

ParisTech

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President of ParisTech

EDITORIAL

Last month, staff from the ParisTech schools attended a workshop organized by the network to look at how the ecological transition is addressed in engineering programs. Plenty of information was shared, covering the current situation, planned actions, and ideas for the future.

ParisTech graduates will undoubtedly play a key role in the ecological transition, which requires us to rethink how we live, what energy sources and means of transport we use, and how we produce our food. The world needs highly skilled graduates to design, implement and evaluate technological solutions aimed at reducing the impact of our activities.

It is the mission of the ParisTech schools to train responsible professionals who are fully aware of the environmental and social challenges we are facing. Thanks to the broad spectrum of skills present within the network, each school is able to offer a multidisciplinary approach and give students the tools they need to help build a greener, more sustainable future. The ParisTech schools also support student innovation and entrepreneurship projects, in particular those focused on the energy transition and environmental issues, thus helping to lay the groundwork for the innovative companies of tomorrow.

FEATURE

The ecological transition: top priority at the ParisTech schools



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How have higher education institutions traditionally approached the ecological transition?

EF: There's a lot of variation from one institution to another. However, by looking at the situation today, we can get an idea of how strategies develop. Usually, the first step is to offer specialized training courses led by academic staff and professionals,

looking at the ecological transition through the lens of a particular discipline or topic. The ISIGE (Institut Supérieur d'Ingénierie et de Gestion de l'Environnement) is a good example. It was founded by the École des Mines de Paris in 1992, initially in partnership with AgroParisTech and the École des Ponts ParisTech, and it remains a leading center for integrated approaches to sustainable development. Following this, collective structures emerge, taking a more cross-disciplinary approach and developing frameworks and tools that can be used more widely. An example of this is the R2D2 network (*Réseau des Référents Développement Durable*) which, under the supervision of the CGE (*Conférence des grandes écoles*)

and France Universités, developed the DD&RS label and a guide on skills and training requirements for those involved in the green transition. And most recently, calls from students and the urgency of the climate crisis have driven institutions to step things up and integrate the ecological transition into their broader strategies.

What is AgroParisTech's approach to the ecological transition?

HB: We started by introducing a strategic sustainable development plan ("Green Plan"), and setting up a sustainable development committee. More recently, we've scaled up our efforts by developing a

CSR policy focusing on eight pillars, which we presented to the school's Executive Board at the end of 2022.

One particularity of our school is that several years ago we introduced a "sustainable development and social responsibility" budget (2% of the school's training and research contracts).

To implement this policy, we've set up:

- A CSR and evaluation board, comprising a director, a sustainable development officer, and one person (on a voluntary civil service placement) who organizes awareness-raising activities;
- A CSR committee including staff from the school, campus representatives, lecturers/researchers, and student ambassadors;
- A steering group consisting of the Dean and Executive Director, the Secretary-General, and external members, including the Vice President for Sustainable Development at the Université Paris-Saclay, the INRAE CSR

Officer, and two students. This group rules on decisions and defines the overall strategy.

We're also in the process of establishing our first greenhouse gas emissions report (BEGES). In the spring, a sustainable development and CSR roadmap setting out our action plans will be submitted to the Governing Board and voted on.

How have you integrated the ecological transition into your engineering programs?

EF: Engineering programs must do two things:

- Provide advanced technical and scientific training to place our graduates at the forefront of design, production, and innovation;
- Help students develop the skills they need in order to adapt to – or lead – the transitions taking place.

There is widespread consensus as to what skills are required. Some of these are already covered on our courses (life cycle analysis, functional analysis, systems analysis, etc.), although new terms are sometimes

used (the integration of sobriety in objective functions, for example). Others demand new ways of thinking (greater interdisciplinarity and co-construction, evaluation of strategies in terms of robustness as well as efficiency, and so on). This dual approach to skills has the potential to transform our schools, allowing them to draw on their strengths and particularities while remaining true to their roots. That said, it is important that this approach is supported by concrete training actions and truly multidisciplinary projects, so that students and staff can master the new approaches required to navigate the major societal transformations that are unfolding.

HB: Our students are keenly aware of environmental issues. It's a core part of what we do. In their first year, students complete a 20-hour module covering all the major issues and challenges relating to sustainable development. They then choose an area to specialize in. Some choose to focus on CSR in companies, others on environmental issues in the natural world, and others on territorial development.

The school has just embarked on a revamp of its training courses, and will be renewing its accreditation with the CTI (French national committee responsible for accrediting engineering schools) this year. As part of this, we ran a survey in collaboration with our junior enterprise to find out what students think of how the ecological transition is covered on their course. The results showed that students aren't fully satisfied. We also worked with students to draw up a list of key skills for agronomists working on environmental issues.

We will take on board our students' recommendations, in particular the need to adopt a more holistic, integrated approach to addressing environmental issues throughout the training program.

ZOOM



JEANNE PARMENTIER
Head of the Educational Experimentation Center (CEP) of the Institut Villebon – Georges Charpak

What is the Educational Experimentation Center?

