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Martin Vetterli
President of EPFL

“As quickly as possible and as slowly as necessary”

EPFL is taking a cautious approach to reopening campus, placing an absolute priority on the health of staff and students. In truth, this crisis brought out the best in us, and we were able to keep the School running the whole time.

“As quickly as possible and as slowly as necessary.” Those are the now-famous words of Federal Councilor Alain Berset, Switzerland’s minister of health. I chose this quote not just because it’s a catchy turn of phrase, but because it neatly encapsulates our own mindset throughout the campus shutdown and continues to guide us as we get things moving again: the health of our staff and students takes top priority, and we’re doing everything we can to help stem the spread of this pandemic.

There’s now a light at the end of the tunnel, as we can see the public-health crisis abating. That said, COVID-19 will bring about a new normal, and we mustn’t forget that there could be a second wave. In other words, we’re going to have to keep adapting our behavior and our work environment until there’s an effective treatment or vaccine.

During the lockdown, we rose to the challenge and seized opportunities – both within EPFL and for the benefit of society as a whole.

Within the School, our students were able to continue all their classes online, and our staff members managed to keep the lights on. More broadly, we played a hand in developing the nationwide contact tracing app SwissCovid while at the same time contributing our scientific expertise to the Swiss Task Force. We’re also conducting cutting-edge coronavirus research.

I’m certain we’ll emerge from this ordeal stronger than before, and I’d like to thank each and every one of you for your contribution to this collective effort!

Have a wonderful summer. And please take care of yourselves.



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EPFL'S CAMPUS COMES BACK TO LIFE



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A month of May like a summer's day

Throughout the seven weeks of almost total lockdown, the golden rule was “work from home.” But our Lausanne campus and the School’s other sites are now coming back to life – subject, of course, to strict hygiene measures. The ultimate goal is to be able to safely hold in-person exams in August.

Anne-Muriel Brouet, Sandy Evangelista, Valérie Geneux



At the CMi, Patrick takes care of the security of the facilities and of the people.
© Alain Herzog



Never in 51 years has EPFL banned students from its lecture halls, emptied its offices, almost totally shut down research facilities, canceled all events and closed all catering points. It's never done all that at the same time, and never for so long. Fifty-one days in total – from 13 March to 4 May. Everything had to be shut down in a hurry. And now it's time to patiently and cautiously open it all up again, step by step.

Little by little research has started up again, although the students are still missing. During this initial phase, only research teams that need access to lab facilities are allowed to come back. They've had to draw up shift plans, since only around 35% of each team is allowed on site at any one time. In the labs, researchers used to work side by side, but now people keep their distance. Teams have been divided up into two completely separate groups to reduce the risk of cross-infection and, in the worst of cases, to prevent the entire lab from having to go into self-isolation.

“For the first week that the lab was up and running again, two of us were allowed in during each time slot. The second week, we were allowed up to eight people. There are usually about 20 of us,” says Andrada Muntean, a PhD student in the Advanced Quantum Architecture Laboratory in Microcity, Neuchâtel. “I went twice and I was there on my own. It's strange – it was so calm. I had nobody to talk to.”

“Just like at IKEA”

“To keep the distance between colleagues, I put arrows on the floor in the lab to mark the way, just

like at IKEA,” explains Laurence Gouzi Abrami, a scientist within Professor Gisou van der Goot's unit. “That means we don't bump into each other. That can happen a lot in a microbiology lab – you're always having to go and get samples from shared equipment like the fridge and the incubator.” When people have to get closer to work, they wear face masks. There's disinfectant everywhere. And everything is regularly disinfected.

“Researchers are used to sharing information with their colleagues, so the rules do have an impact,” says Sandrine Gerber, deputy head of the Institute of Chemical Sciences and Engineering (ISIC). In her ten-person lab, people alternate full work days. In others, it's half days. “A five-person team works from 7am to 1pm and the other does 2pm to 9pm,” explains Francisco Sarmiento Mesquita, another scientist in Professor Gisou van der Goot's unit. “That allows us to do six hours straight of full-on work, then our partner can take over and we can go back to working at home on the computer. It's a very efficient way of doing things.”

Tightly controlled access to technical facilities

“We've adapted the restart rules for each lab,” says Prof. van der Goot, who's the dean of the School of Life Sciences. “We looked at the guidelines and applied them based on the needs and possibilities of each lab, while also ensuring the necessary level of safety. In difficult times, it's important to show that we can take each lab's specific needs into account.” In addition to the labs, the School's tech platforms, which provide the entire EPFL community with



We now only go one way in Professor Auwerx's lab. © Alain Herzog

access to cutting-edge equipment, were forced to rethink their way of working for the restart phase. One such facility is the Center of MicroNanoTechnology (CMi), which is open 24/7 and serves more than 500 users a year. Twenty percent of its users are EPFL startups, and one-third of EPFL's laboratories call on its services. That was until 16 March, at least. Now, to go into a clean room, you need more than just a face mask, gloves and a protective suit. The hygiene measures go on for 14 pages, the entry procedure has nine steps and the exit procedure has eight. The opening hours have been shortened, and the supplies of disposable gloves and disinfectant increased.

But the biggest difference is that the users must have their own suit – they can't be shared. That means user numbers have to be limited, since the suits are hard to come by at the moment. "During the first week, the number of people was limited to 50," says Philippe Flückiger, the CMi's operational director. It's now gone up to 100, with users selected based on their use of the facility over the previous six months. "This crisis forced us to rethink how we do things," explains Flückiger, who hopes that the CMi will soon be able to fulfill all requests.

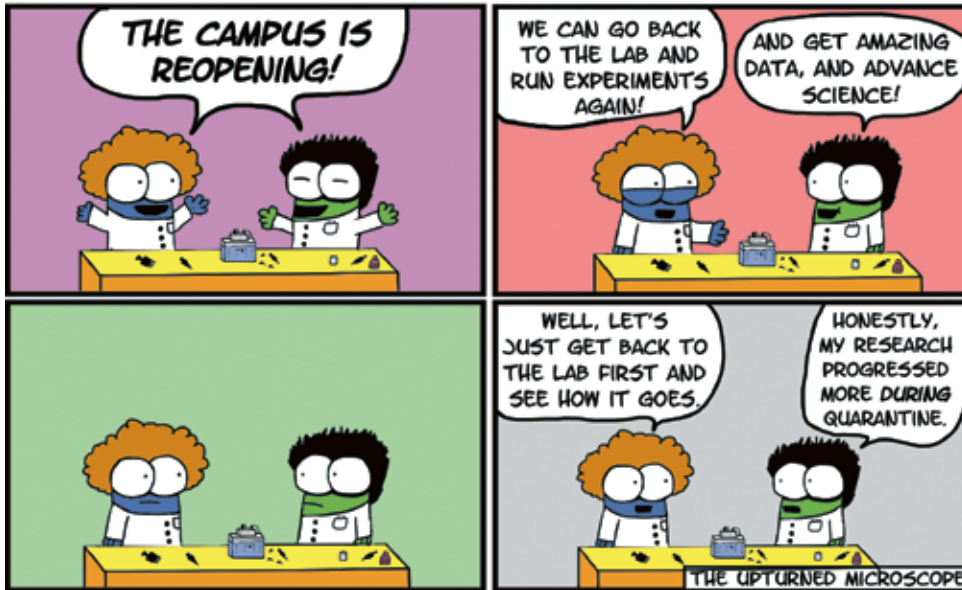
"We had to reorganize everything"

The ISIC's Sandrine Gerber notes, "We have 350 users with 24/7 access to our 22 self-service analytical instruments, which include the nuclear mag-

netic resonance (NMR) machine. They conduct 100,000 analyses a year. We had to reorganize everything." Since 6 May, users have simply been banned from entering one of the NMR rooms in the BCH building. All samples are handed over to the platform's technicians. Even though there are fewer researchers around, the waiting time for each of the three spectrometers is about two hours on average. It's a strict protocol: researchers have to place their sample and request form in the designated area at the entrance. Afterwards, the results are added to the server in a folder named "Covid19."

NMR facility is no longer in open access. © Alain Herzog





How the lockdown and restart have affected experiments and teaching

“The fruit flies were not affected”

“It took us about a week to find our bearings. But we managed to keep up the pace throughout the seven-week lockdown. We each kept busy writing our theses and, for me, articles. And I also used the time to get ahead with my class preparation. In the lab, my team was divided into two groups of five and we kept working – the fruit flies were not affected by the campus shutdown.”

Bruno Lemaître, director of the Global Health Institute

“Nothing can replace lab work”

“Lectures work quite well online, although we did have to make adjustments because it takes longer and there’s less interaction. But at a technical university like EPFL, the practical work is essential. Students need to manipulate things themselves and be involved in experiments in order to learn – nothing can replace lab work. How can we make up for that?”

Sandrine Gerber, deputy head of the Institute of Chemical Sciences and Engineering (ISIC)

“You can manage things well remotely”

“I haven’t been back to campus since 13 March. But you can manage things well remotely. You have to do things differently, but it works. Remote working requires trust among colleagues. Not everyone has that attitude yet. And some professors still haven’t warmed to the idea. But I think remote working makes it easier to juggle all aspects of your life bet-

ter. And people really do work. There’s a chance we may have to keep at it like this for a few more months or years.”

Gisou van der Goot, dean of the School of Life Sciences


“Limit the impact”

“The HOBEL team is mainly involved in empirical research in the lab or out in the field, so our work was put on hold until further notice. We’re currently working on data analysis, articles and other literature-related tasks. We had to adapt how we do certain things. We switched from lab work to simulations in order to keep up the pace. In other words, yes, my lab has been affected by the crisis, but we did everything we could to limit the impact.”

Dusan Licina, head of the Human-Oriented Built Environment Lab

What has changed for you?

What impact did COVID-19 and the lockdown have on your research? How did it change your way of working, especially your use of digital solutions? What changes will you keep? EPFL staff members tell their stories in videos:

 go.epfl.ch/covid-19-what-has-changed

If you’re an EPFL researcher, student or staff member and would like to share your lockdown story, please contact Anne Laure Gannac (anne-laure.gannac@epfl.ch).



WELCOME BACK KIT

A small bottle of hand sanitizer and eight surgical masks. EPFL offers every staff member a protection kit for his or her return to campus. Simply pick it up at the DSPS with your Camipro card. The kit is renewable every 14 days. Keep the bottle, it is refillable!



