

AI-RDV
AI AND NUTRITION
PAGE 14

BESTHONEY

UTC committed to
sustainable beekeeping on
a European scale

Page 2

ZOOMING IN ON

PhD research activities
promoting UTC's research
outreach in 180 seconds

Page 10



utc
Université de Technologie
Compiègne

AUGUST 2026 ### N° 69
Original in French at <http://interactions.utc.fr>

Donnons un sens à l'innovation

Interactions

DOSSIER PAGE 5

Research activities with multiple partnerships

YOU HAVE THE FLOOR... PAGE 15

UTC AND THE CETIM ARE PREPARING

TOMORROW'S TECHNOLOGY-INTENSIVE CHANGES

Scan this QR code
to access the
interactive version





FROM THE
PRESIDENT'S DESK

The major transitions we are currently undergoing – whether health-related, environmental, industrial or digital – remind us every day just how closely interlinked the challenges now facing our Societies are. None can be tackled alone. They all call for new approaches, where disciplines engage dialogues and where technologies draw on life sciences, humanities and the needs expressed by Society at large. It is precisely this overarching ambition that is reflected in this issue of Interactions.

The research carried out at UTC-Compiègne illustrates this ability to develop solutions lying at the interface of several fields. Whether the process involves developing a digital twin of the face to improve patient care, designing new treatments to fight Crohn's disease, gaining a better understanding of exposure to micropollutants, preserving natural resources, supporting more resilient agriculture, or reducing harmful particle emissions from car braking, a common thread emerges: putting science at the service of useful, responsible and innovations that have real impacts.

This approach relies above all on the complementary nature of our expertise. UTC's laboratories work with academic partners, research organisations, businesses, local authorities and international partners. This ability to bring together the expertise needed to tackle complex issues is one of the strengths of the UTC model.

This commitment to sharing knowledge is also evident in the other topics highlighted in this issue. The 'Food, Nutrition and Health' conferences and the AI Meetings demonstrate our commitment to making research accessible to as many people as possible. The success of our PhD students in the 'My Thesis in 180 Seconds' competition, meanwhile, illustrates just how scientific excellence today goes hand in hand with the ability to explain, communicate and engage with Society.

Finally, European projects such as Best HONEY serve as a reminder that the challenges we are addressing extend far beyond national borders and that international cooperation is an essential driving force for generating knowledge and training the engineers of tomorrow.

To educate, to carry out research, to innovate, but also to share and to take action : all of this combined is UTC's ambition. An ambition that comes into its own when research makes a tangible contribution to improving health, preserving the environment, supporting industrial transformation and informing the choices our Society makes.

Claire Rossi,
Director of UTC

INTERNATIONAL MEETING

BestHONEY : UTC committed to sustainable beekeeping at the European level

The 5th international meeting of the bestHONEY project was held in Compiègne from April 8 to 10, 2026. The goal of this Erasmus+ initiative is to improve hygiene, packaging and production standards for high-quality honey at the European level.

UTC has joined the European Erasmus+ project bestHONEY – Bringing Hygiene, Packaging, and Production Requirements to the EU Level for the Best Honey. This two-year project, launched in April 2025, aims at harmonizing beekeeping training practices across Europe by developing innovative, multilingual digital modules accessible to all. Hosted at UTC, this fifth meeting brought together several European partners: in Italy, the Azienda Sanitaria Provinciale di Agrigento and the Centro Internazionale di Altistudi Agronomici Mediterranee; in Spain, the Departament d'Agricultura, Ramaderia, Pesca i Alimentació, coordinated by the Provincial Directorate of Agriculture and Forestry of Eskişehir in Turkey. On the UTC side, the project involves a team from the Department of Biological Engineering, including faculty members professors Claire Rossi, Lynda Boufenar, Aude Cordin, Mirian Kubo and Franck Merlier, working closely with UTC's International Relations Directorate.

Two field visits in the Oise region...

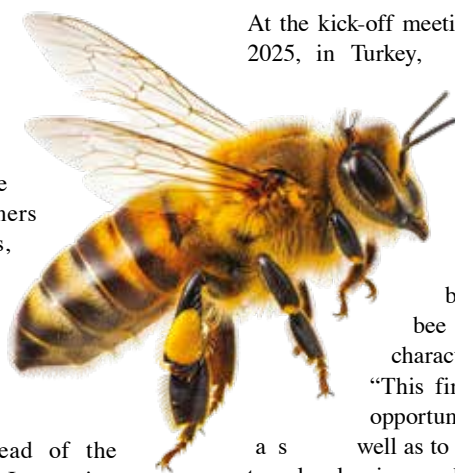
“Over the course of these three days, the partners reviewed project progress, discussed upcoming activities and shared their expertise on improving hygiene, packaging, and production standards in the beekeeping sector,” explains Mirian Kubo, head of the Agro-Resource Food Innovation programme at UTC. As part of the meeting's programme, two field visits were organized in the Oise department. “On the first day, we visited the beekeeping operation in Vieux-Moulin, Le Miel de Damaris. The next day, we visited the beekeeping operation in Ménévillers, L'Abeille Clément.” These visits

“We are delighted to be involved in this meaningful project, which places beekeeping at the heart of European challenges related to sustainability, quality and innovation”.

allowed participants not only to see the hives up close but also to learn about beekeeping practices in France and to exchange ideas and experiences.

... and in Turkey

At the kick-off meeting in Eskişehir, April 16–18, 2025, in Turkey, UTC was represented by Aude Cordin and Mirian Kubo. They shared their expertise during two scientific presentations on the following topics: “Nutrient control and nutrition in beekeeping” by Aude Cordin and “Local bee breeds in France and their characteristics” by Mirian Kubo. “This first meeting also provided an opportunity to exchange best practices, as well as to take field trips, such as a visit to a local apiary and a honey processing facility. We are delighted to be involved in this meaningful project, which places beekeeping at the heart of European challenges related to sustainability, quality and innovation. Also worth noting is the ongoing development of free training modules in five languages, designed for all professionals in the beekeeping sector.” ■ **KD**





INTERDISCIPLINARITY

Promoting interdisciplinarity

After two years of development, four Interdisciplinary Research Centres (CRIs) were established in April 2026. This represents a flagship project of the Research Directorate for the coming years.

Faced with the growing complexity of contemporary challenges and the issues surrounding environmental, digital and societal transitions, UTC, through the CRIs. These CRIs will focus on four main themes: Artificial Intelligence (AI) and Technology Intensive Systems; Living well – ageing well; Decarbonisation of Society and systems; and finally, Resource management (water, air, soils).

The first theme is managed by Pedro Castillo (UTC-Heudiasyc), Fady Mohareb (UTC-GEC) and Florian de Vuyst (UTC-BMBI); the second is managed by Cécile Legallais (UTC-BMBI), Mirian Kubo (UTC-GEC) and Maxime Hachette (UTC-Avenues); the third by Berk Celik (Avenues) and Erwan Guénin (TIMR); and finally the last theme is under the responsibility of Nadia Bousseta (UTC-TIMR) and Hani Al-Hajjar (UTC-Roberval). “Having several thematic coordinators with different backgrounds is very much in line with the aim of strengthening interdisciplinarity. All UTC research staff are welcome to join them to exchange ideas or work on these themes. We are convinced that it is through the convergence of knowledge, methods and perspectives that the most innovative and sustainable solutions to the challenges of the contemporary world are developed,” says Frédéric Lamarque, UTC’s Director of Research.

What is the role of the CRI coordinators? “It is twofold. On the one hand, their role is to provide scientific guidance for collective reflection and to develop a community of research scientists and engineers interested in a theme related to a given CRI. For instance, when we talk about AI, this resonates with both the ‘Living Well and Ageing Well’ CRI—through AI and health—and the ‘Resource Management’ CRI—with predictive AI, for example. Furthermore, they play a structuring role in that they must ensure that the sharing of research themes is effective and that there is genuine co-development of interdisciplinary research projects which could prove eligible for new calls for proposals, including the one due to begin in early November and close in January 2027. “Following the assessment phase for the various projects, we will be able to inform the successful applicants which projects have been funded so that the PhD students can be enrolled at the Doctoral School,” explains Frédéric Lamarque.

Three TWIN (Theses With INterdisciplinarity) projects, arising from the first call for proposals, have already been launched as part of the ‘TWIN



We are convinced that it is through the convergence of knowledge, methods and perspectives that the most innovative and sustainable solutions to the challenges of the contemporary world are developed

2026’ interdisciplinary programme, with six theses to be produced.

The first project, coordinated by Franck Merlier from UTC-GEC and Selma Baati from UTC-Avenues, is entitled ‘Monitoring PFAS (so-called forever chemicals): linking analytical innovation and public policy’. One PhD thesis is devoted to the “development of artificial intelligence agents for analytical prediction and the automated identification of emerging contaminants using LCHRMS”, whilst the second focuses on “the production and use of environmental and health data in the context of territorial governance.

The case of the Oise river basin’. This project lies at the intersection of three CRIs, as it addresses the themes of resource management, artificial intelligence and decarbonisation.

The second project, AMPIRE from the ‘Living Well and Ageing Well’ CRI, coordinated by Khalil Ben Mansour of the UTC-BMBI laboratory and Malek Habak at UTC-Roberval, focuses on ‘Quantified analysis of instrumented prosthetic gait: towards personalised, connected and field-transferable rehabilitation’. The first PhD thesis is dedicated to the study of ‘biomarkers of fluidity for the personalised optimisation of prosthetic walking’, whilst the second focuses on ‘the integration of sensors into lower-limb prostheses: design, reliability and comfort of use’.

Finally, the last project, DASVIDANIA, as part of the CRI ‘Artificial Intelligence and Technology Intensive Systems’ research centre, coordinated by Jean-Daniel Chazot at UTC-Roberval and Jossué Carino Escobar at UTC’s Heudiasyc laboratory, is entitled: ‘Autonomous acoustic surveillance and detection drone powered by artificial intelligence’. The first topic is dedicated to the study of a ‘robust adaptive control system for a drone using an AI-based disturbance compensation approach’. The second project concerns ‘the optimisation of a drone-mounted microphone array for tracking an acoustic target, and noise reduction in acoustic measurements under flow conditions’.



