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2021

September 2021

>Investments

Pioneer of the Swiss venture capital scene: in conversation with Michael Sidler

>Scale-ups Skilled staff urgently needed: startups in th growth phase

THE BEST YOUNG ENTREPRENEURS IN SWITZERLAND

Meat redefined: ETH spin-off Planted Foods captivates investors, experts, and gourmets



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EDITORIAL

Imprint

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TOP 100 Startups

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AN INVESTMENT THAT PAYS OFF

n 2019 and 2020, more than CHF 2 billion was invested in Swiss startups on an annual basis for the first time. Despite the coronavirus crisis, Swiss startups cleared this hurdle in 2021 as early as July and are heading for an impressive record high. Significantly more than half of this investment volume

is attributable to alumni of the TOP 100 Swiss Startups. Spectacular headlines were made by, among others, wefox with a financing round of USD 650 million and SOPHIA GENETICS with a successful IPO on the Nasdaq.

We are looking forward to the first IPOs on the new Sparks SME segment of the Swiss stock exchange SIX. Global investors are traditionally strongly represented in the growth financing of Swiss startups. The fact that international capital is becoming increasingly involved in very early financing rounds proves the high quality and competitiveness of our young companies.

An in-depth study of this magazine is therefore definitely a worthwhile investment. There is also an opportunity for politicians to invest in innovation: Now that Switzerland has been excluded from the EU's billioneuro startup funding instruments, innovative researchers and young companies urgently need new horizons.



Stefan Steiner, co-managing director, Venturelab



Jordi Montserrat, co-founder and managing partner, Venturelab



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Handelszeitung











TOP 100 STARTUPS

 Rank 1 to 10.
 The Top Ten and

what makes it special.



Rank 11 to 100. In brief, 90 startups and the special ratings.



The Jury. These 100 experts selected the 100 startups.

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OUTLOOK



Agenda. The upcoming events from the TOP 100 Partners.

Planted Foods

FIRST CAME THE **PEA, THEN THE** CHICKEN

An increasing number of people are eating less and less animal meat. Planted Foods produces meat for them from yellow peas – and with success. Fost Dubacher

urich startup Planted is redefining the term "meat" and using protein and fiber from yellow peas, along with rapeseed oil and water, to create "Planted Chicken," a meatless chicken. What is unique about Planted Chicken: It is made with only four ingredients, and it looks like chicken, tastes like chicken, and is much more ecological than its animal counterpart - with 50% less land and water consumption and two-thirds fewer CO2 emissions.

"Meat is about protein, structure, mouthfeel, and the cultural aspect of food - and not about the animal," said co-founder Pascal Bieri. "We produce the structure of the meat, the nutritional value, and the value from plants, thus, completely avoiding the disadvantages of animal meat production: animal suffering, environmental pollution, and health risks, such as antibiotic-resistant germs."

Planted's meat substitute is targeted mainly at the "flexitarian"; that is, the group of consumers who have not completely renounced meat but are consciously reducing their consumption. According to a report by the Federal Office for Agriculture, every fifth person in Switzerland belongs to this group. Although the market for meat substitute products in Switzerland is still small, it is growing steadily. In 2016, sales amounted to

4 questions for Pascal Bieri

1. What has been the most important lesson from the corona crisis for you? Regular contact with team members, both professionally and personally, transparent and direct feedback as often as possible, and good, structured onboarding.

2. What are your home office guidelines? Depending on your role and tasks, you should work where you are most productive.

3. When was the last time you surprised your employees? Probably with a customer order that came in at short notice.

4. Where will your next holiday take you? To Tuscany, by the sea.

CHF 60 million; last year, almost CHF 120 million. Various studies predict continued growth over the next five to 20 years, and there is definitely room for improvement: The Swiss meat industry has annual sales of about CHF 5.4 billion.

This is the potential that entrepreneur and investor Stephan Schmidheiny saw, and tasted, at Planted. During the development phase, he turned up in the laboratory of the ETH spin-off, tasted "Planted Chicken" in | Contact: www.eatplanted.com

the meeting room with the young entrepreneurs, and is now on board as an investor. Since then, other investors have joined, most recently the Swiss national football team goalkeeper Yann Sommer and, after the TOP 100 Investor Summit 2020, Vorwerk Ventures. In its Series A financing round in spring 2021, the startup raised a total of CHF 17 million and is, thus, well-financed for the next growth steps.

Founded in 2019, Planted is growing rapidly. In addition to "chicken," "pork" has been added, and it is now sold in retailers Coop and Migros in Switzerland, EDEKA in Germany, and Spar in Austria. In the early summer of 2021, Planted launched its products in France, soon to be followed by the UK, making it the largest market for meat substitutes in Europe with about EUR 500 million in sales.

Planted currently produces about 500 kg of "chicken" and "pork" per hour, with 80 full-time positions in the former Maggi factory in Kemptthal. As soon as separate production lines for both products are available, the quantity should be increased. A factory outside Switzerland is being planned, in order to be able to supply the European market more easily and to overcome tariff disadvantages. Although feed can be imported into Switzerland duty-free, Planted has to declare the protein and fiber from the yellow peas for its meat substitute production. The Planted products are sold abroad exclusively under the in-house brand: "There will be no production for third parties until further notice," commented Bieri.

For the 35-year-old from Lucerne and his co-founders - business economist Christoph Jenny and the two food scientists Lukas Böni and Eric Stirnemann - sustainability is more than a word. It is the guiding principle for countless business decisions: Every degree of waste heat in the factory is recovered, flights are made only in exceptional cases, and only electric cars are used. "When a restaurant replaces a chicken menu with Planted, it has a positive impact. That's what drives us forward," said Bieri.

Planted Foods, Kemptthal (ZH)
Sector: Foodtech
Foundation: 2019
Employees: 80
Contact: www.eatnlanted.com

Photo: Roger Hofstetter for STARTUP magazine



CUTISS

AUTOMATED SKIN FROM SCHLIEREN

Skin from a machine: Zurich company CUTISS multiplies cells for individual skin transplants – fully automatically. *Fost Dubacher*

corona pandemic had paralyzed the work of CUTISS for months, and the treatment of the first patient in Italy, as part of the clinical studies, was a long time coming. Then came a call from Naples in

spring 2021. A newborn, 20 days old, with deep burns, was in urgent need of help. A case for CUTISS co-founder and CEO Daniela Marino and her team: The Zurich-based UZH spin-off and Venture Kick startup is able to increase the number of healthy skin cells of burn victims and produce individual skin - up to 100 cm² from 1 cm² within a month - CUTISS denovoSkin[™]. However, currently, this can be done only within clinical studies, which is why the hospital in Naples had to be integrated into the program.

It took three days to complete what normally takes three months. "And so the baby surprisingly became the first patient to be treated by CUTISS as part of the clinical studies in Italy," said Marino. "That marked an important milestone for us."

The UZH spin-off is on the right track. Founded in 2017, the company has won one award after another; the Series B financing round of CHF 25 million in 2020 was over-

t happened suddenly and quickly. The ' are not yet successful." CUTISS will be deemed successful only when its product has been approved for the market and patients with severe burns can be helped.

> Accidents alone cause about 6,000 largescale burns in Europe every year. And according to the WHO, millions of people worldwide suffer from the consequences of burns, both physically and mentally. Burn victims with visible scars often experience feelings of shame, have difficulty in socializing, and are perceived to be less intelligent and personable. CUTISS aims to alleviate this suffering, and what makes the startup's approach special is that the skin made from the patient's cells grows with them, which promises children in particular a life without periodic operations.

There is still a bit of work to be done before CUTISS can produce for the market. Marino is convinced that "2021 will be the year of independence. Our own team, our own clean rooms in Schlieren for production, our own quality controls. And of course, completion of the clinical studies. The phase II tests are currently running in Switzerland, the Netherlands, and Italy. If all goes well, testing should be completed in 2022."

If the CUTISS technology is approved for subscribed. Nevertheless, Marino said: "We ¦ the market, the company will need fresh



4 questions for Daniela Marino

1. What has been the most important lesson from the corona crisis for you? You have to be flexible to survive

2. What are your home office guidelines? We follow the BAG guidelines.

3. When was the last time you surprised your employees? I try to surprise them positively every day. 4. Where will your next holiday take you? Tuscany, on the beach. I need vitamin SEA!



money again – about CHF 50 million to CHF 100 million, estimates Marino. She does not rule out an IPO. "Why not? That is one of many possibilities," said the young entrepreneur. So far, CUTISS has raised CHF 48 million from investors and subsidies.

The main cost will be the establishment of series production for a fully automatic production machine – so far, there is only one prototype. In the future, CUTISS plans to use such machines to produce large-scale skin grafts for hospitals. "There's a lot to do," said the boss, "but CUTISS is not a one-man show. We are a large, well-integrated team."

It was always clear to Marino that she wanted to become a scientist; since, she said, she was a seven-year-old. And she has consistently followed that path: biotechnology degree in Milan, doctorate at ETH Zurich, research assistant at UZH, the EU-funded project on first-in-human clinical studies, and then Wyss Zurich and CUTISS. The fact that she is no longer simply a scientist but an entrepreneur has turned her everyday work upside down, but her goal is the same as before: "I want to help people."

CUTISS, Schlieren (ZH)
Sector: Biotech
Foundation: 2017
Employees: 35
Contact: www.cutiss.swiss

Peter Harboe-Schmidt, Daniela Marino, Fabienne Hartmann-Fritsch, Vincent Ronfard, Kathi Mujynya Ludunge, (from left to right)

<u>9T Labs</u>

IN THE ENGINE ROOM OF THE FUTURE

9T Labs automates the production of fiberreinforced plastic parts. <u>Jost Dubacher</u>

he ABB logo can still be seen on the building at Badenerstrasse 790 in Zurich-Altstetten. Dry bushings – connections between transformers and the high-voltage network – were stored here until mid-2020. Today, the space is rented to startups; a

theater group has set up its rehearsal stage on the ground floor.

"Industrial areas like this can hardly be found any longer in Zurich," said Martin Eichenhofer, co-founder and CEO of 9T Labs. He talks of a stroke of luck because he and his team develop hardware in the best sense of the word. Their business is the small and large parts that make up everything that makes life in a modern society pleasant and exciting: infrastructure, systems, machines, and devices.

The key term is fiber-reinforced plastics. Countless variants of these composites exist, but they all have one thing in common: They are extremely strong and light. Today, flat structures such as wind turbine blades or aircraft fuselages are built from composites, with the parts milled from large plates. However, because of the low volumes, production cannot be fully automated. This is where 9T Labs comes in. With custom-made 3D printers and downstream molding machines – fully integrated via proprietary software – the aim is to pave the way for industrial series production and, where it makes sense, to replace metal as a material.

4 questions for <u>Martin Eichenhofer</u>

1. What has been the most important lesson from the corona crisis for you? People handle exceptional situations differently, and it is important to understand each person's fears and expectations.

2. What are your home office guidelines? We are and will remain 100% flexible.

3. When was the last time you surprised your employees? With a gift basket.

4. Where will your next holiday take you? This has not yet been defined, but there will certainly be a beach.

The idea arose in the course of Eichenhofer's master's thesis at the Laboratory of Composite Materials and Adaptive Structures at ETH Zurich. The 33-year-old registered his first patents as a doctoral student, and in 2018, he founded 9T Labs with fellow students Chester Houwink and Giovanni Cavolina. After traveling with the Swiss National Startup Team to Silicon Valley in 2019, 9T Labs raised USD 4.3 million in venture capital in early 2020.

The founders have defined three target markets: sports and leisure equipment and the aerospace industry, where they want to

score primarily with the weight advantage of their components. In the third market, medical technology, the focus is on X-ray transparency. For example, the devices used in an operating theater are currently made of stainless steel. If a CT scan is necessary during a procedure, the needles, scalpels, and clamps cast a shadow and impair the surgeon's view. That would not be the case with tools made of plastic composites.

"In medtech, additive composite manufacturing enables completely new processes," said Eichenhofer. In particular, it could lead to computer-navigated surgery: Next-generation surgical robots would have an undisturbed stream of images from the wound site.

It is not clear in which market the 9T Labs technology will gain a foothold first. The capital investment in the industrial goods business is high, and the procurement cycles are long. In addition, Eichenhofer and his team rarely deal with end customers – the manufacturers of helicopters, mountain bikes, or hospital equipment – but rather with their system suppliers, the first-tier suppliers.

"The collaboration usually begins with a preliminary study," said Eichenhofer. Then the 9T Labs team in Altstetten assembles a system. It has to prove that it can produce the parts requested by the customer – for example, the suspension of a helicopter door – at the required rate and quality. In the current year alone, the Zurich-based company has performed more than 100 preliminary studies, and a pilot phase is running with seven companies. Eichenhofer is able to name only one of these – the French Setforge Group, a global supplier to the aerospace and automotive industries.

The tour through the workshop leads to a hall with a slatted roof and overhead crane. Here and there, a head-high production machine stands with a polished company logo. The company is on its way to becoming a real industrial company, said Eichenhofer, but the biggest step is still to come: "Our machines will have to prove themselves in everyday industrial life."