> FOR SCHEDULES AND ANY OTHER INFORMATION ON THE CAMPUS IN TIMES OF PANDEMIC: go.epfl.ch/coronavirus

“Our goal is to be able to hold the exams in August”

The EPFL campus has slowly been coming back to life over the past month. First, research activities started up again. Three weeks later, other staff were allowed back on site, in units that are just as essential to our School – but always with a maximum of 35% to 40% of the units’ staff members at a time. “We’re under a lot of pressure to raise that percentage,” notes Eric Du Pasquier, EPFL’s Safety Prevention and Health Delegate.

But he resisted that pressure during the first phase of lockdown easing. “Our number one priority is the health of EPFL employees. Our second is being able to hold the exams in August under optimal safety conditions for everyone,” says Du Pasquier. “If there’s a second wave of the pandemic, the setback will be measured not in weeks, but months. The more careful we are now, the lower the chances of that happening. We have to be patient.”

The first phase of lockdown easing lasted three weeks, because that’s the time needed to evaluate the impact on COVID-19 infections. The numbers after the first phase looked good, both nationwide and locally, and so EPFL decided to proceed with the second phase on 25 May, bringing more staff back on campus. Today some 1,700 employees are once again working in their office every day.

Scaling measures back rather than stepping them up

“We started by granting permission to research units and are gradually expanding that to all other units,” says Du Pasquier. “Working from home isn’t easy for everyone, and we all have to get back into our normal routine at some point.” EPFL will keep increasing the number of employees allowed on campus throughout June – provided that the pandemic remains under control. However, no decision has been made yet as to whether students can come back in July to study for their exams.

Complying with the social distancing requirements entails complicated logistics that have to be tweaked as the situation changes. “Holding exams safely in August will be a big challenge. We have to make sure that all 1,100 students taking the exams simultaneously are spaced adequately apart not only in the exam rooms, but also as they’re entering and exiting the buildings and walking through the hallways. And if we decide that all students must wear masks, then we’ll have to supply them,” says Du Pasquier. Fingers crossed that the situation improves between now and August. “It’s easier to ease measures than to reinforce them,” he says.

Eric Du Pasquier. © Alain Herzog



Campus eateries slowly reopen

A month ago a number of EPFL cafeterias and restaurants began thinking about reopening, but most decided it was still too soon. Now, a handful of the highly popular eateries – Le Parmentier, along with Sushizen and Puur – have fired up their kitchens once again as the campus slowly comes back to life. The campus grocery store Le Négoce is also open. Other eateries will follow suit over the summer months once there are enough people back on campus – especially if and when it reopens to students. The COVID-19 crisis has forced eateries to completely rethink how they operate, on a scale comparable with airport security reforms after September 11. That’s meant limited menus, floor markings, payment by card or Camipro only, reduced seating, and tables disinfected between diners. Guests will need to maintain physical distancing, not touch anything, and follow a one-way system. And they can expect to be served by staff wearing gloves and masks, and protected behind a visor or a plexiglass

screen. But for all these changes, some things remain the same. At Le Parmentier, two PhD students were recently spotted discussing their research from opposite ends of a table meant for six. Even in the face of adversity, academic and social life goes on.

At Le Parmentier, everything is done to guarantee sanitary standards. © Alain Herzog



Seven weeks of solitude in deserted buildings



Fabio Taddei.
© Nathalie Jollien



Laurent Seydoux.
© Nathalie Jollien

EPFLL Valais-Wallis buildings weren't totally abandoned during the lockdown. Two staff members who stayed on site tell us what those unusual weeks were like.

EPFL Valais-Wallis researchers come in one by one to the campus shop to pick up their supplies of chemical reagents and other lab materials. The manager, Laurent Seydoux, hands over an order and then carefully disinfects everything, so he's ready for the next visitor. He's slowly getting back to cruising speed after seven weeks by himself.

During the crisis, he occasionally crossed paths with a security guard, but otherwise he spent 90% of his time alone. "I can't work from home. I needed to make sure there was always someone here to operate the machines that didn't get shut down," he explains. "It was calm and stress-free, so it was kind of relaxing. And I don't mind being on my own – at times it was pretty heavenly." But Laurent admits that walking through empty corridors could be "a little freaky... you start hearing noises and imagining things."

The adventures of Laurent and Wilson

A volleyball with a red face painted on it takes pride of place on Laurent's desk. It's a copy of Tom Hanks' imaginary friend from the movie "Castaway". "Meet Wilson," he jokes. "I recorded our adventures together over the seven-week lockdown and posted them on Facebook." Their tasks included filling the nuclear magnetic resonance machine with nitrogen every week, collecting deliveries, and keeping an eye on the building's technical facilities, especially the gas pipes. "I also helped colleagues who weren't allowed into the building but wanted their computer

screens so they could work from home. And in one lab, I made small adjustments to the machines that were being controlled remotely by researchers at home."

Fabio Taddei, the technical manager at EPFL Valais-Wallis, was also authorized to be on site. "I usually came about one day a week, mainly to check and repair heating, ventilation and sanitary facilities," he explains. And there were things to mend, including a door and the ventilation system. The building has a positive pressure ventilation system in the lab areas, which keeps the offices safe, and that system was never shut down.

The stress of being on call

Overall, Fabio Taddei enjoyed the calmer period but admits that it was always a bit stressful. "Laurent and I are in charge of first aid at EPFL Valais-Wallis. That means that if an alarm goes off because of a fire or a gas leak, for instance, I have to be on site as quickly as possible," he explains. Coronavirus would have made handling emergencies a little more complicated than usual. "We were briefed, of course, and we have all the necessary personal protection equipment."

With the campus gradually reopening, Fabio was proactive in getting the building ready. He wanted to be fully prepared so that everything would be in place when the researchers started coming back. "I'm happy that the labs are up and running again. It's good to see people. Even if it's from a distance."

Nathalie Jollien

Emerging from the lockdown

The exams have been postponed, students will have to study during their vacation, research is getting back on track, and most staff members are still working from home. As the lockdown eases, what's on your mind?



Markus Ding, first-year Master's student in computer science

"Honestly, I'm quite happy about the exams being pushed back. I'll have more time to study for them and, given the current situation, it's not like we could travel somewhere really great or anything, so we're not missing out on anything.

In September I'm going to start my semester at ETH Zurich as part of my Master's. It's still not (at all) clear whether the classes will be on site or online. I don't know whether I need to look for somewhere to live – I'm waiting to see what happens. At least I'm staying in Switzerland, so it's less complicated than if I were going abroad.

More generally, I feel like my motivation level has dropped slightly. I'm struggling to tune into the online courses when they're streamed live. They're just not that engaging. But I'm not sure anything can be done about that. Instead, I record the classes and watch them later, at 1.5x or 2x speed."



Matteo Cirillo, first-year Bachelor's student in microengineering

"The summer job that I'd lined up has been canceled, and I hadn't planned any vacation. So the modified academic calendar really isn't a problem.

I did my best to get used to the online classes as quickly as possible. Keeping up with the classes helps me to stay motivated. But the lack of direct contact with other stu-

dents and with my teachers is unsettling. I really like that I don't have to go to campus – that frees up about two hours a day. And since my classes are put online in advance, I've been able to play with my schedule so that I can study when I want."

Robin Mamié, first-year Master's student in computer science

"The change in exam dates makes sense, and, quite frankly, I expected it. I don't think there was really any other choice. I'd been planning on doing an internship in July and August, but I'm not sure that I'll be able to do that now because of the exams. If I can't, I'll take some well-earned vacation.

For now, I have to stay motivated and finish several projects before the end of the semester – that's not going to be easy. But I only have one written exam and one oral exam to study for because everything else was assessed during the semester."

Ophélie Planes, PhD student in the Laboratory of Supramolecular Chemistry

"When the lockdown started, I panicked. I couldn't get to the labs to do my experiments, and I was falling behind schedule. I was supposed to finish my thesis in September, but my contract has now been extended by two to three months. When I was getting ready to go back to the lab, I was excited and stressed at the same time. We work in shifts, so we have less time in the lab and have to be very organized. I really make the most of the time I have on site. I hadn't planned on defending my thesis via Zoom, but I don't think all of my committee members will be able to make it here."

Interview by **Nathalie Jollien**

Talia Salzmann, project leader in Prof. Marcel Salathé's lab

"I ended up spending days, weeks and then months in a place that's just meant to be a pied-à-terre. My life was totally turned upside down – as it was for many others – and I had to find a way to adjust to a world measuring just 30m². We're very lucky to be in Switzerland, in part because we can easily get outside and enjoy nature. I haven't been back to Campus Biotech yet, and I don't know when I will. We're a computational group, so we're not allowed back yet. But as soon as I can, I'll be there in a flash. I'm tired of working from home, and I really miss interacting with my colleagues."

Manuela da Silva, secretary in Professor Bitbol's unit (SV) and administrative expert with the Medical Image Processing Laboratory (STI)

"I was happy to get back to campus and pick up my mail and some other things I needed. It was the first time I'd been there in two months. I was allowed to spend four hours on campus. I live in Jura Canton – two hours from Campus Biotech – and I was worried about taking public transport. The trains were empty, but the buses in Geneva were full.

I wore a mask and had hand sanitizer in my pocket. It's something I've always carried with me – I'm pretty adventurous and like to travel. I found the lockdown quite hard – the extrovert in me really struggled. When I can, I'd like to get back to my normal schedule. That means working on site for a few days a week and working from home the rest of the time."

Laurence Gouzi Abrami, scientist in Professor Gisou van der Goot's unit

"I was ready to get back to work. I missed the lab, the experiments, the culture rooms and working with my hands. I wasn't worried at all about COVID when I came back to work. I'm quite rational about such things – if you understand what's going on, then you know what you have to do. And I trust my teammates, and that whoever was there

Gisou van der Goot.
© DR, capture d'écran



before me disinfected everything properly. We have all the necessary safety equipment, so we're very well protected. I especially liked EPFL's welcome kit."

Professor Gisou van der Goot, dean of the School of Life Sciences

"I haven't been back to campus since 13 March! I work in my son's bedroom now.

"All my flights were canceled in quick succession"

Phillip Huwiler began his PhD at EPFL on 15 April. Here, he reflects on the challenges he faced in making the move from the United States to Switzerland.

