télécom ParisTech and ParisTech Coordinator for Latin America

and SYLVAIN FERRARI, Director of ParisTech China*

What is ParisTech's international strategy?

JFN : Each school has its own international strategy. But they work together within ParisTech to recruit international students, to develop double degrees and foster their students' outgoing mobility, to develop partnerships in Europe and, finally, to project themselves on the international stage with implantations.

SF : ParisTech has been present in China since 1999. Our strategy revolves around five axes: academic

partnerships with 12 of the best science and engineering universities, relations with French companies (e.g. partnerships with Safran, Valeo, PSA Peugeot-Citroën, Ardian) or local ones, the alumni network (2,200 alumni in China), institutional relations, especially with the China Scholarship Council (CSC) and four Franco-Chinese Institutes (FCI).

What is ParisTech's main recruiting method?

JFN : ParisTech schools have been pooling the recruiting of international students in their engineering courses for over 20 years ("coordinated recruiting"), in association with leading academic partners in the target countries – China, Brazil, Colombia, Russia. Students admitted to this program after their bachelor's degree enter France's engineering cycle in its second year. They obtain their diploma from the ParisTech host

school along with, if they follow a double-degree course, the master's or engineer's degree from their home university. So we recruit some 40 students a year in Brazil, some fifteen in Colombia, one hundred Chinese in China, and a dozen in Russia.

SF : In 2000, ParisTech set up a partnership in China with 9 of the best Chinese universities, and three more joined them in 2011/2012 **. Since 2000, over 1,300 Chinese students have been recruited by ParisTech schools.

How does coordinated recruiting work? What is the level of selection?

JFN : The home universities preselect the candidates in the fall, i.e. one year before the students join the schools. The selection is based on a written exam in basic and engineering sciences. This is followed by a



motivation interview and an analysis of the student's file. Students indicate which schools interest them, in order of preference. The ParisTech jury takes this into consideration during the deliberation, in late November. After admission, students receive support in French if needed, so that they may be able to take courses in French.

SF : The written test was entirely reviewed this year (see box). It's an extremely useful tool to compare

the levels of students from different universities and curricula and to ensure that they have the scientific base and meet the prerequisites to complete ParisTech schools' Engineering programs successfully. In the context of some of our double degrees that have been working successfully for several years now, candidates are exempt from the written test. In all recruiting methods, scientific excellence remains the key criterion.

What other methods of international recruiting are there?

JFN : We give preference to qualification-based admissions in engineering schools and to double-degree or joint programs (engineering, master's, specialized master's, MBA). The agreements we've reached with our partners are often built on privileged relationships maintained by one or more leading schools. ParisTech brings an undeniable leverage effect to such partnerships

through the congruence between our schools, which cover all fields of engineering.

SF : The recruiting of PhD students is also a strong strategic axis for ParisTech. In China, the PhD program implemented with the China Scholarship Council allows us to recruit 30 to 40 PhD students a year. We've tripled the number of applications over the last two years! Finally, ParisTech is involved in four Franco-Chinese Institutes (FCI):

The Franco-Chinese Institutes in which ParisTech's schools are involved

FCI	Creation Date	Chinese partner	Pilot	ParisTech and other partners	Number of students per class
Sino-European Institute for Clean and Renewable energies (ICARE)	2010	Huazhong University of Science and Technology	Mines ParisTech	Chimie ParisTech ENSTA ParisTech École Polytechnique European partners	90
Franco-Chinese Nuclear-Energy Institute (IFCEN)	2010	Sun Yat-sen University	Grenoble INP	Chimie ParisTech Mines Nantes Ecole nationale de chimie de Montpellier CEA-INSTN	100-120
SJTU-ParisTech Elite Institute of Technology (SPEIT)	2012	Shanghai Jiao Tong University	ENSTA ParisTech	Mines ParisTech Télécom ParisTech École Polytechnique	80-90
Beijing Chemistry	2017	Beijing Chemical Technology University	Chimie ParisTech	Schools of the Gay-Lussac Federation	80

How many students does ParisTech recruit each year for its schools?

JFN : I would say that coordinated recruiting represents a quarter of the number of international students recruited into our schools.

SF : So in China's case, about 100 students are recruited to the engineering program, 40 to 50 for Master's and Specialized Master's degrees, 30 to 40 for doctorates.

What are ParisTech's international prospects?

JFN : We are working with some of our partners in the network ATHENS on European projects. We are also looking into opportunities in Africa. Finally, we are constantly seeking to increase the support received from companies within our target countries.

SF : Beyond recruiting in the engineering cycle, we work with our partner universities to develop scientific relations, particularly through the co-supervision of doctoral students, and to strengthen projects carried out in partnership with French and foreign companies. Important work is also being done to identify, animate and enhance

the network of ParisTech alumni abroad and highlight the success of our international alumni.

Coordinated recruiting: The fully-reviewed scientific test

2018 saw the complete overhaul of the test applied to select candidates for admission into our schools. This is a multiple-choice test consisting of 86 questions, presented in two parts: mathematics, and other scientific subjects. It was developed by 13 teachers-researchers drawn from the schools and tested by three PhD students.