9T Labs, Zurich
Sector: Engineering
Foundation: 2018
Employees: 32
Pontact: www.Qtlabs.com

Martin Eichenhofer, Chester Houwink, Giovanni Cavolina (from left to right)

CREAL

VIRTUAL REALITIES ON A NEW LEVEL

CREAL's light-field technology creates 3D effects of unprecedented depth. <u>Kaspar Meuli</u>

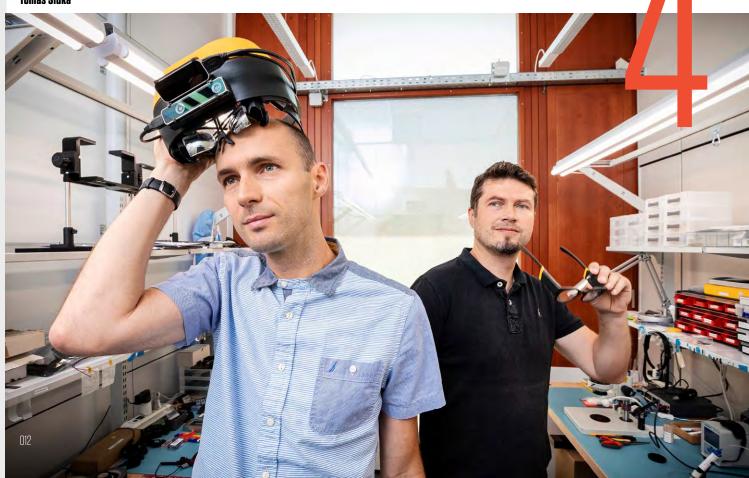
Getting closer to a market entry: Tomas Kubes (left) and Tomas Sluka ausanne-based EPFL spin-off CREAL is breaking new ground in the field of augmented and virtual reality. Diving into virtual worlds has been pretty nauseous up to now; the 3D glasses, in which two 2D images are superimposed to create a 3D effect, are to blame for this negative side-effect. Now, the Venture Kick startup CREAL has developed a technology in which images are projected in a similar way to a hologram. This patented invention provides lighting effects and high-resolution depth that were previously not available in the virtual world, and it also eliminates the feeling of nausea.

"Our light field technology," explained co-founder and CEO Tomas Sluka, "produces a more realistic effect than any other system." The glasses are not yet available for purchase, but the Vaud-based company is getting closer and closer to a product suitable for the mass market. "A year ago, our device looked like a shoebox," smiled Sluka. "Today, it can be worn as an attachment on glasses."

The startup is working closely on the miniaturization of its intelligent glasses, together with its future customers – the manufacturers of headsets, to which CREAL wants to sell licenses for the production of the wonder glasses. The pandemic has not slowed down the company's plans. "Customer contacts have been less intensive," admitted Czech engineer Sluka, "but we have used the time to further develop the hardware and software." CREAL is developing exactly according to plan, according to the CEO. "That is our trademark – we keep our promises."

But sometimes, there are also surprises. No financing rounds had been planned for the past year, but, nevertheless, this was how new investors came on board – Swisscom Ventures being the largest and best known. "That gave us a lot of credibility," said Sluka. The CHF 6.5 million funding has enabled CREAL to take on top-class specialists from an Intel branch in Lausanne.

CREAL, Ecublens (VD) Sector: Engineering Foundation: 2017 Employees: 19 Contact: www.creal.com



TOP 100 STARTUPS / RANK 5

The Carvolution team, with (left to right) COO Luis Wittmer, CEO Olivier Kofler, CMO Léa Miggiano and CFO Bernhard Drüner, still has big plans

Carvolution

CAR ON SUBSCRIP-Tion

How Carvolution is revolutionizing the Swiss car market. *Fost Dubacher*



ld, young, urban, rural, large or small budget: A look at Carvolution's customer register reveals no patterns. What remains are just the bare numbers: In 2020, the number of Carvolution subscribers tripled, with the trend stabilizing rent year

in the current year.

Much of what used to be bought is now rented through a subscription: pictures, furniture, sports equipment. But with the car, everything is a bit more complicated: It not only has to be financed and procured by the owner but it also has to be serviced, insured, and billed again.

"Carvolution," said CEO Olivier Kofler, "has the most complex business model I have ever come across." And Kofler has already seen a lot: He was one of the co-founders of

two highly successful IT companies – iBROWS and bexio. After selling bexio to an insurance company, the 37-year-old became a business angel, including at Carvolution, where he took over the CEO position in July 2019. "The company was entering the expansion phase, and the team believed that I was the right man for it," he commented.

Carvolution, based in rural Oberaargau, has raised CHF 32 million in venture capital since it was launched three years ago. Last autumn, a loan of CHF 50 million was added to finance the fleet. To keep the growth rate high, another CHF 150 million is needed. Kofler intends to launch another financing vehicle this autumn: CV Fleet will give large companies the opportunity to park money on good terms, with the Carvolution fleet serving as security. Kofler goes into raptures when he talks about his company's prospects. Currently, almost 2% of all new cars in Switzerland are rented out after they have been purchased. Those familiar with the car market estimate that this figure will increase to 40% by 2030. "And in this market," said Kofler, "we will be the dominant player."

Carvolution, Bannwil (BE)	
Sector: ICT	
Foundation: 2018	
Employees: 60	

Contact: www.carvolution.ch



Piavita

TELEMEDI-CINE FOR HORSES AND DOGS

The bet on the horses has paid off. Now Zurich medtech startup Piavita is taking on dogs in the digitalization of veterinary medicine. Dominik Hertach

iavita has been looking into the crystal ball: Its system allows it to predict the time of birth of a foal precisely, thanks to real-time data and artificial intelligence (AI). This is crucial for breeders, since horses give birth only when nobody is

around. However, if something goes wrong during birth, the vet has to intervene quickly. It's about both the animal and the money: A set of sperm to fertilize a mare can cost up to several thousand francs.

With their medtech startup for data collection, young entrepreneurs Dorina and Sascha Bührle have developed a medical wearable for horses, which uses sensors to record the various vital signs: ECG, breathing, body temperature, movement. Sensors, data, and AI are then linked on a platform in order to monitor the animals remotely, and the health analysis - for instance, on an upcoming birth - is sold to vets. In the last year alone, Piavita recorded and evaluated more than 30,000 hours of vital signs. "That is a lot more than we imagined," said co-founder and CEO Dorina Bührle, who was elected "HSG Founder of the Year" in 2021.

Piavita's diagnostic and monitoring technology for horses is currently used in Switzerland, Germany, and the US. Now, a new | Contact: www.piavita.com

segment is opening up: dogs - a much larger market. As with horses, the service is aimed at vets.

Today, telemedicine for dogs consists of a video call in which the dog owner shows the vet their four-legged friend in front of the camera. With a Piavita sensor attached to the dog, the vet will now be able to assess the dog's condition much more effectively. "The prototype is there; now we need additional capital to bring it into production," said Dorina Bührle. So far, the startup has raised CHF 14 million in venture capital, part of it from investors in Silicon Valley, which the founders met during the Venture Leaders roadshow.

Piavita, Zurich
Sector: Medtech
Foundation: 2016
Employees: 22
Contact: www.niavita.com

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<u>Wingtra</u>

PROGRESS WITH A Following Wind

The drones from ETH spin-off Wingtra fly in more than 80 countries. <u>*Jost Dubacher*</u>



he British authorities wanted to know how far the erosion of the famous chalk cliffs on England's south coast had gone. So, they had a Wingtra flying robot – equipped with high-resolution cameras – fly over the stretch of coastline several times. Whether road construction projects in Norway, mines in Australia, or cornfields in the American Midwest, Wingtra's drones are the first choice wherever large distances or

areas have to be measured. The vertical takeoff and landing drone, which switches to gliding flight after the vertical take-off, is able to fully exploit its speed and efficiency advantages.

Wingtra procures the cameras and evaluation software for the various ap plications – raw material extraction, agriculture, road construction, or research – from third parties. "We work closely with the respective market

he British authorities wanted to leaders," said co-founder and CFO Elias know how far the erosion of the fa- Kleimann.

What makes Wingtra so attractive to partners and end customers is the unprecedented reliability and stability of the drones in the air – achieved through positioning and control software that makes about 100 decisions per second. "In a direct comparison, our drone navigated more precisely than the best model airplane pilot in Sweden," explained Kleimann.

The hardware is as simple as the software is complex. The flying robot developed at the Autonomous Systems Lab at ETH Zurich has only four moving parts – two propellers and two flaps – which makes it correspondingly robust. This design feature, geared towards durability, is highly valued by customers, and Wingtra is growing rapidly: 90% of sales are achieved abroad, with the US as the main market. "As a company, we are in the expansion phase," said Kleimann, who founded the startup five years ago with his flatmates and university colleagues Basil Weibel and Maximilian Boosfeld. It is now a matter of scaling the intellectual property that has been built up over the years in terms of drone control.

Kleimann has his eye specifically on the market for crewless air transport. And when does he think people will be moving around in autonomous flying machines? "In 10 years at the earliest," he said, "it might be ready."

Wingtra, Zurich
Sector: Robotics
Foundation: 2016
Employees: 85
Contact: www.wingtra.com



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AgroSustain

CRISP **APPLES LIVE** LONGER

AgroSustain's aim is to reduce the ecological footprint of fruit and vegetable production. Kaspar Meuli

ood waste is one of the big problems of our time. The Vaud-based startup AgroSustain wants to make a "substantial contribution" to solve this challenge, as CEO Olga Dubey says. The Russian founded the spin-off from the University of Lausanne together with her husband, Sylvain Dubey. The idea for the company was based on the microbiologist's doctoral thesis: the development of a range of natural protective agents that safeguards vegetables and fruit from fungal attack and rot. This prolongs their life with the result that less food ends up in the

Specifically, the Venture Kick startup based at Agroscope, the federal agricultural research institute in Nyon - has developed two product lines. The first, a fungicide used before harvest that protects against fungal attack, is scheduled to be commercialized in 2025; the second, a coating that is sprayed on before transport and storage, has been approved for the major markets since spring 2021. AgroSustain manufactures it itself, and it is scheduled to be launched later this year.

The product promise is that exotic fruit suffers less damage in transit - bananas, for ' tion," said Dubey, "the timing and potential | Contact: www.agrosustain.ch



Together for sustainable and safe food production: Olga Dubey and her husband, Sylvain Dubey

example, stay fresh for two weeks longer and local apples lose less moisture and stay crisp for a month longer.

The startup's potential customers include producers of fruit and vegetables and wholesalers. The spray has already been tested by Swiss fruit importer Giovanelli, one of the big names in the industry, and it recently joined the startup as an investor. AgroSustain has also agreed to a collaboration with a major Swiss distributor.

"As the world is concentrating more and more on sustainable, organic food producof our offer could hardly be better." And the young entrepreneur has a pertinent point to make in view of the global climate crisis: "If food waste were a country, it would be the third-largest producer of greenhouse gases in the world."

AgroSustain, Nyon (VD)
Sector: Foodtech
oundation: 2018
Employees: 11
ontact: www.anrosustain.ch

trash.



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Closing a diagnostic gap: Grzegorz Gonciarz (left). Danuta Cichocka and Alex Sturm

Resistell

TRACKING THE PATHO-GENS

Resistell shows the way to targeted antibiotic therapies. Jost Dubacher

ulti-resistant bacteria are a growing threat to human health: It is estimated that about 700,000 people die every year because common antibiotic drugs no longer work. The reason for this is incorrect and too frequent use of the drugs, which, in turn, can be traced back to a diagnostic gap. In everyday clinical practice, the resistance of a pathogen takes about a week to determine. Although the procedure can be accelerated, it still takes 48 hours, even in the case of an emergency with the risk of blood poisoning.

During this time, doctors work with a few highly effective broad-spectrum antibiotics. "And this increases the risk that further germs develop resistance," explained Danuta Cichocka, founder and CEO of Basel-based medtech startup Resistell.

Cichocka and her team have developed an antimicrobial sensitivity test (AST) that detects resistance in real time: The bacterium in the patient is brought into contact with a specific antibiotic and placed on a nanomechanical sensor. This measures the vibration that distinguishes dead from living biomass: The less the pathogen vibrates, the more effective the tested antibiotic. "Doctors i Confact: www.resistell.com

are, thus, able to administer very specific drugs very quickly," said Cichocka.

Clinical tests have been running since the end of May, and several Resistell diagnostic devices are already in use at Lausanne University Hospital. Cichocka, who is originally from Warsaw, plans to launch the first products for the research market in autumn; approval for clinical use should be available in mid-2022.

Cichocka is convinced that the market will take up the new diagnostic tool. Her optimism is based on the corona pandemic, during which millions of people had to be intubated and treated with broad-spectrum antibiotics as a precaution. Awareness of the problem among doctors and hospitals has risen again. "The momentum," said Cichocka, "is on our side."

Resistell, Muttenz (BL)
Sector: Medtech
Foundation: 2018
Employees: 20
Contact: www.resistell.com

Exeon

DIGITAL Alarm Systems

Exeon Analytics' software detects suspicious activity in company networks. <u>*Jost Dubacher*</u> tadler Rail, RUAG, building services company Meier Tobler – the list of companies that have been hacked is getting longer almost every day and has led to rethinking in the executive suite. "In the past," said David Gugelmann, founder and CEO of Exeon Analytics, "it was assumed that those affected were at fault." Today, however, it is clear: Any company can become a victim of a cyberattack.

