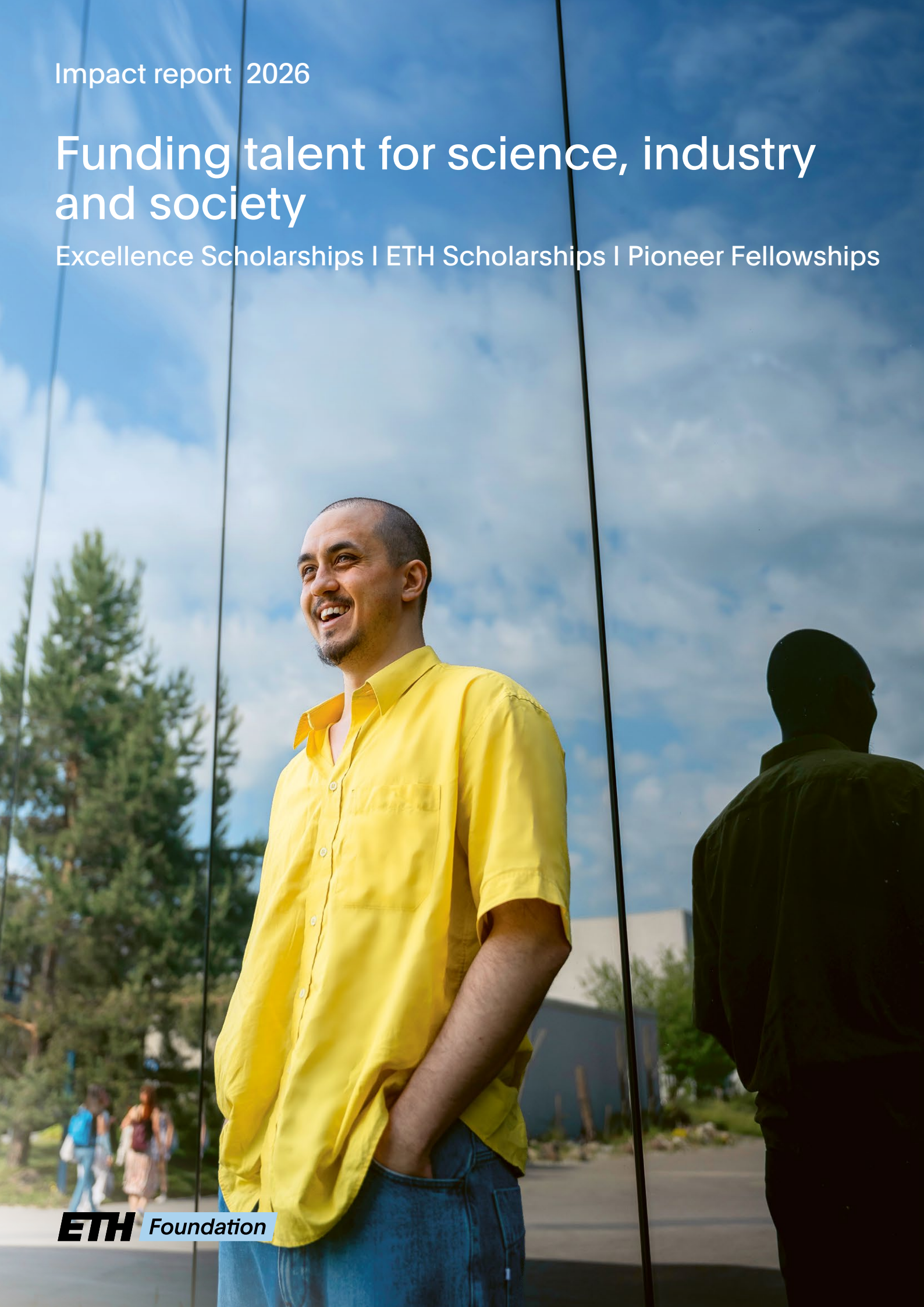


Impact report 2026

Funding talent for science, industry and society

Excellence Scholarships | ETH Scholarships | Pioneer Fellowships



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Many thanks!

Your valuable support enables talented individuals to realise their potential – regardless of background or financial means and based solely on merit. For this, we extend our sincere thanks.

This report illustrates the impact your funding makes. It tells the story of a former Excellence Scholar now working on post-quantum cryptography at Migros, contributing to the security of digital infrastructures that affect us all. It highlights an ETH scholarship holder studying for a Master's in molecular mechanisms of disease, advancing his understanding of disease processes with the freedom to focus fully on his studies. It introduces a young entrepreneur who is developing ways to recover rare earth elements from electronic waste, combining technological innovation with environmental responsibility and geopolitical vision. And we meet a couple whose philanthropic commitment seeks to strengthen education at ETH and open up opportunities for future generations.

Each of these stories exemplifies the transformative power of private philanthropy at ETH Zurich – bringing to life what would not otherwise exist. They show how trust translates into tangible results: in science, industry and society – and in individual lives.

Thank you for helping to enable excellence, foster entrepreneurial spirit and break down social barriers. Your contribution is well invested – in people, ideas and solutions that will shape our shared future.



Günther Dissertori
Rector,
ETH President from
January 2027



Effy Vayena
Vice President for Knowledge
Transfer and Corporate Relations

By funding new talent at ETH Zurich, you support ...

... outstanding Master's students: the Excellence Scholars



Our country depends on first-class specialists. By attracting exceptional young people from Switzerland and around the world to study for a Master's degree at ETH Zurich, the Excellence Scholarship & Opportunity Programme (ESOP) is an essential instrument in the competition for the world's greatest talent. Applicants must go through a rigorous and highly competitive selection process. Those selected receive a full scholarship, which covers their study and living costs during their entire Master's programme. Due to increasing student numbers, the demand for Excellence Scholarships has grown: the goal is to be able to award 60 Excellence Scholarships per year.