* ParisTech also has a representative in Brazil (São Paulo): Gérard Chuzel.
** **Beijing:** Tsinghua University, Beijing University, China Agricultural University
Nanjing: Nanjing University, Southeast University, Nanjing Agricultural University
Shanghai: Tongji University, University Fudan, Shanghai Jiao Tong University
Since 2011/2012:
Hangzhou: Zhejiang University
Wuhan: Wuhan University, Huazhong University of Science and Technology

THE PORTRAIT



FLORENCE LELAIT
ParisTech General Delegate
since June 2018

1. What are the missions of a general delegate? Is this a newly-created position or an established one in ParisTech?

Émile Lorre held this position up till last December. Like him, I must see to the administrative and financial management of the foundation and lead the team of delegates. Working full-time for ParisTech, I must also monitor projects that were delegated to schools in 2016, propose a strategy for ParisTech, and implement it.

2. How do you work: means/teams/coordination of actions with schools...?

This is primarily networking. I work with the three directors who make up the bureau, the founding committee, the delegates – each of

whom monitors the Commission relevant to their competence (Communication, Diversity, Education, International) – and the ParisTech Foundation in matters of corporate relations. The schools, first and foremost, lead the projects; the Foundation comes in to provide support. So I'm currently working on meeting the various players.

3. What were you doing before you became ParisTech's General Delegate?

For eight years, I worked in teaching and research at the University, I defended my thesis in German civilization in 2002. Then, after a Master of European Governance and Administration (MEGA), I spent eight years at the Ministry of Research, five of which in European and in-

ternational affairs. Finally, I spent three years contributing to the deployment of the Court of Audits' new information system before joining ParisTech on 01 June.

4. What ambitions are there for ParisTech? What major projects do you wish to launch over the next two years?

ParisTech's schools share common values and have been working together for a long time. Faced with changes in the higher education landscape, they are currently reviewing their position in relation to the COMUE (France's "Groups of universities and institutions"). However, ParisTech remains a one-of-a-kind sharing and exchange place for these engineering schools. They must reclaim this tool and this brand, share and value good practices, develop joint projects, position themselves as a *think tank* and lobby. These are the actions that constitute the ParisTech brand's added value. For example, we're working with ATHENS

partners on two European projects, and the ParisTech schools would also like to implant themselves in Africa, which raises the issue of the Bachelor's degree and of teaching in English. Student recruiting in China, Brazil, Colombia and Russia, even in Iran, must be developed, and the three school-driven Franco-Chinese Institutes – SPEIT, ICARE, BUCT-Paris Curie Engineering School – must be supported. The RACINE network needs to develop its engineering specialization in the courses it offers. Bonds with the Institut Villebon-Georges Charpak, created by ParisTech, must be strengthened, and actions fostering social diversity must be bolstered. Finally, there are five Chairs that enjoy the support of the ParisTech Foundation: two Chairs (eco-design, urban mining) must be renewed this year; new Chairs must be created.

5. What especially do you like about this position? What are the challenges?

First, I am very happy to return to the sphere of higher education and research, and to get closer to the operational level, even if the projects remain in the hands of the schools and the foundation's participation is more one of strategy management. It's important that ParisTech' added value be shown, that the Commissions' work – for example, on civic engagement – be decompartmentalized, that school cohesion, at all levels – administrative and academic staff, students, alumni – be strengthened, and also that we show that ParisTech does not compete with the COMUE but, on the contrary, that it can give them an extra touch of soul. The ParisTech network is an asset for all of us. I invite anyone who is interested to join us on Twitter and LinkedIn.

PARISTECH LIVE

COMMUNICATION



Look for the ParisTech community on social networks and join our 8,000 followers on Twitter and 1,000 subscribers on LinkedIn! Find out more about our new communication media. The following may be downloaded on our website: a presentation booklet, available in 4 languages (French, English, Spanish, Portuguese) with key metrics on the network, and a video clip on YouTube (accessible from the site's homepage, at www.paristech.fr). And, of course, find all the latest on ParisTech on our website or at the StudyWithUs portal, intended specifically for international students.

DIVERSITY



ParisTech took stock of gender equality (6 schools replied). While Chimie ParisTech and AgroParisTech, respectively, boast 50% and 60% of female students, other schools show a decline, with 30% of female students at the ENSTA ParisTech,

30-40% at the ESPCI Paris, 20-25% at Télécom ParisTech, and 20-30% at Mines ParisTech. The ENSTA, Télécom and ESPCI have committed to a proactive policy (valorisation of women's courses, raising awareness in high schools, dedicated courses). Mines ParisTech is participating in the MELIA project. Regarding the gender pay gap upon graduation, several schools have set up coaching courses (salary negotiation), which are also open to male students.

TEACHING

In July 2018, CentraleSupélec joined ParisTech's RACINE, the innovative education support network, which trains and coaches teachers-researchers. CentraleSupélec will participate in workshop animation and in teacher-researcher training. A dozen workshops are being proposed (e.g. the integration of flipped classrooms in teaching). This helps to enhance and promote the involvement of teachers-researchers in teaching and to bolster the quality of learning. The 2018/2019 catalogue of workshops – including two new workshops (*Introducing games in teaching and Student motivation*) is available at <https://www.paristech.fr/fr/News>.