The demand for hardware and software to protect data and infrastructure from unauthorized access is growing rapidly, and Exeon has benefited from the trend. Other security providers have to carry out installations onsite, but Gugelmann and his team are able to work remotely.

All its Network Detection & Response software needs is the customer's log data, regardless of whether its infrastructure runs locally or in the cloud. "We transform existing data into valuable information," said Gugelmann.

And this is how it works: Since every company network is structured differently, intruders have to orientate themselves first. In doing so, they leave trace patterns in the log files, which are recognized and evaluated by Exeon's AI-based software. Exeon calls its business model "B2bigB," and banks from the DACH region were among the first customers. Now, the startup is expanding into other industries: Two of the three largest logistics companies in Switzerland rely on Exeon's digital alarm systems, as does the Bern-based medtech group Haag Streit.

In May, the ETH spin-off collected another CHF 4 million from its investors. The new money has gone primarily into customer acquisition on the large European corporate market. Exeon now has four salespeople on its payroll.

The company's growth is currently limited only by a lack of skilled employees: Specialists with IT security and business expertise are hard to find. "This is what the reverse side of the cybersecurity boom looks like," commented Gugelmann.

Exeon Analytics, Zurich
Sector: Security
Foundation: 2016
Employees: 23
Contact: www.exeon.ch

Internationally recognized experts in network analytics and digital forensics: founder David Gugelmann (right) with COO Carola Hug and CMO Gregor Erismann

Rank 11 to 100 and special ratings

11 ARARIS BIOTECH ZURICH, BIOTECH

WWW.ARARISBIOTECH.COM

The Zurich biotech company has developed a technology that enables the production of highly efficient antibody-drug conjugates very quickly – drugs are "glued" to antibodies with the "Araris Linker." The spin-off from the Paul Scherrer Institute and ETH Zurich raised more than CHF 15 million in further seed funding last fall and intends to advance pre-clinical development.

12 VOLUMINA MEDICAL EPALINGES (VD), MEDTECH

WWW.VOLUMINA-MEDICAL.CH

Volumina Medical has developed an injectable implant that enables minimally invasive breast reconstruction. As two million women develop breast cancer annually worldwide, the market for the product is huge. According to the company, word-ofmouth recommendations from the first doctors to use the new technology will be decisive in the breakthrough.

13 LEDGY Zurich, ict www.ledgy.com

Ledgy is the startup for startups: The Zurich ICT company offers an all-around service for companies, lawyers, trustees, and financiers. The Ledgy platform gives them a constant overview of key figures, investments, and holdings. Ledgy now wants to open the system to listed companies as well and, thus, gain a new customer segment.

14. HAYA THERAPEUTICS LAUSANNE. BIOTECH

WWW.HAYATX.COM

The Lausanne biotech company develops precision drugs for fibrotic diseases and other serious health problems related to aging, including cancer. The focus is on a drug that works against heart failure, one of the world's leading causes of death. In May, the startup was able to raise CHF 18 million in a seed financing round.

15 ANYBOTICS Zurich, robotics www.anybotics.com

The four-legged walking robot from ANYbotics moves autonomously and can also overcome steps and stairs. The target markets are the energy, raw materials, and chemical industries. Last December, lead investor Swisscom Ventures, together with international partners, invested CHF 20 million in the ETH spin-off as part of a Series A financing round.

16 YAMO ZUG, FOODTECH **WWW.YAMO.BIO**

Zug startup yamo has developed a new process for the production of baby food, a vitamin-friendly cold pressing without coloring or preservatives. It now also produces children's food, such as oat yogurt. After settling a legal quarrel with the market giant Hipp in Germany, yamo is on an expansion course: Since April, the products have also been available at Carrefour in Spain.

TOP 100 STARTUP Ranking: **The Concept**

Every year, 100 experts who are well-known names on the startup scene choose the 100 startups they think have the greatest potential. Each expert names 10 startups that are no more than five years old and awards 10 points for first place and one point for 10th place. The companies with the most points make it into the TOP 100 Startup ranking. The ranking

was launched by **Beat** Schillig (top) and Jordi Montserrat (center) in 2011. They also set up the national Venturelab training program and the international Venture Leaders program and manage the Venture Kick initiative. The project manager is



(below), co-managing director of Venturelab. JNB Journalistenbüro is co-initia-



tor and implementation partner. The edition 2021 is supported by Credit Suisse, SVC, Innosuisse, SIX, dot.swiss, and

the Gebert Rüf Foundation, with media partners Handelszeitung, PME magazine for the French edition, www.startup.ch for the English edition, swissnex in China and CSTEC for the Chinese edition, and Apprecia Partners for the Japanese edition. walderwyss attorneys at law

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WWW.TOLREMO.COM

The molecules developed by TOLREMO prevent the development of resistance in various types of cancer and can be combined with existing cancer drugs. At the conclusion of its Series A financing round, the startup raised another CHF 4.7 million, bringing the total to CHF 13.7 million. The additional funds will be used to develop the first clinical candidate and further strengthen the company's pre-clinical pipeline.

18 Bloom Biorenewables

FRIBOURG, CLEANTECH www.bloombiorenewables.com

Plastics, cosmetics, textiles: Bloom Biorenewables wants to ban petrochemical

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products from our everyday lives and replace petroleum with vegetable substances in material production – a "must" to achieve the climate targets. The first prototype factory is planned for 2022 to prove that the new technology works, and the EPFL spin-off is looking for CHF 30 million to CHF 50 million to fund this.

19 Depoly Sion, cleantech **www.depoly.ch**

Valais startup DePoly's polymerization plant is able to recover PET components in bottles, containers, and fabrics and make them available again as a raw material. Last December, DePoly raised CHF 1.3 million in venture capital from Swiss, German, and American investors.

20 YOKOY Zurich, fintech www.yokoy.ai

Yokoy automates expense management based on artificial intelligence. Simply take a photo of the receipt, and the expenses are checked and processed automatically in the customer's financial system. More than 300 data points are recorded when reading out a single receipt; the finance department's fraud control can record over 5,000 data points. The system has been working for supplier invoices since June, and the aim is to cover expenses management entirely.

21 FUTURAE TECHNOLOGIES Zurich, security www.futurae.gom

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CLIMBERS 1. DEPOLY

- **2. SYGNUM BANK**
- **3. IDUN TECHNOLOGIES**

<u>DePoly:</u> Closing the PET plastic recycling cycle

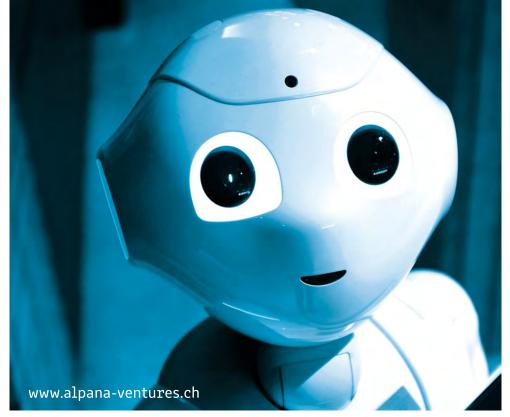
Polyethylene terephthalate in bottle form is the most commonly used container for mineral water and soft drinks worldwide. And it is diligently recycled: In Switzerland, four out of five PET bottles are recycled. That is the good news. The bad news is that mixed with other plastics, PET is found in various other plastic packaging. It is also used in the production of consumer goods, such as clothes and shoes, where the recycling rate is extremely low. The Valais startup DePoly wants to change that: CEO Samantha Anderson and her team have developed a

process by which PET can be inexpensively recycled in practically all forms. The chemical process requires neither pressure nor heat and is, accordingly, cost-effective. "This lets us position ourselves as a service provider for the PETconsuming industry," explained Anderson. The pilot plant at the Sion site will start operations shortly.



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119
deals done45
companies
funded3
funds2'600
jobs created





2. DECENTRIQ

3. FLOWBONE

KENENS VD, KANK 35

Decentriq: Data clean rooms through confidential computing

The list of founders of the Confidential Computing Consortium reads as a Who's Who of the IT world: Alibaba, IBM, Intel, Google, and Microsoft. Also, there from the beginning – Zurich startup Decentriq. "We recognized the potential of the new security technology early on," explained CEO **Maximilian Groth**.

At its core, confidential computing enables data clean rooms to be set up in the cloud in which different parties – for example, companies – can share and evaluate their data without breaking the

encryption. Those involved do not have access to each other's data, but receive the evaluations they want. An example of the application comes from the pharma industry: In order to determine their exact market share, 20 pharma companies have been sharing their sales figures on the Decentriq platform since July. "We are positioning ourselves as a neutral hub of the data economy," explained Groth. the authentication and transactions of millions of customers via Futurae Technologies' platform. It enables valuable user data to be backed up with fraud detection in real time. At the start of 2021, Futurae announced the completion of a financing round of CHF 5 million.

22 MIRAEX LAUSANNE, ENGINEERING WWW.MIRAEX.GOM

Miraex sensors use photons instead of electrons and can, thus, be used under the toughest conditions; for example, as ultra-reliable measuring devices for the nuclear and space industries. The heart of the sensors are chips that can also be used to make quantum computers more powerful – considered to be a potential key technology of the 21st century.

23 NEON SWITZERLAND ZURICH, FINTECH WWW.NEON-FREE.CH

The fintech startup offers inexpensive, app-based banking. And it is on an expansion course – customer growth last year was about 3,000 per month. The offer is particularly popular with the younger generation: A study on brand preferences 2021 by Havas Switzerland showed that neon had achieved the highest rise in popularity among under 26-year-olds, with an increase of 70%.

24 SKRIBBLE ZURICH. SECURITY

WWW.SKRIBBLE.COM

Zurich-based company Skribble, founded in 2018, enables documents to be signed digitally in a legally compliant manner. Its customers include large companies such as Canon, Helvetia, and easyJet, and since spring 2021, an authority has also been on board for the first time: The town of Zug relies on Skribble's technology for digital signatures. A financing round carried out in summer 2020 is intended to drive expansion in Germany.

25 YOVA ZURICH, FINTECH WWW.INYOVA.GH

Yova operates a digital platform for environmentally conscious investors. According to the personal preferences of the investors, investment proposals are selected from a pool of about 400 companies that have a positive impact on the environment or society. In spring, the Zurich startup closed a financing round of CHF 11 million.

26 IDUN TECHOLOGIES

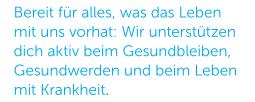
OPFIKON (ZH), MEDTECH www.iduntechnologies.ch

The ETH spin-off is developing a sensor that monitors human emotions through headphones. Along with Sony in 2020, the company has announced another prominent investor: Japanese pharmaceutical company Takeda. The potential of the new partnership is huge: The IDUN earphones are able to analyze how a drug works – an important step in personalized medicine.

27 SYGNUM BANK Zurich, fintech www.sygnum.com

Sygnum is the world's first bank to offer its customers a portfolio of traditional banking services for digital assets. In addition to the B2C business, the startup gives traditional financial institutions the opportunity to offer their customers services related to crypto assets. In February, Sygnum announced it had received an eight-digit USD investment.





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2.LIMULA OUR-DE-PEILZ (VD), RANK 94 **3. INERGIO TECHNOLOGIES**

TWIICE: Powered exoskeleton for walking support

People with lower-limb paralysis are now offered hope - by an exoskeleton, controlled by the patient, that could allow them to stand up, walk, and even climb stairs. The technological basis at the interface between software development, materials science, and sensor technology began at EPFL six years earlier. Tristan Vouga, CEO of TWIICE

researched the interaction between man and machine for his master's degree. "Then," he recalled, "my professor of-

fered me the exoskeleton project." The then only 24-year-old agreed, named the project TWIICE, and put together a team with which he took part in the ETH Zurich Cybathlon several times - a competition in which physically disabled people solve everyday tasks with the help of assistance systems. The company was founded in December 2020. "Technically, we are ready to enter the market," said Vouga. Tests are currently running in collaboration with a Lausanne physiotherapy practice. After approval as a medical product, international expansion is planned.

MICROCAPS SCHLIEREN (7H), ENGINEERING

WWW.MICROCAPS.CH

Tiny but highly accurate: Microcaps produces capsules that can release a drug in the body in precisely dosed quantities. The ETH spin-off has won multiple awards and raised CHF 5 million in a seed financing round in January 2021. The company intends to use these funds to drive the expansion and commercialization of the products.

NEURAL CONCEPT

LAUSANNE, ICT

WWW.NEURALCONCEPT.COM

EPFL spin-off Neural Concept has developed the first 3D deep learning software for computer-aided engineering and design - deep learning algorithms to help companies accelerate their research and development cycles. At the start of the year, the current investors, High-Tech Gründerfonds and Constantia New Business, increased their commitment and, thus, laid the basis for further development.

MOBBOT FRIBOURG, PROPTECH WWW.THEMOBBOT.COM

Mobbot's system for the automated production of shotcrete elements produces them faster, cheaper, and more ecologically than with the traditional casting process - a Mobbot system processes 1.5 tons of concrete in 15 minutes. The first beta system was delivered in autumn 2020, and now the Fribourg startup is working on making the system usable for recycled concrete as well.