“In December 2019, when I learned that EPFL was hiring me, I had no idea of the obstacle course that awaited me. I was working as an engineer in South Carolina, and my contract as a doctoral assistant at the Laboratory for Applied Mechanical Design at Microcity in Neuchâtel was due to start on 15 April. At the time, nobody in the US thought the coronavirus would spread across the globe – it was just something happening far away in China.

But then my outbound flight was canceled a few days before I was supposed to

leave. All the other flights I booked were also canceled in quick succession. To make matters worse, I'd rented an apartment in Switzerland from a retired couple that was going to spend a few months traveling. They canceled their plans and withdrew the offer. I could have stayed where I was and started my PhD remotely. But I talked to my professor and we agreed that I should travel to Switzerland, which was several weeks ahead in terms of the spread of the virus, meaning the lab would probably reopen while the US was still under lockdown.

Nowhere to live

Luckily, I managed to book a flight to Switzerland. The plane was nearly empty, and there were several empty seats between passengers so we could socially distance. Because I had nowhere to live, my aunt and uncle let me stay with them temporarily at their place in Thurgau, on the other side of Switzerland.

I still haven't set foot in the laboratory. So I've been spending my time reading

It's great – I have a big screen. It's actually the third workstation I've set up at home, because each time I find somewhere, my kids end up taking it over. Because of the lockdown, we've rediscovered our home and made use of every nook and cranny.

The lockdown has also demonstrated that people don't have to be physically together for things to work. For the past two years, I've been involved in climate-related campaigns on campus, trying to reduce work-related travel, which makes up a huge proportion of EPFL's carbon footprint. We've shown that experts can take part in thesis defenses remotely, and that meetings can be held via video conference."

Interview by **Sandy Evangelista**



© DR

through my literature and planning my classes. In the end, the retired couple agreed that I could move into their apartment once the lockdown was lifted. Things are finally looking up."

Interview by **Valérie Geneux**

IN BRIEF

SMARTPHONE

An app to listen to the cough
 — Record your cough on a smartphone and find out whether you might have COVID-19. The new Coughvid app has been developed by five researchers at the Embedded Systems Laboratory. According to the World Health Organization, 67.7% of people who have the virus present with a dry cough – producing no mucus – as opposed to the wet cough typical of a cold or allergy. The app is still being developed and will be released in the next few weeks. Once the app is available, users will simply need to install it and record their cough – the results will appear immediately. The app targets to reach a 70% accuracy rate when enough data from a broad spectrum of patients is collected and used for testing. Coughvid uses artificial intelligence to distinguish between different types of coughs based on their sound.

GRANT

5 million research grant
 — The Werner Siemens Foundation has given a major grant to the Supramolecular Nano-Materials and Interfaces Laboratory (SuNMIL), headed by Francesco Stellacci. His team, which is working on a compound that can block viral activity, hopes to make progress in the fight against SARS-CoV-2. The grant will cover the most expensive stage of the drug-development work – clinical trials on animals and then humans.

LOCKDOWN

200,000 hospitalizations avoided in Italy
 — Since the beginning of the COVID-19 pandemic, mobility restrictions and social distancing measures implemented by the Italian government have avoided at least 200,000 hospitalizations, and, over time, reduced contagion transmission by 45%. These findings were published recently in the journal PNAS. The paper is co-authored by Professor Andrea Rinaldo, who heads the Laboratory of Ecohydrology (ECHO), and scientists in Zurich and Italy.

Marie-Hélène Corre and Xavier Fernandez Cassi analyze wastewater samples.
 © Alain Herzog



ENVIRONMENT

Using wastewater to track the pandemic

The method paves the way to an early-stage warning system.

A project from the **Environmental Chemistry Laboratory (LCE)**

One approach being taken by researchers at EPFL and Eawag – until drug treatments and a vaccine are developed – is to analyze wastewater samples so that health officials can detect the virus before the disease is diagnosed clinically. “Our study looks at how we can detect the virus in wastewater and measure its concentration before people start developing clinical symptoms – and to determine how much time before,” says Tamar Kohn, head of the LCE.

Thanks to a collaboration with Eawag, the researchers pulled off a major feat in showing that the novel coronavirus can be detected and measured in wastewater in a matter of weeks. The researchers analyzed samples from Lausanne, Zurich and Lugano. The researchers found traces of the virus in all the samples they collected. “We were pleasantly surprised to find a signal in wastewater from Lugano – where only one case had been identified at that point – and from Zurich, where only six had been identified,” says Kohn.

The main goal of this study is to develop an early warning system. With a quick analysis of samples from twenty large treatment plants distributed across Switzerland it could probably be possible to detect resurgence of infections before diagnostic tests could – about a week earlier – especially during the period when the lockdown is being lifted.

Sandy Evangelista, Andri Bryner

SOCIETY

The effects of the COVID-19 lockdown on well-being

A new nationwide study aims to understand the emotional effects of the lockdown on Swiss residents and what steps they are taking to cope with it.

A project from **EPFL, Idiag and UNIL**

In order to better understand how Swiss residents are coping with the lockdown, researchers have created a national online survey. In addition to asking a series of questions, the survey displays emergency phone numbers, options for online chats, and links to useful websites and videos in order to provide support resources to people who are distressed, bored, or suffering from domestic violence. The survey results will be used to identify the inequalities arising in the face of the pandemic and to develop coordinated and collaborative strategies to avoid them in the future should a similar situation arise.

At the end of the survey, participants can leave their email address if they would like to use a new application called Civique App. The app allows them to report on how they are adapting week after week by sending text messages, comments from friends and family, and photos of individual spaces simultaneously serving as home office, gym, and school. The developers are using the app to create citizen-research groups. Once all the data is collected, they will provide policymakers with valuable information on the basic needs of Swiss residents, and on how emergency response measures can be better targeted, whether in the short-term for this crisis, or to help anticipate future ones. The findings will be available soon.

Sandrine Perroud



> WEBSITE (DE, FR, IT, EN)
www.coronacitizenscience.ch

> APPLICATION FOR SMARTPHONE (DE, FR, EN)
go.epfl.ch/civique-app

SWISSCOVID

Switzerland is piloting a tracing app based on Google and Apple protocols

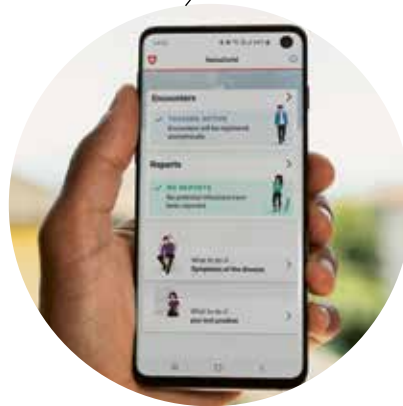
This large-scale pilot paves the way for public availability by mid-June.

Since May 25, several thousand people in Switzerland can download «SwissCovid», the official application for tracing contacts at risk of transmission of COVID-19, if they wish. «This is the first time that the operating system updates from Google and Apple enable its deployment and testing on such a large scale,» says Professor Edouard Bugnion, Vice-President for Information Systems at EPFL. He was at the heart of discussions with Google and Apple to have them adopt the «DP3T» protocol led by the two Swiss Federal Institutes of Technology. Alfredo Sanchez, project manager, notes that «this gives a great responsibility to the Swiss testers, as many other countries intend to adopt the same protocol later on.» This pilot phase will last a few weeks until the Swiss parliament decides on the revision of the law on epidemics.

The purpose of the application is to signal to a user that he or she has been in prolonged contact with one or more people who subsequently tested positive for SARS-CoV-2. With this information, the user can be tested and take additional precaution in order to prevent the spread of the disease.

«Privacy by design»

The effectiveness of the app depends on its widespread adoption by the public. To achieve maximum uptake, the protocol designers chose to minimize the collection and sharing of information. «Our goal is to offer a solution that can be adopted in Europe and around the world,» explains Professor Carmela Troncoso, head of the Security & Privacy Engineering Laboratory at EPFL, the originator of the DP3T protocol. «There are millions of users and we owe it to them to be transparent.»



Digital tracing is one of the tools to control the evolution of the epidemic.
© Jamani Caillet

Decentralized way

SwissCovid operates in a «decentralized» way, which means that the operations that are essential from a privacy point of view are not carried out on a centralized server, but on each phone. The app uses Bluetooth to exchange and record the ephemeral proximity identifiers of other phones in the vicinity. These identifiers are kept on the phone unless a person is tested positive for COVID-19. In that case, their doctor will give them a single-use code that allows them to voluntarily share the ephemeral keys on their own phone that correspond to the days when the person was contagious. These keys are sent to a server managed by the Swiss administration.

If the application concludes that there is prolonged (more than 15 minutes) and close (less than 2 meter) contact with COVID-positive people, it will generate a notification to the phone's user indicating the day of exposure to the risk and the procedure to follow.

Emmanuel Barraud

IN BRIEF

ECONOMICS

Insights from Innovation economists

— Innovation economists at the College of Management of Technology have published a report on the COVID-19 crisis. It covers topics such as: why is society investing so little on vaccine research? What roles do patents play in this crisis? How can we assess the short-term policy (over)reaction in re-allocating so much funding to this field? And finally, what are the lessons for the future?

The document provides the take of innovation economists on the current pandemic. It is addressed to the general public. Divided in three parts, the report explains the root causes for a general under-investment in R&D, discusses several aspects related to current science, technology and innovation policy reactions, and assesses some potential long-term effects of the COVID-19 pandemic.

go.epfl.ch/covid-19-innovation-economy

RESEARCH

Twelve projects selected to combat the coronavirus

— EPFL has chosen 12 projects to receive funding. These studies were selected because they can deliver direct responses to the pandemic. «Some labs are drawing on existing research or on systems that they have already developed, while others have proposed completely new ideas that came out of an intense brainstorming process,» says Paul Sunderland, the deputy to the Vice President for Research. The research must be completed in the short- to medium-term with tangible results ideally in the next six-to-nine months. The projects deal in particular with contagion prevention, diagnostic tools, disease treatment, and vaccine research, but also with economic and social dimensions.