... bright minds with limited financial resources: needs-based scholarship holders



For some young people, the dream of studying at ETH is only possible with a scholarship. Over 100 people are supported in this way every year, the requirements being that they provide regular proof of their academic progress and that they complete their studies within a reasonable period of time. The needs-based scholarships ensure that no one is excluded from studying at ETH on the basis of their financial situation if they have all the necessary qualifications. This is all the more important as ETH studies are time-consuming and often do not allow students to pursue a part-time job. Society as a whole benefits from the programme because it enables more highly qualified and sought-after specialists to be trained.

... budding young entrepreneurs with drive and ambition: Pioneer Fellows



For young scientists, it's often a long and rocky road from the initial idea to creating a marketable product. After all, setting up your own company requires not only courage but also sufficient seed capital, a strong network and access to urgently needed infrastructure. That is why a jury of experts awards 10 to 15 Pioneer Fellowships every year. ETH Zurich would like to further expand the programme so that even more young ambitious researchers can receive up to CHF 180,000, coaching sessions and the opportunity to develop their research to the point of commercial application. The aim is to bring highly innovative products and services of societal value to market as quickly as possible.

On guard where Switzerland shops

From ETH to Migros: discover the scenarios that Marc Himmelberger, a former Excellence Scholar in computer science, is anticipating at Switzerland's largest employer.





Marc Himmelberger's workplace: Migros headquarters in Zurich's industrial quarter.

"Does Migros even do IT?" That was the rather naïve question Marc Himmelberger asked a few years ago, stopping at a stand where the orange giant was presenting itself as a potential employer to computer science students at ETH Zurich. He now smiles at the memory. Sitting in his office at Zurich's Limmatplatz, he recalls his start at Migros where terms like "ROI", "TCO" or "agile software development" were still unfamiliar. "At ETH, you learn the fundamentals – knowledge that will last you a while. On the flip side, you're not aware of the latest in things like software development methodologies." Nevertheless, he quickly settled into the team. His manager is an ETH graduate, as is his manager's manager –

and the one above him, too. "There are around 100 people working in cybersecurity here, and I'd say more than a dozen are ETH graduates."

"What makes the job at Migros so interesting is the range of threat scenarios we're working to prevent – many of which would have a real impact on Switzerland. Just think: what would happen if you suddenly couldn't pay at the check-out? Or if the logistics systems went down and Migros lorries couldn't get goods to stores on time?" As a retailer, Migros is part of Switzerland's critical infrastructure, which means there's a strong public interest in keeping its IT systems stable and secure.

"Organisations should switch to the most secure algorithms as early as possible."

From gaming to programming

Marc Himmelberger's fascination with computer science came from his mother, who spent many years working in the sector. "Without her, I probably wouldn't have thought to install a Java development environment on my PC at 13," he says. He also spent a lot of time gaming. But what ultimately drew him to cryptography was the mathematics behind it. "Cryptography is incredibly precise and logical, but also very fragile. If even one single cog is out of place, the whole system falls apart. I find that fascinating." This made him all the more grateful to receive an Excellence Scholarship for his Master's studies: "That recognition gave me the freedom to focus fully on my studies – and led to a lot of inspiring contacts and connections."

Thinking ahead pays off

Cybersecurity covers a wide range of job profiles. Some analysts work on a reactive basis, monitoring servers and laptops and responding to suspicious activity. "Like a fire brigade," as Himmelberger puts it. By contrast, his role as an Enterprise Security Architect is preventative. He examines new IT initiatives – linking systems, new ways of analysing data or the use of artificial intelligence – through a security lens, makes recommendations and reviews how these are implemented at the end of a project. This is how he and his team ensure that all kinds of valuable data – customer data, industry information, digital signatures and even closely guarded recipes – remain protected.

But how much security is actually possible? How safe will we be when it comes to future new technologies – including quantum computing, that could prove game-changing across many fields, as well as cryptography and, subsequently, cybersecurity? During his first two years at Migros, Himmelberger focused

closely on "quantum safety", also known as "post-quantum cryptography", a topic he had already explored in his Bachelor's and Master's theses at ETH: "We wanted to raise awareness among staff at an early stage, so that in future projects everyone understands what 'quantum-safe' means and where we want to go with it."

As he explains: "'Store now, decrypt later' is a strategy used in cybercrime. The idea is to collect data now, even if it's still securely encrypted. Once sufficiently powerful quantum computers exist, that data can be decrypted." This, he argues, is precisely why it's not a sound security strategy to assume it will be years before quantum computing becomes a reality. "We should move to the most secure algorithms as early as possible. The earlier an organisation makes the switch, the older the data that could potentially be exposed later."

Beyond the screen

Not all of Himmelberger's work happens behind a desk. During an internal training programme, he once stocked shelves in store: "This kind of insight really matters. It makes us security experts think from the user's perspective. We learn, for example, that store staff can't always log in using multi-factor authentication because they don't always have their phone on them. You need to understand that to come up with workable solutions." He also makes sure to spend screen-free time himself. Every other Saturday, he heads into the woods as co-leader of a Scout group. "It's an excellent balance to office life."