31 **PERSEO PHARMA** MUTTENZ BL. BIOTECH WWW.PERSEO-PHARMA.COM

Perseo pharma, a spin-off from Muttenz biotech company INOFEA, develops therapeutic enzymes for the treatment of cancer and rare genetic diseases. INOFEA and Perseo pharma's patented nanotech platform was developed at the University of Applied Sciences Northwestern Switzerland (FHNW).

PRICEHUBBLE ZURICH, PROPTECH WWW.PRICEHIIBBLE.COM

PriceHubble has set out to automate the valuation process in the real estate industry. The platform uses data - such as information on the location, development, and local prices - from many millions of properties in Europe and Asia. In addition, the system learns from the difference between the historical evaluation and the realized price. Customers include banks, estate agents, and asset and property managers in the DACH region, France, and Japan.

DECENTRIO ZURICH. SECURITY WWW.DECENTRIO.COM

More and more business models are based on data collection and analysis. Zurich-based company Decentriq has recognized this and operates a Software-as-a-Service platform on which companies can jointly evaluate fully encrypted data. In autumn 2020, just over a year after it was founded, the startup had already raised USD 3.8 million in venture capital from Europe and the US.





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1. CARVOLUTION Zurich, Rank 5 2. Ledgy

3. NEURAL CONCEPT

LAUSANNE, RANK 29

PUBLIC VOTING AUTHENA

LUG, WWW.AUTHENA.IU

<u>Ledgy:</u> Automated equity set for growth

Confusing Excel tables were yesterday; today is Ledgy. Last year, the Zurich startup tripled the number of users to 1,500; these interact with their shareholders via the platform co-founded by physicist **Yoko**

Spirig. "With employee participation, a startup quickly has several hundred co-owners, then things get complicated and error-prone with Excel," said Spirig. Ledgy provides a remedy



by automating all possible processes relating to shareholders on the digital platform: They can complete transactions, model financing rounds, or communicate directly with other owners. All information is maintained and edited by the startups themselves and is, thus, always up to date. The startup, founded in 2017, has subscribers worldwide, but has so far focused on the DACH region. Now Spirig's team is expanding to the UK and northern Europe. In addition, Ledgy wants to open the platform for listed companies and, thus, open up a new customer segment.

34 ERACAL THERAPEUTICS Schlieren (ZH), Biotech

WWW.ERACAL.CH

One third of the world's population is overweight or obese. However, the currently available pharmaceutical appetite suppressants are sometimes associated with serious side-effects. EraCal, a spin-off from the University of Zurich and Harvard University, relies on a molecule that has been patented under the name Era-107 since 2018 and which has led to significant weight loss in animal experiments. If all studies are positive, the psychoactive appetite suppressant could hit the market in 2028.

35 FLOWBONE RENENS (VD), MEDTECH

WWW.FLOWBONE.COM

More than 600,000 hip fractures occur in Europe every year, and many lead to permanent walking difficulties. EPFL spin-off Flowbone, founded in summer 2020, is working on an injectable bio-gel that strengthens brittle hip bones locally and in a minimally invasive manner. Clinical studies are planned to start at the end of 2022.

35 ANNAIDA TECHNOLOGIES LAUSANNE, BIOTECH WWW.ANNAIDA.CH

If artificial insemination is to be successful, it is important that the most viable embryo is selected. But until now, only the external shape and genetic make-up of embryos have been identifiable. EPFL spin-off Annaida Technologies is developing a magnetic resonance tomograph (MRT) that makes the biochemistry visible inside the embryo, which often is only the size of a grain of sand.

37 HEMOTUNE Zurich, Medtech www.hemotune.ch

If a body is not able to fight off an infection, it spreads throughout the body via the blood; the immune system overshoots and directs itself against healthy tissue. ETH spin-off Hemotune has developed a blood purification system based on nanospheres: The magnetic particles dock with the pathogens – viruses or bacteria – and are then filtered out of the blood. Thus, HemoSystem prevents blood poisoning from leading to septic shock, organ failure, and death. A Series A financing brought the Zurich startup CHF 5.1 million last summer.

38 Nanoleq Zurich, engineering **WWW.Nanoleo.com**

The ETH spin-off caused a sensation with its stretchable cables – silicone threads studded with tiny metal particles. The Zurich-based company entered the market as a development partner for third parties and then, in March 2021, presented its first product: a shirt that measures the heart rate through a continuous electrocardiogram. Shortly before then, a financing round took place that included Mammut CEO Oliver Pabst.

39 HAELIXA KEMPTTHAL (ZH), ENGINEERING **WWW.HAELIXA.COM**

Haelixa's DNA marker is an aqueous solution sprayed on to the raw material during a product's manufacture. The marker is colorless and odorless and ensures that the goods can be clearly identified at all times; for example, as genuine or in conformity with the designation of origin. The Zurich startup has already gained a foothold in the textile and gemstone market – gold can be traced across the entire supply chain – and ZKB has also been one of its customers since April.



Elevated blood pressure affects 1.3 billion people and is the leading cause of heart attacks and strokes globally. The Neuchâtel CSEM spin-off Aktiia has developed a measuring device that is worn on the wrist; it monitors individual blood pressure continuously and displays it via an app. The device received the CE mark at the beginning of the year and has since been sold in more than 40 countries worldwide.

41 QNAMI MUTTENZ (BL), ENGINEERING WWW.ONAMI.GH

Qnami's quantum microscope technology is able to control and measure the state of a single electron. In the semiconductor industry, this type of quantum sensor technology enables error analysis to be conducted in a previously unknown spatial resolution. In the medium term, the construction of quantum computers and spintronics devices may be possible. In May, the Basel startup announced the completion of a Series A financing round of CHF 4 million.

42 PXL VISION ZURICH, SECURITY www.pxl-vision.com

The AI-based mobile phone software from the Zurich startup allows identity verification without a physical presence – solely on the basis of a selfie, an ID, or a passport. PXL Vision's customers include ZKB and Sunrise. In November 2020, the two founders Michael Born and Karim Nemr won the EY Entrepreneur of the Year Award in the "Emerging Entrepreneur" category.

43 LUCKABOX LOGISTICS WINTERTHUR (ZH), ICT WWW.LUGKABOX.GOM

Shipping platform Luckabox currently networks 50 parcel, express, and bike couriers with the retail trade. Its value proposition promises goods delivery in urban areas in less than an hour. Distancing rules and travel restrictions have boosted business over the past 18 months: In December 2020, the Winterthur-based company recorded an increase in shipment volume of more than 2,300%, and it has won major customers, including Jelmoli, Valora, and IKEA.

44 MATRIQ ST. GALLEN. ENGINEERING

HTTP://MATRIQ.CH

For medical and safety-critical plastic parts, traceability and counterfeit protection play a central role. matriq, founded by researchers at the Interstate University of Applied Sciences Buchs (NTB), has developed a solution that stamps an individual serial number in the form of a 2D code on every plastic component during the manufacturing process in the injection mold, during deep drawing or embossing. In August 2020, the St. Gallen team completed a Series A round of CHF 1.75 million.

45 ARTIRIA MEDICAL

BOREX (VD), MEDTECH www.artiria-medical.com

Every year, 13 million people suffer a stroke, which often leads to severe disability or death. Currently, the standard treatment uses the patient's arteries as an access route to insert a microcatheter into the brain. The guidewire developed by EPFL spin-off Artiria Medical promises better navigation in the tiny cerebral arteries and, thus, a higher quality of treatment.



1. PLANTED FOODS KEMPTHALZH RANKT 2. AGROSUSTAIN NYON VOL RANK B

3. YAMO

PUBLIC VOTING Kemiex

ZURICH, WWW.KEMIEX.COM

<u>yamo:</u>The freshest and most natural organic baby food

yamo produces fresh, healthy baby food. Without sugar and without additives. With their innovative production process – cold pressing instead of heating – CEO **Tobias Gunzenhauser** and his co-founders have hit the zeitgeist. It all started with baby food three years ago, and now the Zug-based startup has grown



along with its small customers and expanded its product range to include snacks for two to seven-yearold children with lactose-free oat drinks and yogurts. That goes

down well: "Oat yogurts have been on sale since 2020 and already account for 20% of our sales," said Gunzenhauser. Production takes place primarily in Germany, the most important market for yamo to date. In addition to Switzerland and Austria, yamo has also been present in Spain in all Carrefour branches since spring 2021, with France, the Netherlands, and other countries to follow. In 2020, yamo raised EUR 10 million in a financing round, and another is to follow. "We want to build at least one European brand, and that needs additional capital," said the young entrepreneur.

TOP 100 STARTUPS / RANK 1<mark>1</mark> to 100

46 TINAMU LABS ZURICH, ROBOTICS HTTP://TINAMU-LABS.COM

The ETH spin-off's turnkey solution for drone-based inspections consists of a dashboard, analysis software, and a hardware-independent navigation system. A year ago, the founding team secured CHF 1.1 million in a seed round. Since then, the well-known Swiss-American serial founder Alex Fries has joined the board of directors.



ZURICH, MEDTECH www.lifematrixtechnologies.com

More than 2.1 million patients receive artificial heart valves or other cardiovascular

implants every year, with the diseased tissue replaced by synthetic or animal-derived materials. Zurich startup LifeMatrix Technologies' biomimetic implants are obtained from human cells and thus lead to fewer complications and fewer deaths. The startup's founding CEO is renowned cardiac surgeon Maximilian Emmert.



Bitcoins, or ether, must be stored in a theft-proof way, and the Taurus Group acts as a service provider for the financial industry in the administration and storage of cryptocurrencies and digital securities. Since April 2021, the Geneva-based company has also operated a regulated marketplace for crypto assets under the name TDX Digital eXchange.

49 DUFOUR AEROSPACE VISP (VS). ROBOTICS

WWW.DUFOUR.AERO

Valais startup Dufour Aerospace develops vertical take-off and landing tilt-wing aircraft with electric or hybrid propulsion. The Aero-2 cargo drones, which can transport loads of up to 40 kg, should be ready for the market by 2023. The second product – the crewed Aero-3 drone taxi – is scheduled to enter the market in 2025.

50

NUMAB THERAPEUTICS

WÄDENSWIL (ZH), BIOTECH www.numab.com

In May, Numab Therapeutics announced the completion of a Series C financing round of CHF 100 million. The hopes of international investors rest on the active ingredient ND021: The molecule stimu-

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lates the immune system to fight cancer cells and will go into clinical trials this year.



Gmelius' business software complements Gmail accounts and bundles the various communication channels within a company. Employees can use their mailboxes to manage projects, answer customer inquiries, and automate contacts.

52 MAXWELL BIOSYSTEMS

ZURICH, BIOTECH www.mxwbio.com

The sensor devices from MaxWell map the electrical activity of thousands of nerve cells simultaneously, thus helping the phar-

maceutical industry to accelerate the development and market introduction of drugs for neurodegenerative diseases such as Alzheimer's and Parkinson's. Last December, Sensirion Holding, existing shareholders, and business angels injected a further CHF 4 million in venture capital.

53 SCEWO

WINTERTHUR (ZH), MEDTECH www.scewo.ch

Our built environment is anything but wheelchair-accessible. So, a team of Winterthur students set themselves the goal of developing the wheelchair of the 21st century: A wheelchair that climbs stairs and, thanks to the self-balancing technology, moves quickly and agilely on both flat and uneven terrain. Sales of the first series models started last summer, and in March 2021, the Scewo BRO wheelchair received the German Design Award in the 'Excellent Product Design' category.

54 VERSAMEB BASEL, BIOTECH WWW.VERSAMEB.COM

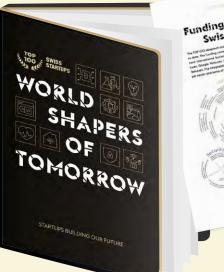
Versameb's VERSagile technology platform acts as an innovation driver for drugs based on ribonucleic acid (RNA). Versameb develops treatment methods that accelerate the regeneration of cells in muscle, bone, cartilage, and nerve cells, and stimulate the body's self-healing powers. In the last round of financing, completed in July 2020, the Basel-based company raised CHF 6 million.

55 ADIPOSS Plan-les-ouates (ge), medtech

HTTPS://ADIPOSS.COM

Cancer cachexia is an emaciation syndrome characterized by involuntary weight loss. It affects more than half of all cancer

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1. YOKOY 2. NEON SWITZERLAND

3. YOVA

PUBLIC VOTING

SWISSBORG

LAUSANNE, WWW.SWISSBURG.CUM

<u>Yokoy:</u> Spending and corporate credit cards on autopilot

There are many apps for recording expenses, but none like the app from Yokoy. The Zurich startup records and processes expenses around the globe in a few seconds and automatically records them in the customer's financial system. The product has been well received: At the end of 2020, Yokoy had about 200 custom-

ers, but by mid-2021, this number had grown to 500. The offer is aimed exclusively at medium-sized and large companies, many of which are globally active, such as

Stadler Rail. Yokoy is currently represented with one location in Switzerland, Germany, and Austria. With another round of financing in 2022, the startup wants to "expand intercontinentally," as co-founder and CEO **Philippe Sahli said**. And the gradual expansion of the system for the entire expenditure management of a company is also on the agenda, coupled with the issuance of virtual and physical credit cards, which can be created individually in terms of time, location, or other criteria. patients and is the cause of death in a fifth of those affected. Adiposs, a spin-off from the University of Geneva, is developing a contrast agent that makes changes in brown and beige body fat visible in a computer tomograph and thus enables early detection. Clinical trials should begin this year after approval by the UK regulatory agency.

