

student support program

Impact Report
2020-2021

Dear Reader,

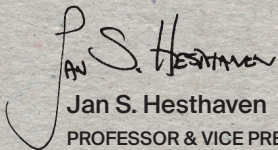
If you look up the word ‘talent’, you will no doubt come across various definitions that revolve around the idea of having a natural ability to excel in a particular subject. Skill, however, encompasses the notion that ability is obtained, developed, through practice.

The students that you are so generously supporting are indeed talented, but they are also skilled. Over the course of the past year, the beneficiaries of the Student Support Program have sharpened their natural abilities and acquired new competencies. Through practice, yes, but also through their dedication and determination. These traits of character have proven decisive in their capacity to weather the unpredictable storm that the ongoing Covid-19 pandemic represents.

The community of support that carries our students forward also has a fundamental role to play in encouraging them, and in ensuring that they reach their full potential, no matter the circumstance.

Thank you for being such an integral part of that community and thank you for your tremendous support.

Enjoy the read.

A handwritten signature in black ink, appearing to read 'Jan S. Hesthaven', with a stylized flourish at the end.

Jan S. Hesthaven

PROFESSOR & VICE PRESIDENT FOR ACADEMIC AFFAIRS

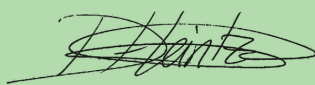
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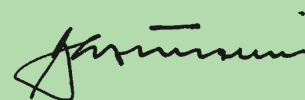
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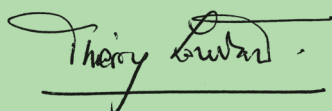
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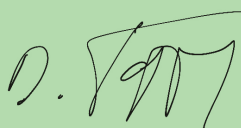
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Scho- lars

MARIA and DIEGO had several universities to choose from for their Master's degrees, but in the end they opted for EPFL and the joys of exploring Switzerland. These two bright minds were attracted by the campus' international environment, which is literally brimming with research labs and resources. They both believe they have made the best decision for their future. And thanks to their Excellence Scholarships under the Student Support Program, they are able to focus their boundless energy on their studies, as you will discover on the following pages.

Maria Vittoria

Basil Panzer Trust Excellence Scholarship

Italy, 22 years old

Master's in Electrical and electronic engineering



For Maria Vittoria, living in Switzerland and studying at EPFL would not have been possible without the Excellence Scholarship. Her experience at EPFL has been rewarding, giving her concrete skills and a promising future in electronic engineering.

When she was little, Maria Vittoria dreamed of becoming an airline pilot. “As I got older, I developed an interest in technology and digital innovation, and the many ways we connect with one another. This led me to study engineering,” says Maria, who is now in the second semester of her Master’s degree in electrical and electronic engineering. She earned her Bachelor’s from the Polytechnic of Turin during which she took part in an exchange program at Auburn University in Alabama. When she returned from the US, she was eager to continue her studies abroad: “I enjoy discovering new countries, and I wondered where I could go next in Europe. I was accepted at ETH Zurich, but I chose EPFL instead because the Excellence Scholarship allowed me to live in Switzerland, where the cost of living is high.” She doesn’t regret this decision, as EPFL has opened up a range of opportunities and provided her with valuable resources to help her get ahead in her field of expertise.

“When I first checked out EPFL, I was really struck by its atmosphere and its setting, surrounded by mountains and beside a beautiful lake,” says Maria. She was surprised by the number of green spaces on campus, but even more so by EPFL’s library, a stunning contemporary facility. Arriving in the middle of the pandemic, when campus life was very restricted, Maria missed being able to meet up with other students, talk about classes and make friends. “When you don’t have to attend class, you feel like you have more time to get things done. In reality, studying alone in your room all the time can be overwhelming for many students,” she says. “You might think it’s better to have a lot of time on your hands, but in the end it’s counterproductive, because you’re constantly putting things off until tomorrow.” But Maria managed to remain very disciplined, spending most of her time studying with music playing in the background: “I like contemporary music, pop and Indie, but my favorite band is still Coldplay.”

Maria is particularly grateful to her mother, who encouraged her to find her own path and develop her career. “My mother is a real source of inspiration. She went straight from high school into the work force, and now she heads up a small company.” Maria also greatly admires Marie Curie: “Curie’s major discoveries came at a time when women were still struggling to find their place in a world dominated by men.” As an up-and-coming scientist, Maria believes that women and men should have equal rights and opportunities. Her time at EPFL is helping her prepare for life’s challenges. Next semester, she will do her internship at IBM, working on data converters applied to quantum computing. “It is an opportunity to work alongside experts in a field that fascinates me,” says Maria, who is looking forward to the experience.

Maria is acutely aware of the challenges the world is facing, noting that “technology can lead to progress, but it is up to us to make sure that this progress is actually good for humanity.” When asked about her future, she is still undecided between a career in research or industry. “My internship should help clarify what I want to do later on,” she says. “It helps that we explore real-world issues at EPFL, which has powerful resources for this purpose.” Her semester project, which focuses on ways to optimize power consumption, is applicable to energy-intensive fields such as telephone technology and electric cars. How can we make them more powerful with the same amount of energy? How can we store and conserve this valuable energy? These are some of the questions on her mind. In addition to being talented, however, Maria never loses sight of her personal goal. “I know it may seem odd, but my most cherished dream is in fact to find joy in this world,” she says with a smile.

Diego Sandoval

Basil Panzer Trust Excellence Scholarship

Mexico, 24 years old

Master's in Materials science and engineering



As a child, Diego's dream was to become an inventor. He found his calling in research at MIT and decided to continue his studies at EPFL – a vibrant, unique school where theories become reality through practical application.