JACQUES CARLIER, EMERITUS PROFESSOR AT UTC, NAMED KNIGHT OF THE FRENCH LEGION OF HONOUR

On March 10, 2026, Jacques Carlier, emeritus professor at the UTC-Heudiasyc laboratory, received the insignia of Knight of the French Legion of Honour from Philippe Baptiste, Minister of Higher Education, Research and Space, during a ceremony in Paris. A leading figure in operations research, Prof. Jacques Carlier has dedicated his career to the study of scheduling—a key field in computer science and optimization—and has influenced several generations of researchers and engineers through his scientific contributions and his commitment to research-based education. The ceremony provided an opportunity to reflect on a beautiful symbol of the passing of the torch: In 1998, Jacques Carlier supervised Philippe Baptiste's CIFRE thesis and the minister who presented him with the award was that very same Philippe Baptiste. Our heartfelt congratulations on this well-deserved recognition!

FEEL GOOD WEEK : A TRUE MOMENT OF RELAXATION BEFORE REVIEW SESSIONS AND FINALS

Feel Good Week, organized by the Office of Student Life and the Preventive

Medicine Service, in collaboration with the Office of International Relations and partner Sunrise, lived up to its promise by offering students and doctoral candidates a chance to take a

break, look after themselves and discover new practices that promote their well-being before studying and finals. Over the course of five days, from June 1 - 5, 2026, nearly 160 students took advantage of genuine opportunities to disconnect or reconnect with themselves through the various workshops offered: animal-assisted therapy, plant-based crafts, musical naps, meditation, cooking workshops, singing, apitherapy, stretching, dance, colouring, unusual international sports, making stress balls, head massage and riding smoothie bikes.

DELEGATION FROM PARANÁ (BRAZIL) : A SEMINAR ON THE VALIDATION OF PRIOR LEARNING

From June 8 to 10, UTC hosted an official delegation from the state of Paraná (Brazil) for a seminar on the validation of prior learning (VAE). This institutional visit builds on a 40-year partnership between UTC and higher education institutions in Paraná. Fourteen academic leaders were in attendance: vice presidents for academic affairs from the universities UENP, UNICENTRO, UNIOESTE, UEM, UEP and UNESPAR; heads of research councils; the president of the State Council for Education; and representatives from the Chamber of Higher Education and the Araucária Foundation. Over the course of two days, participants familiarized themselves with the French regulatory framework, discussed support for candidates, observed a VAE evaluation panel, and met with graduates and industry representatives. This meeting strengthened ties between the institutions and opened up new avenues for academic cooperation. It also fostered a shared discussion on the recognition of skills, lifelong learning, and the role of universities in career paths. ■ PS



Furthermore, for UTC, strengthening interdisciplinary research through these CRIs is a way of setting itself apart from other institutions. “Indeed, we wish to make this a hallmark of the university. We began with research. Why? We are a key player in the Sorbonne University Alliance, which established interdisciplinary Institutes and Initiatives in 2019; our CRIs will now serve as a springboard for us to join them. We have, however, broken new ground by setting up dual-thesis projects, in that each thesis will focus on a specific disciplinary aspect, whilst at the same time drawing on the work of the other. The aim is to foster dialogue between two PhD students and their supervisory teams on a given subject, using two different approaches,” he explains.

What are the objectives of the CRIs? “We are pursuing a twofold objective. The first can be illustrated by TWIN, where we are not following a model of two side-by-side theses, but rather one in which the data from one thesis will be used by the other – not necessarily because the latter is an expert in that field, but to advance its own subject using reliable data. In short, we want PhD students to be more open-minded by the time they complete their theses, having frequently and closely engaged with work done in another discipline. The second objective – though this is a gamble – is that this will create a multiplier effect,” he explains.

This gamble appears to have paid off well, since the Hauts-de-France Region has co-funded four of the first six theses. “As for future projects, we have also decided to be more proactive in seeking European funding over the coming years,” adds Frédéric Lamarque.



FRÉDÉRIC LAMARQUE

UTC has no intention to limit an interdisciplinarity approach to research and intends to build on this momentum and incorporate it into its teaching programmes as well. “We are going to extend this interdisciplinary dimension to the delivery of educational projects spanning several semesters, which will address transition-related issues in general, covering topics involving different perspectives such as ‘Technology, Science and the Humanities’ approaches, those of ‘Engineering Sciences’, or even those of experts in the environment or health, for example. This will raise the level of awareness amongst students – engineering students in particular – in regard to research-related themes, whilst also training them in interdisciplinarity per se, which, in my view, has a more methodological dimension. We want to train engineers with a broad perspective because it is at the intersection of knowledge, methods and perspectives that the most innovative and sustainable solutions are developed,” concludes Frédéric Lamarque. ■ MSD

We have, however, broken new ground by setting up dual-thesis projects, in that each thesis will focus on a specific disciplinary aspect, whilst at the same time drawing on the work of the other. The aim is to foster dialogue between two PhD students and their supervisory teams on a given subject, using two different approaches



Research activities with *multiple* *partnerships*

Led by UTC, the PREDIT4FACE project involves, within the University Jules Verne, Amiens, the UTC-BMBI and UTC-Roberval, as well as the CHIMERE (UPJV-CHU Amiens, INSERM), LaMcube (Institut Centrale, Lille, CNRS) and LATIM (IMT Atlantique, INSERM) laboratories. The same applies to E-BIOCARB, which has received €15 million in funding and involves no less than eleven academic partners and research organisations, including UTC-TIMR. At UTC-GEC, the 'Squale' project – which aims to replace squalene derived from shark liver with squalene from amaranth – and the 'PaCha' IRP – the assigned objective of which is to develop a climate-resilient variety of rice – are being carried out in partnership with INRAE for the former, the Montpellier Institute of Plant Sciences (IPSiM) and the Vietnamese Academy of Science and Technology (VAST) for the latter. Finally, this is also the case for the D-Brake project at UTC-TIMR. This project, dedicated to improving air quality by reducing braking particle emissions, involves CETIM, INERIS and the company Mann+Hummel.

PREDIT4FACE, *a predictive digital twin* *mimicking facial expressions*

University professor and emeritus director of research (2017-2023), Marie-Christine Ho Ba Tho specializes in the development of personalized models of the musculoskeletal system at UTC-BMBI. She leads the PREDIT4FACE project, one of sixteen winners of the PEPR Santé Numérique de France 2030 call for proposals, assigned a total budget of 24.5 Meuros.

Scheduled to run for four years, PREDIT4FACE has a budget of 1.59 Meuros and aims to develop a multi-scale predictive digital twin of the face. This ambitious project brings together, within a consortium of five partners, four of which are located in the Hauts-de-France region: Professor Stéphanie Dakpe, a maxillofacial surgeon affiliated with CHIMERE (UPJV-CHU Amiens, Inserm); Professor Tien Tuan Dao, a UTC alumnus (BMBI), who has joined the UMR LaMcube (Centrale Lille Institut, CNRS); Professor Valérie Burdin of Latim (IMT Atlantique, Inserm); Roberval (UTC) with Professor Alain Rassineux, a specialist in complex meshing techniques; and Mohamed Rachik, an associate professor specializing in nonlinear

behaviour modelling; and finally the BMBI, which includes, in addition to Marie-Christine Ho Ba Tho, Olfa Trabelsi, an associate professor specializing in the characterization and multiscale modelling of soft living tissues. This consortium brings together a variety of complementary areas of expertise.

To develop a digital twin of the face, models must be customized both geometrically and in terms of mechanical properties. Various tools for modelling, meshing, medical imaging and artificial intelligence, as well as clinical expertise, are required. "Thus, using medical images, we develop a virtual 3D model in which we reconstruct the face's geometry through segmentation. Next,





we ‘mesh’ the face using finite elements to run simulations. For this work, we rely in particular on the expertise of our Roberval colleagues, a long-standing collaboration,” explains Marie-Christine Ho Ba Tho.

As pioneers in patient-specific modelling, the researcher and her team aim, through PREDIT4FACE, to better understand, model and rehabilitate facial expression. “So far, we’ve tried to understand the role of the twenty or so muscles involved in facial expressions. We’ve simulated the muscles used to smile, or those activated during certain pronunciations such as the ‘O’ or ‘Pou.’ We’ve also developed a tool to monitor functional rehabilitation exercises.

With the PREDIT4FACE project, we want to take this a step further. Our main goal is to develop predictive, multi-scale digital twins capable of modelling, simulating, and predicting facial expressions.” These models will incorporate the morphological and mechanical properties of the muscles and soft tissues of the face at different scales for each patient. “For each patient, we will extract their imaging data and combine it with our knowledge of biomechanics to model the behaviour of each patient’s face specifically,” she explains.

This project involves another major challenge. “Rapid model reconstruction is a huge challenge. To achieve this, part of the team is currently working

on automating segmentation, while another part is focusing on automatic meshing. Furthermore, the interaction between the patient and their digital twin must occur in real time. Specifically, this will involve capturing data and performing rapid reconstruction so that, when the patient makes a facial expression, the digital twin interacts with the movement and simulates what the patient is doing. This predictive digital twin will also help us optimally plan functional rehabilitation. It will allow us to develop differentiated scenarios and, for each patient, define the optimal movements for facial expressions,” she emphasizes.

This requires a large number of innovative methodological developments in modelling, finite element coupling, reinforcement learning models and model reduction. Today, the proof of concept has been established. “Also as part of the PREDIT4FACE project, DeepFaceX—a startup currently being established by Professor Tien Tuan Dao—has developed software called iTwin4Face, designed for the rapid reconstruction and real-time analysis of facial models,” she adds.

Marie-Christine Ho Ba Tho is also leading - in collaboration with Professor Tien Tuan Dao - the SCAR_FACE project (Simulation and Personalized Mechanical Characterization of the FACE), a project selected following the call for pre-maturation projects issued by the Sorbonne University Alliance’s university innovation cluster.