56 TERAPET GENEVA, MEDTECH WWW.TERAPET.CH

Proton therapy is the most precise radiation therapy available. However, to date, no solution exists to verify the radiation dose administered during tumor treatment or its location. Terapet, founded in 2019, is developing a system with which doctors will be able to monitor the proton dose in vivo, non-invasively, in 3D, and in real time, thus saving hospitals time and money.

57 ALENTIS THERAPEUTICS BASEL, BIOTECH HTTPS://ALENTIS.CH

Fibrosis refers to pathological reproductions of connective tissue in tissue and organs. Alentis is working on an antibody that can be used to control the course of a fibrotic disease, with a focus on the liver

and kidneys. The medical need is great: 3.3 million people in the US alone live with liver fibrosis in an advanced stage, which can lead to cirrhosis and treatment only with an organ transplant.

58 THREATRAY BIEL (BE), SECURITY HTPS://THREATRAY.COM

Targeted digital attacks on critical infrastructure and large companies have become a real threat to the economy and society. Threatray, a spin-off from Bern University of Applied Sciences (BFH), markets a search and analysis machine for cyberspace threats. In the event of an attack, the tool allows conclusions to be drawn about the originator and provides information on possible countermeasures.

59 DAPHNE TECHNOLOGY Saint-Sulpice (VD), Cleantech

WWW.DAPHNETECHNOLOGY.COM

Container ships, oil tankers, and freighters are gigantic polluters, and the climate debate is forcing the shipping industry to rethink. Daphne Technology has developed a nanotech filter that reduces sulfur oxide emissions from ship engines by 99% and nitrogen oxide emissions by 85%. The residue can even be sold as fertilizer. Aramco, the world's largest oil company, is one of Daphne's investors.

60 AUTERION ZURICH, ROBOTICS **WWW.AUTERION.COM**

Three out of four flying robots take off, fly, and land with the open-source software from Zurich-based Auterion. The PX4 operating system is considered as Android for drones and is also used by the American armed forces: The Pentagon decided last autumn that the US Army's unarmed camera drones must run on PX4. CEO Lorenz Meier spoke to Handelszeitung of a breakthrough.

61 PLASTOGAZ LAUSANNE, CLEANTECH WWW.PLASTOGAZ.COM

The EPFL spin-off is working on a process for the chemical conversion of plastic into short-chain hydrocarbons, which can be used as fuel or to manufacture new recycled plastics. The proof of concept has been provided, and the Lausanne-based company intends to set up the first industrial-scale demonstration plant in 2022.



Financing: Start-up, scale-up or late-stage – how we are here for you

Zürcher Kantonalbank offers particularly innovative young companies a solution with equity capital for each phase of the business – from start-up and development through to scaling and the growth phase.

The innovation captures the spirit of the times, the prototype (proof of concept) is ready, and the team is also just right. In other words: the rocket is ready to launch. But where does the fuel come from?

Even the best business idea can't take off without sufficient financial resources. This is where Zürcher Kantonalbank comes in. "We can proudly say that under the umbrella brand of Zürcher Kantonalbank, we offer innovative young companies a solution with equity capital from the start-up to the growth phase," says Fabian Bamert, Head of Start-up Finance at Zürcher Kantonalbank.

The best example of this is Versantis, a biotech company founded in 2015, Zürcher Kantonalbank was one of the first to believe in its multi-organ support therapy for liver cirrhosis and therefore supported the young company from the start. "As an anchor investor from the very beginning, the bank has been involved throughout the entire journey with us entrepreneurs in a pragmatic, efficient and effective manner. From the start to expansion and growth," says Dr Vincent Forster, CEO and co-founder of Versantis. The culmination of the support was the series B financing round of CHF 16 million – managed by Zürcher Kantonalbank's Swisscanto Invest as lead investor. Vincent Forster adds: "We are excited to have received the continued support of such a high-calibre investor who recognises the high unmet medical needs that exist and shares our vision of urgently changing liver disease care. We can only find words of sincere gratitude."

Seed/early-stage and scale-up phase

As one of the largest and most active investors in Switzerland, Zürcher Kantonalbank has already supported over 250 start-ups with over CHF 180 million in risk capital. It does so in the early phase of an innovative start-up as soon as a convincing prototype (proof of concept) has been presented. In addition to the initial investment, follow-up investments are also possible if the company develops well. For example, in the subsequent scale-up phase, in which the company lays the foundations for future growth with a successful market entry (proof of market).

Late-stage phase and exit

For the larger tickets in the growth phase, as the name suggests, the growth fund of Swisscanto Invest comes into play. The private equity fund has been on the market for over two and a half years. Since then, 14 initial and five follow-up investments have been made in promising growth companies in the ICT and health tech sectors. Further financing rounds are planned until the end of the year: "The engagement and experience of Fabian Bamert and his start-up finance team are important for our deal pipeline and a good basis for potential investments," says Andreas Nicoli, Head of Private Equity and adds: "Since we are also investing internationally, it is not the only source of deal flow but it is a very important one."

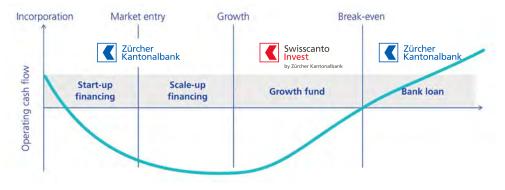
After successful financing, the work is not finished but has only just begun. Following successful selection and financing, the responsible Swisscanto investment managers closely support the companies on their journey, for example by holding a position on the Board of Directors for several years. Zürcher Kantonalbank offers all the services of a full-service bank for our corporate clients – ideally up to a successful exit, such as via IPO.

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Are you a start-up looking for an investor? And do you also want to be supported by the experienced experts at Zürcher Kantonalbank? Then take the first step today and send us your financing request together with your pitch deck.

You can find further information at: zkb.ch/start-ups.









1. EXEON ANALYTICS ZURICH, MANK IC 2. FUTURAE TECHNOLOGIES ZURICH, RANK ZI

3. SKRIBBLE

ZURICH, RANK 24

PUBLIC VOTING PRODAFT

YVERDON-LES-BAINS, WWW.PRODAFT.COM

<u>Futurae</u>: Secure authentication for users

IT security has many facets, and an important aspect is the authentication of the user so that sensitive data is protected from unauthorized access. Zurich-based Futurae Technologies operates a security platform that relieves customers of the entire authentication process and issues a warning if it discovers abusive behavior.

"Since we don't need to know who is behind the authentication," said co-founder Sandra Tobler,

"data protection is guaranteed at all times." The spin-off

from the System Security Group at ETH Zurich has managed to gain market entry in the financial industry. Banks from all over Europe are Futurae's largest customer base; other customers include medical service providers, insurers, and authorities. And the market is continuing to grow: "With the pandemic-induced spread of digital customer relationship models," explained Tobler, "the need for secure authentication solutions has increased in all sectors."



The size and number of images taken each year are growing rapidly, putting a strain on storage media and networks. Dotphoton has developed an image compression solution for professional applications that reduces raw data images up to 10 times – and with the guarantee that the quality will be maintained. CEO Eugenia Balysheva's team enables novel imaging solutions in the areas of AI, biomedicine, and aerospace.

63 IMVERSE GENEVA, ICT WWW.IMVERSE.GOM

With the Imverse Live3D software, live 3D holograms can be captured, edited, and streamed by several people in real time. The technology is used in the fields of telemedicine, training, entertainment, and remote collaboration. At CES 2021, held online and in front of corporations that included Samsung and Shenzhen Maono, Imverse won the award in the "Streaming" category.

64 EYEWARE TECH Martigny (VS), ICT

WWW.EYEWARE.TECH

The spin-off from EPFL and the Idiap Research Institute programs software that can be used to record the eye movements of users via a 3D camera. The eye tracking represents a promising interface between man and machine. Electronics company ams is already using the Valais-based firm's technology to develop a system that detects drowsiness in drivers.



Alzheimer's disease is not curable, but physical activity and memory training can slow the process down in the early stages. Altoida operates a platform for brain health data that supports the early detection of Alzheimer's up to 10 years before the onset of the disease. The Altoida app is an FDA-approved and CE-marked medical product.

66 TWIICE LAUSANNE, MEDTECH

Research in the field of exoskeletons has been carried out at EPFL's Laboratoire de Systèmes Robotiques since 2015. But it was not until the end of 2020 that Tristan Vouga's team got serious and founded TWIICE. Its goal is the development and marketing of exoskeletons that enable people with spinal cord injuries to stand up, walk, and climb stairs.

67 LATTICEFLOW ZURICH, ICT WWW.LATTICEFLOW.AI

The tools from the ETH spin-off, founded in 2020, help AI developers make their mathematical models for machine learning applications more secure and reliable. The first customers include SBB, the German federal office for cybersecurity, and the US Army. At the beginning of the year, the Zurich-based company secured USD 2.8 million in a seed round.



Thanks to a unique rotor system, the drone from ETH spin-off Voliro not only



flies and sees, but can also manipulate its surroundings. In addition, the 360° design of the Voliro platform enables the inspection of flat, curved, and inclined surfaces for the first time. In order to accelerate the development to market readiness, the finalist of the Swiss Technology Award 2020 collected CHF 2 million in a seed round.



The spin-off from the Institute of Neuroinformatics (INI) is developing a new generation of semiconductor chips. The AI chips are tailor-made for applications with intelligent sensors that generate a highly dynamic calculation effort; for example, in the areas of wearables, IoT, and monitoring. In December, Manu V Nair, founder and CEO of Synthara, completed an oversubscribed seed round; investors included High-Tech Gründerfonds (HTGF) and Zürcher Kantonalbank (ZKB).



The contract brought the Vaud-based cleantech startup ClearSpace into the headlines across Europe: Last November, it became known that the European Space Agency ESA had commissioned a consortium led by ClearSpace to carry out a clean-up operation in space and had provided it with EUR 86 million. In 2025, the ClearSpace-1 scrap collection probe is expected to recover leftover parts of a rocket launched into space in 2013.

71 RETINAI MEDICAL BERN, MEDTECH HTTP://RETINAL.COM

Machine learning, computer vision, and signal processing: Bern-based medtech startup RetinAI bundles the latest IT technology in order to discover eye pathologies earlier than is possible with current diagnostic methods. After several successful pilot projects, the RetinAI founders, with CEO Carlos Piller, signed a long-term cooperation agreement with Novartis.

72 SYNENDOS THERAPEUTICS

ALLSCHWIL (BL), BIOTECH www.synendos.com

Synendos' active ingredients locate a newly identified target in the endocannabinoid system in the brain. This is a new approach in the treatment of central nervous system illnesses associated with anxiety and stress-related disorders. A Series A financing round concluded in April raised CHF 24 million.

73 CYSEC LAUSANNE, SECURITY www.cysec.systems

The pandemic-induced trend toward remote work has put data security at the top of the list of priorities for many companies, benefiting firms such as CYSEC. It markets a high-security server for sensitive data and applications and was able to double its sales last year. Customers from financial services, IoT, astronautics, and telecommunications are likely to generate triple-digit growth again in 2021.

74 NEMIS TECHNOLOGIES

DÜBENDORF (ZH), BIOTECH www.nemistech.com

According to the World Health Organisation, 420,000 people die every year from the consumption of contaminated food, with bacteria as the largest source of contamination. The diagnostic kits from NE-MIS Technologies detect dangerous germs within a day; in comparison, the methods currently used in the food industry typically take 48 hours to detect viable bacteria.



1. PIAVITA Zurich, Rank 6 2. Resistell Muttenz BL, Rank 9 3. Volumina Medical Epalinges VD, Rank 12

PUBLIC VOTING **Spiden**

PFÄFFIKON SZ, WWW.SPIDEN.COM

<u>Volumina Medical:</u> Biomaterial for reconstructive surgery

Every year, two million women worldwide develop breast cancer. After the tumor has been removed, many of these women forego breast reconstruction because the surgery is exhausting and the results uncertain. **Amélie Béduer** had these women in mind when she founded Volumina



about how artificial tissue can interact with the human body during her time as a

researcher at the University of Geneva and EPF Lausanne. "What drives me," said Béduer, "is my thirst for knowledge." As CEO of Volumina Medical, she aims to help achieve a breakthrough in breast reconstruction with an injectable implant that can regenerate damaged tissue in a single minimally invasive procedure. The product launch is planned for 2025.

ROBOTICS

1. WINGTRA 2. ANYBOTICS

3. TINAMU LABS

ZURICH, RANK 41

PUBLIC VOTING Voliro

<u>ANYbotics:</u> Autonomous robots for industrial inspection

ANYbotics is the rarity among the eight robotics startups in this year's TOP 100. The ANYmal robot does not fly; it has four legs and walks. Otherwise, similar to a drone, it is crammed full of sensors and software that allow it to orient itself and collect data. "As it is ground-based," said ANYbotics CEO Péter Fankhauser,

"our robot is particularly suitable for routine inspections." In other words, the ANYmal is able to "live" on the facilities that it has to inspect. "Mobile robots are the



next step in the digitalization and automation of large-scale technical systems in the chemical industry and energy and raw material extraction," said Fankhauser with conviction. After various preliminary projects with companies such as oil group Petronas, and with the technical approvals on the table, the 70-strong ETH spin-off is about to begin the commercial roll-out. The first turnkey walking robots will be delivered in the very near future.