Researchers say regular monitoring of indoor air quality would be necessary.
© iStock



© EPFL



IN BRIEF

INNOVATION

Magnetic resonance to fertility treatment

— EPFL spin-off Annaida is developing a magnetic resonance system that can detect the chemistry inside the tiniest living organisms. The technology's initial application will be in the field of fertility treatment, where it will be used to assess the viability of embryos before implantation. The company has just raised one million Swiss francs to validate safety and efficacy of its technology.

HANDICAP

The exoskeleton for backcountry skiing

— The engineers of the REHAassist research program adapted the TWIICE exoskeleton they'd been working on to create WIITE. It allows people with complete spinal-cord injuries to stand up, walk and, above all, go backcountry skiing thanks to a mechanism that can accommodate standard backcountry ski boots. The only requirement is that wearers must be able to use their upper bodies to operate the exoskeleton's crutches, which provide balance and control.

HOUSING

Indoor air quality merits closer attention

Energy-efficient renovation work on residential buildings tends to overlook the question of indoor air quality.

A project from **EPFL, the School of Engineering and Architecture of Fribourg and unisanté**

According to the survey conducted by the scientists the highest concentrations of chemical and biological pollutants were found in dwellings with good wall insulation but no mechanical ventilation or other air circulation systems. This finding has prompted the team to urge government authorities, the construction industry and the general public to pay closer attention to the issue of indoor air quality, on both sustainability and public health grounds.

The researchers found that levels of chemical pollutants were generally lower in buildings equipped with mechanical ventilation systems. They concluded that high volatile organic compounds concentrations in dwellings built between 1950 and 1990 were, at least in part, caused by the use of certain construction materials, a lack of mechanical ventilation, and the fact that fitting energy-efficient insulation reduces natural air flow between indoors and outdoors.

Dusan Licina, a tenure-track assistant professor at EPFL's Smart Living Lab in Fribourg and one of the co-authors of the papers, believes that the study paves the way for further research into smart windows and low-emission building materials, with an emphasis on the need to monitor indoor air quality continuously.

Sandrine Perroud

HEALTH

Help to prevent bone fractures caused by osteoporosis

The startup Flowbone has developed a gel that can locally reinforce bones.

A project from the **Biomechanical Orthopedics Laboratory (LBO)** developed by **Ulrike Kettenberger**

The LBO scientists came up with a novel compound called Flowbone to address bone fractures caused by osteoporosis. "We developed a biomaterial in the form of a gel that contains a hyaluronic acid matrix, calcium phosphate particles and a tiny dose of a bisphosphonate," says Ulrike Kettenberger, a post-doc researcher at LBO. Doctors can inject the gel directly in a patient's bone under local anesthesia. The gel penetrates the bone structure without damaging it.

"Flowbone is only administered where it's important to prevent a fracture," she adds. "It could serve as a minimally invasive treatment to help avoid systemic secondary effects. The local bone structure would show a marked improvement three or four months after the injection, and the effect would last around three years." A radiologist could perform the injection through an outpatient procedure. Flowbone would be useful mainly for preventing subsequent fractures, since osteoporosis often goes undetected before an initial fracture.

The scientists entered their Flowbone startup in the Venture Kick competition for Swiss entrepreneurs and have just made it through the second round with a prize of CHF 50,000 in funding. They expect to launch their Flowbone gel on the market within five or six years.

Valérie Geneux



> ALL NEWS: actu.epfl.ch

© Alain Herzog



CHEMISTRY

Filtering out toxic chromium from water

Scientists have shown that sponges-like materials can efficiently adsorb substances dissolved in solution, like gold, mercury and lead.

A project from the **Laboratory for Functional Inorganic Materials (LFIM)**
Developed by **Wendy Queen**

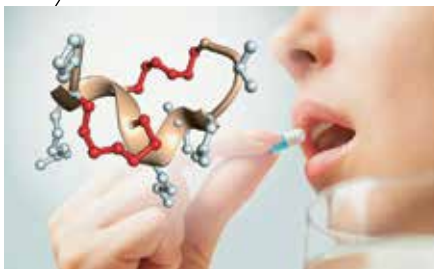
“Providing access to clean water is one of the most important challenges of our time,” says Wendy Queen of LFIM. Queen and colleagues are developing sponge-like materials that can collect specific substances from solution. Their materials are actually crystals, called metal-organic frameworks (MOF), and the scientists are tailoring these crystalline structures to capture a particular substance.

The materials are extremely porous and the contact surface area contained in one gram of these MOFs can be as large as that of a football field. The target substance then enters these pores and sticks to the internal surface area in a process called adsorption.

In collaboration with Berend Smit and PhD student Bardiya Valizadeh, Queen has demonstrated the extraction of hexavalent chromium from water. With hexavalent chromium, a relatively light substance, the MOFs can extract approximately 208 milligrams per gram of MOF. Also, if you shine light on the MOF, it then transforms the highly toxic hexavalent chromium into a relatively nontoxic trivalent chromium.

Hillary Sanctuary

Structure of a double-bridged peptide that is not degraded by enzymes in the stomach and intestines. The two stabilizing chemical bridges are shown in red. © C. Heinis



MEDICINE

Peptides that can be taken as a pill

A new method allows to generate peptides that resist enzymatic degradation and can be taken orally.

A project from the **Laboratory of Therapeutic Proteins and Peptides (LPPT)**
Developed by **Christian Heinis**

Peptides are short chains of amino acids that occur in our body, in plants or bacteria to control diverse functions. More than 40 peptides are already approved as drugs, generating revenues in the billions. But almost none of these drug-peptides can be taken orally. Most peptide-based medication do not survive the passage through the gastrointestinal tract.

In 2018, the research group of Christian Heinis at EPFL developed a peptide format termed double-bridged peptides, where peptides are cyclized by two chemical bridges that provide even higher stability. Despite its success, most such peptides were not sufficiently stable to survive the enormous enzymatic pressure found in the gastrointestinal tract.

Now, Heinis's group has developed a new method that identifies among billions of double-bridged peptides those that bind a disease target of interest and survive enzymes of the gastrointestinal tract. With this method, the researchers have succeeded for the first time in evolving target-specific peptides that can resist breakdown in the gastrointestinal tract.

Nik Papageorgiou



IN BRIEF

OPTICS

The first camera to capture the photon

– The Advanced Quantum Architecture Laboratory has developed the world's first million-pixel camera. What makes their camera different is that it can capture and count the very smallest form of light particle: the photon. Photons are invisible to the human eye. MegaX can film the trajectories of individual photons in rays of light. MegaX is extremely fast and can take up to 24,000 images per second; in comparison, movies are filmed at 24 images per second.

SPACE

EPFL joins the SKA project

– The Square Kilometre Array, or SKA, will be the biggest radio telescope ever built. Thanks to this ambitious tool, some of the universe's greatest mysteries will be resolved. EPFL became a member of the SKA Organisation beginning of April 2020 and will coordinate the contributions to this project on behalf of the Swiss academic community.

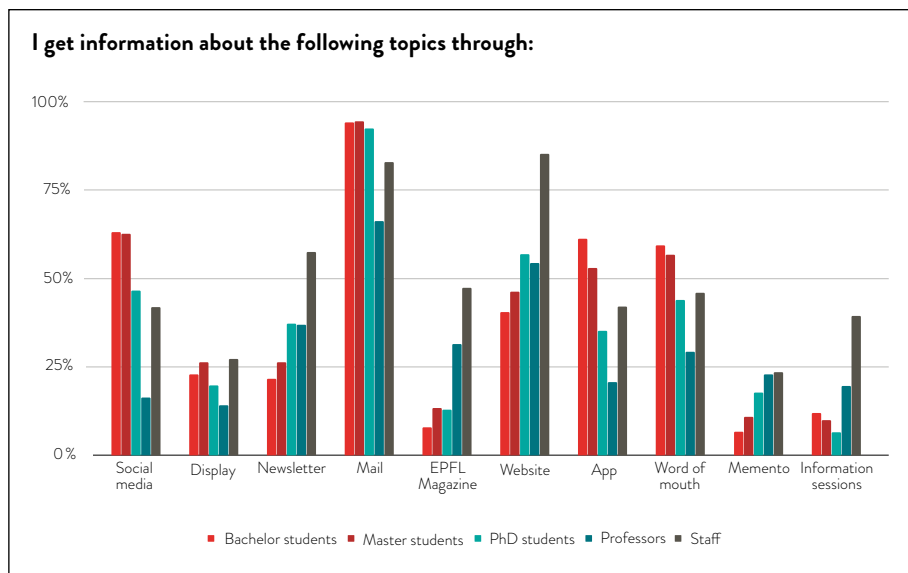


> ALL NEWS:
actu.epfl.ch

SURVEY

Keeping track of what's going on at EPFL: email, social networks or word of mouth?

Nearly 30% of the EPFL community took part in our survey on how they keep up with the latest happenings at EPFL. Here are the key takeaways.



respondents get their EPFL-related news from social networks or by word of mouth – these channels seem to play an important role in learning about campus life and events. Staff and faculty members are the biggest readers of *EPFL Magazine*, while 50% of respondents use the EPFL Campus app.

French, English, or both?

Among social networks, YouTube is the most popular. This is especially true of Bachelor's and Master's students, over 80% of whom use it. Some 67% of the EPFL community is on Facebook and 59% on Instagram. Faculty members are the biggest users of Twitter (37%), while 63% of staff are on LinkedIn.

Of the 818 people who replied in English, some 40% are PhD students and over 75% would rather receive information in this language. Over half of the people who replied in French are flexible about which language is used.

Satisfied but wanting more

While most people are satisfied with how frequently EPFL communicates, some said they would like to receive more information. For instance, Bachelor's and Master's students expressed a strong wish to see more content on YouTube; staff and PhD students would like to see more articles published on LinkedIn; and 33% of Bachelor's students would like more Instagram posts.

But on what topics? At a time when we all want to be kept informed of issues related to our work and study programs, 47% of respondents – including 57% of staff – would like more information on strategic decisions taken at EPFL. Over half of Bachelor's and Master's students would like more details about their course schedules and procedures. And nearly half of the respondents want more news about the latest scientific and research developments.

In the coming months we will examine the survey responses in greater detail so that we can align the School's communications more closely with the needs and expectations of our community.

Julie Haffner

The winners of our survey prize drawing are:

Loris Aiello, Laetitia Aurand, Tomislav Begusic, Bradley Fetter, Paolo Mansour, Gaétan Membrez, Vladimir Pesic, Rémi Schlama, Margot Smith and Donatien Tavan. They will receive a CHF 50 credit to their Camipro card. Thank you to everyone who participated in our survey.