The Educational Experimentation Center, or CEP for short, is part of the Institut Villebon – Georges Charpak and is located on the Orsay Campus. It's a 450 m² space where teaching staff from the Institute's founding members – which include ParisTech – can work on educational projects and resources. The facility offers multiple, flexible spaces to meet users'

needs, including a pleasant reception area, co-working spaces, a workshop dedicated to the creation of learning objects, meeting rooms, video and design studios, and more.

We have three objectives:

- To create new training programs;
- To provide teaching staff with a space where they can meet with peers;
- To build bridges between teaching practice and research in various fields (education sciences, cognitive science, etc.) and, where applicable, support researchers who want to measure the impact of a new teaching method/program and publish the results in a scientific article.

How can staff from the ParisTech schools benefit from the teaching methods developed at the Institute?

Teaching staff from any of the Institute's founding universities and schools are welcome to come to the CEP and work on educational projects. It's an opportunity to talk to other CEP members and benefit from a workspace dedicated to teaching practice and materials. We also offer long-term arrangements for projects that fall within the center's focus areas. For example, this year, Fabienne Bernard and Sébastien de Rossi from the Institut d'Optique have been granted special leave to develop an educational innovation, and have chosen to spend one day a week at the center working on their project. Two other lecturers/researchers, from the Université de Versailles Saint-Quentin-en-

Yvelines, also come here once a week to write research articles on teaching topics.

We run a number of activities too:

- The Journal Club, which is a monthly reflection group that looks at education-related research. Staff can take part online or in person.
- Communities of practice, including one for the teaching of mathematics, and another for chemistry. Here, teaching staff regularly meet up to discuss teaching issues within their field (e.g. why do students struggle in science subjects due to mathematics?) or attend mini-courses on specific topics (e.g. mathematical reasoning).
- One-off workshops, usually to provide training on new tools.

In addition, we publish a selection of resources on our website, such as recipe cards for teaching methods, videos, educational games, and a guide to evaluating teaching methods. The resources are available for staff to consult and download for free if they cannot come to the center in person.

Lastly, from time to time we take part in teaching events organized at our partner schools, where we lead workshops or conferences.

THE LATEST FROM PARISTECH

COMMUNICATION



The ParisTech network has opened an official account on the [LINE](#) social media platform, which is very popular in Asia. The aim is to bring French engineering programs at the ParisTech schools to the attention of more students in South Korea, Thailand, Japan and Taiwan, where LINE has millions of users. ParisTech will use the account to share information about the [ParisTech International Admission Program](#), its member schools and partners, and mobility opportunities. The new communication channel is part of ParisTech's international development strategy of attracting top talent from all over the globe.

DIVERSITY



ParisTech/ENCPB "Ambitions Sciences" partnership: 4 years and still going strong!

Once again, as part of the "Cordées de la réussite" scheme, ParisTech will be working with ENCPB over the course of the coming year to mentor and support more than 70 *prépa* students and help them reach their full potential. Tutors from the four ParisTech schools involved (AgroParisTech, Arts et Métiers, Chimie ParisTech – PSL, and ESPCI Paris – PSL) have received training and are all set to run eight (or more) sessions for their tutees, in which they will share methods and offer moral support, practical tips, and advice to help the students prepare for their competitive exams. For the first time this year, the tutors will also give their group a guided tour of their school so they can see first-hand what it's like to study at a leading engineering school.

EDUCATION



Flyer advertising admission routes into the ParisTech schools

As the new academic year gets underway, the Education Commission is working on promoting and diversifying admission routes to encourage students who haven't completed CPGE preparatory classes to join one of the network's seven prestigious schools. In a bid to attract the very best students, irrespective of background, ParisTech is updating the flyer advertising the various post-baccalaureate admission routes into the network's schools. The aim is to attract candidates from a wider range of academic backgrounds and thus help the schools diversify their student communities.

INTERNATIONAL

100%

As in previous years, ParisTech submitted dozens of applications to the China Scholarship Council (CSC), all of which have been accepted: around 10 for engineering students ([9+9 program](#)) and around thirty for PhD candidates. The [ParisTech/CSC PhD program](#) in particular, which is run by the ParisTech Office in Asia, has shown itself to be a first-rate, reliable program. The award of the scholarships constitutes international recognition of the excellence of the ParisTech laboratories and the importance of engineering schools within France's research landscape. Chinese students may [apply for the PhD program](#) between 16 October and 10 December 2023.



This summer (3–7 July) saw a team from AgroParisTech, Chimie ParisTech – PSL, the École des Ponts ParisTech and Mines Paris – PSL [travel to Nairobi in Kenya](#) for the official launch of the partnership between the University of Nairobi, ParisTech, and CentraleSupélec/ Université Paris-Saclay. The French delegation and partners from the various faculties were welcomed by the President of the university and His Excellency Arnaud Suquet, Ambassador of France to Kenya. Over the first three days, the group discussed the five pillars of the partnership (governance, university-corporate relations, research, innovation, internationalization), set up Franco-Kenyan tandems, and identified areas for further reflection and action. On the last two days the schools met with lecturers and researchers working in the same scientific field. Much was discussed and learned on both sides! Moreover, ParisTech has once again been awarded an [Erasmus+ International Credit Mobility Grant](#), which will be added to funding from the French Development Agency (AFD) to fund two-way exchange programs for staff, and study programs for Kenyan students wishing to study engineering in France (exchange semesters, qualification programs, internships, etc.).