75 ANAPAYA SYSTEMS ZURICH, SECURITY

WWW.ANAPAYA.NET

The internet has a massive security problem. Thousands of companies worldwide are concerned with ensuring the availability and integrity of data and services. At ETH Zurich, the problem has been approached more fundamentally: A team led by Professor Adrian Perrig has developed a completely new internet architecture called SCION. The technology has been commercialized by Anapaya Systems, and the ETH spin-off now operates data centers throughout Europe and several Asian countries.

76 BITSABOUTME BERN. ICT

WWW.BITSABOUT.ME

Since the European General Data Protection Regulation (GDPR) came into force, the operators of online activities are no longer allowed to pass on user data unreservedly. However, the data appetite of the advertising economy is unsatisfied. BitsaboutMe jumps into this gap: Consumers can upload their social media profiles, online accounts, and customer card data to a personal account, manage it, and make it available to selected companies for a fee.

VAY ZURICH, ICT https://vay.ai

The original goal of VAY's founders was to market a smartphone fitness app. However, it was the underlying AI-supported motion capture platform that caused a sensation in the market. Since the pivot, Ben Simon, Joel Roos, and Caspar Leuzinger have addressed corporate customers in the health and fitness sector. In June 2021, they presented with Venture Leaders Mobile at the Mobile World Congress in Barcelona.

78 FLYBOTIX Lausanne, robotics www.flybotix.com

The EPFL spin-off builds inspection drones that operate within industrial facilities and areas that are difficult to access. Thanks to an electromagnetic drive system with only two propellers, the Flybotix drone can stay in the air for twice as long as its competitors. Customers come from the construction, energy, chemical, and raw materials industries. In April, Flybotix received milestone financing of CHF 1 million from its existing investors.

79 ASSAIA INTERNATIONAL Zurich, Ict https://assaia.com

Assaia International promises significant increases in efficiency to an aviation industry under historically unique cost pressure due to the pandemic. The AI-supported image recognition software monitors, analyzes, and optimizes typical airport work processes, such as refueling and loading aircraft. The ETH spin-off employs about 40 people in Zurich and Texas.

80 SWISSDECODE RENENS (VD), FOODTECH WWW.SWISSDECODE.COM

More and more consumers want to know what is on their table. The food industry has reacted by investing in systematic control of products and indication of origin. For example, the DNA analysis kits from SwissDeCode prove reliably within 30 minutes whether a food is contaminated or incorrectly labeled. A number of pilot projects are currently running with global food companies.

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1. 9T LABS ZURICH, RANK 3 2. CREAL ECUBLENS VD, RANK 4 3. MIRAEX LAUSANNE, RANK 22

PUBLIC VOTING SYNTHARA

<u>Miraex:</u> Photonic sensors and quantum solutions

The minimum one needs to know: Light particles contain 100,000 times more energy than electrons and are, therefore, much more robust and less prone to failure. Miraex takes advantage of this fact. "Our sensors use photons instead of electrons and can, therefore, be used under the toughest conditions," emphasizes

Clément Javerzac-Galy, co-CEO and co-founder. The Frenchman did his doctorate in Lausanne and founded a company in 2019 that plans to do much more

than produce ultra-reliable measuring instruments that detect anomalies in the nuclear and space industries. "Our chips can be used to make quantum computers more efficient," claimed Javerzac-Galy. Quantum computers are seen as a possible key technology of the 21st century. "At first, I thought that to set up a company in this field, I would have to move to Silicon Valley," he said, "but at EPFL, I found everything I needed." First and foremost, two well-trained and highly motivated co-founders.

81 EMBION TECHNOLOGIES

ETOY (VD), FOODTECH https://embiontech.com

Embion's technology platform, developed at EPFL, enables organic waste to be chemically upgraded to probiotic food suitable for humans and animals. The first product, made from brewery waste, hit the market last summer. Shortly afterward, the Vaud firm won the Asahi Group – the seventh largest brewery in the world, with beer brands Pilsner Urquell and Peroni – as a customer and investor.

82 INERGIO TECHNOLOGIES LAUSANNE. ENGINEERING

HTTPS://INERGIO.CH

The fuel cell is considered to be one of the most promising technologies on the way to a sustainable future. Inergio, a spin-off from EPFL and the School of Business and Engineering Vaud, has now succeeded in significantly miniaturizing one of the most efficient fuel cell technologies – the solid oxide fuel cell. The result is an autonomous power storage system with 20 times the energy density of a lithium-ion battery.

83 CAPSKIN ZURICH, ENGINEERING www.capskin.com

When a shoe pinches, the wearer feels pain. How this happens and what exactly happens inside the shoe have not yet been established. But now, ETH spin-off Capskin has developed a sock equipped with thin, stretchable 3D motion detection sensors that record in detail what is happening under the leather. Potential customers are the shoe industry and manufacturers of special orthopedic shoes.

84 EARLYSIGHT LAUSANNE, MEDTECH WWW.EARLYSIGHT.COM

Many eye diseases – for example, age-related macular degeneration and glaucoma – begin with the degeneration of the cell structure of the retina. But until now, this impairment has not been visible with the available diagnostic devices. The imaging technology developed by EarlySight now enables a 10 times more detailed view of the retinal tissue.

85 COMPPAIR TECHNOLOGIES

HTTPS://COMPPAIR.CH

Fiber-reinforced plastics (FRP) are used when a component must have low weight with high rigidity. However, unfortunately for engineers, parts made of FRP are also very sensitive. EPFL spin-off CompPair, founded in 2020, wants to change that. The Lausanne team has developed an FRP that can heal itself: Fatigue cracks and impact damage can be repaired in just one minute through the application of heat.

86 LEGARTIS TECHNOLOGY ZURICH, ICT WWW.LEGARTIS.AI

Legartis' clients – law firms and legal departments – use the AI-based tool to review contracts; for example, non-disclosure agreements (NDA). Legartis classifies and checks an NDA within a few seconds, relieving employees of the repetitive work. Other typical use cases may include the search for specific clauses in extensive contracts and the review of contracts for compliance with legal requirements and other guidelines.

ENCOURAGING INNOVATION

SWITZERLAND'S LEADING HUB FOR TECHNOLOGY & KNOWLEDGE TRANSFER

YOUR PLACE TO GROW



1. BLOOM BIORENEWABLES Friedurg, rank 18

2. DEPOLY

3. DAPHNE TECHNOLOGY

SAINT-SULPICE (VD), KANK 59 👘

PUBLIC VOTING **Perovskia**

AUBUNNE VD, WWW.PERUVSKIA.SULAR

Bloom Biorenewables: Making biomass a real alternative to petroleum

It is beyond dispute: If humankind wants to fight climate change effectively, it has to move away from oil. And not only through petroleum



and heating fuel, but also

through materials: plastic, cosmetics, textiles. The Fribourg-based startup Bloom Biorenewables has developed the right technology for precisely this purpose: "We are replacing petroleum materials with plant-based materials," explained CEO and cofounder Remy Buser. Bloom refines carbon from corn, wood, or straw as the basis for new, environmentally friendly products. The aim is for the consumer not to notice that the plastic bottle, for example, was produced without petroleum. The EPFL spinoff is now in the intermediate stage of research and market readiness, with development well advanced in the fragrance and bio-plastics area. The plan is to build a prototype factory in 2022 "with which we can prove to the industry that our concept works," said Buser. The technology will then be sold under license. A Series A financing round of up to CHF 50 million is planned for the factory construction.

87 FIXPOSITION Schlieren (ZH), Robotics www.fixposition.gom

Fixposition produces centimeter-accurate real-time navigation systems for drones, autonomous cars, and robots. The ETH spin-off links signals from satellite-based positioning systems with image-recognition algorithms. The technology from Schlieren is used in many applications, including Adore, the new, self-driving delivery shuttle for goods and meals on the EPFL campus in Ecublens.

BB ARCHILYSE ZURICH, PROPTECH

www.archilyse.com

The Zurich-based proptech startup Archilyse combines floorplan data of buildings with 3D models of the environment and simulations of the field of vision and noise emissions. On this basis, it is possible to calculate exactly how high the rent that can probably be realized is, based on historical rental transactions. Customers include large property owners, such as Swiss Life and Migros.

89 GRZ TECHNOLOGIES GROLLEY (FR), CLEANTECH WWW.GRZ-TECHNOLOGIES.COM

The storage of photovoltaically generated power is still one of the central challenges of the energy transition. An approach often followed is to split water into oxygen and hydrogen. EPFL spin-off GRZ Technologies, founded in 2017, uses metal hybrids to make storage of the combustible H2 more efficient, safer, and correspondingly cheaper. The aim is to develop high-density and decentralized storage systems for industry and mobility.

SO Alaya Gland (VD), ICT http://alayagood.com

Alaya supports companies that want to enable their employees to do charitable work in an uncomplicated and digital way. The alayagood.com platform gives access to more than 150 organizations looking for volunteers, skills, and donations and is already active in more than 70 countries with branches in London, Paris, and Barcelona. Customers include large com-

VAUD: THE PERFECT SETTING TO INVEST, INNOVATE AND GROW IN SWITZERLAND

he canton of Vaud, in the heart of Europe, has emerged as a global hub of research and innovation over the past 20 years. Many breakthrough technologies have been developed here, such as the Nespresso coffee machine, Logitech mouse, Scala programming language, and Solar Impulse, the solar-powered plane. This region, one of the wealthiest in Europe, hosts the headquarters of many multinationals, along with numerous SMEs, scale-ups, and startups. And since 2013, 245 foreign companies have chosen to set up shop here with the help of Innovaud, the agency for the promotion of investment and innovation.

What attracts foreign companies to Vaud is not just the region's high quality of life and large pool of skilled workers, but its entire innovation ecosystem – a public-private initiative built on relationships of trust. Companies can team up with universities and research centers, benefit from technoparks and enjoy a dynamic R&D environment fueled by cross-disciplinary collaboration.

This region is known globally for its technology clusters in life sciences, nutrition and food technologies, energy and environment, micro and nanotechnologies, ICT and digital, and drones and aerospace – to name just a few. Teams of deeptech panies such as PwC, Société Générale, BNP Paribas, and Hermès.



AVAtronic's Digital Active Noise Cancellation (ANC) technology suppresses unwanted and annoying audio noises in hearing aids, headphones, and speakers. At CES 2021, the Vaud firm showed that its solution is also suitable for upgrading conference calls: It cuts out the noise of tapping keyboards, air conditioning, and squeaking chairs.

92 TALENT MAPS St.gallen, ict www.talent-maps.com

Working from home has advantages and disadvantages, and one of the disadvantages is the elimination of chance encounters at the coffee machine. On 8 March, the St. Gallen startup Talent Maps launched a digital alternative with "Coffee-Call." The telephone and video app brings remote employees of a company together across departmental boundaries and hierarchical levels for a 10-minute break. Swisscom was one of the pilot customers.



HTTPS://IMMOZINS.CH

Swiss startups that start with seed funding of CHF 12.5 million are rare. But Immo-Zins did it. Now, Louis-Philippe Müller and his team want to stir up the Swiss real estate market. They give private individuals the opportunity to invest in selected construction projects together with third parties – ImmoZins and other investors. The processing software documents the construction project from planning to commissioning.

94 LIMULA LA TOUR-DE-PEILZ (VD), BIOTECH

HTTPS://LIMULA-BIOTECH.COM

Cell and gene therapy represents a real turning point in the treatment of numerous serious diseases, and the manufacturing



Vaud is a global research and innovation hub and hosts numerous startups and scale-ups

innovators work in a range of interdisciplinary fields of research across as many as 16 key disciplines.

The canton of Vaud has the highest startup density in Switzerland, according to the study Vaud Innove (www. vaudinnove.ch/en), and in 2020 regional startups attracted CHF 409.1 million in funding. It is home to 34 scale-ups – innovative, high-growth companies that include Nexthink and SOPHiA GENETICS – and it leads Switzerland in digital healthcare investment.

Vaud's performance in this year's TOP 100 Swiss Startup Award once again reflects the strength of its innovation ecosystem with 23 Vaud-based companies on the list. To learn how you can invest, innovate and grow in Vaud, visit **www. innovaud.ch.**



1. CUTISS Schueren ZH, RANK 2 2. ARARIS BIOTECH Zurich, Rank II 3. HAYA THERAPEUTICS

D. NATA INCNAPEUI Alganne dank 14

PUBLIC VOTING Synendos Therapeutics

AUBUNNE VU, WWW.SYNENDUS.CUM

<u>Araris:</u> Developing the antibody-drug conjugates of tomorrow

In contrast to traditional chemotherapy, antibody-drug conjugates (ADC) are a new approach in cancer therapy. The drug is coupled to the antibody, which transports it to the cancer cells, where the drug is able to destroy them. This type of treatment is more precise and helps reduce the severe side-effects of cancer therapy.