Driven by curiosity from a very young age, Diego met his first mentor in primary school. One of his teachers, a retired chemist, sparked his passion for science, and he went on to earn a Bachelor's degree in Monterrey, Mexico. A six-month exchange program at MIT convinced Diego that he was destined for the sciences. One of his professors there had wanted to apply knowledge of chemistry to the field of medicine: “Although people told him that he couldn't combine the two disciplines, he persisted and, after a time, his research was accepted and he was able to approach medicine from a molecular and chemistry standpoint.” Diego found this tenacity very inspiring. “In Boston, I realized how much I like research,” he says. It was also at MIT that he heard about EPFL from other students: “When you're from Mexico, you're usually flooded with information about American universities. But I listened to their advice and ended up coming to Lausanne to do my Master's degree in materials science and engineering.”

The international atmosphere on EPFL's campus is very stimulating for Diego, who was born in Sinaloa, a state in northwestern Mexico. He believes that EPFL is one of the best places to study science and technology, particularly because the courses are taught by leading researchers. When he started classes here in September 2020, Diego was intrigued by the work being done in laboratories, where concepts become reality. This practical approach allows him to apply the theories he learns in class. “This is the type of environment in which you can really thrive,” he says. “It makes a big difference.” Diego is doing his semester project in EPFL's Laboratory of Photonic Materials and Fiber Devices (FIMAP) under the guidance of Fabien Sorin. His project involves a micro-sized meta-lens in which

nanoscale glass structures direct light. This kind of lens could lead to the creation of more powerful microscopes or improve the efficiency of solar panels. The possibilities are vast, and Diego wants to investigate how this technology could produce a better system for converting energy. He sees this as a way to help the environment: “Our generation has to focus its time and expertise on making the world a better place,” explains Diego, who wants to be sure such new technologies are put to good use.

Diego lives in the Vortex, the student housing facility that boasts a particularly vibrant social life. He is a member of a mentoring program where EPFL students spend time together, share meals and talk about life. He has hosted dinners with other international students, and people he has met have become friends: “We’re all in the same boat – we may not all be heading in the same direction, but we’re all talking about the future.” Diego feels that he’s growing with, and alongside them. EPFL has provided him with a whole new set of experiences, enriched further by his travels throughout Switzerland. He has explored various regions and gotten to know the distinctive character of each season, which he finds quite exotic: “I’m discovering landscapes I’ve never seen before as well as snow and all of the associated vocabulary used to describe it.” He is very grateful for the Excellence Scholarship, which allows him to focus on his studies and professional projects, and he would like to go on to do a PhD at EPFL. “Being here gives us the opportunity to make a contribution to society through science. The impact of the work we do can, and should be of benefit to everyone,” says Diego, who is well aware of his good fortune and of the promising future that lies ahead.



Tu- tors

The first year of university can be a real challenge. At EPFL, first-year students can benefit from invaluable help from tutors in order to make it through this challenging year and begin pursuing their particular interests. University tutors play an essential role in this process, serving as a human link between classroom lectures and exercise sessions, where their explanations enable students to grasp complicated concepts. And it's extremely satisfying for tutors to see their students' faces light up in a Eureka! moment. However, the support that tutors provide goes beyond their teaching capabilities. These young women and men, having themselves endured the first-year exams, feel a great deal of compassion towards their peers. Through their kindness and concern – particularly important during the pandemic – they help keep students on track and moving forward. The stories and personalities of tutors PRAKRITI, ALIX, CLARENCE, LUCIE and FERDINAND are delightfully inspiring. Read on to find out how tutoring has been an enriching, transformative experience for them, and about their dreams and philosophies on life.



Prakriti Bhatia **Singapore, 23 years old** **Master's in Mathematics**

Inspired by her aunt, a researcher and teacher in the US, Prakriti is now following the same dream: to become a teacher and join a research group in mathematics, her favorite subject since she was a little girl.

Born in Singapore to Indian parents, Prakriti moved to Switzerland when she was three years old and now feels 100% Neuchâteloise. She enrolled at EPFL in 2015 for a Bachelor's degree in mathematics. During her first year, she received the support of a university tutor whose patience and explanations helped her make it through that pivotal year. She in turn became a tutor as soon as she could, helping some 450 students since 2017. As a gentle-natured person, Prakriti has grown into this role, becoming more authoritative while developing her teaching skills. "I need to think like my students, who might not see things the same way I do. Some students are very visual and need drawings to understand. But drawing is not my strong point. I have to learn to visualize problems so that I can help these students get their heads around them," she says.

Prakriti admits that, since the start of the pandemic, "teaching remotely has been an obstacle. I don't hear students' laughter anymore, or their jokes, or their whispering." It also prevents her from making the friendships that form spontaneously when she works with students. During her exercise sessions on Zoom, students tend to turn off their cameras and activate the sound only to ask a question. And sometimes two hours can go by before she gets a single one! But these exceptional circumstances have enabled her to develop an essential trait: empathy. "It's not easy for students, especially this year. I have to put myself in their shoes and ask how I'd want my tutor to act towards me."

Prakriti also invests her time in causes she believes in. She joined Polyquity – a student commission that promotes gender equality on campus and fights discrimination – two years ago. "I'm now its Vice President," she says. "I fight hard for gender equality, because inequality has always bothered me." This year Polyquity rolled out an awareness campaign called *Paye ton EPFL* on social media. It collected some 200 testimonials from students who have been subject to harassment or discrimination. Prakriti hopes that the campaign, which has already led to the adoption of several prevention measures, will raise the EPFL community's consciousness and break the taboo surrounding this important issue.