“The goal is to develop a digital tool capable of visualizing the personalized mechanical properties of facial skin in vivo and in real time. This tool will build on doctoral thesis work conducted at BMBI on the mechanical properties of skin (Tran Viet, 2005; Ang Xiao Fan, 2016) and on the digital twin of the face (T. N. Nguyen, 2021). It was the work of the latter—who also won the Guy-Dénielou Thesis Prize in 2021—that led to the creation of DeepFaceX,” concludes Marie-Christine Ho Ba Tho. ■ MSD

EBIOCARB : sustainable hybrid fuels

Khashayar Saleh and Mikel Leturia, respectively tenured Professor and a Senior Lecturer, are based in the Department of Process Engineering and the UTC-TIMR laboratory. The former is also Director of the research unit. As specialists in powders, they are jointly leading the UTC’s participation in the EBIOCARB PEPR, financially supported by ‘France 2030’ to the tune of 15 million euros.

Coordinated by the CEA via the APED¹, EBIOCARB is scheduled to run for nearly six years and involves a consortium of 11 partners, including the Institut Supérieur de l’Aéronautique et de l’Espace [aeronautics and space], Université Paris Cité, the CEA, INRAE and IFPEN, the latter being responsible for overall scientific leadership. The aim of the PEPR ‘Sustainable Hybrid Fuels: E-Biofuels’ is to replace fossil fuels with bio-based and renewable alternatives.

What is the UTC’s role in this consortium? “Building on the Phobars project funded by the ANR [French national research funding agency], we are focusing on the pneumatic conveying of powders derived from unconventional solids such as biomass, intended to feed the reactors. One of the challenges we face is ensuring a consistent feed to the reactors,” explains Khashayar Saleh.

This challenge stems from the very nature of biomass. “Indeed, the particles are often fibrous, elongated and tend to become entangled. These

properties mean that conventional design rules, established for more regular particles, need to be adapted to these biomasses. Among other things,



this involves understanding these phenomena in order to optimise flow patterns. To achieve this, we combine a pilot-scale experimental approach with a numerical simulation approach,” explains Mikel Leturia.

What are some of the practical applications of EBIOCARB? “Essentially, it involves developing e-biofuels for the aviation and maritime sectors – sectors where electrification is difficult. In the approach under investigation, the gasification of biomass (agricultural and forestry residues) produces a synthesis gas containing, in particular, carbon monoxide and hydrogen, which can then be converted into fuels. Why e-biofuels? The ‘E’ refers to low-carbon electricity, which enables additional hydrogen to be produced through the electrolysis of water. This additional supply of hydrogen makes it possible to convert a greater proportion of the carbon from the biomass into fuel. It is this combination of biomass and electricity that gives



them the name ‘hybrid fuels’, or ‘e-biofuels’,” explains Mikel Leturia.

Another avenue being explored, again in the field of energy, is the co-electrolysis of CO₂ and water to produce syngas, which will supplement the synthesis gas produced from biogenic resources. “The aim is to reduce greenhouse gas emissions compared with fossil fuels,” explains Khashayar Saleh.

The production process begins with the preparation of the biomass, followed by its gasification, which results in the production of synthesis gas. It is after gasification that the process known as Fischer-Tropsch comes into play. “This process uses a catalyst to convert the mixture of carbon monoxide (CO) and hydrogen (H₂) into hydrocarbons. The addition of extra hydrogen – derived from water

electrolysis, for example – would increase the yield and overall efficiency of the process. We face, however, a twofold challenge: the variability of inputs depending on their source and the seasons, and fluctuations in the availability of low-carbon electricity, depending on the sources utilised,” says Mikel Leturia.

Compared with natural gas, syngas production involves complex processes. “However, the attractiveness of syngas lies in its versatility, as a wide range of products can be manufactured from synthetic gas and its composition varies depending on the intended application. The programme focuses on the entire value chain, from biomass – how to transport it? how to process it? – right through to the final product. Namely, the type of biofuel required. If, for example, we wish to

produce methanol, we must adjust the proportions of hydrogen, carbon monoxide and carbon dioxide. This raises the question of which biomass source to prioritise for producing syngas that enables the optimal production of various biofuels. This production takes place in biorefineries – refineries like any others, but adapted to work with bio-resources. This presents a number of challenges: cost, safety, impurities, variability in the resource ...”, emphasises Khashayar Saleh.

Is there evidence of the importance of the UTC’s role and its involvement in research-based training? The funding, as part of EBIOCARB, of one PhD thesis out of the 23 included in the PEPR, in close collaboration with two postdoctoral researchers at IFPEN. ■ MSD

¹ <https://www.agence-aped.fr/pepr/pepr-ebiocarb/>

D-Brake : Improving Air Quality

Martin Morgeneyer, a tenured research scientist working at UTC in the UTC-TIMR laboratory as part of the “Environmental Protection in Chemical Engineering” team, also holds a Jean Monnet Chair from the European Union aimed at raising awareness in regard to environmental issues among the public and future engineers. Specializing in particle systems, he has led, in partnership with the CETIM, Ineris and the company Mann+Hummel, the D-Brake project, which aims to reduce braking-related emissions into the air. The brake pad manufacturer Mat Friction of Noyon later joined the project.



MARTIN MORGENEYER

The European Union has launched the implementation of the European Green Deal, a set of directives dedicated to protecting the environment and, ultimately, improving the well-being and health of Europeans, including the “Air” Directive, which came into force on December 10, 2024, and addresses air quality. This directive is based very strictly on scientific evidence.

According to the WHO, pollution is responsible for 6.7 million premature or preventable deaths worldwide each year, including nearly 40 000 in France. However, among the main causes of this pollution are particulate matter—and more specifically, fine particulate matter emitted when vehicles brake, as well as from the friction of tyres running over asphalt. With a rare sense of foresight, UTC, CETIM, Ineris and the Stellantis Group have

taken on this challenge. “As early as late 2021—well before the ‘Air’ Directive— we launched the ‘CleanBrake’ thesis project, dedicated to developing a device capable of characterizing particle emissions from braking systems in a rapid, efficient, and accurate manner through the implementation of a measurement chain,” states Martin Morgeneyer.

This led to conclusive results that enabled us—while still working with the same academic partners, now joined by the filter manufacturer Mann+Hummel in Laval—to continue our research thanks to funding from ADEME. “Another manufacturer joined us along the way: the brake pad manufacturer Mat Friction, based in Noyon. This company has fully embraced the environmental and technological challenges of automotive braking. This partnership allowed us—as coordinator of the ADEME project and a CIFRE thesis in collaboration with Mat Friction—to thoroughly explore not only the needs but also capitalize on the capabilities of the various stakeholders. For the CIFRE thesis, we utilized the measurement chain to conduct a parametric study and determine the optimal composition of the brake pads and rotors of the future,” he explains.

Today, Martin Morgeneyer’s team has demonstrated that braking emissions can be reduced by 19%, 84%, or even 97%, estimated the associated emission factors, and identified specific tracers for braking emissions. “In a braking system, there will always be friction. However, we tested different materials for both brake pads and rotors to determine the

composition that would provide the greatest reduction in emissions. To do this, we brought together the expertise of each partner—namely, the tribologists and friction specialists from CETIM, the aerosol physicists from Ineris and our own process expertise,” Martin Morgeneyer.

The results are of undeniable scientific interest, as they have been the subject of numerous publications in academic journals—including the **Journal of Tribology**, **Environments**, and **Atmosphere**—as well as in technology-focused publications. “In fact, we have developed material formulations for both brake pads and pad-rotor combinations that have reduced particulate emissions by more than 90 percent. “This is a success for research, but also for industry, since Mat Friction is taking over for the industrialization phase,” he notes.

Martin Morgeneyer and his partners do not intend to stop there. Two projects are currently underway. “The first, which we can call ‘D-Brake+’, is funded by the Hauts-de-France region and aims to accelerate the industrialization of the braking systems of the future. The second, MIPLEXMO, focuses on the other major source of particulate emissions: tyre-to-road friction from vehicles. Funded by ADEME and involving, in addition to UTC, ENPC, INERIS, and two startups (OBERON and SOPAT), MIPLEXMO aims to better characterize the dispersion of microplastic particles by improving the measurement of these particles in the air,” concludes Martin Morgeneyer. ■ MSD



MIPs for the treatment of Crohn's disease

Claudia Herrera León, a contract faculty member since 2025, specializes in molecular imprinting and, more specifically, in molecularly imprinted polymers (MIPs) within the Enzymatic and Cellular Engineering (UTC-GEC) laboratory. Currently, her research focuses on the development of anti-TNF- α MIPs for the oral treatment of Crohn's disease.



© Popsy Images

After completing her PhD at UPJV in Amiens, she joined UTC as a postdoc in 2022. As part of a project funded by Sanofi, she developed MIPs designed to neutralize tumour necrosis factor alpha (TNF- α).

"Molecular imprinting is a molecular-scale

moulding technique that allows for the creation of recognition sites specific to a target molecule within a polymer, resulting in what are known as molecularly imprinted polymers (MIPs). These materials have an affinity comparable to that of antibodies; this is why they are also called 'synthetic antibodies. For my part, my work focuses primarily on therapeutic and diagnostic applications," she explains.

Since 2026, thanks to the "Young Researchers" programme from the research department, she has been tackling Crohn's disease, an inflammatory bowel disease (IBD) that can affect one or more segments of the digestive tract. This condition, driven by genetic and environmental factors as well as immune system dysfunction, primarily affects young people between the ages of 20 and 30. Its prevalence is steadily rising; for example, between 2015 and 2023, the average annual growth rate of patients covered by social security was 3.37%.

"TNF- α is naturally secreted by the body in response to inflammation. Our goal, using

MIPs, is to block the overproduction of TNF- α , which causes inflammation. This is particularly important since this molecule is involved in a large number of inflammatory diseases. Currently, existing treatments for Crohn's disease, based on monoclonal antibodies, are not only expensive but can only be administered intravenously. This is because monoclonal antibodies are too fragile and can be denatured by the acidic pH and degraded by digestive enzymes. Our goal is aim to use MIPs - which are more physically and chemically stable - to develop an alternative treatment that can be administered orally."