Zurich startup Araris has managed to couple the active ingredients to an antibody easily and stably, thanks to the "Araris Linker." With the technology discovered and co-developed by co-founder and

CEO Philipp Spycher, the antibody does not have to be modified, saving time and money compared with competing products. Pre-clinical studies are currently underway, with clinical studies scheduled to follow from 2024. There has already been great interest from investors in the Paul Scherrer Institute and ETH Zurich spin-off, and so far Araris has raised CHF 15 million. Another round of financing will follow at the end of the year and bring Araris a little closer to its goal: "We are trying to revolutionize precision medicine with our discovery," said Spycher.



1. MOBBOT Fredung, Rank 30 2. pricehiirri f

Z. PRIVERUDDLE 71Rich RANK 32

3. ARCHILYSE

ZURICH, RANK 88

PUBLIC VOTING

ZURICH, WWW.IMMUZINS.CH

Mobbot: Mobile 3D concrete printing system

Fribourg startup Mobbot is bringing digitalization to the construction industry. Founder and CEO **Agnès Petit,** who has a doctorate in engineering, combines traditional shotcrete technology with automation and robotics. The startup's system enables prefabricated concrete elements to be produced faster and cheaper. For example, concrete shaft

elements for telecommunications cables normally take two days, but the Mobbot system can produce them in two hours and with cost savings of up to 40%. The sys-

tem also protects the climate: Compared with conventional casting methods, a Mobbot system requires about 25% less concrete. And with the increased use of recycled concrete, Petit is aiming to halve its CO2 emissions. Mobbot makes its money primarily from leasing the system to construction companies and the production of prefabricated elements. In autumn 2020, the system was delivered to a first customer as a beta version. A Series A financing round is planned for later this year to raise capital in the mid single-digit million range for commercialization and expansion to Germany and the UK.

process is also revolutionary, as it originates from the patient's own immune cells. Limula's production platform enables the decentralized production of personalized cell therapy directly at the patient's bedside.

95 Urbio

SION (VS), PROPTECH www.urb.io

District heating networks and local power consumption communities turn residential areas into complex energy systems with growing optimization potential. EPFL spin-off Urbio is developing software that supports energy providers and energy consulting companies in the system planning for the generation and storage of energy, building renovations, or new distribution networks.

96 OXARA Zurich, proptech https://oxara.ch

Materials scientist Gnanli Landrou developed a chemical mixture at ETH Zurich that turns excavated material into an environmentally friendly building material. After completing his doctorate, he applied for a patent for his innovation and has been building the spin-off Oxara since autumn 2018. The additives save construction companies landfill and transport costs, and help to reduce the real estate industry's carbon footprint.

97 IMBURSE Zurich, fintech

WWW.IMBURSEPAYMENTS.COM

IMburse, founded in 2018 with headquarters in Zurich's financial district and a branch in London, operates a cloud-based Payments-as-a-Service platform. It enables companies to integrate different payment technologies into their IT systems via a single connection. In June this year, IMburse closed a Series A financing round of USD 12 million.

98 SCAILYTE Basel, Biotech **www.scailyte.com**

The ScaiVision software from the ETH spin-off shortens single-cell data analysis from several weeks to two to three days, enabling biomarkers to be found that indicate a tumor or other diseases, and, in addition, determine the individual risk of developing the disease. In February, Scailyte strengthened its board of directors with the addition of Pascal König, co-founder of femtech startup Ava.

99 WORKSPACE2GO ZURICH, PROPTECH

HTTPS://WORKSPACE2GO.COM

Workspace2go's platform allows about 1,000 meeting and workshop rooms in 100 Swiss locations to be booked. The restrictions on contact and mobility of the past 18 months have hit the Zurich startup hard, but it has stuck to its growth plans, and a financing round concluded in March for a mid-six-digit amount has created the conditions for this.

100 Sonect Zurich, fintech www.sonect.net

The Sonect app can be used to withdraw cash in kiosks, shops, and restaurants. The network currently has about 2,300 points of sale. In May, the Zurich startup entered into a sales partnership with the payment app Twint, which has brought more than 70,000 new users to the platform. International business is expanding in parallel to domestic expansion, with about 100 points of sale integrated in Germany and pilot projects running in the UK.



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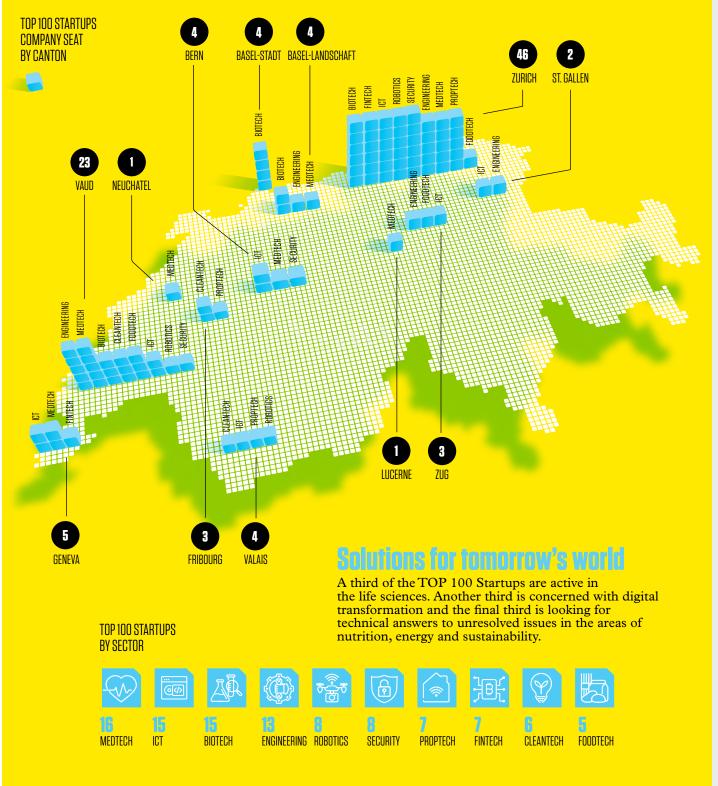
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STARTUPS IN SWITZERLAND

Pacesetters ETH and EPFL

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AT HOME IN THE STARTUP SCENE

A total of 100 investors and startup experts chose the 100 best Swiss startups in 2021 founded since 1 January 2016. They each selected and rated their 10 personal favorites, awarding 10 points for first place and 1 point for 10th place. Those startups with the highest number of points are listed in the rankings.



Discover more about the jury:



Zurich





Teddy Amberg, Zug Partner venture capital business Spicehaus Partners. www.snicehaus.com

Business angel, CEO invest-

www.diamondscull.ch

Michael Altorfer,

ment business Diamondscull.

Rolf Auf der Maur, Zurich

Business angel, IT law expert VISCHER Anwälte und Notare. www.vischer.com



Fabian Bamert, Zurich Head start-up finance Zürcher Kantonalbank. www.zkb.ch



Tobias Bassi. Zurich Head corporate venture capital PostFinance. www.postfinance.ch



European Business Angel of the Year 2014, founder of business angel platform GoBeyond Early Stage Investing.www.go-beyond.biz

Christophe Beaud, Zurich

Business angel and private equity investor. founder and CEO peoplefone Group. www.peoplefone.com

Daniel Bertholet.

Geneva Managing partner 4see ventures. https://4seeventures.ch





Silvio Bonaccio. Zurich Head FTH Transfer. www.transfer.ethz.ch

Diego A. Braguglia,

Lausanne





Geneva Associate venture capital company Forestay Capital. www.forestaycapital.com

Nicolas Brand, Zurich

ness Lakestar.

Partner venture capital busi-



www.lakestar.com David Brown, Lausanne Business Angel of the Year 2016, member Innovation

Council, Innosuisse www.hightechfondue.com





L André Catana, Lausanne Head startup unit EPFL.

www.eofl.ch

Lausanne Responsible for economic

Raphaël Conz,





Andrea Crottini, Lausanne Head technology transfer EPFL.http://tto.epfl.ch

development and innovation

vd.ch/promotion-economique

policy canton Vaud, www.



Thomas Billeter. Zurich Serial entrepreneur and business angel, partner business angel platform Impact51. www.impact51.com



Alberto de Lorenzi, Bioggio (TI) Partner consultancy DeLorenzi & Partners.



www.delorenzi.ch





Gioia Deucher, San Francisco

CEO Swiss research and innovation network swissnex San Francisco. www.swissnexsanfrancisco.org

Gina Domanig, Zurich Management partner Emerald Technology Ventures. www.emerald-ventures.com



(SICTIC). www.sictic.ch Florian Dünner, Zurich Investment manager start-up finance, Zürcher Kantonal-

bank. www.zkb.ch

Pascal Dutheil, Lausanne Founder Andromede Consultng. www.andromede.ch



Pharma.



Werner Enz. Basel Board president Perseo https://perseo-pharma.com

Bettina Ernst, Epalinges (VD) Founder and board president BERNINA BioInvest. cofounder and CEO Preclin **Biosystems** www.preclinbiosystems.com



Antonio Gambardella, Plan-les-Ouates (GE) Director start-up incubator Fongit.www.fongit.ch

Frank Gerritzen, Verbier (VS) Managing board Business Angels Switzerland (BAS). www.businessangels.ch



Florian Gunz Niedermann, Zurich Board member Startzentrum Zürich, partner Kanzlei Walder Wyss Rechtsanwälte. www.walderwvss.com

Daniel Gutenberg, Zug Business Angel of the Year 2011, general partner VI Partners. www.vipartners.ch



Trudi Haemmerli, Basel Business angel, president Swiss Health Angels, board member Innosuisse. www.innosuisse.ch



Basel Deputy managing director Unitectra. www.unitectra.ch



Nicole Herzog, Zurich Business angel and board member Sherpany. www.sherpany.com

Matthias Hölling, Zurich Team leader Stiftung Technopark Zürich, jury member ZKB-Pionierpreis and Swiss Technology Award. www.technopark.ch



David Hug, Zurich Founder and partner venture capital business Marcau Partners. https://marcau.vc



Andreas Iten, Zurich Head Corporates Ventures SIX. www.six-group.com



Schlieren (ZH) CEO and founder Bio-Technopark Schlieren, co-initiator and managing director business incubator glaTec. www.bio-technopark.ch





Cédric Köhler, Zurich











Peter Lasinger, Vienna Managing partner venture www.three.vc





Ariel Lüdi. Zurich

Business angel, founder and

owner Hammerteam, acceler-

ator for software start-ups.

www.hammerteam.ch

Investment associate Venture Capital Partners, https://uvcpartners.com





Karim Maizar, Zurich Partner Kellerhals Carrard, head start-up desk Kellerhals Carrard. www.kellerhals-carrard.ch





capital business for growth financing Neventa Capital. www.neventa.com



Anita Martinecz, Zurich Project manager entrepreneurship & creative industries, business and economic development canton Zurich. www.awa.zh.ch



Pascal Mathis, Zurich Co-founder GetYourGuide, business angel and partner Wingman Ventures. www.wingman.ch



Head Swisscom Ventures. www.swisscom.ch/ventures



Serial entrepreneur and co-founder Swiss Founders Fund. www.sff.vc



Saint-Prex (VD) Business angel, co-founder and managing partner Venturelab, Co-Managing Director Venture Kick. www.venturelab.swiss



Bern







Mario Jenni,

Partner health & care investment company Gimy. www.gimv.com

Managing partner investment company Creathor Venture Management. www.creathor.ch

Marjan N. Kraak, Zurich Head spin-off group ETH Zurich, manager Pioneer Fellowship program. www.transfer.ethz.ch

Olivier Küng, Preverenges (VD)



Business angel, board member Gilytics. www.gilytics.com David Kurmann, Zurich

Editor-in-chief news platform

Swiss Venture Capital Report.

startupticker.ch, co-author

www.startupticker.ch

Investment manager EGS Beteiligungen. www.ernstgoehner-stiftung.ch Stefan Kyora, Lucerne





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TOP 100 STARTUPS / JURY



Bertrand Müller. Geneva Co-founder and partner DAA

Capital Partners. www.daacap.com



Carolina Müller-Möhl. Zurich Board president Müller-Möhl Group. www.mm-grp.com



Myke Näf, Zurich Business angel. co-founder Doodle, managing partner Übermorgen Ventures. www.uebermorgen.vc



Nasri Nahas, Lausanne CEO life sciences campus Biopôle, www.biopole.ch

Peter Niederhauser, Zurich Serial entrepreneur and business angel, founding

partner Redalpine Venture Partners. www.redalpine.com Axel Nitsch, Bonn





Magne Y. Orgland,

Teufen (AR)



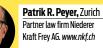
Business angel, managing partner Norga Capital. Markus Oswald, Schwyz Investor and start-up coach, CEO Innovationsstiftung

Schwyzer Kantonalbank.





Adrienne Perramond, Neuchâtel Investor, board member **Business Angels Switzerland** BAS. www.businessangels.ch



www.agire.ch

Barbara Pin, Manno (TI) Serial entrepreneur, start-up coach Ticino innovation agency Agentur Agire.

