

ParisTech

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CHRISTIAN LERMINIAUX
President de ParisTech

EDITORIAL

ParisTech's graduates must understand the world we live in and be able to address the environmental and social challenges we are facing. They need to be able to grasp concepts and devise solutions. Our engineering programs must therefore be closely tied with research so that students are continually exposed to the latest scientific ideas.

The ParisTech schools are keenly aware of this, and all the engineering programs on offer have a strong research component. From their first year, students are immersed in a diverse and dynamic research and innovation environment, as the network brings together several hundred lecturers and researchers and over 80 laboratories spanning 12 scientific fields. The schools have also set up more than 70 chairs to foster network-wide synergies in teaching and research. The "Vinci Lab Recherche Environnement" chair and the "Mines Urbaines" chair are prime examples, founded 16 and 10 years ago respectively.

Thanks to these interfaces between the ParisTech engineering programs and the stimulating world of research, many of our graduates are inspired to pursue their studies at PhD level, which opens up a whole array of opportunities, in particular internationally.

FEATURE

Research – the backbone of all ParisTech engineering programs



PIERRE HAQUETTE
Dean of Studies at Chimie
ParisTech – PSL

ANNE MOREL
Dean of Studies at Arts et Métiers

How does your school go about familiarizing students with research throughout their course?

PH: All our engineering students are introduced to research right at the start of their studies. During induction week we run a round-table discussion with lecturers and researchers to give students an insight into the school's research activities. Practical assignments systematically include a literature

review, so students learn how to find information, how to read and summarize articles, and how to write up their findings in the form of a scientific article.

At the end of their first year, students take part in an innovation week, which includes sessions on research dissemination and tech transfer, and visits to research laboratories. In parallel to this, some students carry out exploratory lab work of their own. The PSL UROP program helps fund these research placements for some students (approx. 10% in 2023/2024).

In their second year, alongside standard practical sessions, students work on innovation projects based on a scientific methodology:

inspiration, ideation, implementation. All students must do at least one long scientific/technical internship, and most opt to do placements in academic or industrial research laboratories. There are two research laboratories and four or five startups on the school's site, so students are immersed in a research environment at all times.

Over half of teaching is done by permanent lecturers, all of whom are active researchers and draw on examples from their own research to illustrate the concepts covered in their classes.

AM: Across the country, the school has 15 high-level research laboratories. A significant part of the curriculum is delivered by lecturers

who are active researchers and can thus bring elements of their own research work into the classroom.

We organize special days to familiarize students with the world of research, provide information about master's courses and PhDs, and showcase inspiring professional achievements through talks with guest speakers. We place significant emphasis on applied research, as the school has very strong ties with industry.

We also invite our students to work on projects related to the school's research activities.

Lastly, we've set up a professional student support scheme which includes small group sessions and one-to-one meetings. This allows us to present research-related roles to our students and help each student plan their career in line with their values.

Why have you made research such an important part of the curriculum?

PH: Research-based teaching and learning is very important because it kindles an interest in innovation, helps students become critical thinkers, and develops their skills in project management, research dissemination and tech transfer. It also helps students understand why it is important to keep abreast of the latest scientific developments, and improves their written and oral communication skills in both French and English.

AM: In today's industrial sector, research and innovation are crucial. Graduates from Arts et Métiers are able to define, explain and implement innovation strategies using the resources available to them. Moreover, thanks to the research and technology transfer work undertaken by our lecturers and researchers, we are able to update our teaching content to make sure it reflects the technical reality of industrial stakeholders.

The French government has awarded the school the Carnot label in recognition of its strong commitment to applied research.

Why should graduate engineers consider doing a PhD?

PH: Around a third of our students go on to do a PhD. This allows them to build on their all-round engineering training to become experts in a specific field. It reinforces the skills mentioned above, helping students consider their results and progress with respect to the state of the art and the work of their peers. At PhD level there is more emphasis on collaboration and a stronger international focus too. Those who persevere acquire in-depth expertise in their chosen field. A PhD is a globally recognized qualification, whereas the prestige associated with the French engineering degree is more specific to France.

AM: If students want to work overseas, we advise them to do a PhD, because this is recognized worldwide. Moreover, a PhD is often a prerequisite for the highest leadership positions. Last year, a former student who'd been working as an R&D engineer at Safran for eight years completed a PhD with us as he'd realized that he needed this for the next steps in his career.

For over ten years, our management team have been working to create a research culture and structure our research activities and use them to inform our teaching practices. The impact of these actions on our international indicators is clear.

Currently, around 30% of our students follow a research track as part of their engineering studies. This is promising, but we can still do better when it comes to encouraging students to pursue their studies at doctoral level.

[Find out more](#)

ZOOM



PIERRE BALADI
Director of ParisTech Asia
as of February 2024

Could you tell us a little about your background?

I did an engineering degree at the École des Mines de Nantes, and as part of that I spent a semester in Singapore. When I graduated, I was no longer really interested in working in information technology, so I did an overseas

volunteer placement (VIA) at the Consulate General of France in Hong Kong, where I got my first taste of international cooperation in the academic and scientific sphere.