The first step will be to study the behaviour of MIPs in artificial gastric environments, viz., those recreated in the laboratory - to verify whether they can withstand this highly acidic pH environment. Ultimately, the goal will be to "assess whether oral administration of MIPs will allow for the capture of TNF- α in the intestines," concludes Claudia Herrera León, who hopes to establish a sufficiently robust proof of concept to enable the development of industrial partnerships. ■ MSD

Amaranth squalene : a substitute for shark liver oil

Adrian Troncoso-Ponce, an associate professor at UTC, specializes in the study of plant metabolism. He is also the head of sustainable development and the coordinator for the "sustainable engineering" label within the UTC-GEC laboratory. He is currently working on the "Squale" project, funded by INRAE since 2025.

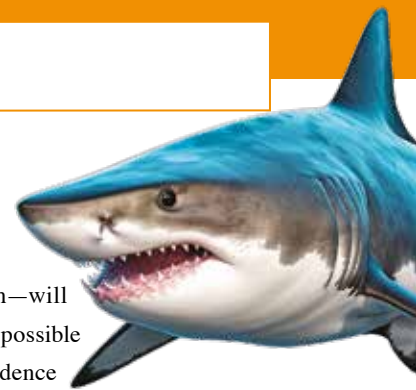
After working at INRAE, Adrian Troncoso-Ponce joined UTC. He quickly became interested in the issue of squalene, a lipid extracted from shark liver. This lipid, which occurs naturally in the skin's sebum, plays an important antioxidant role. As a result,

the cosmetics industry is a major consumer.

It is also used in dietary supplements and as an adjuvant in certain vaccines. This led Adrian Troncoso-Ponce to conduct research aimed at

finding a plant-based alternative to reduce the reliance on overfishing of sharks. "The INRAE research team has





developed a large number of plant lines, including amaranth lines—a plant that produces squalene in much greater quantities than other plants. For the ‘Squale’ project, INRAE provided us with amaranth seeds; our role is to understand the ‘why’ behind this high squalene production in amaranth. To do this, we will extract the squalene plant substitute from each seed to determine, among these lines, which one produces the most

and which the least and to identify the genes involved in the production and accumulation of these metabolites,” he explains.

The gene expression results for this varying squalene production across the different lines will then be transferred to INRAE’s Department of Applied Biology. “The large-scale production of plant-derived squalene—in this specific case,

from amaranth—will ultimately make it possible to reduce our dependence on, or better yet, our use of, lipids derived from shark liver, as well as avoid the use of transgenic techniques,” concludes Adrian Troncoso-Ponce. ■ MSD

PaCha : Improving Resistance and Yield in Rice Cultivation

As a CNRS research fellow at the GEC, Éric Ruelland specializes in plant signalling, in particular, lipids—that is, the synthesis of small lipid molecules that play a signalling role. He is currently working on the CNRS’s PaCha IRP (International Resource Project), conducted in collaboration with the Vietnamese Academy of Science and Technology (VAST), notably the Institute of Biology (IB) and the Hanoi University of Science and Technology (USTH).



When a plant is subjected to various environmental stresses, it synthesizes small molecules—particularly lipids—that act within the cells to trigger an appropriate response.

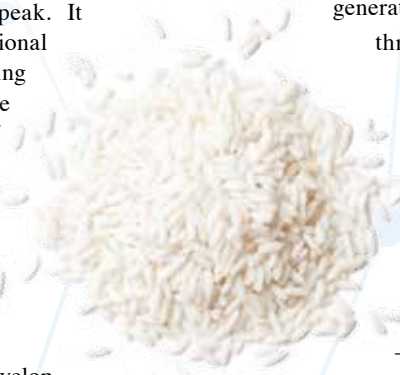
Given the foreseeable consequences of climate change on agriculture—such as water stress or, conversely, flooding—and rising food demand, ensuring global food security has become a major challenge of our time. Hence the need to develop sustainable agricultural practices to mitigate the effects of climate change while increasing crop productivity. The IRP PaCha was launched by the CNRS and VAST to address this challenge for rice cultivation in Vietnam. The project draws on diverse areas of expertise, including plant sciences, agricultural techniques, and biotechnology.

Among the laboratories involved in the PaCha project are, in addition to the GEC at UTC, the Montpellier Institute of Plant Sciences (IPSiM), and, in Vietnam, the IB and the USTH.

How did this five-year project, launched in 2026, come to be? “The IPSiM in Montpellier has long-standing collaborations with Vietnam. As for UTC-GEC, contacts were established following a postdoctoral fellowship completed by Huong To Thi Mai, a Vietnamese researcher, under the supervision of Brigitte Thomasset. Impressed by the skills and expertise developed within the laboratory, she wanted us to continue working together once she returned to her home country. “The IRP PaCha came at just the right time, so to speak. It provided the ideal institutional framework for continuing the collaboration while ensuring the mobility of researchers from one site to the other. For my part, I would particularly like us to be able to supervise joint doctoral theses,” says Éric Ruelland.

The IRP PaCha aims to develop plant genomics approaches to address the challenges posed by the effects of climate change on agriculture - and specifically, in the case of Vietnam, on rice cultivation—and to ensure its sustainability.

What is the role of each partner? “Our Vietnamese colleagues in the field will subject the rice plants to various stresses, particularly water stress. UTC-GEC will contribute its expertise in data analysis. Initially, this will involve analysing the data provided by our colleagues using two approaches. The first concerns the metabolomic response—i.e., to the set of metabolites synthesized by the plant in response to a particular type of stress. The second, the lipidomic response, gives us an overview of the lipids produced depending on the nature of the stress experienced. We will then compare the “control” condition with the “stress” condition, with the goal of using certain mutants generated by our colleagues in the field through gene editing and selecting the most resilient ones. For my part, I am particularly interested in the phospholipase D (PLD) gene family. The objective is to analyse PLD lines - enzymes that synthesize phosphatidic acid, a signalling lipid and to identify which ones are most - or least - resistant to various stresses. As for the IPSiM team, they are working on the ability of rice plants to absorb minerals and on grain filling. The goal is to select varieties with optimal yield,” concludes Éric Ruelland. ■ MSD





DOCTORAL RESEARCH

Showcasing UTC in 180 seconds

Bastien Lahetjuzan, Sorosh Samiei and Marie Crémillieu won awards at the Alliance Sorbonne Université finals of the 2026 edition of the “My Thesis in 180 Seconds” (MT180) competition. Another way to discover the full richness of doctoral research at UTC.

Three UTC doctoral students distinguished themselves at the Alliance Sorbonne Université finals of the “My Thesis in 180 Seconds” competition, winning three awards in different categories. Bastien Lahetjuzan received the First Prize from the jury, earning him first place. Sorosh Samiei received the Third Prize from the jury, and Marie Crémillieu won the High School Students’ Prize. The MT180 competition is an exercise in science communication in which doctoral students present their research topic in exactly 3 minutes. It is a major challenge that requires scientific rigour, teaching skills and the ability to explain complex concepts in layman’s terms. This year, the Alliance Sorbonne Université finals featured a wide variety of topics, ranging from philosophy to chemistry, including linguistics, neuroscience, and biology. “It provides a way to make research accessible to the general public, so you have to summarize what you’re doing in three minutes - 180 seconds. It really has to be accessible to a general audience—you have to explain the issue, but without getting too bogged down in details, using words that everyone can understand. I think this is a truly interesting exercise for doctoral students. It forces them to take a step back from their topic, put themselves in the listeners’ shoes, and try to explain what their work is all about,” emphasizes Christine Prelle, director of the doctoral school.

Promoting the dissemination of knowledge to the general public

Marie Crémillieu enrolled at UTC in the general studies programme after earning a science-focused high school diploma, before continuing on to the elective specialty Process Engineering programme. She also completed a Master’s



“It makes them take a step back from their subject, put themselves in the listeners’ shoes, and try to explain what their work is all about.”

degree in Formulated Products Engineering before beginning her dissertation at the UTC-TIMR laboratory. She hopes to pursue a career as a researcher in industry, while maintaining a focus on education and science outreach in her work. Between organizing “Pint of Science”, a local edition of the world’s largest science festival, a conference and her thesis work, she looks back with us on her MT180 adventure. “I’m very passionate about science outreach to the general public. I had already participated in the Nuits de la Recherche and the Fête de la Science, where I was able to present my research to UTC students, schoolchildren of all ages, as well as residents and families in Compiègne. Participating in the MT180 competition was therefore a natural extension of this approach: bringing science out of the laboratories and making it accessible to as many people as possible, beyond the local level.” After passing the initial selection round, she competed in the Sorbonne University Alliance’s local final on March 19. The High School Students’ Prize she received allowed her to compete in the Paris regional final, which took place on April 9.

Training Sessions and Stage Presence

The Sorbonne Université Doctoral College prepared the candidates through several training sessions with a coach specializing in public



speaking, who has been working with them for several years. But the preparation didn’t stop there: the advice and discussions with the other participants were very stimulating as they worked on their angles of presentation. “Until the first final, I practiced mostly on my own, then in front of my thesis advisor. I wanted to keep it a surprise for my family, friends, and colleagues who came to watch the Sorbonne University final so they could see my presentation live on stage. Then, for the regional final, most of the work was done, but there were still details to fine-tune: certain words, pauses, body language... Right up until the night before, I was still improving my script! We also had to adapt our stage presence to the technical conditions.” Her topic? 3D printing of stimutable functionalized biomaterials. “I was particularly drawn to this thesis topic because of its multidisciplinary nature. It draws on expertise in formulation and chemistry to develop the gel I’m printing, in processes and mechanics to optimize 3D printing - an innovative technology - as well as in biology for the ultimate biomedical application of my biomaterial.”