INTERNATIONAL ACTIONS

International Agreements

Renewal of the MoU (including for double degrees) with Shanghai Jiao Tong University (SJTU), China

Renewal of the Cooperation Agreement with the Federal University of Rio de Janeiro (UFRJ), Brazil

Signature of a Cooperation Agreement with the Federal University of Santa Catarina (UFSC), Brazil

Renewal of the Cooperation Agreement with the University of São Paulo (USP), Brazil

Renewal of the Double-Degree Agreement with the Federal University of Minas Gerais (UFMG), Brazil

International Missions

AgroParisTech, Chimie ParisTech – PSL, the École des Ponts ParisTech and Mines Paris – PSL travelled to Kenya as part of the partnership with the University of Nairobi 3–7 July 2023

Trip to Brazil (recruitment interviews) 16–20 October 2023

NEWS FROM THE SCHOOLS



AgroParisTech

AgroParisTech and the EBU Alliance – a European initiative aimed at boosting the bioeconomy

Last month, AgroParisTech's Dean and Executive Director, Laurent Buisson, and the school's international delegation attended the [European Bioeconomy Scientific Forum](#), held from 6–8 September in Vienna, Austria. The EBU Alliance, which AgroParisTech joined in 2019, has five other European members: the University of Hohenheim (Germany), Wageningen University & Research (The Netherlands), BOKU – the University of Natural Resources and Life Sciences of Vienna (Austria), UEF – the University of Eastern Finland, and the University of Bologna (Italy). All the member institutions cover the different fields of bioeconomy (primary agricultural and forest production, food, biotechnology, etc.). The alliance aims to bolster cooperation among member institutions in order to offer solutions to the challenges posed by the European bioeconomy.



Arts et Métiers

Taking steps to boost graduate numbers by 2030

Every year, 50,000 students graduate from engineering programs in France, but by 2027, double that number – 100,000 – will be needed.

With this in mind, Arts et Métiers aims to increase its student intake by 50% and thus help France meet its reindustrialization goals. The school's graduates will be among France's industrial leaders in 2030, driving innovation at sustainable companies, and founding and managing their own businesses. The school is taking several steps to increase its training capacity. This includes opening two new campuses (in Le Havre, France and Rabat, Morocco), forming partnerships with other institutions (ISTP-Irup, Essca), and seeking to attract new talent. [Find out more on the school's website.](#)



Chimie ParisTech – PSL

2023 Climate Day with researchers at Chimie ParisTech – PSL

For the second year in a row, Chimie ParisTech – PSL arranged a special Climate Day for all first-year students. The morning was dedicated to small-group Climate Fresk workshops followed by a conference entitled “The climate – and me?”, organized by French non-profit organization The Shifters. This looked at what each of us can do as individuals, and covered the fundamental science of climate change. In the afternoon, lecturers and researchers from the school led a round-table discussion focusing on research being carried out at Chimie ParisTech – PSL in relation to the ecological transition. The discussion covered energy, resources and the circular economy, and plastic pollution – all major research areas at the school. Staff explained their contribution to these three key challenges and how their work could help accelerate the transition to a greener, more inclusive future. All in all, the day was an original way for new engineering students to discover the green work being done in the school's laboratories.



École des Ponts ParisTech

“Sports & Science” event as part of France's annual Science Festival

Held on Saturday 14 October from 2–6 pm, this event was attended by researchers, PhD candidates and students from across the school. The program included workshops, exhibitions, demonstrations, performances, and guided tours. Many activities were centered around “Sport & Science” – the national theme for this year's festival and a major research topic at the École des Ponts ParisTech, as the school is a founding member of the Sciences 2024 program. The school also hosted a special event for school students the previous day. [Read more about the event here.](#)



Institut d'Optique

A new venue for the Photonics Forum

The Forum de la Photonique (Photonics Forum) brings together people working in all sectors and sub-fields of photonics, providing a place to share ideas and innovations. For students it's an opportunity to meet with professionals and find out about recruitment possibilities, including internships, jobs, and PhD positions. This year, the Photonics Forum is moving to a different, larger venue: the impressive iXcampus in Saint-Germain-en-Laye near Paris. The event is open to students from all the schools. Save the date – 30 November 2023! Find out more at www.forumdelaphotonique.fr

ParisTech, the major engineering schools network

The complementary nature of the areas of excellence of the various schools provides our students, researchers and partners (academic and corporate) with an exceptional consortium that offers unique transdisciplinary opportunities. ParisTech also has strong international teaching and research links via its many partnership agreements.

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