After my placement, I was appointed as Assistant Head of International Relations at the École des Mines de Paris. In this role, I took part in ParisTech's fact-finding trip to Korea in 2009, which laid the foundations for the network's current framework agreements.

In 2011 my work also took me to Japan. The trip was just a few weeks after the Tōhoku earthquake, but I decided to go ahead, and was warmly received by the Japanese universities, who were very appreciative of the visit. The trip gave me lots of new contacts and led to collaborations outside of Tokyo.

In 2017 I was made Head of International Relations at the Institut d'Optique. The school was a leading institution in its field, but had a relatively low public profile and few international ties, so this was an exciting role to tackle.

You're now ParisTech's representative in Asia. What attracted you to this role?

It's a logical step in my career. Thanks to my previous roles I'd met most of ParisTech's representatives in Asia. I was familiar with the network and its schools and ambassadors. Moreover, I've always been fascinated with Asia, particularly from a cultural perspective. I was keen to get back to the kind of fast-paced, opportunity-filled environment that characterizes Asian metropolises like

Shanghai. I'm eager to experience life here as an inhabitant rather than just as a tourist.

What are your main missions?

One of the biggest goals is to boost ParisTech's reputation in Asia and extend the network's actions across the whole region. This means continuing to develop networks and partnerships, facilitating dialogue between universities, institutions and local stakeholders, and coordinating ParisTech's flagship programs – the International Admission Program, the 9+9 engineering scholarship program, and the PhD program.

The role also involves developing relations with local alumni and setting up partnerships to nurture ties with French companies operating out of China. One of my key tasks in this respect will be organizing this year's Sino-French careers forum. I'll also be helping the network's schools reinforce bilateral relations with their Chinese partners, for example by accompanying delegations sent to China or helping to set up academic mobility programs for students from China and elsewhere in Asia.

Lastly, we're planning to offer services to institutions outside the ParisTech network too to support them in deploying their international strategy in Asia.

COMMUNICATION



The ParisTech schools recently met with journalists from *Le Figaro Étudiant* and *L'Étudiant*, which publish annual rankings of France's top engineering schools. Both rankings are a popular source of information for high-school pupils and students looking into options for further study. The meetings allowed the schools to find out more about the journalists' methodology and pass on some suggestions aimed at making the ranking criteria as fair as possible. We hope to build on these initial meetings through further, more regular discussions with each media outlet, and in doing so help make the rankings more objective.

DIVERSITY



This year's *Cordées de la réussite* event was held on the Arts et Métiers campus in Paris on Saturday 20 January. The event was attended by over 60 pupils from our partner schools: the Lycée Pierre-Gilles de Gennes – ENCPB and the Lycée Adolphe Chérioux (Vitry-sur-Seine). Each group of pupils took part in three of the four classes organized by representatives from the ParisTech schools ("What can the glassmakers of the Roman Empire teach us about dealing with radioactive waste?", "Material fatigue", "Temperature and crowds" and "An introduction to solid materials"). Attendees also had chance to chat with the ParisTech/ENCPB "Ambition Science" student tutors, and students from the Institute Villebon – Georges Charpak. Discussions were lively and many who attended went away with new perspectives and ideas for the future.

EDUCATION

Les voies d'admission dans les écoles de ParisTech

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The ParisTech Education Committee is moving full steam ahead with its aim of diversifying admission routes into the network's schools. Having updated the admission routes flyer last autumn, the schools are now working on identifying the most promising sources of candidates outside the traditional CPGE route. Driven by a desire to diversify their student communities and attract the best candidates from across France, the schools aim to tap into these previously unexplored talent pools and present their courses to potential candidates.

INTERNATIONAL



The ParisTech annual international student recruitment campaign closed on 17 November last year. Several dozen international students will be joining second-year programs at the schools in September 2024, either on a double-degree program or as free movers. As in previous years, there was lots of interest in Latin America thanks to the network's partnerships in Argentina, Brazil and Colombia. ParisTech is also keen to boost recruitment in Asia, in particular in China, where it has maintained ties since 2000. The schools are also delighted to see that the 2022 decision to accept applications from candidates all over the world is now bearing fruit, with students from a number of different countries due to join in September.



The main mission of the ParisTech network is to promote the engineering programs of its member schools both in France and internationally, showcasing their interdisciplinary approach and global focus and the vibrant research culture that exists across the network. With this in mind, on 11 January the presidents and heads of international relations from the seven schools met to review their objectives and draft a roadmap for the years ahead. To kick off the session, each school presented its European and international strategy, setting the stage for fruitful and enriching discussions on a range of key topics: how to promote engineering programs and attract students, international partnerships and geographic priorities, the recruitment of international students, and the development of outward mobility.