“I was struck by the richness and diversity of the research”

For Sorosh Samiei, a doctoral student in bioprocess engineering, it all began during his capstone internship at L’Oréal, where he participated in an internal version of the competition titled “My Project in 180 Seconds,” presenting his internship project to the company’s advanced research community. “The exercise turned out to be much more rewarding than I had anticipated. It allowed me to build some valuable connections and to appreciate the power of science communication



The Sorbonne University doctoral college prepared the candidates through several training sessions with a coach, a specialist in public speaking, who has been working with them for several years.

for the general public. That's when I decided that, as soon as I started my PhD, I would embark on the real adventure." Sorosh made it a point to practice every evening at the office, once his colleagues had left, rehearsing with a stopwatch, identifying passages that lost momentum, choosing where to insert pauses, and refining every word. This meticulous practice gave him, on the big day, a precious freedom: the freedom to be fully present for the audience rather than absorbed in his own

notes. "The two finals—the one at the Sorbonne University Alliance, followed by the one for the Paris region, were memorable experiences. As I discovered the other candidates' projects at the same time as the audience, I was struck by the richness and diversity of the research being conducted today. The stress, however, was very real. But once on stage, everything picks up speed in the best possible way. A brief interaction with the host creates an initial connection even before the 180 seconds begin. Then time flies by at a dizzying pace. What I was looking for above all else was a connection with the audience: having them for three minutes is both a short and a long time. Both times, I had the satisfaction of seeing their eyes locked on to me, hearing laughter at just the right moments and receiving applause that was worth more than any award."

Talking About biogas and sustainable aviation fuel

Sorosh Samiei works on anaerobic digestion, the process that converts biowaste into biogas. His thesis is part of a European project (Interreg OBIWAN) that takes this ambition even further: converting this biogas into sustainable aviation fuel. To achieve this, biogas production must be stable, both in terms of flow rate and composition. However, the feedstock entering the process is subject to significant seasonal and regional variations. His work specifically focuses on managing these irregularities by combining numerical modelling, experimentation and control systems. "I began my studies in pharmacy at the University of Medical Sciences in Tehran, before going on to earn a bachelor's degree in life sciences at the University of Lorraine, followed by a Master's degree in Biomedical Engineering and Bioproduction at the University of Montpellier. I am currently in my first year of PhD studies at UTC, at the intersection of biology and process

engineering. I am deeply passionate about research and development - not as an end in itself, but as a catalyst for transformation. I am convinced that scientific work is only truly accomplished when it leaves the laboratory to generate products that improve daily life and create value in the real economy. It is in this space, between innovation and its implementation, that I want to forge my path." ■ KD

**3 000 PHDS HAVE GRADUATED
FROM THE UTC DOCTORAL SCHOOL
SINCE 1985**

The University of Technology of Compiègne has devoted a significant portion of its activities to training in and through research—that is, to the doctoral programme. As early as 1985, when the state doctorate was abolished and the unified doctorate was created, UTC established its own doctoral school, even though there was not yet a standardized framework at the national level. "Based on an idea by Dominique Barthez, a professor at UTC, the creation of this structure aimed to define a comprehensive postgraduate training policy and to foster collaboration among UTC's various research teams on its technological research agenda, which is inherently multidisciplinary. The purpose of this doctoral school was to manage student recruitment and monitoring, harmonize course programmes across UTC's various specializations UTC, and to offer shared cross-disciplinary courses to provide students with a solid scientific foundation," explains Christine Prelle, director of the UTC doctoral school. Since 1985, the doctoral school has awarded PhD degrees to approximately 3 000 doctoral graduates. Today, it supports multidisciplinary—and even interdisciplinary—technological research more than ever, recruiting doctoral candidates from 11 research laboratories. All are funded for at least three years and can pursue their doctorates in various settings.



GENDER PARITY / EQUALITY

Equality Month Spotlights Women in Science

'Equality Month', held from March 9 to 26, 2026 featured a rich programme dedicated to promoting equality between women and men and combating discrimination.



At the initiative of Professor Marie-Hélène Abel, working at the Heudiasyc laboratory and UTC's Equality Officer, 'Equality Month' kicked off on March 9 with a roundtable discussion bringing together female researchers from the CNRS and UTC. Workshops and lectures were also offered, focusing on the concept of equality in the broadest sense to raise awareness of everyday discrimination. The roundtable discussion titled "Women in Science" highlighted several inspiring scientists, including Isabelle Claude, an associate professor at the UTC-BMBI laboratory. "The work of a scientist is extremely varied; the subject matter can appeal to any young woman interested in this field. And you're never bored, because we're researching, proving things and exploring new avenues—innovation makes every day different and exciting." For Louise Le Barbenchon, a research fellow at the CNRS, her participation in the roundtable was also a given: "I enjoyed science in middle school. In high school, that interest

solidified. When it came time to choose a path, I opted for advanced math and specialized science courses. At engineering school, I discovered the field of materials mechanics. I think we all have what it takes to do what I do today. You just have to keep your options open."

Raising the Profile of Women in Science

Stéphanie Barbez, head of the communications and science outreach department at the CNRS's Hauts-de-France delegation and recipient of the 2025 CNRS Crystal Medal, also shared her story and presented the exhibition she initiated. "The exhibition, *La Science taille XX Elles*, has been running for several years at the CNRS and through the *Femmes et Sciences* association. The idea is to highlight women from all scientific fields and at all levels—from laboratory technicians to research directors, including engineers." Miraine Dávila Felipe, an associate professor at UTC's Compiègne Laboratory of Applied Mathematics since 2019, is one of the women in science featured in this exhibition. After earning a Bachelor's degree in mathematics in Cuba, she arrived in France in 2010 on a Master's degree scholarship to École Polytechnique. She then completed a doctoral dissertation at Sorbonne University and a post- at the Institut Pasteur before joining UTC. "We women often tend toward self-censorship.

So I wouldn't have spontaneously thought that my journey was inspiring. But when I take a step back, I've accomplished a number of things that might seem difficult for younger people to achieve. In that sense, my journey can make these young people's dreams more realistic and more attainable. It won't always be easy, but you have to persevere and give yourself the means to succeed."

A Challenge Worth Taking On

Claire Dupont is a CNRS engineer specializing in scientific computing at UTC's Biomechanics and Bioengineering Laboratory. She, too, agreed to be featured in this exhibition, which will be presented in March 2027 during Equality Month. She hopes to break down stereotypes, inspire young girls to pursue careers in science, and show that women have a place in scientific fields and that they can find happiness and build fulfilling careers there. "It was a challenge because I'm usually behind the camera rather than in front of it. The photo session will remain a wonderful memory. This exhibition allowed me to meet the ambassadors, Stéphanie Barbez and the DR18 communications team, Vincent Moncorgé, the photographer, Sophie Barreau from the Femmes et Sciences association, Sophie Blitman, the journalist who wrote our profiles, and - I'm sure - to reach out to young girls in middle and high schools." ■ **KD**

Middle School Students Meet the Women Leading Research Today

Among the highlights of Equality Month, one day was dedicated to secondary school students from Ressons-sur-Matz and Nogent-sur-Oise.

On March 19, 2026, 4e and 3e secondary school students were accompanied by Indira Thouvenin and Domitile Lourdeaux, research scientists at the Heudiasyc laboratory and were able to benefit from an introduction to computer science and virtual reality. The morning began with a tour of the centre's facilities: prototyping, motion science, and the digital hall. The students then attended a lecture by Florence Sedes, a professor and researcher in computer science at IRIT and a specialist in data science, a presentation that provided a concrete look at what a career in research entails. The afternoon was devoted to discussions with three UTC faculty researchers: Anne-Virginie Salsac (UTC-BMBI

laboratory), Mirian Kubo (UTC-GEC) and Indira Thouvenin (UTC-Heudiasyc).

Building Confidence

"We're working at the grassroots level to try to build girls' confidence in science and help them discover all the possibilities. We had prepared questions in class to better understand not only the work of women scientists but also their impressive career paths," says Damien Leban, a physics teacher at Collège de la Vallée du Matz. "We were also very impressed by the facilities

at UTC. Knowing that at our French universities, just a few kilometers from the school, our students might one day have access to degree programmes and training where the resources are available - that was a very positive first impression. Finally, as a citizen, father, and teacher, I recognize the importance of encouraging young people to embrace the sciences, at a time when, due to social media and misinformation, only sciences provide the truth." ■ **KD**



Valem sculpts living matter during 'Equality Month'

The Royallieu Library hosted Valem's works alongside creations made by participants in the modelling workshop held on March 17 and 19, 2026.



Valem, aka Valérie Moreau, is a sculptor and instructor. She is also an engineer and served as a faculty member and researcher at UTC from 2008 to 2022; she herself is a UTC graduate. She naturally jumped at the chance to lead the modelling workshop offered during Equality Month. "We had two two-hour workshop sessions. I broadened the theme of this workshop a bit to discuss 'Women AND Science' with a dozen registered women—students and staff members from UTC. Their works conveyed a great deal of emotion, poetry, and conviction—it was both gentle

and powerful," Valem says happily. "I discovered sculpture while I was still in school. I knew right away that this was where I belonged. I was good at drawing, and that's why I decided to go to UTC—because it had a design programme."

Sculpting the Living

Valem sculpts living matter—humans, animals, and, since 2023, plants. "In fact, now all my creations blend the three forms of life: human,

animal, and plant. My sculptures speak to the bonds that connect living beings and the necessity of those bonds," explains the artist, who exhibits throughout France and also performs in unique live shows. It's a sort of theatrical piece during which she sculpts, combining artistic gesture with discourse and the emotion that goes along with it. Valem sculpts on stage while drawing on disciplines such as philosophy, economics, and ecological sciences... ■ **KD**

Find all the videos from the 2026 Equality Month events on the UTC YouTube channel :



TEDx UTC

UTC's TEDx Talks inspire reflection

A TEDx Talks conference took place in a UTC lecture hall on March 28, 2026 on the theme "Exploring Your Time." It was an afternoon of talks featuring six speakers, each speaking for 20 minutes about our current world.

Members of the TEDxUTC association were delighted to welcome six speakers to the TEDx Talks event in late March. "We took over this association in September. The goal was to show students new ways of thinking and new perspectives on the world through the journeys and experiences of people from outside UTC. TEDx talks make this possible. We invite speakers from outside the UTC system who can inspire engineering students—who need to understand the many facets of the world in order to make the right decisions in the future," explains Alix Amanton, president of TEDxUTC. Among the speakers was Claire Blondel, an engineer by training, who began her career in the industry before joining Decathlon, where she developed a strong

background in management and innovation. In 2007, she left her position to move to Japan: an experience that marked the beginning of a remarkable international journey. Joris Bossard is a New Space expert and member of 313Signature LLC; he is also a science communicator and coordinator of events related to space and science.