Mediacom conducted a survey of the EPFL community in mid-April to get a better idea of how students, staff and faculty members get their School-related news. A total of 4,049 people took part in our survey, which means the findings are statistically significant. Three-fourths (74.1%) of the responses came from students, and nearly one-fourth of faculty members participated – as did a number of staff members. All EPFL schools were represented.

While many people said they receive “too many” emails, nearly nine out of ten reported that that's their preferred communication method – regardless (or almost) of the topic being addressed. For updates on campus life, events, strategic decisions, startups, alumni, administrative policies and study programs, email wins out. However, for information on science and research, 44% of respondents would rather visit our website. Over half of

INNOVATION

EPFL's startups cautiously moving forward

The lockdown has been a real headache for most EPFL startups. All but a few were forced to halt their development. The pace of the economic recovery will play a decisive role, and experts are cautiously optimistic about fundraising opportunities going forward.



During the lockdown, some of Insolight employees continued to come to the EPFL Innovation Park. © Alain Herzog

Startups may be dynamic, flexible companies, but they're also vulnerable during times of crisis. There are many reasons why young companies struggle when the economy is flagging: research and development can take longer, revenues may be low or even nil for a couple of years, and significant outside investment may be needed. To stay afloat for the next few months, more than a quarter of the 208 companies in EPFL's Innovation Park (EIP) applied for a loan under the federal government's guarantee program. How well the economy picks up will, of course, play a key role in these companies' future development. So far, none of them has gone under, but campus experts are calling for caution over the coming months. They nevertheless remain optimistic about fundraising opportunities.

Some startups have kept growing

EIP didn't shut down completely. Many startups were able to continue developing their devices, provided they complied with the strict hygiene rules. "Some people involved in testing equipment continued to come to work," says Laurent Coulot, the CEO of Insolight. Other young companies, like Ouay, which was founded by EPFL students and whose workshop is located in an EPFL lab, were able to take their equipment home just before the campus closed. Medical startups were hit particularly hard by the two-month lockdown – hospital-based tests were stopped short, in some cases forfeiting several months of work and financial investment.

But some startups were able to quickly adapt their devices to meet new needs. Examples include Technis's people-counting solutions, Rovenso's cleaning robots and Abionics's sepsis tests. Other startups have been developing technologies over the past few years that are now proving particularly useful, like the transparent face masks developed by Hello Mask.

No panic among investors

But most startups did not fare well during the pandemic, and observers think that close to half of them may be in danger. Jean-Philippe Lallement, EIP director, initially sensed a bit of panic about the lack of visibility. But that was soon allayed by the guarantees announced by the federal government at the end of April. A lot of companies on campus have made use of them, and some 10 million Swiss francs in support have also been granted by the Canton of Vaud.

"The support is very welcome but it's not ideal for a startup," explains Jordi Montserrat, the head of Venture Kick in French-speaking Switzerland. "The loans have to be repaid over five years, so it might end up taking that long for the company to start turning a profit." EPFL Innovation Park has also set up a support plan, which 70 companies from EPFL and Campus Biotech have applied for. The financial aid will go towards rental costs and other park-related

expenses. For a large number of companies, costs have already been cut because of the lockdown, so they should be in a better position as they wait for the economy to pick up again. "It's going to take somewhere between four and 12 months for business to get back to normal," says Montserrat. "Provided there isn't a second lockdown, that is."

Fundraising opportunities

But not everything came to a standstill for the past two months: a number of large funding rounds still took place. Lunaphore, for instance, raised 25 million Swiss francs, and Flybotix 1.5 million francs. There's as much money available now as there was before, especially since two new Swiss-based venture capital funds aimed specifically at domestic startups were created recently.

But things are out of kilter, and investors may well proceed cautiously over the months ahead. "Companies might find they have less room to negotiate fundraising terms and conditions," says Lallement. Montserrat adds, "Unless we see a rapid V-shaped recovery, as some experts hope, it might be worth being a little conservative for a change."

Cécilia Carron



> THREE START-UPS FACING COVID-19:
go.epfl.ch/startups-covid



IN BRIEF

Call for proposals

—The Collaborative Research on Science and Society (CROSS) Program encourages interdisciplinary projects that deal with current issues in society and technology, and that are carried out as a collaboration between researchers from EPFL and UNIL. The theme for the 2021 Call for CROSS Projects is digital humanities. Up to six grants of a maximum of CHF 60,000 per project will be distributed. Proposals must come from joint UNIL-EPFL teams, which bring together specialists in the human and social sciences on the one hand, with specialists from life sciences, natural sciences or engineering on the other. Submissions until 24 August 2020. Notification of results: October 2020.



> MORE INFORMATION:
go.epfl.ch/cross

> CONTACT: cross@epfl.ch

Student projects pushed back and reworked

The student teams involved in interdisciplinary projects haven't been deterred by the lockdown.

EPFL's interdisciplinary projects give students from a variety of fields an opportunity to team up on concrete applications. This year, the project coordinators along with staff from our Educational Affairs office have been working closely with the student teams to adapt their project plans to the constraints posed by COVID-19.

When the campus was closed in response to the coronavirus outbreak, the six student teams competing in the robotics competition were still outlining their specifications for a new type of cleaning robot. "Everything came to a halt from one day to the next," says Alessandro Crespi, a research assistant at EPFL's Biorobotics Laboratory and the robotics competition coordinator. "What motivates the students is being able to physically build a robot. That's not something you can do with a simulator," he adds.

That competition – like EPFL's Lab-in-a-Tube contest – has been pushed back to the fall semester. Students seem to be on board with this decision, as they've all re-upped. "In the meantime, the project coordinators have been giving online workshops so that the students can develop specific skills," says Julien Delisle, the interdisciplinary project coordinator.

Presenting their designs remotely

Several student events that were supposed to take place this summer have been shifted online. These include IGLUNA (which GrowBotHub is participating in, see box), iGEM and SensUs. For SensUs, student teams have to develop biosensors for treating epilepsy. EPFL's team this year, called Helvet'Sens, consists of 14 students who are still plugging away at their designs – some are even running tests at home. "We're kind of in DIY mode," says Aurélie Ducrot, a life sciences engineering student. Maxime Marchionno, a microengineering student, adds: "It's a big engineering challenge that requires other skills as well. Still, there's a

lot of value in what we're doing – we've been able to move forward on the business aspect through research and discussions with industry professionals. But for the physical part of the design work, which was supposed to take place this summer, things are a little less clear-cut."

The team will present its biosensor design to the selection panel through a series of documents and videoconferences. SensUs is usually an opportunity for students to talk first-hand with medical industry experts, but that won't be possible this year. The participants are now waiting to see whether an online networking option will be available.

Time wasted or time saved?

Some EPFL student teams – like Swiss Solar Boat, EPFL Rocket Team and EPFL Racing Team – will have to wait until 2021 to showcase their designs at international competitions, which have been postponed. EPFL Racing Team won't be able to hit the racetrack this summer or even build its prototype. "We plan to use the resources we have to further enhance our racecar design for next year," says team leader Pierre Georges. Thanks to the efforts of Julien Delisle and Alessandro Crespi, the teams will be able to run advanced simulations at home by accessing powerful computers remotely. Georges is optimistic: "We'll be pretty much ready to build our racecar in September, if we're allowed back on campus by then. The testing period on the racetrack will just have to be a lot longer than normal."

Project ideas abound

Many students have used the lockdown to think up new project ideas, and a large number of proposals have landed on Delisle's desk. "It's a good sign because some of the projects involve students from fields that have been underrepresented," he says. Onward and upward!

Julie Haffner



> MORE INFORMATION:

go.epfl.ch/interdisciplinaryprojects-covid19

SPACE

Shoot(s) for the Moon!

A robot that grows and harvests plants without human intervention? That's the aim of GrowBotHub, a student project under the auspices of the IGLUNA 2020 initiative. Final projects will be presented online in July.

There are many ways to express improbability, such as “when pigs fly” or “when hell freezes over.” How about “when vegetables grow on the Moon”? Actually, that might just happen, if the GrowBotHub team has its way. This interdisciplinary student project is part of the IGLUNA 2020 initiative, launched by EPFL's Swiss Space Center on the initiative of the European Space Agency (ESA). The goal of IGLUNA is to determine what astronauts need to survive on a mission to the Moon (or to other planets) and the technologies involved.

This is the second year of the IGLUNA campaign, and the project presentations – originally slated to take place in Lucerne on 10–19 July – will instead be held online. This year's theme is remote control. GrowBotHub is EPFL's sole contribution to IGLUNA 2020. It brings together some thirty students, most of them in Master's programs. The team is pooling their knowledge from a variety of disciplines – such as robotics, chemistry, life sciences, data management, communication systems, microengineering, materials science and electrical engineering – to create a robot for growing vegetables using aeroponics.

Aeroponics does not require soil. Instead, the plants' roots are regularly sprayed with nutrient solutions. GrowBotHub's robotic system intelligently calculates the variables based on each plant's needs, including the composition and quantities of nutrients, pH, humidity, light and ambient temperature.



The GrowBotHub platform alone could provide 30% of the food necessary for the survival of astronauts on long-duration missions to a lunar base. © GrowBotHub/EPFL

Spinach, radishes and chili peppers

In environments where resources are extremely scarce, the challenge is how to recover and utilize them as efficiently as possible. A vertical carousel system makes optimal use of available space and produces a maximum number of vegetables. To date, GrowBotHub has successfully produced green lettuce and spinach, as well as radishes, arugula and basil. Since lengthy stays in space tend to diminish one's sense of taste, the team is also looking at how to grow more pungent plants, like chili peppers, and whether it's possible to cultivate root vegetables such as potatoes.

“The idea is for the system to meet 25% to 30% of astronauts' daily nutritional requirements,” says Victoria Letertre, a systems engineering student who's also the president of the GrowBotHub student association. “The two months of lockdown – during which we had no access to either the campus or the robot – were an excellent test. We were worried about the project remaining viable, but in the end, the plants held

up well and even continued to grow, which shows that the system really works.”

GrowBotHub has uses beyond the field of aerospace. It could also be deployed for polar expeditions or underwater exploration. Moreover, it has implications for sustainable living, with potential for small-scale, local, autonomous vegetable production.