FOUNDATION



In the current context of natural-resource exhaustion, urban mining – rich in plastic materials and rare metals – is essential to the development of an environmentally-friendly circular economy. In this context, in 2014, the Eco-systèmes eco-organization, with the ParisTech Foundation's support, established a Research and Teaching Chair. This Chair, called "Urban Mining", is managed by Chimie ParisTech, Arts et Métiers ParisTech and Mines ParisTech. On 05 and 06 June 2018, Eco-systèmes held a symposium during which the results obtained under the Chair were presented to the players in the recycling sector. Copyright: © Eco-systèmes

INTERNATIONAL



Élisabeth Crépon, recently elected President of the CTI, represented ParisTech during French Engineering week in Colombia, which was held from 17 to 21 September. The Bogota Student Fair was a success, with over a hundred students welcomed at the ParisTech stand. She then proceeded to Cartagena to inaugurate the International Meeting on Engineering Education, dedicated to "Management, Quality and Development in Engineering Faculties", along with Gautier Mignot, Ambassador of France to Colombia, and Carlos Arturo Lozano Moncada, President of the ACOFI, the Colombian Association Engineering Faculties.

IN THE SCHOOLS

AgroParisTech

AgroParisTech launches the first edition of #SIALRISINGSTARTUPS at the Global Food Marketplace. A proposal of the SIAL Paris, designed in collaboration with the IDEFI-ECOTROPHELIA network and with AgroParisTech, #SIALRISINGSTARTUPS is the first forward-looking European space dedicated to potential startups in the agro-food sector. 40 projects and companies have been selected to participate in the SIAL's Rising Start-Ups space and to showcase their new products, services, or equipment. AgroParisTech will also be present at the SIAL, with the mobilization of students who will work at the fair, to be held from 21 to 25 October 2018.



Arts et Métiers ParisTech

A new student-life project. In their shared desire to train engineers best able to meet the human, social and technological challenges of tomorrow's industry, students, the school, and its alumni have jointly defined a student-life project. Both open to the world and innovative, it includes corporate social responsibility and innovation. To carry it out, students are accompanied and commit to respecting people and actively combating addictions.



Ecole des Ponts ParisTech

Renewal of the Chair on "Science for Rail Transport". Eurotunnel and the École des Ponts ParisTech have renewed their 2013 partnership for five years. The scientific stakes seek to optimize the tunnel's mechanical, aerodynamic and thermal behaviors. Over the previous period, the Chair has notably led to the patent of a major innovation in track inspection supports for preventative maintenance, with a robot named COBRA. The robot's core software and its intelligence were developed in the Navier laboratory by researchers from the school.



Télécom ParisTech

A new joint laboratory with Nokia Bell Labs. In June, Yves Poilane, director of Télécom ParisTech, and Thierry Boisson, President of Nokia in France, inaugurated a Model-Oriented Programming laboratory. To mitigate the complexity of the hardware architecture supporting future telecommunications standards (e.g. 5G), a new approach will be used for the optimum design of the electronic infrastructure of a communications network. Thierry Birthare: "For Nokia, it is essential that we collaborate with the worlds of academia and industry to fully reap the benefits of interdisciplinary know-how."

CHAIRE MACHINE LEARNING FOR BIG DATA
September 17th & 18th, 2018

International Workshop
Machine Learning & Artificial Intelligence
The stimulating challenges

Télécom ParisTech...

... brings together 300 Artificial Intelligence players. The International Machine Learning and Artificial Intelligence Workshop, held on 17 and 18 September 2018 at Télécom ParisTech, brought together 300 academic and business players from all sectors to focus on new AI industrial challenges: an AI that interacts more with its environment – Deep Learning (deep neural networks) – The integration of new constraints (reliability, real time, confidentiality, interpretability...). <https://workshopmlai.wp.imt.fr>

INTERNATIONAL ACTIONS

International Framework Agreements

Faculty of Engineering, University of Buenos Aires, Argentina	July 2018
Universities in Tehran, Amirkabir and Elm-o-Sanat	19 June 2018
Federal University of Rio Grande do Sul (UFRGS)	Renewed June 2018

International Missions

37 th Conference of Presidents and Rectors of European Technology Universities at the University of Strathclyde, Scotland	14-15 September 2018
French Engineering Week in Colombia	17-21 September 2018

Recruiting Missions

Brazil	1-9 October 2018
Colombia	7-12 October 2018
China	22-26 October 2018
Russia	30 October-1 November 2018

Hosting of Foreign Delegations

Hosting of Colombian teachers and researchers (COLIFRI)	May 30, 2018
Hosting of China Scholarship Council (CSC)	19 September 2018

ParisTech, the Network of France's top engineering schools.

The complementarity of the schools' areas of excellence makes an exceptional grouping available to students, researchers and all partners (institutional and corporate), allowing a unique transdisciplinarity. ParisTech participates in strong international interactions in teaching and research through numerous partnership agreements.

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