Environment and Society

A Nikon photographer and creator with a unique perspective, Yohan Terraza explores the world and the visual image. His work stands out for its sensitive and atmospheric approach to imagery. Elsa Da Costa is the executive director of Ashoka France,

an NGO dedicated to the public good and to social and environmental entrepreneurship. In January 2026, she published the book *To Our Valiant Hearts: A Manifesto for a Culture of Engagement. Stéphanie Drouhin has turned her attention to early childhood sector. In particular, she has been involved in language development for children between 3 months and 3 years of age through the "Parler bambin" project. She returned to school to become a healthcare manager. During her Master's programme, she and her entire class conducted in-depth research on students' sexual health. Finally, Timothée Duverlie is the co-founder of Ehope, an organization that places ecology at the heart of civic priorities. ■ **KD**

THE AI RENDEZVOUS

AI and Human Nutrition on the “menu” for the AI Meetups

From formulation to processes: AI as a driver of innovation - was the theme of the fourth edition of the AI Rendezvous, held on March 27 at the UTC Daniel Thomas Innovation Centre. Numerous speakers explored the transformative role of artificial intelligence in the fields of human nutrition and health.

Several experts gathered at UTC in late March for a new repeat of the AI Rendezvous, organized as part of the SAFE AI Chair led by Prof. Sébastien Destercke, with support from the UTC Foundation for Innovation and the SUNRISE Alliance. All participants highlighted how AI is revolutionizing formulation and processes, from knowledge engineering and data science to automation, computer vision and intelligent decision support systems. This fourth edition brought together leading experts from academia and industry to examine concrete applications of AI within food systems and industrial innovation. The discussions highlighted the integration of AI throughout the whole value chain, contributing to safer, higher-quality food, personalized healthcare solutions and, consequently, enhanced well-being. The day's programme included plenary sessions in English as well as a high-level roundtable discussion on how AI is transforming professional practices in formulation and process development. These discussions brought together academic and industrial expertise, highlighting concrete applications and future prospects for professional skills and practices. Dedicated networking sessions also fostered exchanges among researchers, industry leaders, and innovation stakeholders.

Addressing Food Safety Challenges

Among the international experts was George Ioannis Nychas, emeritus professor at the Agricultural University of Athens, Greece and distinguished professor at Shandong Agricultural University in China. He is currently a member of the Hellenic National Authority for Higher Education (HAHE), Vice-President of the Hellenic Academy of Agriculture, Chair holder of the “Food Safety” working group of the European technology platform “Food for Life,” and ‘alternate’ stand-in member of the EFSA (European Food Safety Authority) Management Board. His presentation



focused on the evolution of the food industry, from laboratory results to the humanization of bots. For his part, Professor Fady Mohareb is internationally recognized at the intersection of bioinformatics, genomics and genetics, food quality and safety, advanced artificial intelligence methodologies and food sciences. He has extensive experience leading and managing national and international research programmes that integrate genomics, rapid detection technologies and data-driven modelling to address challenges related to food quality, authenticity and nutritional safety. “My work bridges the gap between fundamental molecular research and applied AI solutions, enabling real-time monitoring, predictive analytics and digital traceability within agro-food systems. Drawing on more than twenty years of academic leadership, I have developed interdisciplinary collaborations between academia, industry and technology partners to transform innovative research into scalable platforms and high-impact outcomes.”

Examples at CNIEL and L'Oréal

Fanny Tenenhaus-Aziza is the Director of Data and Statistics at CNIEL. Since 2020,

she has been leading the data management strategy for the French dairy sector, addressing issues related to regulation, interoperability, standardization, data quality, and governance, while promoting evidence-based decision-making. During her presentation “Data and AI: Their Contribution to Dairy Product Safety,” she emphasized the special attention that must be given to data quality, data governance, and data science skills. “Special attention must also be paid to the transparency of AI models and accountability for the results obtained through AI.” For his part, Giovanni Palma, head of artificial intelligence and computer vision within L'Oréal's Research and Innovation division, leads a specialized team dedicated to the applying of deep learning and advanced computational methods to cosmetic formulation and augmented beauty. “My work aims to leverage AI to accelerate innovation and predict product performance.” Patrice Buche, a research engineer at INRAE since 2002, works primarily on integrating data and knowledge from heterogeneous sources, on the design of multi-criteria and multi-stakeholder decision-support systems based on structured and semi-structured databases, with applied projects in the field of food and bio-based product engineering. ■ KD



Preparing for Tomorrow's Technological Advances

For CETIM, CREM is part of a long-term strategy: that of a collaborative research model that has been developing for nearly 60 years with the goal of continuously bridging the gap between academic research and industrial needs. An in-depth look with CETIM's Director of Research, Philippe Lubineau.

“It represents both continuity - our 11th joint laboratory - and a significant milestone, because it comes at a pivotal moment - one marked by profound transformations driven by electromobility in mobile equipment and powertrain components. With CREM, we aim to reach a new milestone: accelerating the translation of scientific findings into concrete solutions for manufacturers. The challenge is both to overcome scientific barriers and to reduce the technological uncertainties that still hinder certain innovations,” explains Philippe Lubineau, a mechanical engineer and UTC graduate who currently serves as director of research and programmes at the CETIM. His career path has allowed him to combine research and consulting roles in the field of control circuit safety, managerial responsibilities, international standardization activities and, above all, to work with numerous companies in the mechanical engineering sector, among others. His goals are very clear: to generate high-level knowledge, but above all to quickly translate it into models, testing methods, and demonstrators that are useful for our applied research projects and, ultimately, for mechanical engineering companies.

A Strong Collaboration with UTC

The collaboration between the CETIM and UTC is rooted in a particularly strong history. It dates back to the early days of UTC and has developed gradually - first on an ad hoc basis, then through increasingly structured joint projects—culminating in an initial framework agreement in 2008, which has since been renewed, notably in 2025. “Over time, we have developed a shared vision: that of collaborative research that goes beyond the mere



production of knowledge to transform it into value for industry. UTC brings academic excellence and the ability to explore complex scientific issues, while CETIM brings its close ties to industry and its ability to transform this work into operational solutions.” CETIM’s mission is to serve as a technology accelerator for industry. Its role is to deliver the best in research while translating it into concrete solutions for companies: engineering, innovation and support.

The high level of scientific and industrial expertise

“We focus in particular on helping manufacturers anticipate changes - whether technological, energy-

related, or environmental - and remain competitive in a rapidly changing landscape. “Essentially, our mission is to bridge the gap between science and industry, with a strong focus on impact.” The Roberval Laboratory at UTC provides high-level scientific expertise, particularly in multiphysical approaches. CETIM develops the capacity to integrate this knowledge into industrial environments, apply it through applied research, and facilitate its transfer to companies. The laboratory is designed to operate through integrated cooperation, sharing resources, platforms and team members. “This allows us to cover the entire chain, from a detailed understanding of phenomena to the development of concrete solutions.” ■ KD



3 QUESTIONS FOR...



SAMUEL VEILLERETTE,
SAMUEL VEILLERETTE,
DIRECTOR OF SOCIO-
ECONOMIC PARTNERSHIPS
AND ENTREPRENEURSHIP
AT UTC

What does UTC expect from a laboratory like this?

For UTC, CREM is first and foremost a strategic lever to strengthen the continuum between academic research, experimentation, and industrial transfer. Electromobility today poses complex challenges, that cannot be addressed by a single discipline: we must integrate mechanics, thermodynamics, electromagnetism, vibro-acoustics, modelling, testing, and system integration. The goal is therefore to make CREM a place where the scientific expertise of UTC's Roberval Laboratory can directly address the needs of industry. It is also a matter of education. By working on real-world industrial challenges, CREM will help train engineers, doctoral students, and researchers capable of tackling electromechanical systems in all their complexity.

What do you think of the partnership with the CETIM in this context?

The partnership with CETIM is particularly relevant because it is based on a long-standing and highly formative complementarity. UTC brings its scientific expertise, experimental platforms, modelling capabilities, and interdisciplinary culture. CETIM, for its part, brings its close ties to industry, its in-depth understanding of the needs of mechanical engineering companies, its technological resources, and its expertise in technology transfer to industry. CREM is built precisely on this synergy: starting with concrete industrial problems, addressing them with a high degree of scientific rigor, and then translating them into methods, tools, or demonstrators that companies can use. This is what gives the joint laboratory its full value.

What joint projects have already been carried out?

CREM isn't starting from scratch. It builds on a long history of cooperation between UTC and CETIM. The two partners have already worked together within the framework of Latim, and later through the Institute of Mechatronics, which combined training, research, and technology transfer. Joint initiatives have also been carried out in the fields of electrical engineering, hydraulics, mechatronics, vibro-acoustics and power systems. More recently, several demonstrators and technology projects have illustrated this ability to bring together laboratories, platforms, and industrial partners. Notable examples include work related to the Hydraulics and Mechatronics Chair, as well as demonstration projects such as the development of a hydraulically powered drone and electro-hydraulic systems. ■ **KD**

JOINT LABORATORY

Accelerating Innovation in Electromobility

UTC is launching the CREM joint laboratory with the CETIM to accelerate innovation in the field of electromobility and address the multiphysical challenges that are profoundly transforming the mechanical engineering industries. This complementary partnership targets the off-road sector, the rail industry, mechanical equipment, industrial machinery and, more broadly, all sectors committed to decarbonizing their systems.



CLAIRE ROSSI, DIRECTOR OF UTC, AND DANIEL RICHET, EXECUTIVE DIRECTOR OF CETIM

CREM, an acronym for CETIM-Roberval for Electromobility, brings together the scientific strengths and expertise of UTC's Roberval Laboratory and those of the CETIM research centre at the interface with industry. It provides industry partners with a high-level scientific tool to support them as they navigate the profound transformations of low-carbon mobility. "The Roberval Laboratory's trajectory is based on building an ecosystem of long-term industrial partnerships, closely aligned with its scientific ambitions. CREM marks a new stage in this strategy and is the fourth joint laboratory created with a trusted industrial partner," explains Marion Risbet, director of UTC-Roberval. CREM will enable progress on the multiphysical challenges related to electric mobility, provide deeper insight into the vibro-acoustic and psychoacoustic issues of electric vehicles—which are essential for comfort, perception, and the overall performance of mechatronic systems—and accelerate the development of models, testing methods, digital tools, and demonstrators that meet the needs of industry, particularly in the off-road, automotive, rail and mechanical equipment sectors. The laboratory operates through integrated cooperation, drawing on the platforms, expertise, human resources, and equipment of both partners.