Sarah Perrin



> TO LEARN MORE:
www.spacecenter.ch/igluna
go.epfl.ch/growbothub



IN BRIEF

COLLABORATION

New MOOCs learning portal in Morocco

— As part of Excellence in Africa, a joint program with Mohammed VI Polytechnic University (UM6P), students at UM6P can now access 41 MOOCs developed at EPFL free of charge, while teaching staff can plan classes, track students' progress and set assessments based on the course materials.

Looking to the future, the platform built by EPFL will host new MOOCs developed at UM6P and, later, at other African universities. In the longer term, UM6P could serve as a central hub, developing and publishing online courses for learners across the continent.

RESEARCH

EPFL launches Center for Intelligent Systems

The platform brings together experts in machine learning, data science, computer vision, cyberphysical systems, and robotics.

Initially conceived to unite the schools of Engineering (STI), Computer and Communication Sciences (IC) and Basic Sciences (SB), CIS's unique mission is to connect and support all EPFL researchers working in fields related to intelligent systems. These fields are developing technologies that, when brought together, can be used to construct intelligent systems capable of making complex, nuanced decisions in challenging, dynamic environments.

CIS Executive Director Jan Kerschgens says his goal for the center is to get researchers out of their research silos, and their comfort zones, to pursue ambitious and collaborative projects. "We have never had three schools come together like this to promote research and technology transfer under the umbrella of intelligent systems. The CIS is also 100% synergistic with other EPFL centers like the Center for Digital Trust and

the Swiss Data Science Center," Kerschgens says.

Included within the CIS is the EPFL unit of ELLIS, a European initiative aimed at bringing together experts in machine learning and intelligent systems. The center's website also includes a list of EPFL courses for students interested in developing key competences in intelligent systems, including software and connectivity, big data management and analysis, smart computing systems, and embedded devices. Finally, CIS will act as a point of contact with industry, as well as Swiss and international stakeholders, to create long-term partnerships and accelerate innovation in complex systems.

Celia Luterbacher, IC



> FOR MORE INFORMATION:
www.epfl.ch/research/domains/cis

EDUCATION

New classes in management and finance

Starting in September 2020, Bachelor's students will have the option to take new classes in management and finance.

"Bachelor's students have to take two SHS credits per semester," explains College of Management of Technology (CDM) director Dominique Foray. "Until now, the program has largely revolved around traditional humanities and social sciences subjects like sociology, as well as general knowledge. We realized there was unmet demand for something different, so

we're launching new management science classes to fill that gap. We also found that Bachelor's students who went on to study a Master's degree tended to gravitate toward the Management, Technology and Entrepreneurship program. By introducing these subjects earlier, at the Bachelor's level, we hope to broaden students' options, inspire a passion for management and finance, and encourage more of them to enroll in one of our Master's courses."

When classes resume in the fall, Bachelor's students will have eight standalone classes – worth two credits each – to choose from. The built-in flexibility means students will, for instance, have the option to switch between CDM and SHS classes in the third and fourth years of their Bachelor's program, while more practical-minded students will

be able to select those subjects that most closely align with their future career plans.

In time, CDM plans to add more classes to the menu of options as it looks to shape a comprehensive program and give students even greater freedom of choice – from innovation, policy, entrepreneurship and management science to game theory, microfinance, sustainable finance and environmental economics. Space is limited to 80 students per class, allocated on a first come, first served basis.

Laurianne Trimoulla, Educational affairs



> FOR MORE INFORMATION:
go.epfl.ch/CDMcourses2020



RETIREMENT

“One last word”

I’m writing this one last message from the comfort of my lockdown before I leave EPFL to start a new, exciting life in retirement.

It seems that I won’t be able to get everyone together so that I can personally thank all those I’ve worked with at EPFL over the past 25 years, especially the last 13 years in sustainability. So I’m leaving one last note in your pile of magazines at home, hoping that you’ll find it.

I’d like to tell you just how much I loved my work and, especially, all of my colleagues. I’m eternally grateful to this great School and my seven successive bosses for having offered me such fertile ground for 25 years. I spent the last 13 years helping EPFL prepare for the challenges of sustainable development first, then for those of

weak sustainability – which became strong sustainability – and finally for the climate and public-health emergencies.

I never thought that the end of my career would be swept up in two successive tsunamis of such incredible force. The first was the Greta wave and the ensuing student response – so powerful and yet so peaceful and inspiring. Then came this deadly virus, which got me but didn’t take me and which is now keeping us all apart.

I also never thought that my president, my vice president and our upper managers

would take on my cause with such a great (task!) force, creating an exemplary climate and sustainability action plan and putting sustainability at the center of the School’s attention for the 2021–24 period. It will be implemented by the sustainability team – an experienced group of innovators who are more than capable of launching, driving, coordinating and supporting sustainable initiatives across the School. I will retire with peace of mind on 1 August, when every firework in the sky will remind me of one of you.

Philippe Vollichard

EPFL’s sustainability team spent two days online getting ready for the campus to reopen. The long work days were punctuated by light-hearted Zoom games.
© Philippe Vollichard



RESEARCH

A new interdisciplinary research fund worth over one million francs

EPFL has earmarked 1.2 million francs to support interdisciplinary research projects.

Professor Anna Fontcuberta i Morral has spearheaded an initiative to encourage greater collaboration across EPFL schools and laboratories. She secured 1.2 million francs in funding from the Office of the President to support research projects that would otherwise never have seen the light of day. “At EPFL, we’re fortunate to be part of a community of leading and visionary scientists,” says Fontcuberta i Morral. “The thinking behind this new fund is to get people working together and finding areas where their research interests overlap. An initiative

like this can only strengthen the quality and impact of EPFL’s scientific output.” Her idea proved an instant hit.

In December last year, a committee of EPFL professors received 22 proposals. Following a review by outside experts, just six made the grade. “We set a number of criteria, including two key tests,” explains Fontcuberta i Morral. “First, the project had to include a significant element of risk – in other words, it had to be genuinely innovative. And second, the researchers involved mustn’t have collaborated with each other before. Work on the winning projects will start in the coming months and run for up to two years.” Each winning proposal was awarded 200,000 francs in funding.

Common themes

Many of the proposals were in one of three areas: artificial intelligence, health

technology or climate change. One of the projects that was awarded funding brings together researchers from the School of Architecture, Civil and Environmental Engineering (ENAC) and the School of Life Sciences (SV). Under that project, Professors Alexandre Alahi, Grégoire Courtine and Jocelyne Bloch will work on developing an AI-based system that allows paraplegic patients to walk again.

“There’s a lot to be said for teaming up with colleagues from other laboratories,” says Alahi, an assistant professor at the Visual Intelligence for Transportation Laboratory (VITA). “What’s more, there’s a wealth of expertise here at EPFL that’s just waiting to be tapped.” This initiative was such a success that it’s likely to be run again next year.

Valérie Geneux



IN BRIEF

ELECTIONS

EPFL Assembly and School Councils

The EPFL Assembly (AE) ensures the proper functioning of the faculty councils and the smooth running of the consultations organized by the EPFL Management. Composed of 16 members, elected for two – except for the students for one – years, representing the four bodies of the School, it submits proposals to the Management. 2020 elections period begins June 5 and ends June 19. Don't forget to vote!



> MORE INFORMATION: go.epfl.ch/epfl-assembly

DISTINCTION

Maryna Viazovska honoured

Maryna Viazovska, head of the Chair of Number Theory, has been awarded one of the 10 European Mathematical Society (EMS) Prizes for 2020 in recognition of her contributions to number theory and optimal configuration on manifolds.

Nominations of EPFL professors



Professor Hatice Altug was named as Full Professor of Bioengineering in the School of Engineering

Hatice Altug's research focuses on applied nano-optics in the field of biology and life sciences. Among other innovations, she has developed a method of detecting mid-infrared rays and molecular fingerprints without the need for spectrometry. She now aims to develop new nanophotonic biosensors using revolutionary techniques in the areas of biosensor technology, spectroscopy and bioimaging. Hatice Altug has received several awards, including an ERC Consolidator Grant and an ERC Proof of Concept Grant, and is regarded as a pioneer in her field.



Dr Giuseppe Carleo was named as Tenure Track Assistant Professor of Physics in the School of Basic Sciences

Giuseppe Carleo is a young researcher who has already gained international recognition in the field of many-body quantum systems. Among other achievements, he has developed a machine learning software programme which not only helps computers "learn" the quantum state of a complex physical system based on experimental observations but also enables

them to predict the results of hypothetical measurements. His pioneering achievements in this promising field have already had a significant scientific impact.



Dr Marius Lemm was named as Tenure Track Assistant Professor of Mathematics in the School of Basic Sciences

Marius Lemm's work focuses on problems of mathematical physics originating in quantum physics and quantum information. At just 31 years of age, Marius Lemm has already proved himself to be an outstanding mathematician whose work to date combines several mathematical areas, including operator theory, random matrices and partial differential equations. At EPFL he will set up a research group in the area of mathematical analysis and mathematical physics, further strengthening the links between mathematics and physics.



Dr Mats Stensrud was named as Tenure Track Assistant Professor of Statistics in the School of Basic Sciences

Mats Stensrud's unusual career path (Master in applied statistics, Doctorate in Neuroscience, Doctor of Medicine and post-doctorate in Biostatistics) enables him to combine all these fields very creatively. He is currently conducting research in the area of biostatistics and causal inference with the aim of discovering whether a specific treatment can have a causal effect on the risk

of a disease in the presence of competing risks. Mats Stensrud will further strengthen statistics at EPFL while building links with the School of Life Sciences and with Biomedical establishments in the greater area.



Professor Jean-Philippe Thiran was named as Full Professor of Signal Processing in the School of Engineering

Jean-Philippe Thiran's research focuses on computational image analysis for medical imaging, with special reference to the diagnosis of cardiovascular diseases and neurological disorders. He has also contributed significantly to the field of computer vision. His original research and pioneering achievements have gained international recognition in this highly competitive field. His dedication to educational activities is also exemplary, as a teacher, supervisor and section director. Concurrently, Jean-Philippe Thiran is an Associate Professor at Lausanne University Hospital (CHUV) and the University of Lausanne.