Time may be relative, but with Prakriti, it seems to be incredibly elastic. Between the 120 student assignments to correct each week, her Master's thesis to write and her involvement in Polyquity, she still finds time to play the harp – her passion since she was six years old. Six is also how many intense years she's spent at EPFL. Prakriti says that some memories will stay with her forever, such as a lively night at the Satellite – the campus bar – when she treated all her students to a round, and, above all, her work for Polyquity. "It gives me a purpose and a sense of responsibility. I'd like to improve things a little for the next generation of EPFL students," she says. When it comes to inspiring journeys, Prakriti's certainly ranks among them.



Alix de Coulon

Switzerland, 20 years old

Bachelor's in Architecture

As a child, Alix dreamed of becoming a dancer or an astronaut. An internship at an architecture firm revealed her true calling. Empathic by nature, Alix is extremely interested in the humanitarian aspect of the construction industry.

Alix has always enjoyed sharing what she knows, notably by serving as a tutor in high school. “I love teaching, and I hope my enthusiasm is felt!” she says. Today, Alix is a university tutor in math and geometry, but she’s aware that her role goes well beyond instruction. “I was impressed by the perseverance of the university tutors who helped me in my first year – not just with my classwork, but also by providing moral support,” she says. Alix now delivers the same service to her own students: “I tell them about what I went through in my first year. It’s important to reassure them.” That’s especially true in the wake of the pandemic, which brought its fair share of frustration and social disruption. “Teaching online, I have less students and they ask very few questions,” she says. Alix nevertheless found new ways of teaching, to explain concepts that are generally easier to illustrate face to face. “I film diagrams on my iPad and share exercises on my computer.” Flexibility, communication and patience are the key skills she has developed as a university tutor. She freely gives out her contact details – an open-door policy that has proven its worth. “Three students came and asked me for private tutoring sessions,” says Alix, with a broad smile. “That really gives me a sense of satisfaction.”

When thinking about her future, Alix sees herself working in a small architecture firm so she has time to devote to humanitarian efforts. She’s particularly inspired by the work and projects carried out by the UNHCR*, which she follows closely on social media. One of her goals is to work for that organization as a volunteer. For her ENAC Week Project, which brings together students from different EPFL sections, Alix chose to study the topic of “Living in emergency.” Here she was able to develop her personal approach to the issue of habitats for refugees, exploring how architects can provide solutions to refugee camps by designing structures that comply with the constraints out in the field and building practical habitats under emergency conditions. Alix’s best memory from her time at EPFL so far is a project she worked on extensively at the Elements of Climate architecture studio. It involved mapping out plans to renovate the Saussure high school in Geneva in order to improve its thermal efficiency by taking weather conditions into account. Next year, Alix will go on an exchange to Aarhus in Denmark to study Scandinavian architecture. She chose coursework in which the approach is based on using structures that exist already rather than on contributing to urban spread by building new structures on undeveloped plots of land – which are becoming increasingly rare. She will also learn how to work within the constraints of Denmark’s unique landscape and geography to plan new buildings. When she returns to EPFL after her exchange, Alix plans on joining AGEPoly. “The EPFL campus is made for sharing knowledge and experience. I’ve learned so much. It’s amazing how much general knowledge you can acquire in just one year!” says Alix, who also enjoys nature and hiking.

*UNHCR is the United Nations’ Refugee Agency



Clarence Linden France, 20 years old Bachelor's in Mechanical engineering

Clarence Linden, a self-taught science enthusiast, knew early on that he wanted to become an engineer. Although Clarence likes to spend his time helping first-year students fine-tune their mechanical engineering and physics skills, he is well aware that work is only one part of a happy life.

Clarence lived in South Africa and then Canada until he was ten, after which his family moved back to France. Early on, his grandfather, a researcher, and his father, an engineer, instilled in him a taste for construction and DIY projects. “My father and I renovated my bedroom, I loved tinkering with my bike, and I taught myself programming. I find versatility inspiring – it's important to know how to do everything!” says Clarence. He is a member of AMAC, EPFL's mechanical engineering student association, where he helps out with video editing and graphic design. Somewhat hyperactive, Clarence is a sports enthusiast and also likes to cook for himself and his friends. He never loses sight of the fact that good times make life worth living. When the pandemic put a damper on campus social life, Clarence often ate with the students he tutors as a way of keeping in touch: “It's not easy to make friends remotely. First-year students can feel somewhat lost – that was certainly my experience,” says Clarence. “My tutors really helped me, and I wanted to do the same.” His work as a tutor is also important financially, as it defrays the cost of living in Switzerland and pays for the shared apartment he lives in, some 200 meters from campus. Although pandemic-related restrictions left some students feeling isolated, Clarence sees an upside to distance learning, as it gives him flexibility in organizing his work schedule. “It frees up time. I can, for instance, work offline on the train on my way to see my family on the weekend.”

Now in the second year of a Bachelor's degree at EPFL, Clarence is pursuing his dream career in the automotive sector. He has always excelled in his studies, and he often tutored his classmates in high school. “Knowing how to explain things is critical. I try to teach students problem-solving skills,” he says. To answer questions, he draws on his knowledge of physics and mechanics. “I know it can sometimes be discouraging not to be able to solve things quickly,” he remarks, but the excellent grades his students have received on exams are a real high point for Clarence. “I've received emails of thanks,” Clarence says, happy to have been of help. Next year, he'll be an exchange student in South Korea for two semesters, and he is looking forward to discovering Asia. No doubt he will return with new skills and a pocketful of Korean recipes for his personal cookbook. “For me, work is fun. But the most important thing in life is to know how to be happy,” says Clarence. It's a good philosophy.