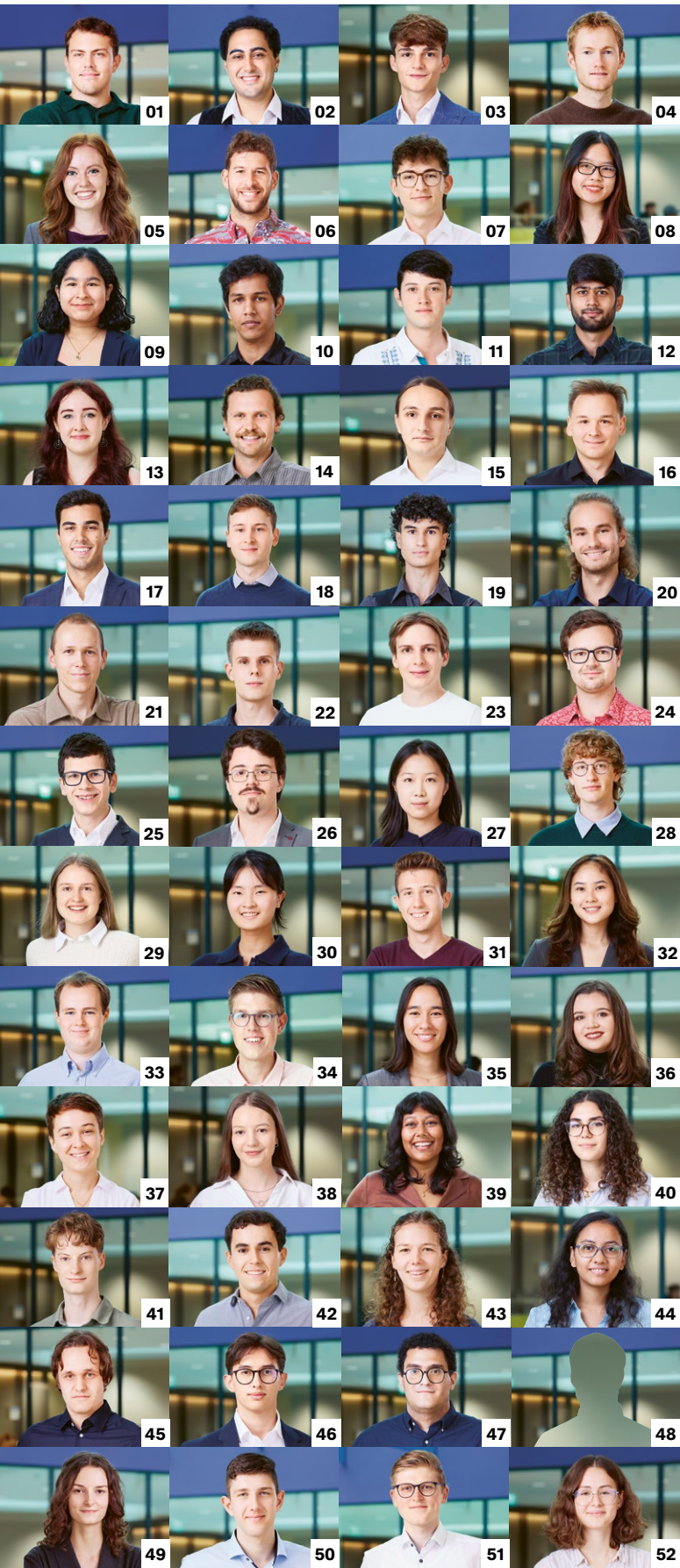
Success of the Excellence Scholarships

2007 (launch of the programme) to 2025:

807 outstanding students
from 74 countries received support

249 from Switzerland
and 336 from the rest of Europe

Excellence Scholarships 2025/26



- 01

Tibet Alpay, TR,
Electrical Engineering and
Information Technology
- 02

Vicente Algaba Martinez, ES,
Health Sciences and Technology
- 03

Paolo Basso, IT,
Robotics, Systems and Control
- 04

Baldouin Bee, DE, Architecture
- 05

Chealen Berry, US,
Civil Engineering
- 06

Elias Bräm, CH, Architecture
- 07

Leon Brunella, CH,
Materials Science
- 08

Thanh Truc Bui, VN,
Computational Biology and
Bioinformatics
- 09

Ivana Carcamo Valencia, PE,
Earth Sciences
- 10

Shubhranil Chatterjee, IN,
Mechanical Engineering
- 11

Emiliano Chávez Pichardo, MX,
Environmental Engineering
- 12

Parinay Chauhan, IN,
Computer Science
- 13

Emma Craig, ZA,
Computational Biology and
Bioinformatics
- 14

Joseph Crudington, GB,
Agricultural Sciences
- 15

Victor-Ioan Dumbrava, RO,
Physics
- 16

Sergey Ermakov, DE, Physics
- 17

Tomás Ferreira Dias, PT,
Management, Technology and
Economics
- 18

Oscar Freiherr von Löhneysen, DE,
Robotics, Systems and Control
- 19

Mikołaj Jakub Gazeel, PL,
Cyber Security
- 20

Dominik Handlir, CH,
Biomedical Engineering
- 21

Moritz Hangartner, CH,
Health Sciences and Technology
- 22

Luca Hegner, CH,
Pharmaceutical Sciences
- 23

Moritz Heppler, CH,
Robotics, Systems and Control
- 24

Radu Herzal, RO,
Robotics, Systems and Control
- 25

Lucas Hörl, AT, Physics
- 26

Elias Hohl, AT, Space Systems
- 27

Chenjie Hu, CN,
Integrated Building Systems
- 28

Raoul Klein, CH, Biology
- 29

Julia Knuchel, CH, Biochemistry
- 30

Allison Tsz Kwan Lau, CA,
Computer Science
- 31

Aleksa Madžarević, RS,
Robotics, Systems and Control
- 32

Elise Marvela, ID,
Environmental Sciences
- 33

Ulysse McConnell, FR, Data Science
- 34

Matthijs Muis, NL,
Mathematics / Applied Mathematics
- 35

Eszter Nguyen, HU,
Health Sciences and Technology
- 36

Anna-Angela Pecheanu, RO,
Computer Science
- 37

Esther Petat, DE,
Mathematics / Applied Mathematics
- 38

Stasha Petrovikj, MK, Space Systems
- 39

Novaya Politra, CA,
Landscape Architecture
- 40

Ioana Popescu, RO, Data Science
- 41

Lukas Rost, AT, Chemistry
- 42

Victor Ribeiro Sanctis, CH,
Chemical and Bioengineering
- 43

Franziska Schneider, DE,
Management, Technology and
Economics
- 44

Manjari Sengupta, IN,
Quantum Engineering
- 45

Flurin Steck, CH, Computer Science
- 46

Daniel Steinhäuser, CH,
Robotics, Systems and Control
- 47

Mehrshad Taziki, IR,
Computer Science
- 48

Diego Torres Tejada, BE,
Mathematics / Applied Mathematics
- 49

Louka Verstraete, BE,
Electrical Engineering and Information
Technology
- 50

Marcel Walter, CH, Civil Engineering
- 51

Elias Westrup, DE,
Robotics, Systems and Control
- 52

Estelle Zemp, CH, Geomatics

Growing above and beyond together

Receiving an Excellence Scholarship creates a wide range of opportunities to meet equally bright and driven minds and make new and inspiring connections, both at ETH and with donors.

Whatever people may think, Excellence Scholars aren't solitary geniuses hidden away in their rooms focused only on their studies. With their scholarship, they become members of a vibrant community where they can share and discuss ideas and realise the full potential of their abilities, passions and visions.

The scholars are officially welcomed by the Rector in September, an event that marks the start of an academic year full of exciting opportunities. At the twice-yearly LabXchange, scholars share insights into their work. In the 2025/26 academic year, for example, former Excellence Scholar David Oort Alonso offered a glimpse into the Agentic Systems

Lab at ETH, showing how agentic AI systems are developed. A particular highlight was the exchange with Sebastian Thrun. The AI and robotics pioneer, Stanford professor and entrepreneur spoke about his journey as a founder, his experiences with deep-tech ventures and what it takes to turn research into a successful company.

The programme also includes excursions for the scholars to discover interesting perspectives on industries and organisations. A visit to Hilti this year took participants to Liechtenstein, while in Zurich West the industrial company Everllence welcomed the current cohort onto the factory floor. Each year, the "Meet the Talent" event creates space for encounters with private donors and foundations. In April 2026, the ETH Foundation and its scholars welcomed close to 400 guests. Missed it? You can watch the recording by following the link at the end of this article.

In May, the community proved its team spirit. At the traditional SOLA relay – Switzerland's largest university sports event – a team of Excellence Scholars took part for the first time. Even the Rector joined a training run held ahead of the race. Incidentally, the coming academic year will be a special one for the Excellence Scholarship programme as it marks its 20th anniversary. The ETH Foundation and its scholars will be celebrating with a series of special initiatives – including former recipients returning as donors to support the programme.





See video of this year's "Meet the Talent"



To the anniversary website

Training together for the SOLA race brings people closer – with Rector Günther Dissertori keeping pace.

Bridging biology, data and society

From rural Brazil to ETH Zurich: supported by a needs-based scholarship, Gianluca Ikeda Ferretti is conducting research on how evolution and genes shape our health. His aim is to build bridges between science and society.

"I spent my childhood in a rural area near São Paulo, surrounded by toucans and monkeys. When I was ten, I moved with my parents and three siblings to Ticino, my father's home region. After my Matura in Lugano and civilian service at Agroscope, I enrolled in the Biology Bachelor's programme at ETH Zurich, as I'd always been drawn to the natural sciences.

Understanding connections

I'm particularly interested in developmental biology and the question of how evolution influences development and health. For my Master's thesis in ETH's Molecular Mechanisms of Disease programme, I'm researching in the field of evolutionary medicine. At the heart of my work is the protein Piezo1, which plays an important role in red blood cells.

Key figures of the ETH scholarships 2025/26

Around 130 young people were supported by a scholarship

With amounts from CHF 600 to CHF 20000 a year

I'm investigating how different genetic variants of this protein relate to traits such as body weight in mammals, and what role they've played in evolution. In the long term, this research will help us to better understand the links between genetic variation, disease and evolutionary adaptation – and to develop personalised therapies, for example for hereditary blood disorders.

Freedom through funding

My parents work in the arts, so it was clear they'd only be able to provide limited financial support for my studies. I funded my Bachelor's degree through cantonal scholarships, savings and part-time jobs as a teaching assistant and food-delivery driver. Receiving an ETH needs-based scholarship from Fondazione PKB for my Master's was a huge relief. The scholarship gives me financial security, so I can focus entirely on my thesis.

Looking ahead, I'd like to pursue a doctorate. Besides evolutionary developmental biology, I'm also interested in how science and politics interact. The Covid-19 pandemic showed just how important – and challenging – it is to communicate scientific findings in a way that's clear and nuanced. I find it alarming how doubt is sometimes deliberately cast on scientific evidence, such as on climate change or health topics. Misinformation can spread even faster on social media, making it all the more important to provide clear context. While working on my Master's thesis, I often notice how demanding it can be to fully understand scientific publications. That's why I'm keen to help make research more accessible to society – whether through my own scientific work or by engaging directly with the public."



Ten years of exciting ideas and bold projects

What began in 2016 with just two student projects has grown into a flagship initiative for project-based learning – one that now reaches far beyond ETH Zurich. The many success stories linked to the Student Project House owe a great deal to the generosity of its donors.