Julia Schmale. © DR

ENVIRONMENT

Drifting through the ice on board a polar climate research vessel

The German research icebreaker Polarstern has been drifting for six months through the frozen waters of the Arctic Ocean. Julia Schmale, an atmospheric scientist from EPFL, joined the crew to study cloud formations and their role in local and global climate change.

EPFL researcher Julia Schmale joined the crew of the Polarstern, a German research icebreaker that has been drifting through the frozen waters off the coast of Greenland since September last year. The vessel is carrying an international team of scientists on a year-long research expedition, titled Multidisciplinary drifting Observatory for the Study of Arctic Climate, or MOSAiC for short, which aims to gain fundamental insights into conditions in the Arctic and the region's influence on global climate change. The crew is working in unusual and often challenging conditions: changeable weather, temperatures plummeting as low as -40°C , interminable darkness giving way to endless daylight, and ice as far as the eye can see. An atmospheric scientist, Schmale is leading the observatory's atmospheric research team. She studies how airborne molecules and particles influence cloud formations in the Arctic.

What samples are you collecting and why?

I'm studying the formation of low-level clouds, which play a vital role in maintaining the Arctic's energy and mass balances be-

cause they reflect and absorb radiation and contribute to snow cover through precipitation. In general, clouds only form in the presence of condensation nuclei or ice-nucleating particles. These are aerosol particles that can originate from natural sources such as sea spray, phytoplankton emissions or blowing snow, but also from human activities such as fossil-fuel combustion, other industrial emissions and agriculture. Thanks to the on-board instrumentation, we can characterize these particles in terms of number concentration, size distribution, hygroscopicity, chemical composition and fluorescence and thus identify their origin – natural or human – and their potential effects on clouds. Our end goal is to understand how far natural versus man-made processes contribute to cloud formation and to the energy balance in the Arctic, and how this might change as the so-called “New Arctic” evolves and human emissions change in the future.

What have you learned about the Arctic air so far?

When air masses come from the High Arctic, the aerosol population is aged, meaning several days to weeks old, and consists mainly of sulfuric acid. This is a common winter phenomenon known as Arctic haze, when sulfur dioxide emissions – mostly from human activity in the mid and high latitudes – accumulate over the wintertime. The haze began forming back in November. Initially, the concentration was about 50 particles per cubic centimeter. Now it's risen to 200. We also see that salty snow is lifted during stormy conditions into the air where it forms aerosol particles. The number of particles depends on several factors, including the mi-

crostructure of the snow, how wind-pressed it was, and its surface roughness. Because these particles make up a significant share of the overall aerosol population, they likely play an important role in cloud formation.

And when air masses arrive from the south, all these variables are different. The particles have been processed by clouds, and differ in origin, size and chemical composition. Mid-April is the time when phytoplankton blooms happen in the Atlantic. These blooms emit dimethyl sulfide, which is transformed to methanesulfonic acid – a tracer we're now seeing in the aerosol particles. We've also found halogens – iodic acid and bromine – that are more local in origin, and connected to snow chemistry and UV radiation. And, of course, we also see exhaust particles from the ship, skidoos and helicopters. They carry a distinctive signature.

Have you personally observed changes in the Arctic climate?

That's a difficult question. I don't have a reliable benchmark because this is the first time that I, like many other members of the team, have been this far north at this time of year. Generally speaking, we didn't anticipate observing so much mobile ice so early in the year. We expected to see a much more consolidated ice pack. But this might not necessarily be a sign of climate change. What was striking, however, was that precipitation fell as rain instead of snow when Atlantic air masses arrived in mid-April.

Sarah Perrin



> THE COMPLETE INTERVIEW IS TO READ ON EPFL OUT THERE WEBPAGE: epfloutthere.tumblr.com



© EPFL/Julia Schmale



IN BRIEF

CALL FOR PROPOSALS

CECAM Flagship program

— COVID-19 has deeply impacted our personal and professional lives. Recent events, however, have further demonstrated that scientific exchange and collaboration are precious: together we can turn this challenge into seeds for exciting developments! Therefore, CECAM invites you to submit a proposal for our 2021 program through our website: www.cecama.org, where you will also be able to discover our latest initiatives and ongoing projects. We encourage you to imagine and submit proposals with innovative formats. The tenets of the CECAM approach will be maintained, but we are, more than ever, open to explore scientific events with different designs! The call will be open until July 19th 2020. For any specific enquiry, please email helpdesk@cecama.org



> www.cecama.org

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CAREERS

EPFL inaugurates its first Postdoc association

The newly inaugurated Postdoc association aims to promote the professional development of EPFL postdoctoral researchers.

The EPFL Postdoc Association (EPDA) became EPFL's first non-student association in March. It builds upon the foundations laid down by the former SV Postdoc Association that was created in 2012 by life-science postdoctoral fellows. The SV association's activities, initially organized for life-science postdocs, soon caught the interest of postdocs across all faculties.

"The association was initially created by SV postdocs, but it became obvious that what we were doing was beneficial for the entire postdoc community at EPFL," explains Jamshid Asadzadeh, president of EPDA. "The SV dean Gisou van der Goot has supported the association since inception, and the new EPFL Postdoc Association wouldn't be here today without her support."

While fulfilling an important role in the development of Postdocs' careers, members of the EPDA also foster a much-needed dialogue between the community of postdocs and EPFL's administration. One of the current issues is on the formal status of postdoctoral researchers at EPFL, which has practical implications such as the type of residency permit for working in Switzerland, to mailing-lists and access to alumni networks upon departure.

A toolkit for developing their careers

Before the lockdown, the association members organized events for the Postdoc community, like networking sessions, public speaking workshops, integration, to provide postdocs with a much-needed toolkit for developing their careers here at EPFL and beyond. "It's important to know how to write a CV for an academic position versus one in industry," continues Jamshid Asadzadeh. "With the lockdown, we continue to meet for video discussions and are working to move our future events and workshops online"

"We have been working in collaboration with the different Vice-Presidencies to organize new kinds of events but also to help postdocs to really benefit from everything EPFL has to offer", explains Jonathan Cottet, communications officer for EPDA. "We invite postdocs from all faculties to join us in the association, participate in our events but also to create their own events with our support if they want. We really want everyone to get the best out of their time at EPFL in order to prepare the next steps of their career."

Hillary Sanctuary, Mediacom



> LEARN MORE: epda.epfl.ch

LIBRARY

Although physically closed, the Library is still open for business

Until the Rolex Learning Center reopens, the Library is offering a range of services that includes mailing collection documents.

On 4 May, almost two months after the EPFL campus closed, the Library introduced a free mailing service. Early demand was so intense that, in the first three days after launch, Library staff mailed out over 100 collection documents that weren't available online in electronic format, including books from the Art and Architecture and Teaching Collections. But that's not all. Members of the EPFL community can also order on-demand printed standards to be delivered to their home address – and those requests have been coming in too. These mailing services are free of charge, sub-

ject to a per-user limit of three documents, with the Library and EPFL covering all postage costs.

On-demand digitization service

May and June are typically the Library's busiest months of the year, as students descend on the Rolex Learning Center in huge numbers to prepare for their exams and borrow books from the collection. Demand is especially high for the Teaching Collection, which includes all references recommended by teachers. The on-demand digitization service is normally only available to teachers and researchers. But in these unprecedented times, the Library has opened up the service to students and expanded it to include everything in the Teaching Collection.

The Library's online helpdesk has been especially busy fielding inquiries since these new services were launched.

Frank Milfort, EPFL Library

A handful of librarians have returned to work to manage the loan service. © DR



> IF YOU HAVE A QUESTION ABOUT ANY OF THESE SERVICES, OR WANT TO KNOW MORE ABOUT THE NEW LOAN ARRANGEMENTS OR SERVICES MAINTAINED SINCE THE LIBRARY CLOSED, PLEASE READ THE FAQ SECTION HERE: go.epfl.ch/coronavirus-information-library

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JOBS

EPFL OFFERS
EMPLOIS.EPFL.CH

> The School of Architecture, Civil and Environmental Engineering is currently putting the following positions to competition:

Faculty positions in architectural design & architecture and digital processes

Contact : Prof. Claudia R. Binder/
archidesignarchidigi@epfl.ch
go.epfl.ch/architectural-design_architecture-and-digital-processes

Faculty positions in urban and territorial design & theory of architecture and the environment

Contact : Prof. Claudia R. Binder/
utdesigntharchienv@epfl.ch
go.epfl.ch/urban-and-territorial-design

Faculty position in sustainable civil engineering

Contact : Prof. Dimitrios Lignos/
SearchSustainable@epfl.ch
go.epfl.ch/sustainable-civil-engineering

Faculty position in soil system science

Prof. D. Andrew Barry /
SearchSoilScience@epfl.ch
go.epfl.ch/soil-system-science

> The School of Engineering is currently putting the following position to competition:

Faculty position in sustainable materials

Contact : Prof. Harm-Anton Klok /
imx-search@epfl.ch
go.epfl.ch/sustainable-materials

CdH welcomes visiting professor Jeffrey Shaw

Renowned new media artist Jeffrey Shaw, who will adapt his visiting professorship to accommodate confinement measures in response to the coronavirus pandemic.

Invited by the College of Humanities (CdH), Shaw will carry out his appointment in the Laboratory for Experimental Museology (eM+), until September, 2020. One of his primary research topics will be presence, or telepresence: the representation of the self in virtual environments. It's a subject that is especially relevant at a time when much of the world is adapting to social distancing using digital technologies.

"Presence defines a contingency for profound experiences and new knowledge. Today, it has many modalities including the actual, virtual and telematic. It's the operational and aesthetic conjunction of these modalities that I want to pursue at EPFL," Shaw says.

'Cultural shaping of technology'

As an artist, Shaw explains that his research agenda is always driven both by a personal desire and a social need to create meaningful, real-world experiences for a broad public. "Life on planet earth today is experiencing many new and radically transformational technologies. The greatest challenge we face is the existential and cultural shaping of these technologies, so that they will be of real value in way they influence our lives and the environment," he says. "The radical imperative for new media art is to be a beneficent agent in this digital transfiguration of our being and culture."