Lucie Mangold
France, 21 years old
Master's in Chemical engineering
and biotechnology

As a child, Lucie wanted to understand how the world worked and explore it down to the smallest detail. This interest led her to EPFL – a choice she has never regretted.

Lucie grew up near Paris and then moved to Lausanne in 2017 to pursue a Bachelor's degree in chemical engineering and biotechnology at EPFL. "I came here more or less on a hunch," she says. "I graduated a year early and felt I should try this university that my guidance counselor had described. It was the best decision I've ever made." Lucie discovered tutoring in her second year after filling in for friends, and took a liking to it. Since September, she has spent about seven hours a week tutoring students in both Math 1 and General Chemistry. She's learned a lot from the experience – most of all patience, which was not her strongest suit. "I like when things go fast. But in tutoring, you need to adjust to the student's pace. I've learned a great deal from teaching others," says Lucie, who knows how her students feel and how overwhelming everything can be. "In my first year, I attended every tutoring session. It's great for absorbing what you didn't catch in class and for asking questions you didn't dare ask the professor. I found it very helpful." At her final tutoring session this year, her students thanked her profusely and she felt proud to have supported them up until exams: "I felt useful. It was exactly the feedback I needed to hear!" says Lucie, who enjoys teaching even if it's sometimes a challenge to juggle classes, end-of-semester deadlines and tutoring. The salary is also a motivation. It allows her to cover her costs in Switzerland, including her apartment in downtown Lausanne, which she shares with two other students she met in her first year at EPFL.

Today Lucie is happily pursuing a Master's degree at EPFL. In the second year of her Bachelor's program, she joined STIL, a student association that organizes the annual Lausanne Technology and Innovation Fair, an event that brings together about 250 start-ups and draws over 5,000 visitors. STIL also regularly organizes special events, during which "people come in and talk openly about how their startup went wrong. It's very interesting to get a glimpse of the other side of the startup experience, which is usually presented in a positive light without the pitfalls," she says. Lucie is inspired by people who, despite tough times, rose to the challenge and fulfilled their goals. "My father began his career as an intern and eventually reached the top of his company. He started with nothing and gave his all to succeed. I admire people who persevere," says Lucie, who will be leaving for Paris next year for an internship in L'Oréal's R&D lab. Her happiest memory at EPFL? There are so many it's hard for her to choose, but her involvement in organizing the STIL fair is definitely at the top of her list.



Ferdinand Posva Switzerland, 25 years old Master's in Materials science and engineering

As a first year Master's student in materials science and engineering, Ferdinand is a perfect example of what perseverance and enthusiasm can achieve. He was able to combine these traits and turn an initial failure into a success. "What doesn't kill us makes us stronger," said Nietzsche. A motto Ferdinand could very well adopt as his own.

Although he studied Latin and English in high school, Ferdinand has since nurtured a fascination for science and the infinitesimally small. He initially planned to study law but changed his mind after attending a presentation on EPFL. He was intrigued by the wide range of fields on offer, the nearly unlimited potential to explore new topics and the breadth of career possibilities. As a child, Ferdinand took part in an immersive experience during one of EPFL's Open Day events. "I think that played a considerable role," he says. He therefore decided to follow in the footsteps of his older brother, currently a PhD student in algebraic geometry at EPFL, and his father, who studied at EPFL before them.

Ferdinand struggled during the first year of his Bachelor's program. He failed the first semester, getting his worst grade in linear algebra. Despite feeling defeated, Ferdinand persevered and took EPFL's Mise à Niveau review course in the second semester. The following year, he retook the first year of the Bachelor's program and was fortunate enough to have Prof. José Luis Zuleta as his linear algebra teacher. "His classes were easier for me to understand!" says Ferdinand. He finally understood the basic concepts of this fundamental subject. This time around, his best grade was in linear algebra and he went on to pass the year. "I was on cloud nine," he says. "But I never would have passed the year without the help of the tutors. They serve as a bridge between the professors and the exercises, creating an essential link between the classroom lectures and our comprehension of a problem." The satisfaction of being able to help students navigate through the challenging first year at EPFL prompted Ferdinand to become a tutor himself, although he admits that financial considerations played a role too. The money he receives lets him share an apartment near campus and avoid spending hours on the train commuting to EPFL – leaving him free to devote himself entirely to studying the science behind superconductors and micromagnetics. Ferdinand also uses the extra time to indulge in his many hobbies, such as the clarinet, archery, skiing, movies and museum-going.

In the first year of his Master's program, Ferdinand became a tutor for his mentor, Prof. Zuleta. He helps the professor's students grasp the concepts of linear algebra – the subject that started out as his weakest but is now among his strengths. This experience assisting students has made him a better listener and enhanced his ability to summarize problems in new ways, allowing him to answer questions he himself never thought to ask. It has also pushed him to become more organized personally, so that he's fully prepared for each exercise session. Ferdinand's greatest satisfaction is seeing the students' eyes light up when they finally understand a problem. During the first semester, he worked with students from both EPFL and UNIL through six hours of in-person sessions per week. "It was easier to work face to face," he says. "Now we've lost the human contact." What he misses most since the exercise sessions were shifted entirely online in the second semester is discussing things directly with the students. "Students currently spend most of their time behind a computer screen," says Ferdinand. "They're cut off from campus life, which makes their first year even harder." He remembers his days as a Bachelor's student when the Balélec music festival was a big highlight. The last edition of this highly popular festival – along with the joy of finally passing his first year – are some of his best memories so far from his time at EPFL.