For innovation to take shape, spaces are needed where students from different disciplines can come together, think outside their curriculum and develop their ideas. And spaces where chance encounters can take place. It was here, for example, that the co-founders of Digit Soil first met in 2018. Today, their spin-off – led by Sonia Meller and Hélène Iven – helps farms optimise fertiliser use. The early stages of Tethys's underwater drone and Unbound Potential's novel battery can also be traced back to ETH's creative workshops. With two SPH locations at their disposal – in the main building and on the Hönggerberg campus – students are free to experiment, build prototypes and make use of equipment such as 3D printers and laser cutters.

The infrastructure continues to evolve in step with students' needs. Recent milestones were achieved thanks to a generous contribution from the Georg H. Endress Stiftung, which enabled ETH to establish a Life Sciences Lab, and a donation from the ZKB Philanthropie Stiftung that led to the expansion of the Digital Makerspace. This is where students explore and apply technologies such as artificial intelligence and extended reality. This year also saw the opening of the HSG ETH Student Project House in St Gallen, where the strengths of students from both universities are combined in the best of both worlds. Looking ahead, the next step to be realised with donor support is a Food Lab dedicated to developing agricultural technologies, food processing and products fit for the world of the future.

Student Project House (SPH) in figures:

More than 1300 projects have been assisted in ten years

In 2025, 73 per cent of the projects aimed to benefit society or the environment

Almost a quarter of ETH spin-offs and start-ups emerged last year from an SPH project



Many thanks!

Supporting talented students with Excellence Scholarships, ETH Scholarships and Pioneer Fellowships is only possible thanks to the commitment of private individuals and partners. To all of you – more than 9,000 donors – we extend our sincerest thanks. Together, you are giving brilliant minds with bold ideas the wings to fly.



For an overview of our donors and partners:

“Planted received support from ETH donors in its early days. Their backing helped us bring our products to market while benefiting from ETH's expertise and infrastructure. Today, Planted employs 220 people and supplies more than 10,000 stores across nine European countries.”

Lukas Böni,
Co-Founder Planted, former Pioneer Fellow



“The challenges of our time – from the energy transition to mobility – call for people who combine technical expertise with economic vision. That's exactly what my studies at ETH gave me. I haven't forgotten that it was a scholarship that enabled me to take this path – which is why I now support the programme myself.”

Hannah Knüsel-Cassard,
Team Lead Traction Power Technical Development SBB,
former Excellence Scholar



Making education a foundation for the future

Irène and Gerd Burla look back on a rich and varied life, one that has also been marked by a personal loss. They support ETH because of the pivotal role the university played in the lives of both Gerd Burla and their daughter.

Mr Burla, as an architect you've been responsible for a number of remarkable projects – where might people have come across your work?

GERD BURLA – Working with the agency Interbrand Zintzmeyer & Lux – a partnership that lasted from 1977 to 2007 – I was able to shape the architectural expression of the BMW brand worldwide. In technical terms, I'd say my most demanding project was the brand-specific interior design of the entire aircraft fleets of Lufthansa and Thai Airways. The most fascinating and challenging of all, however, was my collaboration with the American light artist James Turrell on his Roden Crater project, an extinct volcano near Flagstaff, Arizona. Since the 1970s, he's been pursuing his life's work there, transforming celestial phenomena into light within the crater, making light and colour tangible. I worked alongside him as an architect for several years. I've since donated my architectural plans to the Institute for the History and Theory of Architecture (gta) at ETH. And people with an interest in fashion may also remember the Hannes B. boutique in Zurich, which I designed – now part of the collection at the Swiss National Museum's Collection Centre.

Your ties to ETH go beyond your studies.

GERD BURLA – I quickly took an interest in becoming involved in the Polyball. In my second year, I became Head of Decorations and was elected to KOSTA, the committee responsible for organising the ball. I played an active part in the event for many years – first as President, later as an adviser. After I was married, the Polyball became something of a family affair, with Irène also getting involved. Once during set-up, our then twelve-year-old daughter even "flew" across the hall of the main building on a wire cable.

Flying high was also the theme for your wedding – which made headlines from Blick to the New York Times.

IRÈNE BURLA – It started as a joke. Gerd said, "Let's get married in New York." I replied, "In a helicopter." On the day of the wedding, we received a call at the hotel asking whether the press could join us. After a live interview on CBS Radio, the TV station WPIX filmed our ceremony above Park Avenue from a second helicopter. The piece was broadcast on the evening news.

Your daughter Joan-Bryce was born in 1984. How did her path unfold?

IRÈNE BURLA – She discovered her love of horses at an early age. After starting riding at seven, she began competing in show jumping while still at secondary school. She went on to study agricultural sciences at ETH, completing a doctorate on horse husbandry and behaviour before moving on to her last position, a postdoc at Agroscope in Tänikon. She was diagnosed with cancer before even starting her Master's thesis and had to endure many difficult periods. Despite this, she was highly successful in her research and received an award from the International Society of Livestock Husbandry for her doctoral thesis. In it, she studied horses kept in open stables and how their interactions are influenced by factors such as resting areas and feeding management. Her findings have also been fed into revisions in federal legislation.

Your daughter passed away at a young age. Is her connection to ETH the reason you're supporting the university with a named fund and a gift in your will?

IRÈNE BURLA – Our daughter received tremendous encouragement at ETH. Her illness was always taken into account, and her demanding research given full support. That allowed her to pursue her passion to the fullest – something for which we'll always be deeply grateful to ETH.

And you, Mr Burla – do you also feel the desire to give something back to your alma mater?

GERD BURLA – Very much so. And to help make education a foundation for the future. I was only able to build a career because, at every stage, there were people who supported me. My parents were of modest means. I was only able to study thanks to a scholarship, and at ETH I found professors who encouraged and guided me.