He adds that both the eM+ Lab and ArtLab offer unique and exciting platforms to advance his research agenda, which is highly interdisciplinary. Indeed, Shaw has already launched a dialogue with Dario Floreano, head of the Laboratory of Intelligent Systems. "I see prolific opportunities to conjoin Floreano's cutting edge research in wearable and aerial robotics with art and cultural heritage," he says. "The development of new directions in technology-informed interdisciplinary art stands to benefit exceptionally from the diversity of formative work being undertaken there."

Celia Luterbacher, CdH

Prix Pictet: one of the photographs from the winning series *Ça va aller*, by Ivorian photographer and artist Joana Choumali. © Joana Choumali, Prix Pictet



Photography, robotics and AI

ArtLab prepares to reopen this fall with a message of hope and a look at the future.

ArtLab will reopen on 3 September, when it will play host to the prestigious Prix Pictet world tour for the second time. This new exhibition, entitled *Hope*, features socially conscious works by the 12 photographers shortlisted for the prize. Visitors will be treated to an exploration of the social and climate crises facing humanity.

In November, Pavilion B will host *Nature of Robotics: An Expanded Field*, an exhibition that looks at how soft, self-reconfigurable and bio-inspired robots are pushing the boundaries of scientific discovery by harnessing the latest advances in computational neuroscience, biomechanics, behavioral systems analysis and machine learning. Combining art and technology, the exhibition will draw on insights and interpretations from contemporary artists to examine key themes and issues

in science and ethics and look ahead to what the future might hold for this fast-growing field of research.

In Pavilion A, artist Nora Al-Badri will present *Neuronal Ancestral Sculptures Series*, the result of her artist-in-residence at EPFL. Al-Badri uses artificial intelligence to generate digital versions of museum artifacts that are both barely distinguishable from the original yet unmistakably different. Her work confronts us with questions of authenticity, the properties of data, and neocolonialism.

If it is safe to do so, ArtLab will run guided tours and both on- and off-site events.

Joël Curty, ArtLab Communications



> FOR FULL DETAILS, GO TO: artlab.epfl.ch
> THE PROGRAM IS SUBJECT TO CHANGE

Creating cultural experiences for a post-pandemic society

A new project, hosted by the dhCenter EPFL-UNIL, aims to develop digital tools and practices to help museums, festivals, and theaters continue to operate in an age of social distancing.

Celia Luterbacher, CdH

When the coronavirus pandemic hit Switzerland this spring, cultural institutions across the country were forced to rethink their summer lineups, and decide what events could be postponed or held online. But due to logistical challenges, and the uncertainty surrounding the pandemic's impacts, most cultural events – from EPFL's Balélec concert to the world-famous Montreux Jazz Festival – had been cancelled altogether by the end of April.

As it became clear that COVID-19 would have a much longer-term impact on public life than this summer's music scene, it also became clear that new social and technological solutions would be needed to help people engage with culture in the future, without risking their health or that of others.

Alexandre Camus, a lecturer in the College of Humanities (CDH) and UNIL, believes that both short- and long-term solutions must be developed as a collaboration between researchers, artists, and cultural institutions. To facilitate such exchanges, Camus is organizing an Open Lab event on June 8th, 11th, 15th and 18th, which will also serve as the kick-off of the new UNIL-EPFL Cultural Innova-

tions Program he is coordinating. This program aims to bring researchers and students from the social sciences and digital humanities, as well as computer science and engineering, together with actors from the worlds of art, performance, and cultural heritage. The program will focus not only on new technologies, but also on developing new uses for existing technologies.

Reinventing the arts

For Véronique Mauron, who leads CDH's art and culture program, meaningful experiences and public engagement with culture at a distance will require more than livestreams or YouTube videos. Indeed, she believes that social distancing is

deeply questioning the nature of what it means to perform.

"Art is direct; it is an immediate relationship that people establish with each other and with objects. Art that does not have a place does not exist, and for the moment, the Internet is a space and not yet a place," Mauron says. "To create a connection between the virtual and the real is not only a question of inventing new digital tools, but also of reconfiguring the performing arts; by acting on the virtual as well as on the real to create new connections."

"More than ever before, artists and scientists can work together to rebuild a society that has been weakened on all sides," she says.

Alexandre Camus also believes that the Cultural Innovations Program could have a positive impact that goes beyond adapting to the coronavirus pandemic. He says that the program's long-term goals include working with the Vice Presidency for Innovation to incubate certain projects that come out of these discussions, and bringing them to maturity in collaboration with several partners. "We want to do more than respond to the COVID-19 crisis: we want to think critically about how we can support the digital transition, and create a sustainable future for culture," Camus says.

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BRAIN TEASERS

Crash, boom, bang!

In 1929, the stocks held by our five happy speculators went bust! Work out who is who, the initial value of their portfolio (in millions of \$), the sector they invested in, and the percentage they lost when it all came crashing down.

Clues:

- A. Penny Pincher lost a smaller percentage than Adam Up, but his portfolio was worth \$2 million more. Ivor Bigloss was the richest of the five at the start.
- B. The one who invested in banks lost a smaller percentage than Robin Banks, whose portfolio was not worth exactly \$5 million.
- C. The telecoms portfolio lost 10% less than the portfolio worth \$7 million. As for the healthcare portfolio, it lost 10% less than the portfolio worth \$3 million.
- D. The portfolio that lost 'only' 40% was worth \$6 million more than the portfolio belonging to Stan Broker. Stan's portfolio, which he hadn't invested in the energy sector, lost 30% less than the portfolio invested in steel.

		\$3 million	\$5 million	\$7 million	\$9 million	\$13 million	Steel	Banks	Energy	Healthcare	Telecoms	40%	50%	60%	80%	90%
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Penny Pincher	1															
Stan Broker	2															
Adam Up	3															
Robin Banks	4															
Ivor Bigloss	5															
40%	6															
50%	7															
60%	8															
80%	9															
90%	10															
Steel	11															
Banks	12															
Energy	13															
Healthcare	14															
Telecoms	15															

SPECULATOR	PORTFOLIO VALUE	SECTOR	LOSS
Penny Pincher			
Stan Broker			
Adam Up			
Robin Banks			
Ivor Bigloss			

SUDOKU

	1			9	7	2		
	9						8	1
	2		1	8				
	4		9	1		6	5	8
	5						1	
1	8	6		2	5		3	
				6	2		7	
4	6						2	
		2	3	5			4	

9	8			6	1			5
			8				9	
	5		4	3				1
				1	8		4	9
8		1				6		2
4	6		3	2				
3			1	6			8	
	9			4				
7			9	3			5	6

	9	7	3		6			8
			4	2			6	
			8				2	
		1	7					4
4	8		9		7			6
3					2	8		
	3				4			
	4			7	5			
7			2		3	4	5	

KEMARU

Each grid has several areas outlined in bold each containing numbers between 1 and 5. Complete the grid with the missing numbers. A bolded area with just one square must contain the number 1, a bolded area with two squares must contain the numbers 1 and 2, and so on. You cannot have two of the same numbers next to each other (vertically, horizontally or diagonally).

Example :

2			1		2	1	2	1	3
	4				3	4	3	4	2
			5		1	5	2	5	1
			3		2	3	1	3	4

INTERMEDIATE

		5			5			
								2
		4			1			
		4	1					
								5

HARD

								1
		1						
3								

HARD

4									3
4			4						3
								4	
							1		
						4			
1				2			4		
							3		
						5			
									5
5				5					

Children e-books for the lockdown

EPFL's Center for Learning Sciences (LEARN) has published a trilogy of picture books to help parents and educators talk to young children about the struggles of life under the lockdown – from the dangers of fake news to limiting screen time and keeping in touch with loved ones. The stories, written by a consulting company specialized in education in collaboration with a psychiatrist, are free to download and available in English, French and German:

www.editem.com/oscar-zoe-fr



When Mathematics merge with Minecraft

Mathematician David Strütt, a scientific collaborator at EPFL, worked for four months to develop Matheminecraft, a math video game in Minecraft, where the gamer has to find a Eulerian cycle in a graph. Matheminecraft, now freely available to everyone, is a video game around Eulerian graphs with a tutorial and four levels.



Download Matheminecraft: go.epfl.ch/matheminecraft

When you don't feel like cooking

Do you want to enjoy a home-made meal without the hassle of cooking? Now you can, thanks to a fast, convenient, and easy-to-use app called Shekamou that some EPFL students helped develop. The app matches up people who have cooked a meal with those living nearby who are looking to buy one. The customer and the chef decide together where the meal will be picked up, and the customer pays through the app. You can download Shekamou from the App Store or Google Play.

<https://shekamou.com/>

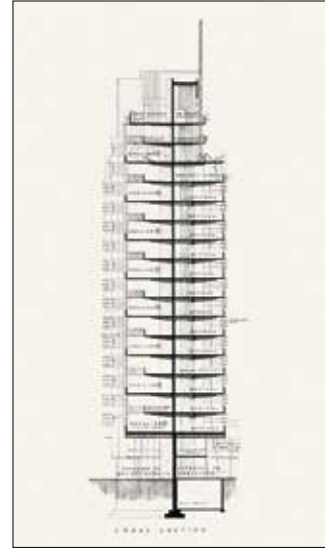


Poetry competition

The harvest was fruitful! Eighty-nine poems sprang from the imagination of EPFL students and staff. The participants explored the theme of time, the theme of the 2020 competition, and plunged, with humor, nostalgia or fantasy, into the deep questions raised by the immutable and intangible temporality to which we are subject. The jury, composed of a student, two SHS teachers, a poetess and a librarian, will make its choice from all the texts and three of them will be awarded prizes.

Monday, 22 June at 6 p.m.
Zoom ID: 976 4446 9284

Discover organic architecture



In a new book, “Organique. L’architecture du logement, des écrits aux œuvres” (EPFL Press), Christophe Joud and Bruno Marchand, architects and researchers at the Theory and History of Architecture Laboratory 2 (LTH2), examine the history of organic architecture, complete with telling examples of the genre, from its emergence in the early 20th century to the present day. They observe that the movement is enjoying a revival – particularly in Switzerland – that’s being driven by the demands of high-density urban development.

Read the interview of Christophe Joud: go.epfl.ch/how-organic-architecture-can-shape

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THE CAMPUS

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Nature takes back its rights.



Construction of the Discovery Learning Lab.



Construction site of the RTS building.



Planting 50 trees for the 50th anniversary of EPFL.



Construction of the EPFL Data Center.



Laying of new carpet at the Rolex Learning Center.

Pictures :
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