MAKE pro- jects

Taking part in a project sponsored by the MAKE fund can be one of the most enriching experiences for an EPFL student. CYRIL, SOLÈNE, NOLAN, COLINE, FELIPE, QUENTIN, JONATHAN, CÉSAR, BAPTISTE and PIERRE spoke with us about their experience of hands-on, real-life projects, and how it prompted them to push past their own limits, put the theory they learned in class to practical use, pick up new cross-functional skills needed in the business world, and see firsthand how important good communication is for a team's success. Whether the goal is to launch a rocket, improve the aerodynamics of an electric racecar, use innovative technology to protect biodiversity or develop a rover in record time, these ambitious projects give participants a valuable opportunity to channel their enthusiasm. Students learn more about their own capabilities, develop new skills and explore their interests. The collaborative experience of MAKE projects fosters the talents of budding engineers, preparing them to excel. It's a unique learning program that will be unveiled to you as you read through the portraits of these creative, outward-thinking students.

Asclepios

Organizing analog space missions

EPFL Assistive Technologies Challenge

Developing personalized prosthesis for motor-disabled patients

EPFL Horological competition

Developing a clock with complex mechanisms

EPFL Racing Team

Developing a single-seater, electric-powered Formula race car

EPFL Rocket Team

Developing and launching rockets

EPFL Spacecraft team

Developing a constellation of satellites for scientific research

EPFL SSA Team

Mapping the satellites and debris orbiting around the earth

EPFL Xplore

Developing a rover from scratch

GenoRobotics

Accelerating biodiversity identification through DNA extraction

GrowBotHub

Growing and harvesting vegetables in extreme environments

iGEM

Tackling global issues through synthetic biology

Lab in a tube

Developing a smart catheter for biomedical purposes

ProCam

Conceiving a privacy friendly system to track individuals with fever

Robotic competition

Designing, building, and programming a cleaning robot

SensUs

Developing biosensors for healthcare

SP80

Developing a boat to break the sailing speed record

Swiss Solar Boat

Developing a solar-powered boat

TO FIND OUT
MORE ABOUT
MAKE PROJECTS

<https://bit.ly/3jGLABG>



GenoRobotics



CYRIL MONETTE, 20, Belgium, Bachelor's in Microengineering
SOLÈNE BARD, 21, France, Bachelor's in Microengineering
NOLAN CHAPUIS, 21, Switzerland, Master's in Computer science

The GenoRobotics project gave these three students invaluable experience that will serve them well when they head out into the real world. Cyril and Solène explored new areas of knowledge, while Nolan found concrete ways to expand his skillset. It was an exhilarating immersion in a meaningful project.

Very early on, Cyril – a keen hiker, ornithologist and botanist – knew he wanted to combine his love of nature with engineering. As a third-year microengineering student, he was immediately drawn to the GenoRobotics project, which focuses on the environment and uses technology to protect and preserve biodiversity. Specifically, the team is developing a compact tool for on-the-spot DNA sequencing of biological samples so that plant species can be more quickly identified. Fifteen EPFL students, in partnership with INSA Lyon and a professor from US-based Boise State University, created a fully mobile, automated device for performing analyses in harsh environments. “Bringing the laboratory to the field means that local populations can process their own samples automatically, giving them greater insight into their local resources. We can only protect what we know,” says Cyril, who will study biorobotics at the University of Bristol next year. For the GenoRobotics project, however, he had to explore new areas of knowledge, including learning about molecular chemistry through DNA quantification. “Learning how to learn, having the courage to go out and look for information and structure it, has really empowered me,” he says. “With the resources available to us, the only limits are our own creativity and engineering skills.”

This cross-disciplinary project requires people from different fields to work together. During the prototyping phase, each team develops their specific part of the project, which is led by two coordinators. Nolan, a Master's student in computer science, is in charge of creating the database. Although he was initially worried about getting involved in a project of this size, he was able to make direct use of what he learned in the classroom to strengthen his theoretical knowledge and gain self-confidence. The MAKE project also helped Nolan – who is interested in the environment and biodiversity – gain experience in other areas, including communicating with the other teams and deepening his understanding of wider issues.

Solène also explored areas worlds away from her microengineering studies. She is working on a new technique that allows DNA to be extracted with tiny needles for the purpose of biodiversity analysis. Inquisitive and determined by nature, Solène wants to understand how things work, and her eagerness to gain more practical experience led her to this MAKE project. The diversity of the subjects on offer was one of the reasons she chose EPFL over a French preparatory class, which she felt would be too theoretical. “Here, there are so many things going on and we have the opportunity to see a project through to the end,” she says.

Although the pandemic halted a trip to the Amazon this year, the students will be able to try out their engineering work under real conditions during a scientific expedition to the Jura Mountains in the summer of 2021. This will be a great way for the GenoRobotics team to work with the device and test whether it is viable, an essential step before the final prototype is completed next year. The three students agree on the project's ethical dimension, which made them more aware of an engineer's responsibility concerning societal and environmental issues, such as current threats to biodiversity.



EPFL Racing Team



**COLINE DROXLER, 21, Swiss French,
Bachelor's in Electrical and electronic
engineering**

**FELIPE ALVAREZ, 23, Colombia, Master's
in Energy science and technology**

Meet two students on EPFL's Racing Team: Felipe, who has car racing in his blood, and Coline, who jumped into the adventure only last year. Both of them, however, learned an enormous amount during their MAKE project experience, and both agree that, when it comes to competition, human relationships are the key to success.