You travel a great deal. Where are you off to next?

IRÈNE BURLA – Ever since Gerd began working on the Roden Crater project, we've travelled regularly to the American Southwest. We love being on the road there. The vivid rock formations, cacti, golden grasses swaying in the wind, and those deep black nights where you can see the Milky Way – it's quite unique.

Current Pioneer Fellows



Chakaveh Ahmadizadeh
SmrtMov: intelligent clothing for improved rehabilitation

The ageing population is placing increasing pressure on healthcare systems world-wide. SmrtMov is developing a garment that combines highly sensitive fibres with AI algorithms to enable continuous motion analysis in everyday settings. The system promotes rehabilitation after surgeries like joint replacements, providing precise support regardless of location. Patients can track their recovery progress, while clinicians can manage treatment plans more effectively.



Dr Manuel Carro Dominguez
Biomasker: improving sleep through precise pupil signals

Sleep disorders affect millions of people worldwide, yet early warning signs are difficult to detect at home. Recent research shows that the human pupil is a reliable indicator of deeper brain activity. Bio-masker is developing a sleep mask capable of measuring brain signals in real time and using smart audio feedback to promote more stable, restorative sleep.

Research explained firsthand: At the “Meet the Talent” event, donors and those they support come together.



Dr Kanika Dheman
UroPatch: bladder monitoring without hospital visits

Kidney disease, spinal cord injuries and lower urinary tract symptoms affect more than a billion people world-wide. UroPatch is a wearable device that measures urine volume and flow patterns accurately and in real time. Current methods, by contrast, are invasive, inaccurate or impractical. Kanika Dheman is further developing the wearable, validating it in clinical settings and preparing pilot implementations.



Dr Shuo Li
Augel: restoring vision with a synthetic cornea

Keratoconus is an eye condition in which the cornea gradually bulges into a cone shape. Many people affected experience vision loss – not

least because there are too few donor corneas available world-wide. Shuo Li is developing a fully synthetic, customisable cornea that almost perfectly replicates the functions of natural tissue, laying the groundwork for restoring sight to people with severe corneal disease around the world.



Svitlana Mykolenko
Olexir: healthier fats from plants

Solid fats used in food contain high proportions of saturated or trans fatty acids, which raise health concerns. In cosmetics, stable textures rely on fossil-based ingredients, synthetic polymers, silicones or unsustainable palm derivatives. Olexir’s approach is to use plant proteins to transform natural oils into solid textures. The resulting oleogels offer sustainable alternatives that support longevity and planetary health.



Using Svitlana Mykolenko’s method, plant-based oils are turned into stable gels without the need for synthetic additives.



Dr Ronja Rappold
Teno Bioworks: chemicals without fossil dependence

From plastic packaging to fragrances and dyes, chemicals derived from petroleum are everywhere. Bio-based alternatives often reduce emissions by only around half and require large amounts of land and water. Ronja Rappold has developed a process that uses microorganisms to produce chemicals from green methanol – a significant step towards fossil-free chemical production.



Mayur Gajanan Sapkal
RepliClouds: recreating clouds to advance climate resilience

Clouds play a critical role in precipitation, droughts and the climate system as a whole. Yet their precise formation remains poorly understood, making accurate predictions difficult. Mayur Gajanan Sapkal has developed an instrument that can accurately replicate the formation of cloud droplets. The technology has already been patented and interest from research institutions and industry is high.



Jiaqi Su
DetoxiGel: reducing the impact of alcohol

Excessive alcohol consumption is linked to serious health risks. Jiaqi Su is developing an innovative formulation that helps the body break down alcohol more safely. The solution is based on natural ingredients that convert alcohol into a harmless substance as soon as it reaches the digestive tract. This will help reduce immediate symptoms and limit potential long-term harm.



Luca Thommen
Solar Heat: rethinking industrial heat

Industrial production processes often require large amounts of heat, most of it generated from fossil fuels. Existing solar technologies are either too expensive or fail to reach the necessary temperatures. To address this, Luca Thommen is developing a new type of solar thermal collector. The system reaches temperatures of up to 150 °C and is cost-effective enough to enable even price-sensitive industries to switch to clean process heat.



Anna de Vries
Sunne Tech: removing CO₂ with sunlight

Tackling the effects of climate change requires more than cutting emissions. Ways must also be found to remove the CO₂ already present in the atmosphere. Anna de Vries has developed a method that captures CO₂ directly from the air, using sunlight as its energy source. At the heart of the technology is a chemical solution that makes the process both energy-efficient and scalable.



Yimo Yan
Parabolis: microrobots that treat blood clots

Treating venous thrombosis and pulmonary embolism carries significant risks. To provide a safer option, Yimo Yan is developing magnetically controlled microrobots that can break up blood clots mechanically while delivering medication to the site of the blockage. This enables local, minimally invasive treatment with a significantly reduced need for medication.

Success since the launch in 2010

Around
160 Fellowships awarded

100 companies founded by Fellows

Recycling rare resources

Found in smartphones and electric vehicles, rare earth elements are essential when it comes to both digitalisation and the energy transition. Yet their extraction is geopolitically sensitive and environmentally costly. At ETH Zurich, chemists Marie Perrin and Victor Mougél have developed an efficient process to extract these metals from electronic waste.

Marie, how did your research turn into a business idea?

MARIE PERRIN – The world produces vast amounts of electronic waste. Yet in this waste are significant quantities of rare earth metals, little of which are being recycled. In Professor Victor Mougél's Laboratory of Inorganic Chemistry at ETH, we discovered that simple bioinspired molecules can bind to rare earth elements on a selective basis. The breakthrough came when we were able to show that our method works even in complex mixtures like those found in electronic waste. So we asked ourselves: if we have the scientific foundation, why not turn it into a real-world solution?