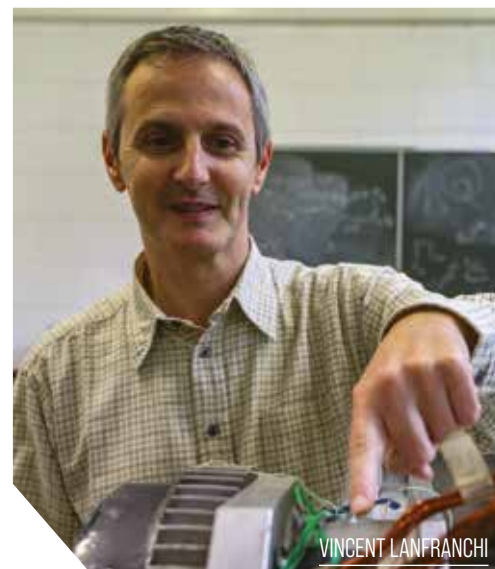
CREM also contributes to the implementation of research results as part of the e-Mobility R&D programme led by CETIM to develop innovation and technology transfer capabilities for the benefit of manufacturers. CETIM plays a key role here as an interface with these sectors, while UTC provides research, analysis and training capabilities.

Bringing together scientific, experimental, and technological expertise

UTC expects this laboratory to produce models, testing methods, digital tools, and demonstrators capable of reducing the technological uncertainties associated with the electrification of systems. For Prof. Claire Rossi, Director and Vice-Chancellor of UTC, this joint laboratory is truly the result of the strategic and long-standing collaboration between UTC and CETIM. "It illustrates the strength of the synergy between UTC's academic research and the CETIM's operational expertise. By combining our platforms, teams, and expertise, we are strengthening our ability to address the technological challenges of electromobility and to

The laboratory operates through integrated cooperation, drawing on the platforms, expertise and the human and material resources of both partners.





THE CETIM-UTC RELATIONSHIP, UNE BELLE HISTOIRE



The first joint laboratory, Latim, was established in year 2000. Since then, numerous projects have followed: collaborations on material fatigue, European projects such as H2REF (hydrogen) and research conducted under the hydraulics chair established by the 2008 agreement, in partnership with Artema. This collaboration has also yielded very concrete results, such as demonstrators developed with students, for example: hydraulically powered drones, which clearly illustrate the link between research, education and innovation. To sum up, this partnership is built on a strong scientific foundation, with more than twenty doctoral theses and several postdoctoral fellowships undertaken since 2008, covering topics ranging from fatigue to acoustics, including manufacturing processes and eco-design. CREM serves to structure and expand upon this existing framework.

support manufacturers in their transformations. This integrated approach, which aligns research, innovation, and training closely with socio-economic needs, is deeply embedded in UTC's DNA. CREM is a concrete manifestation of this: accelerating technology transfer to industry while training the engineers and researchers who will drive future transitions.

The joint laboratory is co-led by Vincent Lanfranchi on behalf of UTC, who has more than 25 years of scientific experience in electromobility, having led numerous projects and industrial partnerships in this field, and Étienne Camus, the project manager in charge of implementing CETIM's e-Mobility R&D roadmap. This 11th joint laboratory further strengthens CETIM's collaborative research model, recognized as an essential driver of competitiveness and autonomy for French industrial companies.

Serving the mechanical engineering industries

CETIM, certified as a Carnot Institute since 2006, has been establishing joint laboratories for over 25 years, dedicated to scientific and technological innovation in support of mechanical engineering companies. "CREM is fully aligned with our 2024–2027 roadmap under the Objectives and Performance Agreement and will help overcome scientific barriers to foster innovation in the mechanical engineering industries. Research is a strategic investment that must be sustained over the long term. This new partnership with UTC strengthens a long-standing collaboration and enables us to anticipate changes, secure the necessary expertise, and transform scientific advances into value for the entire mechanical engineering sector" says Daniel Richet, CEO of CETIM. While UTC and CETIM are now taking their strategic partnership to a new level, the collaboration between the two organizations already has a long and fruitful history, starting with the founding of UTC. It started as a series of one-off projects but gradually evolved into an increasing number of joint initiatives over the years, culminating in 2008 with the first framework agreement, which was renewed in 2025. These projects have helped build a shared culture among the teams—a way of working based on experimentation, modelling, technology integration, and technology transfer to industry. CREM builds on this momentum by now focusing it on the major challenges of electromobility.

Concrete Prospects for Useful Solutions

The prospects are significant. CREM aims to accelerate the development of solutions for electromobility, particularly regarding key components and systems: batteries, inverters, motors, powertrain integration and the thermal, mechanical and vibro-acoustic behaviour of electrified systems. One of the key challenges will

be to better understand and control the interactions between these phenomena. In an electric vehicle or an electrified machine, performance does not depend on a single component but on the entire system. A modification to the motor can have thermal, mechanical, or acoustic effects; an integration constraint can alter overall performance. CREM aims to address these interactions holistically. For UTC, the perspective is both regional and industrial. The goal is to strengthen an innovation ecosystem in Compiègne and throughout the Hauts-de-France, in line with national and European energy transition needs. By combining research,

This new partnership with UTC strengthens a long-standing collaboration and enables us to anticipate changes, secure expertise, and transform scientific advances into value for the entire mechanical engineering sector.

training, platforms, and technology transfer, CREM aims to support companies in their design, redesign and decarbonization efforts. Ultimately, the goal is for CREM to become a recognized hub for manufacturers facing the challenges of electrification—a place where one can understand physical phenomena, test solutions, develop tools and prepare the technologies of tomorrow. This approach is fully in line with UTC's DNA: high-level research activities, open to practical applications, technologies and industrial transformations. ■ KD



INTER-SEMESTER EDUCATIONAL ACTIVITIES

Product optimization and upcycling : the API's guiding principle

Through its winter and summer Inter-semester Educational Activities (API), the University of Technology of Compiègne, in partnership with the Sorbonne University cluster, offers UTC students and international students from partner universities the opportunity to engage in original and innovative programmes that complement their academic curricula. Examples include the “Happy Sound” workshop held from January 19 to 23 and the International Winter School on Food Engineering, which ran two weeks, February 2-13, 2026.



Innovating in teaching methods, deepening and acquiring skills and knowledge in specific fields or technologies: the Intersemester Educational Activities (API) offer numerous benefits to the students who participate. Combining theory and practice, these international winter (and summer) schools, taught in English, “enable students to critically examine current practices and supplement their learning,” says Nicolas Dauchez, a professor at UTC and researcher with the Acoustics and Vibrations team at the university’s Roberval Laboratory. The ‘Happy Sound’ workshop on “upcycling portable speakers,” which he led from January 19 to 23, 2026 as part of the Erasmus+ SUSEE (Smaller Universities for Sustainability in Engineering Education), invited about fifteen students from the acoustics and design programmes to “modernize and design speakers using used and obsolete desktop speakers as part of an approach to sustainable engineering and the repurposing of technological products - an approach that is now an integral part of our curriculum.” For students in the acoustics programme, working on speakers was very interesting as it allowed them to understand the entire process - from design to manufacturing - and to take an existing concept and learn how to use it in a new way. “Since the launch of the ‘Happy Sound’ API in 2018, the challenges have multiplied: building speakers without using wood,

and conversely, wooden speakers in collaboration with the Saint-Quentin School of Applied Arts; designing and manufacturing speakers made of cellulose-based materials or tubes; designing subwoofer enclosures... It fosters healthy competition. We’re often pleasantly surprised by the resulting concept or design. In 2020, focusing on the sound of wood, we achieved some pretty amazing results—clean and very ‘polished’. The ultimate goal, within a relatively short timeframe, is to ensure everything works and to conduct comparative listening tests to evaluate the acoustic quality. “Every year, we set new performance, technical, and budgetary constraints,” continues Nicolas Dauchez. “This winter, the question arose regarding the portable drum set, which requires resources: Is the portable battery sustainable and long-lasting? Do we really need it? A visit to the Paprec factory, which specializes in recycling and waste treatment, helped us realize the consequences of consumption and the problematic future of batteries.”

Gastronomy, a holistic science

The same objectives were set for the 3rd edition of the Food Engineering International Winter School, which took place at UTC’s Daniel-Thomas Innovation Centre from February 2 to 13, 2026 “We offered projects combining food science and technology with French gastronomy,” explains Mirian Kubo, a faculty researcher and head of the Food and Agro-Resources Innovation (IAA) programme at UTC. The 16 students—about half of whom were enrolled in the Master’s programme in Nutrition, Quality and Health at Sorbonne University, with the other half from European universities in the SUNRISE Alliance, were tasked with developing innovative technological solutions to create healthier and more nutritious versions of world-famous culinary specialties such as beef Bourguignon, foie gras, tarte tropézienne, and gougères.” Over the course of ten days, which included theoretical classes, practical work and project workshops, the students developed food prototypes complete with specifications, nutritional value tables, ingredient lists, sensory profiles, label designs, and packaging proposals... “They study

the nutritional profiles and functional properties of ingredients, texturizing agents, the impact of additives and flavourings... But also the latest innovations for replacing fats, sugar, and gluten,” explains Mirian Kubo. “We aim to improve the nutritional quality of products by enriching them with protein and fibre. But we also seek to meet the needs of people with allergies, diabetics, or those with intolerances—such as those with celiac disease. We’re also addressing the needs of seniors and children, who require tailored nutrition as well.” In 2025, gluten-free gougères and vegan beef bourguignon were on the menu. The new products had to taste pleasant and similar, with the same texture and flavour... “These workshops always offer opportunities to learn, especially since international students bring cultural adaptations to the table,” adds the expert. “Last year, gnocchi made from stale bread were served with a traditional Portuguese sauce. It was a real culinary discovery.” The cooking workshop led by Ludovic Colpart, chef at the Auberge du Pont de Rethondes near Compiègne, the cultural tour of Pierrefonds and dinner at a gourmet restaurant, in addition, allowed students to expand and enrich their skills and techniques, as well as refine their knowledge. They experienced some true discoveries. ■ IL



UTC FOUNDATION FOR INNOVATION

A Fundraising Campaign to Support Elite Sports at UTC

The UTC Foundation for Innovation is launching a sponsorship campaign to support elite athletes at UTC. The goal is to fund several scholarships and provide long-term support for student-athletes pursuing a dual path of excellence.