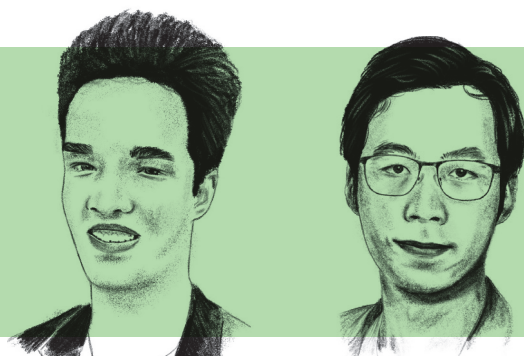
Coline, a third-year Bachelor's student in electrical and electronic engineering, joined the MAKE project in September 2020. She had originally planned to oversee communications, but within a few weeks she found herself appointed president. "I love a challenge," she says about her decision to take on this new role, "but I'm just managing the project. Without Felipe, we wouldn't have a car!" Along with Felipe and two other team members, she serves on the committee that heads up the project and makes decisions. Coline had initially thought that being an engineer meant working alone in a lab, but she quickly realized that the human element is far more important than she had imagined. "I learned a great deal about subjects that are not taught in theoretical lectures," she says. Some of the cross-cutting skills she acquired while working on the project were communication, team leadership, scheduling and budget management, not to mention large-scale event organization. A key moment for her was the unveiling of their creation at the Swiss Tech Convention Center in May of this year. Their latest Student Formula car, known as Mercury, was presented to a group of delighted sponsors, which was no mean feat in times of financial uncertainty. Managing an annual budget of CHF 350,000 – a portion of which has to be raised off-campus – was not easy in the midst of the pandemic. Keeping one's cool requires character, which is not something that Coline lacks. As a child, she dreamed of pursuing a career that seemed to be reserved only for men, but she overcame that stereotype and made her studies her own: "I want young girls to know that they can study whatever they want," says Coline, who is proof positive that the engineering profession is open to all.

"This new car is the result of two years of work by a team of 60 dedicated EPFL students," said Felipe, his voice heavy with emotion at Mercury's unveiling. After spending three years in the association and serving as CTO this year, Felipe gets butterflies in his stomach at these events. "Orion, our first car, was nicknamed 'The Roll-Out Miracle' (the roll-out is the crucial moment when the car is finally assembled). That's the moment that makes it all worthwhile – all the ups and downs, and the many sleepless nights," says Felipe. Mercury is now 30% lighter than Orion and, with optimized aerodynamics thanks to a carbon fiber body, this dazzling electric racing vehicle has a track speed of 120 km/h, and it can reach 150 km/h when the stops are pulled out. Mercury has just been chosen to race at FSG Germany, the leading European Formula Student competition. Competing internationally has enabled the EPFL Racing Team to fine-tune their creations. "At EPFL, they don't teach us how to build a car; it's up to us to figure it out," says Felipe, who is confident that understanding how the car works from an engineering standpoint will help drivers achieve better results on the track. And he knows what he's talking about: in 2015 and 2016, seated behind the wheel of a Caterham R300 on the Colombian circuit, he fulfilled a childhood dream of becoming a race car driver.



Felipe's has racing in his blood – his grandfather was a race car driver and his father a mechanical engineer. Today he's studying for a Master's degree in energy science and technology and is set on pursuing a career in the automotive industry. To achieve this, EPFL is the best possible place: “the School lets me push myself as far as I can go; that’s the kind of opportunity that doesn't come along twice,” he says, aware that he’s made a good call. However, serving as team leader of a MAKE project was an education in itself. Felipe was able to confirm his “technical hunches” and apply theories he had learned in class. With seven or eight meetings per week to coordinate each division’s progress, Felipe discovered the importance of good working relationships. “It’s a real mix of skills – every student should get involved in an interdisciplinary project like this!” His enthusiasm is shared by Coline, who now has more confidence to tackle her future career...one that will very much include the human element!

EPFL Xplore



QUENTIN DELFOSSE, 21, France,
Bachelor's in Microengineering
JONATHAN WEI, 22, Switzerland,
Bachelor's in Microengineering

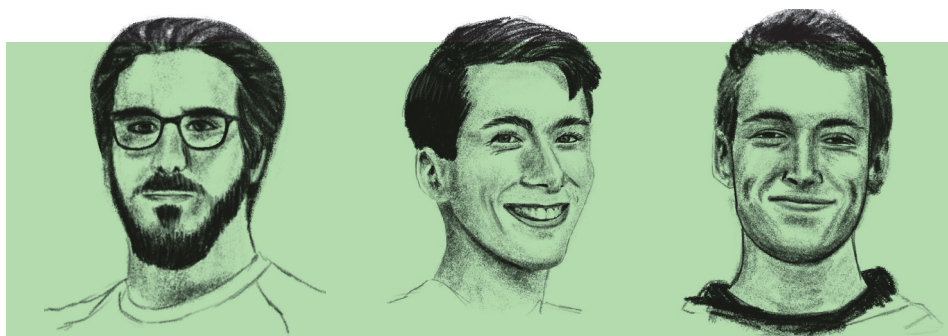
Putting together a MAKE project from scratch is a challenging task, yet one that Quentin and Jonathan have accomplished with brio. They are currently project manager and president, respectively, of the EPFL Xplore association, created to run the MAKE project of the same name. Now they are working hard to get their rover ready for the European Rover Challenge this September.