What sets your approach apart?

Instead of energy- and chemical-intensive processing chains, we use highly selective molecules to extract specific individual rare earths from a mixture. This makes the process not only more efficient but also more environmentally friendly than conventional methods. By recycling rare earth metals from electronic waste, we're also helping to close the loop on these materials.

Where does your technology stand today?

We're pursuing two objectives. First, we're scaling up the process and building our first laboratory-scale pilot reactor. Second, we're broadening the range of waste streams we can process to include magnetic waste from hard drives and electric motors – all in close collaboration with industry partners, so that we can base the technology on real conditions. At the same time, our growing team is significantly speeding up developments.

"We need to improve recycling processes and limit the use of these critical metals to what is essential."

How do you plan to put the technology into practice?

We want the recycling to happen locally. Rather than huge, capital-intensive plants, we envisage modular units that can be installed directly at recycling facilities or manufacturing sites. This avoids long transport routes and helps companies retain control over their supply chains. What excites me is the idea that a piece of junk can be turned back into something valuable – right where the waste is generated.

How large could the impact of your technology be?

The potential is huge. The concentration of rare earths in natural deposits is extremely low and this concentration varies greatly depending on the rare earth: producing just one tonne can generate up to 2,000 tonnes of toxic waste. Then there's the issue of geopolitical dependencies – more than 90 per cent of global production takes place in China. Rare earths are very often far more concentrated in electronic waste than in nature. From both an environmental and a technical standpoint, it makes much more sense to extract them from secondary sources. While primary mining will remain necessary as demand continues to grow, we'll need to improve recycling processes and limit the use of these critical metals to what is essential.

Moving from the lab into entrepreneurship is a big leap. How does the Pioneer Fellowship help you?

My academic research revolves around experiments, data analysis and publications. But as a founder, my responsibilities range from industry relations, business strategies and recruiting to investor pitches. The Pioneer Fellowship helps me bring these multiple roles together – by offering coaching, access to entrepreneurial expertise and a strong network of committed founders. It also allows us to continue using ETH laboratories – a decisive advantage given the infrastructural needs and safety requirements of a chemistry start-up.



Support the Pioneer Fellowship programme:

Making an impact



Magdalena Lederbauer graduated from ETH with an ETH Medal, the Willi Studer prize, the S. & N. Blank prize and a Dr. Maria Schaumayer Stiftung award.

From ETH to MIT

It was clear early on that Magdalena Lederbauer had exceptional talent, as she completed her Master's in chemistry at ETH on an Excellence Scholarship. Nonetheless, receiving no less than four awards for her Master's thesis was still a remarkable recognition, one that gave the Austrian strong encouragement for her path ahead. She's now pursuing a doctorate at the Massachusetts Institute of Technology (MIT), working on cutting-edge machine learning methods with the potential to achieve breakthroughs in applied chemistry.



Pregnolia collaborates with world-renowned gynaecologists whose aim is to facilitate the ETH spin-off's entry into clinical practice.

Founder with big ambitions

"Build something that truly wows people" – that's the stated aim of David Oort Alonso, a former Excellence Scholar who graduated from ETH in 2023. As co-founder of Bloom, he's now working to radically simplify the way smartphone apps are developed. His journey hasn't been without setbacks. It took five rejections before the young entrepreneur was accepted into the highly competitive Y Combinator programme. Since then, his Zurich-based team have gone on to raise USD 3.4 million in investment.

OBaris acquired by Johnson & Johnson

Offering a novel drug delivery platform, OBaris was founded by Pioneer Fellow Nevena Paunovic and David Klein Cerrejon as a biotech spin-off from ETH and University Hospital Zurich (USZ). The technology enables therapies typically administered by injection to be delivered buccally (via the inside of the cheek). The approach has the potential to expand treatment options while improving patient comfort – and is now being further developed as part of Johnson & Johnson.



Nanomaterials spin-off tipped for success

Chiral, a company building next-generation chips, is making positive headlines: with Pioneer Fellow Natanael Lanz as co-founder, the start-up recently secured USD 12 million in seed funding. Chiral was set up in 2023 as a collaboration between three research groups: the lab led by Christofer Hierold, Professor of Micro- and Nanosystems at ETH; the Institute of Machine Tools and Manufacturing headed by Professor (now Emeritus) Konrad Wegener; and the "Transport at Nanoscale Interfaces" department led by Michel Calame at Empa. The company has also received funding from Innosuisse, Switzerland's innovation agency, and was awarded the Swiss Technology Award in the "Inventors" category.