INTERNATIONAL ACTIONS

International Agreements

Renewal of the double-degree agreement with UNICAMP (Brazil)

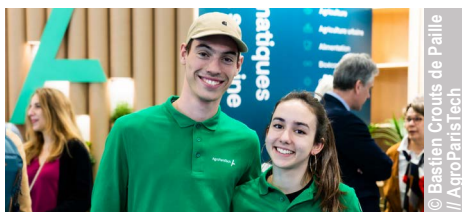
Renewal of the framework agreement with UFRGS (Brazil)

Renewal of the double-degree agreement with the Polytechnic School of the University of São Paulo (Brazil)

Visiting Delegations

Visiting delegation from the Gwangju Institute of Science and Technology (GIST) 17 October 2023

NEWS FROM THE SCHOOLS



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AgroParisTech

Visit AgroParisTech at the 60th International Agriculture Show

Come and visit the AgroParisTech stand at the International Agricultural Show! The show runs from Saturday 24 February to Sunday 3 March and the school will be running educational sessions on water and forestry throughout the event. There'll be presentations, tasting sessions and live demos too, including a water bar, info on the Farm'InnLab, an emulsion creation class, chance to taste products developed at the school's Food'InnLab and more. A number of special themed days on topics such as forests, biomass, food, agriculture and water will also take place throughout the week. Come along and meet with experts and students from AgroParisTech, sample products from our Food'InnLab, try your hand at making your own emulsions, or stop for a break at our water bar! The program is available at <https://salonagriculture.agroparistech.fr/> Location: Parc des Expos – Porte de Versailles – Stand 4 C 045



Arts et Métiers

ScCRYO2: Better manufacturing for people and planet

The use of machining fluids in industrial processes is under threat from EU legislation due to the environmental impact of these substances. Recycled CO₂ would appear to be a viable alternative. For the moment, however, the promising results of this solution cannot be explained. Worse, results are sometimes disappointing, and this cannot be explained either. To remove the hurdles preventing the use of CO₂, the empirical evidence needs to be backed up with scientific proof. This is the aim of the ScCRYO2

project, which brings together four Arts et Métiers laboratories. The project began in 2021 and is set to run for five years. The goal is to provide reliable data and models to help researchers understand the phenomena at play when machining with ScCO₂. Find out more on the [Arts et Métiers website](#).



Chimie ParisTech – PSL

“Forum Entreprises” – A new careers fair at Chimie ParisTech – PSL!

A new careers fair was recently held on the Chimie ParisTech – PSL campus, providing students with a unique opportunity to meet industry professionals and future employers and colleagues. Stands were run by more than twenty companies, including Saint-Gobain, Kury Ingénierie, Motul, Adisseo, Q-Energy, Veolia and Mane, and over 300 engineering, masters and PhD students attended. Students were able to talk to industry experts about their career options and find out about internships and current vacancies. The event was equally useful for the companies who attended, giving them chance to connect with promising candidates, present their sector and areas of expertise, and enhance their image as an employer.



École des Ponts ParisTech

New term for the “Supply Chain of the Future” chair

Michelin, Renault Group, Louis Vuitton, DECATHLON and management consultancy Argon & Co. have joined forces with the École des Ponts ParisTech to launch a new phase of the “Supply Chain of the Future” chair. The renewal ceremony took place in Paris on 25 January and was attended by the school's President, Anthony Briant, and supply

chain directors from each of the corporate groups. The chair is dedicated to teaching and research and aims to foster knowledge sharing and collaboration between major companies and institutions who have made a firm commitment to sustainable transformation. Find out more on the school's website.



Institut d'Optique

20th anniversary of the Saint-Étienne campus

On 25 January, the Institut d'Optique Graduate School celebrated the 20th anniversary of its Saint-Étienne campus. Around one hundred people attended the event, which showcased the depth and diversity of the research, training and innovation projects carried out at the site. The program for the day included a mini scientific exhibition and an outdoor laser show. The closing session – a talk by Alain Aspect, recipient of the Nobel Prize in Physics and professor at the Institut d'Optique – attracted over 400 people, filling the venue to capacity.



Mines Paris – PSL

Signature of the Objectives and Performance Contract (COP) and launch of a strategic partnership with Albert School

On 18 December 2023, French Minister of Industry Roland Lescure signed the COP with Mines Paris – PSL. The contract will run for the next five years. By 2027, 20% more students will be admitted onto the civil engineering track to boost diversity. The day also marked the inauguration of the Henri Poincaré lecture theatre, which has been renovated to cut energy consumption by 30% thanks to funding under the *France Relance* recovery plan. Mines Paris – PSL and Albert School also announced a partnership for training in data and AI. For the 2024-25 academic year, they are launching a Bachelor's degree in Business & Data and an MSc in Business & Data. In a bid to boost diversity, 30% of places will be reserved for students on financial support bursaries.

ParisTech,

A network of leading graduate engineering schools

ParisTech is a network of leading graduate engineering schools that offer research-based engineering programs with a strong international focus and close ties with industry. Founded over 30 years ago, it promotes the engineering programs of its member schools in France and worldwide.

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