The idea came from a discussion that Quentin and Jonathan had over a meal last year, when they were both members of the EPFL Rocket Team association. At first it seemed like a daunting task. “We saw online that there are competitions in which rovers compete against each other. EPFL didn’t have a student team or project for that at the time, so we said: ‘Let’s do it!’” recalls Quentin. He and Jonathan spent an entire semester looking for research labs to support their MAKE project. “Step by step, we’ve become a viable association with a CHF 100,000 annual budget and an international competition in our sights,” says Quentin. He discovered that EPFL is home to a countless number of labs, underscoring his impression that the School is indeed at the cutting edge of research. Today Quentin is in the third year of his Bachelor’s degree in microengineering; before coming to EPFL, he took a year-long preparatory class in Paris. He was attracted to EPFL by its international environment and the abundance of student associations that enrich life on the Lausanne campus. In his first year, Quentin was a member of the Robopoly association, where he was able to indulge his fascination for robotics – an interest that dates back to when, as a boy, his grandfather taught him how to weld and assemble different electronic systems together. “That gave me a taste for electronics. I saw the things we built turn on and work. It was fantastic, magical. It made me dream of doing that when I got older,” he says.

Today that dream has come true with the rover he’s developing under the EPFL Xplore project. The team’s robot will be able to carry out tasks similar to those of a space rover – that is, a motorized vehicle used to conduct scientific experiments on an extraterrestrial body – except that it will operate in a simulated environment on Earth. This ambitious robotics project takes up between 25 and 40 hours of Quentin’s time each week. “This is the first year of our project, so we have to do everything needed to get ready for the competition,” he says. Juggling his time between his classes and the work he does for the association is still one of his biggest challenges. For EPFL Xplore, he’s in charge of the project team and schedule. “It’s a little different from the technical role I had last year for the EPFL Rocket Team, where I was responsible for coding the rocket sensors. Here in this project, I’ve learned that knowing how to communicate and share information within a team is crucial,” he says. The frequent meetings he has with the project’s technical crew are preparing him for real-world conditions once he starts his career, and giving him a healthy dose of self-confidence. “You have to have good people skills to manage a team’s schedule and make sure everyone meets their deadlines,” he says. These skills allowed him to unite the association’s members around a common goal: building a rover that can analyze soil samples autonomously.

While Quentin became aware of his vocation when he was a young boy, Jonathan didn't really have a clear idea of his, even as he was applying for university. He hesitated between HEC Lausanne and EPFL for a long time before finally deciding to study engineering. When Jonathan passed his first year at EPFL, he knew he'd made the right decision. "The first semester was really hard because I didn't have a strong enough background in scientific subjects. But I overcame that, and it made me realize that I had what it takes to stay at EPFL. That's when I started studying for the pleasure of it, and not just under the pressure of passing an exam," he says. Today, in his role as president of EPFL Xplore, he manages the association's administrative matters, communications and budget. Setting up a MAKE project from A to Z, starting with a blank slate, is something you learn not in class but by teaming up with the right people and resources. "There's not really a class that explains how to launch a startup. But if it's something you genuinely want to do, you learn as you go along," says Jonathan. He eventually succeeded in locating the facilities and sponsors needed to get the project off the ground. His entrepreneurial mindset no doubt stems from an application he developed with a friend in high school – a decisive experience that had already put him in contact with outside businesses. But setting up the EPFL Xplore project wasn't so easy, and at one point he had to rethink his approach. "There was a period of time when I wasn't able to find funding," he says. "Fortunately, the first semester consisted mainly of design work so we didn't need much money." Jonathan then worked with his team to go back through the list of companies that might be interested in funding the project and tweaked his approach so as to better target the right ones. "With time, I was able to source the additional funding we needed. That was a huge relief," he says. Jonathan is someone who manages his time best when he has a lot of things to do, and jokes that his important role in the association means he no longer has the luxury of doing nothing. Communication, good organizational skills and entrepreneurship are the keywords of his MAKE project experience. Although Jonathan didn't have a clear idea of his career goals when he enrolled at EPFL, he now has a better picture of what he wants to do. "I discovered that I'm pretty interested in space technology. Today I'm drawn more to engineering than to finance – to the point where next year I plan to move into a more technical role in the association," he says. Thanks to the cross-disciplinary nature of his MAKE project, he's discovered new fields he'd like to explore.

EPFL Rocket Team



CÉSAR TOUSSAINT, 23, France, Master's in Mechanical engineering

BAPTISTE DE CHRISTEN, 21, France, Bachelor's in Mechanical engineering

PIERRE GROSLAMBERT, 23, France, Master's in Robotics

Launching rockets and taking part in an international space competition – those are the goals of a MAKE project called Bella Lui, in which César, Baptiste and Pierre are all actively involved. Adrenalin, music and late nights form an integral part of this technological and human adventure that pushes them beyond their limits.

With 200 members, a CHF 200,000 annual budget, 50 hours a week of work (for the most engaged participants), some 30–40 projects that receive credit each year and a 1,600-page report, the EPFL Rocket Team association is no small affair. These figures illustrate its scope as well as the investment required by the three students, who occupy strategic functions within the association. “I learned how to be an engineer and how to carry out my responsibilities on very little sleep,” says César. “I also learned a lot about human relations.” He joined the Bella Lui MAKE project, which is run by the EPFL Rocket Team, four years ago; this allowed him to take part in the Spaceport America Cup competition in the United States one year later. “There were 120 rockets and 1,500 people involved. The competition attracts students from all over the world,” he says. Today César, a first-year Master's student in mechanical engineering, is a systems engineer on the project, and its CTO. His role is to have a big-picture view of the rocket and ensure that all its various sub-systems progress in the same direction. The next step for the team will be to launch their rocket so that they can test its engine, parachute, computers and other components.