Big brains behind new wheelchairs and weeding robots

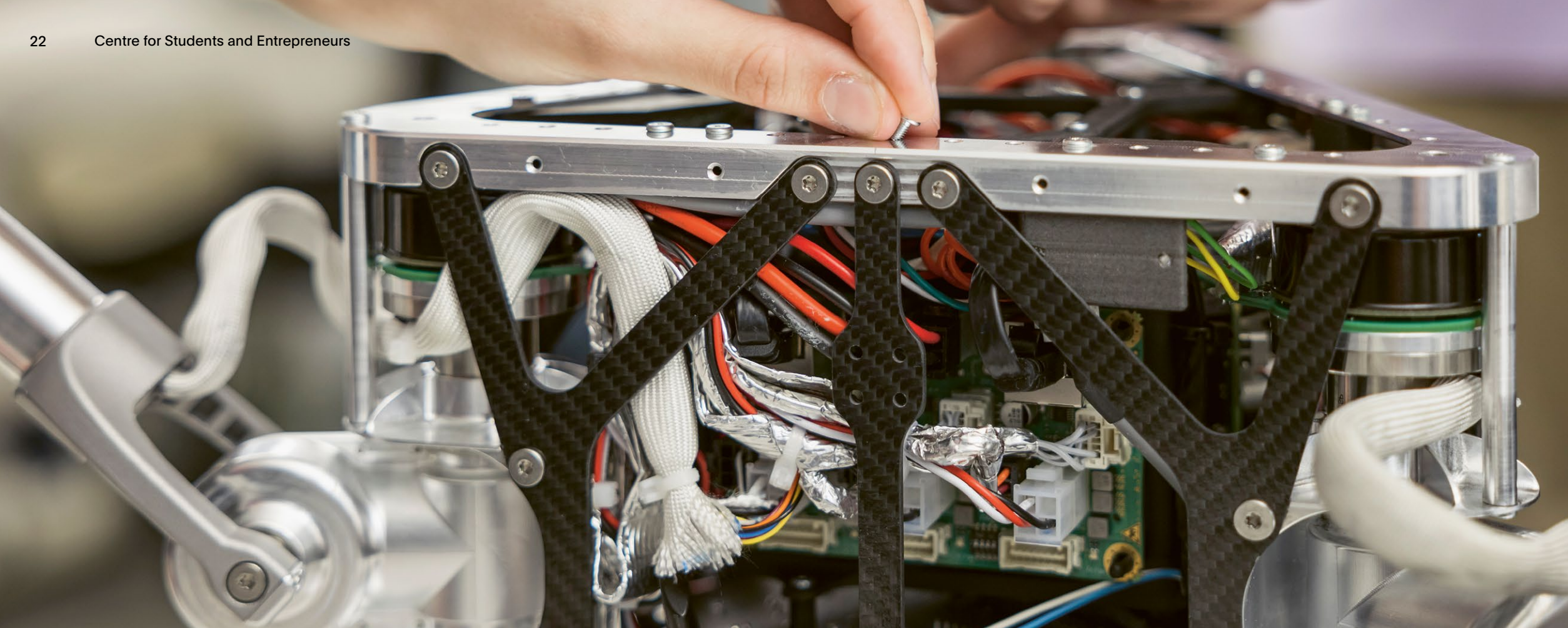
After finishing their studies, Excellence Scholars are often ready to tackle exciting challenges. Céline Grünenfelder, for instance, is working at Versive to revolutionise the manual wheelchair. The company was supported by a Pioneer Fellowship and plans to launch its first product in 2027. Noah Sassan, meanwhile, is bringing advanced innovation to agriculture with the autonomous Cattera weeding robot, also developed with the support of donor funding. With a deep learning algorithm, the system can reliably distinguish weeds from crops and eliminate them using a laser.

Women's health draws investor interest

Sabrina Badir, a former Pioneer Fellow and founder and CEO of Pregnolia, has developed a system that enables the prediction of preterm birth. In March, the company secured funding from the European Innovation Council (EIC), allowing it to successfully close a third financing round worth CHF 3.4 million and move from fundamental research into clinical application. From every 100 children born in Switzerland, six to seven are born prematurely.



For more news on ETH talent, follow the ETH Foundation on LinkedIn, Instagram and Bluesky or subscribe to Impact News:



A landmark new building in an exciting phase

The design-build competition for the new centre of creativity and entrepreneurship on the Hönggerberg campus is now underway.

The Centre for Students and Entrepreneurs plans to unite under one roof existing initiatives that are currently spread across multiple locations, including the Student Project House, the ETH Entrepreneur Club and numerous ETH spin-offs. It will also provide an excellent home for UPortunity, the accelerator programme supported by UBS. After all, the Centre represents more for our students and researchers than just a building: it will form a unique ecosystem where interdisciplinary collaboration, creative experimentation and entrepreneurial initiative will be encouraged to flourish – with workshops, modern workspaces, event areas and informal meeting zones creating the ideal environment to make it all happen.

The design-build competition was launched in early June and is being run as a two-stage

dialogue procedure, with the first submission deadline set for January 2027. The distinguished jury is composed of recognised experts in architecture, engineering and sustainability, and includes representatives from ETH Zurich, other universities and the City of Zurich's Office for Urban Design. Members of ETH's Executive Board are also strongly represented. In spring 2027, the jury will select three teams to move on to the second stage of the procedure and further develop their proposals. The aim of this dialogue-based approach is to refine the projects to the point where the winning design can move straight into construction without substantial revision once the contract has been awarded. The project will be executed within a binding cost cap. The jury's decision is expected in the second half of 2027, with construction scheduled to begin in 2029.

Thank you

This ambitious project is being made possible thanks to the generous support of committed partners – above all UBS as a major partner, as well as organisations including the Ernst Göhner Foundation, Fondation Alcea, Werner Steiger Stiftung, Baugarten Stiftung, SWF Stiftung für wissenschaftliche Forschung, Truus und Gerrit van Riemsdijk Stiftung, Franke (Artemis Group), BKW, Heer und Co., Plexim and ETH juniors, along with numerous committed private individuals, including Dr Severin Hacker, Jürgen Hilti, Manfred Hunziker, Philippe A. Sarasin, Professor Roland Yves Siegwart, Andrea Ullmann-Bremi and Tonia Weibel.

Their investment in the Centre for Students and Entrepreneurs is an investment in the next generation of innovators shaping the future.

We look forward to hearing from you

ETH Zürich Foundation
Weinbergstrasse 29
8006 Zürich

T +41 (0)44 633 69 66
E info@ethz-foundation.ch
🌐 ethz-foundation.ch

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