UTC offers a specialized programme, UTC Sport Élite, which is one of the institution's four areas of excellence, alongside Musique Élite, Entrepreneuriat Élite and Assos Élite. This programme allows elite athletes to pursue their engineering studies under conditions adapted to their training and competition schedules. "As early as the 1970s, Robert Colcombet, one of UTC's founding fathers and a pioneer of intercollegiate sports at the institution, recognized the value of welcoming and supporting elite athletes in their engineering studies. Since then, many champions have studied at UTC, such as Tom Laperche, an offshore race skipper and university graduate," notes Arnaud Vannicatte, director of the sports department. "The unique feature of UTC's innovative educational model is that it optimally organizes the dual goals of our high-level student-athletes." For several years, the UTC Foundation for Innovation has been supporting students pursuing paths of excellence, whether they are entrepreneurs, musicians, or athletes. This new campaign aims to strengthen its support for student-athletes.

An initiative open to alumni and companies

The funds raised will be used to award scholarships designed to help cover expenses related to high-level sports: travel, training camps, competitions and athletic preparation. "The goal is to support our students' personal and professional aspirations. The programmes of excellence allow them to simultaneously pursue their engineering education and their personal goals, whether in entrepreneurship, music, or sports. This fundraising campaign is aimed at both companies and individuals, and especially at our alumni community and students' parents," explains Sylvie Lemonnier-Morel, Secretary General of the UTC Foundation for Innovation. To serve as the face of this campaign, the foundation has chosen Julien

Bahain as its patron. A 2011 UTC graduate in mechanical systems engineering and an Olympic medallist in rowing at the 2008 Beijing Olympics, he has committed to rallying the university's community of former elite athletes behind this initiative.

Paul Fortin has his sights set on the Los Angeles Olympic Games

A mechanical engineering student at UTC, Paul Fortin has been fencing since the age of 10 and has a clear ambition: to compete in the 2028 Los Angeles Olympic Games. Last May, he secured his first individual international podium finish at the Medellín Grand Prix in Colombia. "I defeated the reigning European



champion and lost by a narrow margin to the Paris 2024 Olympic champion in the semi-finals. This result allowed me to break into the world's top 50," explains the 23-year-old athlete. "At the end of July, I'll be competing in the World Championships in Hong Kong. The Olympic Games are obviously in the back of my mind." Olympic qualification will begin at the end of next season. "Given my progress, my age, and my room for improvement, I consider this a realistic goal." Although he rarely requests adjustments to his class schedule, Paul Fortin believes that fundraising could provide valuable assistance in covering travel expenses. "I train at INSEP in Vincennes (East Paris suburbs). I travel there twice a week from Compiègne. Travel costs are significant. This support seems reasonable to me, because when I'm competing, I'm also representing UTC. However, I would never ask the university to fund my sports equipment—that's more the responsibility of my club. Travel expenses, on the other hand, seem like a legitimate expense to me."

Mazarine Proux : Balancing engineering studies and Elite field hockey

A student in the core curriculum at UTC, 20-year-old Mazarine Proux has been playing field hockey since she was five. Every week, she makes several round trips between Compiègne and Lille to train with her club. "That's about four hours of driving

each week, plus weekend trips for practices and games. UTC has adjusted my schedule so that I don't have classes on Tuesday evenings or Wednesday mornings. That's already a significant support and a real benefit of the 'Pathway to Excellence' programme,"

explains the athlete, who plays for the Iris Hockey Lambersart club. An international youth category, she competed in two European Cups in the U18 and U21



categories. More recently, she took part in a World Cup qualifying campaign with the French senior team in Chile. Other major events await her, notably the 2026 Nations Cup in New Zealand and the European Cup in Salon-de-Provence. "Between petrol and motorway tolls for my trips to Lille, the expenses add up quickly. I'm lucky to have parents who can help me financially. Without their support, I probably wouldn't have been able to continue on this path. Many athletes don't have that option. This fundraiser can help them continue to fully pursue their passion and athletic goals." ■ **KD**

A SHOW-CASE OF MEDALS

FOR UTC'S ELITE PROGRAMME ATHLETES!

UTC's Elite athletes have proved brilliant on regional, national and international stages in recent months, reaffirming the university's sporting excellence. Tom Jeannot won the Île-de-France senior trail running championship on May 3, 2026. At the same time, Paul Fortin, a mechanical engineering student, brought home the Bronze Medal from the Grand Prix d'Épée Grand Prix in Medellín, Colombia (May 10, 2026). Mathieu Bruna, a process engineering student on a sports leave of absence, distinguished himself in fencing with a 24th-place finish at the national senior level, complemented by a 2nd place finish at the Satellite World Cup in Timișoara (Romania) and a 3rd-place finish at the National Senior Circuit in Paris. **Volleyball: A Prestigious Podium Finish for the Women's Team**

At the French University Championships in Strasbourg, the three UTC teams impressed and delighted spectators. The women's team claimed the title of French runner-up after a hard-fought final—an exceptional result! The men's team finished in 19th place and the mixed team in 23rd. In the 400-meter hurdles, the UTC Elite Sports athletes delivered magnificent performances. Laura Blanc became French runner-up, Nina Goujon set a personal best of 62' 44, while Julie Spy ranked 6th on the French all-time list for her category. These performances highlight the commitment of the Elite Sports athletes and the quality of the academic and athletic support UTC provides them. ■ **PS**



NACIM BENSAXHRIA

Balancing his two passions: engineering and event planning

Nacim Bensakhria, a 2022 UTC graduate majoring in computer engineering and specializing in data mining, founded the startup Apoly in 2024, combining his two passions: engineering and event planning.

After earning his high school diploma, Nacim Bensakhria didn't hesitate for long between enrolling in a preparatory class or seeking admission to UTC. What motivated his choice? "It was the freedom we had to choose courses, the variety and quality of the curriculum and the project-based activities that allow us to put everything you learn in theory into practice—which wasn't the philosophy of the preparatory classes."

It's also the richness it brings us, particularly in terms of interpersonal skills, by immersing us in the atmosphere of a class of nearly 400 students rather than a class of 30. Finally, it's the choice of courses, where we found ourselves alongside students from all kinds of backgrounds, especially in those dedicated to the humanities, such as economics, communication, and marketing," he says.

His years at UTC were, in his view, also very enriching thanks to the vibrancy of student life. The proof? The student society's motto: there's life after class. "So, starting in my first semester, I joined the Imaginarium Festival and then Décibels, the association handling sound and lighting for all events. That's where I discovered this world that appealed to me and observed the challenges inherent in these professions. I realized that there were management, planning and oversight issues involving both equipment and people. I then wondered how the major players in this sector handled things before realizing they weren't doing much better," he recounts.

He sees this observation as an opportunity that will allow him to combine his two passions in the future: engineering and event technology, although the health crisis affecting this sector—the first to shut down and the last to reopen—is calling its viability into question.

For his end-of-studies internship, he joined the R&D department at RIMES Technologies, a company specializing in financial data aggregation. He was drawn to the department's intimate size and the team's international makeup.

At the end of his internship, he returned to his idea of a startup dedicated to the events industry. "I benefited, during my senior year, from UTC's Elite Entrepreneurship

programme. Thanks to coaching from experienced faculty members, Véronique Misseri and Bruno Ramond, I was able to refine the idea, turn it into a product, and define the goals I was pursuing with this project. I also received financial support from the UTC Foundation for Innovation and guidance from the iTerra incubator and the Hauts-de-France Region (HDFID) to turn the project into a business. In particular, I completed a training programme that allowed me to acquire the skills necessary for running a business, such as financial engineering, communication, and sales techniques," he emphasizes.

That's how, in 2024, Nacim Bensakhria decided to launch Apoly. "After an initial R&D phase, TechOS—a portmanteau of 'technology' and 'operating system'—was born. It's a management and traceability solution

powered by IoT (chips) and AI, designed to free up professionals' time and reduce their mental load so they can focus on their core business, while optimizing the lifespan of expensive, constantly on-the-move equipment fleets. The application is modular and helps streamline time-consuming, tedious, and low-value-added tasks—whether in planning, inventory management, or maintenance—while ensuring the traceability of the equipment "making them interconnected," he explains.

At the same time, he continues to expand his network by providing technical direction and overall production management for events and concerts such as the Star Academy tour at the Zénith in Amiens (12 semi-trailers of equipment and more than 100 professionals mobilized in a single day) and the July 14 concert in Valenciennes featuring the artist Gims, which drew nearly 60 000 spectators.

This solution already has its first partner client: the Le Tigre performance venue and exhibition hall and is currently being implemented with larger clients such as the Zénith in Amiens and the Paris La Défense Arena (Europe's largest venue with 40 000 seats). ■ **MSD**

BIO EXPRESS

2022: Project launch and incubation

2024: Deeptech certification by BPI France

2025: First partner client



Interactions
interactions.utc.fr

Director of publication
Claire Rossi

Editor-in-chief
Odile Wachter

Editors
Kaltoume Dourouri
Ingrid Lemaire
Pauline Seban
Meriem Sidhoum Delahaye

Design/Realization
Dorothee Tombini-Prot
Antonella Vaudru

Assistant
Sonia Gabino

Translation by
Alan Rodney, BABEL TWO

UTC-CS 60319
60203 Compiègne Cedex
www.utc.fr



AGENDA

2ND BESTHONEY SEMINAR

Friday, October 23 2026
Centre d'Innovation UTC

www.utc.fr/seminaire-besthoney

GRADUATION CEREMONY

Saturday, November 21, 2026
Espace Jean-Legendre & centre de transfert - Compiègne

www.utc.fr

VIRTUAL OPEN DOORS UT GROUPE

Saturday, december 12 2026
On line

www.utc.fr