Pierre, a second-year Master's student in robotics, joined the EPFL Rocket Team a little over three years ago. Like César, he's a systems engineer; he's also in charge of developing the rocket's launch ramp. Pierre has acquired the necessary theoretical knowledge, but often has to look beyond what he's learned in class to get the information he needs to take the project forward. “Over 95% of the Bella Lui was designed by students, and we have to make sure that all the different pieces fit together,” he says. It's not easy to manage a core operations team of over 80 students, ensure everyone stays motivated, keep the building process going and make sure knowledge is passed on from one year to the next. But the excitement of the launch days makes up for the stress, the hundreds of hours invested and the particular challenges arising from the pandemic. The Spaceport America Cup, which brings student teams together to compete in New Mexico every year, was cancelled last year because of the pandemic. So that something could be held in its place, Pierre contacted all the student teams in Europe and, working with the Portuguese space agency, hosted seven of them at a competition in Portugal in October 2020. This year, the Spaceport America Cup was held online and the EPFL Rocket Team was the most mentioned team at the closing ceremony. It came in second place in its flight category and was the runner up for both the honorary award in innovation and the Team Sportsmanship Award, which recognizes the team's positive attitude and its members' willingness to assist their fellow teams.



Baptiste, the president of the EPFL Rocket Team association, says: “The competition helps forge a network within the international space community. Managing a project of this scale from start to finish is a very useful experience for our future careers.” A third-year Bachelor’s student in mechanical engineering, Baptiste oversees the association and handles sponsorships, communications, human resources and relations with other organizations both within and outside EPFL. Working on a team that’s cross-disciplinary – meaning its members don’t all speak the same technical language – and that includes people from 18 different countries, with budgets and deadlines to juggle, is an invaluable experience. “The best way to learn is on the job,” says Baptiste. And to pass on the lessons learned during the project to future students, he, along with César and Pierre, took on a Herculean task: they wrote a 1,600-page report to serve as a “technical Bible” for the project. “We worked non-stop for 45 hours!” says Baptiste. “We didn’t do it for ourselves but for those who will come after us. This way, when they have a question, they’ll know where to find the answer.”

The three engineering students sometimes joke that they should also be awarded a degree in psychology, given how much this scientific odyssey has taught them about the mysterious nature of the human psyche. The rocket’s name – Bella Lui – comes from a mountain in the Canton of Valais. It was an apt choice – when you’re fueled by a passion for innovation, there’s no mountain top you can’t reach.

Do- nors

The generosity of our community of committed donors has continued to make a significant difference to our students' lives. We are truly thankful to the following partners, as well as those who wish to remain anonymous, for their trailblazing support.

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George Popescu, ALUMNUS PHD COMPUTER AND COMMUNICATION SCIENCES '16

A word from the President

It feels like it was just yesterday that I was penning my closing words in the first edition of the Student Support Program's Impact Report and yet a full year has already gone by. They say time flies when you're having fun; it positively skyrockets when you're in the midst of a pandemic.

Despite the difficulties of the past year, witnessing the relentless enthusiasm and grit of our students has renewed my hope for the future. In parallel, the solidarity demonstrated by our community has been, and continues to be, inspiring. It most certainly 'takes a village' and I would like to thank our steadfast partners and our incredible Alumni for their unwavering support. You are truly making a difference to the lives of our students, every single day. Thank you.

Although we are thrilled with the impact that the Student Support Program is having, in true EPFL form, we strive to do more. The fact is that a student's higher education journey starts well before the challenging first-year of Bachelor's studies. Indeed, from an early age, complex dynamics start shaping the future student pathways of schoolchildren.

At EPFL, we have a responsibility towards our youth to help them make their professional dreams come true. From providing gifted children with the challenges they thirst for during their formative years, or reminding girls that gender has no bearing on the ability to excel in STEM subjects, we have a duty that extends beyond the walls of our institution.

As a result, we have decided to broaden the reach of the Student Support Program by including programs and activities that have a direct impact on students throughout the full cycle of their educational journey. You will be able to discover this exciting evolution of the Student Support Program in the next edition of the impact report. If you can't wait that long and are eager to find out more, we would be delighted to hear from you.

As always, thank you for your invaluable contribution to the students, the science, and the success that make EPFL the remarkable school that it is.

All the best,



Martin Vetterli
PROFESSOR & PRESIDENT

EPFL

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With gratitude

I would sincerely like to thank the donors, whose support was really helpful for both my studies and for me on a personal level.

Thank you. The tutoring system gave me an opportunity to teach, and I really loved it!

The SSP scholarships are extremely valuable. The opportunity they provide allows smart, young students to learn a great deal and have a positive impact of their own.

Thank you. I'm not sure I would have passed my exams at EPFL without my tutors, and I'm happy to have become a tutor in turn.

Without this scholarship, I'm not sure I would've been able to afford these kinds of studies. I'm very grateful for this opportunity.

I just want to say thanks.

If you would like to know more about the Student Support Program, please contact Catherine Janssens at catherine.janssens@epfl.ch or check out our website:



go.epfl.ch/philanthropy

By supporting us, you're also supporting Swiss innovation and the training of talented students. Thank you for helping us take our projects forward.

Your support helps fuel the passion of students eager to build great things. The tangible nature of our projects gives us additional, complementary skills and trains capable engineers and architects. Thank you.

I would like to thank the donors. Being immersed in this kind of project has enabled me to discover my areas of interest and orient my career choices.

Your support has given students an opportunity to work on concrete responses to major challenges like sustainable development.

I'd like most of all to thank you. Your donation allowed us to engage in activities related to subjects we're interested in. In so doing, it has opened our eyes to the world around us today and better prepared us for tomorrow.