Eric Plan. Sion General secretary Cleantech-Alps. cleantech cluster western Switzerland. www.cleantech-alps.com

Jim Pulcrano, Buchillon (VD)

Business angel, professor IMD Business School, coach IMD Startup Competition. www.imd.org



Alexandra Richardson, Geneva

Serial entrepreneur, business development Clavton Biotechnologies. www.claytonbiotech.com

Simone Riedel Riley, Zurich Head Swiss Technology Fund. www.technologyfund.ch

Andreas B. Roth, Zurich Representative bank for entrepreneurs Credit Suisse. www.credit-suisse.com



Christian Schaub, Zurich

Business angel, co-founder, CEO and board president Redbiotec. www.redbiotec.ch

Beat Schillig,

St. Gallen Business Angel of the Year 2012, founder IFJ Institut für Jungunternehmen, initiator Venturelab, Venture Leaders, Venture Kick and TOP 100 Swiss Startup Award. www.ifj.ch

Peter Schmetz, Berlin Investment manager Vorwerk Ventures. https://vorwerkventures.com





Florian Schweitzer. St. Gallen

Co-founder and partner btov

Michael Sidler, Zurich

partner Redalpine Venture

Business angel, founder and

Partners. www.redalpine.com

Robert Skrobak, Zurich

Vice-director Bank Roths-

child, jury member several

start-up awards. www.roth-

Founder and general partner

FyrFly Venture Partners.

Nanja Strecker, Zurich

Head of business incubator

European Space Agency ESA,

project manager Switzerland

Innovation Park Zurich.

www.esabic.ch

schildandco.com

San Francisco

www.fyrfly.vc

Philipp Stauffer.













Neha Tanna, London Investment partner venture capital business Joyance Partners. www.joyancepartners.com











Business Angel Club Schweiz www.businessangels.ch

Paul-André Vogel, Sion Director CimArk www.cimark.ch

Pascale Vonmont,









Lucian Wagner, Zurich



Andreas Thomas

Investor, president IMD

Alumni Club Taiwan.

www.imd.org

Weckherlin, Taipei City





Pascal Widmer, Geneva Investor, co-founder investment business Alpana Ventures. www.alpana-ventures.ch





Bastian J. Zarske Bueno, Zurich Prime Site. www.sps.swiss

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Biologist with a feeling for attractive investments: Michael Sidler has accompanied numerous TOP 100 Startups

MATURE ECN-SYSTEM" Zurich-based venture capital company Redalpine

Zurich-based venture capital company Redalpine Venture Partners is one of the leading earlystage investors in Europe. Founding partner <u>Michael Sidler</u> talks about Switzerland as an innovation location and big money from Asia and the US. <u>Jost Dubacher</u> edalpine is one of those rare funds that invest in visions and true disruption." Do you know who said that, Mr Sidler?

[laughs] The quote is probably from our website, as said by Mathis Büchi and Lino Teuteberg. After successfully setting up SmallPDF, the two launched the tax return platform Taxfix. We are currently invested in it.

Redalpine positions itself as a seed and early-stage venture investor. What does that mean?

We become involved when companies are still very young, sometimes even before they can present marketable products or stable customer relationships. In these cases, what counts for us is the potential of the founding team and the technology.

How many startup projects do you evaluate annually?

My colleagues and I read about 3,000 business plans a year, which ultimately leads to a handful of investments. Redalpine has participated in almost 70 startups in total so far.

The cumulative capital of your six funds is more than CHF 500 million. How do you satisfy your financiers?

Redalpine's six partners define the strategy, duration, and return targets of a fund. Investors enter into financing commitments based on this information and our track record. They give us the right to access the money when we make an investment decision. The venture capital business is essentially a matter of trust. Investors have to be convinced that we are able to identify startups that will multiply their value within five to 10 years and can be sold with the corresponding multiple.

As you say, the return on a venture capital fund is measured by the quality of the exits. Which exits, in particular, have given you the most pleasure in recent years?

Let me name a few that are known from the TOP 100 Startup Awards over the past 10 years: biotech supplier InSphero [rank 2: 2012], life sciences company Biognosys [rank 11: 2013], and IT company bexio [rank 7: 2016], which was sold to Mobiliar for a three-digit million amount.

INVESTEMENT / INTERVIEW

These three examples show that unlike other early-stage investors, Redalpine does not have a clear sector focus. Why is that?

We focus on fast-growing industries in our geographic area. Our unique selling point is the interdisciplinary approach: We are particularly committed where sectors overlap. In the biotech sector, we are not interested in companies that work on a specific active ingredient but rather companies, such as Araris [rank 11: 2021], that develop platform technology. The same applies to the intersection of the consumer goods market and ICT: The car is not a new invention, but Carvolution [rank 5: 2021] has managed to develop a new business model around it.

The subscription phase for your latest vehicle – Redalpine Capital VI – ended last spring, and Redalpine Capital I, your first fund from 2007, was liquidated in the summer. The industry standard return is about 20%. Have you achieved this?

We do not publish specific figures, but our performance is in the foremost quarter of the global field of competition.

For the comparatively high return, your financiers accept low liquidity when the risk is high...

That's right. But the position is suitable in particular for long-term investors, such as very wealthy individuals, family offices, and fund-of-funds vehicles.

Long-term thinking is a good point. Why are there no pension funds among your investors?

A good question that you should actually ask the pension funds. However, from our discussions in the financial world, we know that pension fund administrators are extremely risk-averse. In addition, they have to invest enormous sums and, thus, focus on larger investments. From their point of view, comparatively small early-stage funds are too maintenance-intensive in relation to the money invested.

The reluctance of pension institutions has consequences. Studies show that in comparison with other countries, very few large financing rounds take place in Switzerland...

...I would disagree, looking at the last two to three years. Traveltech startup GetYour-



Building bridges between research and the market: Michael Sidler and his colleagues read about 3,000 business plans every year

Guide [rank 3: 2012] collected CHF 488.9 million in 2019, and SOPHiA GENETICS [rank 3: 2012] managed to get CHF 110 million last year. It is true, however, that a large part of the money came from US and Asian investors, which is, of course, regrettable from an economic perspective.

ABOUT MICHAEL SIDLER

Michael Sidler (53) studied biology at the University of Zurich and graduated with a doctorate. He worked for Boston Consulting Group and in 2003 moved to Zurich biotech company Prionics, the then global market leader in BSE test kits. During this time, Sidler made his first investments as a business angel. In 2006, he was part of the founding team of Redalpine Venture Partners.

Where does the international investor community's interest in Swiss scaleups come from?

One reason is home-grown to a certain extent. There are countless highly attractive projects in Europe and Switzerland backed by people who know exactly how to build and scale a business model. In other words, we now have a mature ecosystem.

What are the other reasons?

After almost 10 years of low interest rates, money is looking for returns. In the US and parts of Asia, venture capital funds have recorded an extreme influx of funds, which, in turn, has driven the valuations of some startups and scale-ups to dizzying heights. In Europe, funds can still find attractive deals at reasonable terms.

In contrast, venture capital investment in Switzerland fell slightly last year, to just over CHF 2.1 billion.

These statistics record only money that goes directly into the company, but not what happens on the secondary market. Increasing numbers of investors want to benefit from the potential returns in the venture capital market, but have no connections or network in the national innovation ecosystem. They turn to first-time investors like us and propose an acquisition of one of our holdings. In recent years, a number of exits have been secondary transactions.

The global economy seems to be recovering after the shock of the pandemic. How do you assess the prospects of the venture capital market?

Some startups certainly suffered – for example, through the international travel restrictions – but these were isolated cases. What predominated was the surge in digitalization triggered by the pandemic, which gave software projects in particular an enormous tailwind. The venture capital sector experienced a strong corona boost that now seems to be transitioning seamlessly into a post-corona upswing.

You have been a member of the Venture Kick jury for years. Why?

Because it is by far the most professional startup funding organization in Switzerland. And – I'm happy to admit this – because I want to know what is going on at the universities, in the startup scene, to a certain extent at the grassroots.



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"TREMENDOUS INNOVATION"

<u>Andreas Gerber</u>, head of corporate banking at Credit Suisse (Switzerland), on the Swiss startup scene.

Credit Suisse is the financial partner of well over 100,000 Swiss SMEs and large corporations. What significance can a few hundred local startups have?

Andreas Gerber: Traditional corporate banking is a credit business. It's a different business with startups, as very few of them work with the classic bank loan; they use our services in the area of alternative financing.

What specifically does Credit Suisse offer?

Knowledge and relationships. We are experts in capital market transactions and have contacts in the national and inter-

national economy. The Swiss Venture Club (SVC) is the largest entrepreneur network in Switzerland and thus an exciting platform for exchanging ideas with successful entrepreneurs. Credit



Suisse Entrepreneur Capital is a classic investment company. Finally, we are able to bring startups together with investment-ready clients from our private banking.

Credit Suisse has supported the TOP 100 Swiss Startup Award Award for five years. You personally initiated the collaboration as head of the SME business at the time. Why?

Our goal was to increase Credit Suisse's footprint in the innovation ecosystem. We had been observing the startup scene for a long time and noticed that it was growing steadily in importance. And in the meantime, tremendous innovative power has grown at the interface of science and entrepreneurship, which is driving the entire Swiss economy.



TOP 100 INVESTOR SUMMIT: WHERE INVESTORS Spot Swiss Startup GEMS

enture capitalists from around the world come to Switzerland every September to discover the most promising startups of the number one country in innovation. The TOP 100 Swiss Investor Summit offers worldclass investors trusted access to the most relevant startups that are looking for funding.

Each year, more than 100 Swiss and international super angels, venture capitalists, corporate investors,



"The TOP 100 Swiss Investor Summit is an ideal platform to meet peers from across Europe and get access to a curated

set of interesting growth companies with innovative business propositions and break-out potential." **Nicolas Meier, director at Temasek**



"TOP 100 is my favorite event to hear about the latest trends in the Swiss venture ecosystem and for inspiring discussions

with great Swiss entrepreneurs." Frank Seehaus, managing partner at Acton Capital Partners





Get to know startups, maintain the network and discuss current trends: the venture capital industry meets at the Investor Summit

and family office representatives from Austria, Belgium, Estonia, Finland, France, Germany, Italy, Liechtenstein, Luxembourg, Netherlands, Poland, Spain, the UK, and the US participate in the invitation-only Investor Summit. The event provides hand-picked TOP 100 Startups, both early and growth stage, with relevant and hard-to-get investor meetings.

Investors with more than CHF 12 billion in venture capital come to the TOP 100 Swiss Investor Summit to listen to startup pitches, meet entrepreneurs one-on-one, and watch presentations to identify the best gems that have what it takes to join Switzerland's unicorn alumni, such as Climeworks, GetYourGuide, and NBE Therapeutics. TOP 100 2021 winner, Planted Foods, met its investors for the CHF 17 million financing round at last year's Investor Summit.







"It is a great opportunity to get a compacted overview of the Swiss startup scene. It is especially helpful for us as a non-

local fund to connect with the strong Swiss startup scene." Daniel Keiper-Knorr, partner at Speedinvest

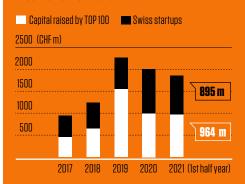


"I see a great technology base coming out of Swiss universities. I'm here to learn about the next technologies and find invest-

ment opportunities." Christian G. Nagel, managing partner at Earlybird Venture Capital

Yearly investments

TOP 100 Startups attract half of all equity investments in Switzerland



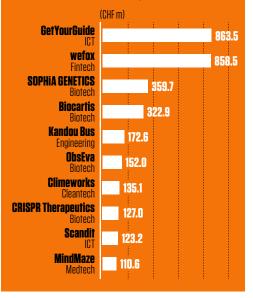
Largest rounds since September 2020 More than half a billion for wefox

(CHF m) 588.0 Wefox Fintech GetYourGuide ICT SOPHIA GENETICS Biotech

ICT	121.0
SOPHIA GENETICS Biotech	110.0
lumab Therapeutics Biotech	100.0
Oculis Medtech	51.7
Kandou Bus Engineering	36.3
PriceHubble Proptech	31.3
Sygnum Bank Fintech	30.0
ONWARD Medical Medtech	29.4
Nexiot ICT	22.4

Most funded TOP 100 Startups

GetYour Guide attracts more capital





THE EMPLOYEE IS KING Flat hierarchies, flexible working hours, and a pinch of garage groove.

How fast-growing startups recruit new employees. *Jost Dubacher*

ulia Iten is tough. The head of HR at Oviva Schweiz hires three to four employees every month, and it won't be any fewer in the future. Because Iten's employer, a healthtech startup founded in 2014, is growing rapidly.

The app-based nutritional advice from Oviva (see page 65, TOP 100 Scale-ups), is in demand. The Schwyz-based startup has set itself the goal of accompanying 50 million patients worldwide in their daily fight against the extra pounds by 2025; and thus contribute to the fight against the widespread rise in cases of diabetes.

The number of permanently employed nutritionists – mostly women – is expected to rise to more than 80 in Switzerland alone by the end of the year. But the market for applicants is small. Health insurers cover nutritional advice only if it is provided by a person with specialist training. Oviva competes with retirement and nursing homes, public hospitals, and international hospital chains.

Iten tries to reach seasoned professionals

via word-of-mouth advertising. Oviva employees who help to fill a vacancy receive a referral bonus, and webinars are organized for consultants in training: "The students should see that we deliver added value with our app," she commented.

A targeted group approach and recommendation incentives do not sound like traditional marketing, but it is. Cornel Müller is the founder and head of the personnel platform x28, which operates, inter alia, jobagent.ch. He has more than 25 years of experience in the Swiss job market and summed it up: "Today you have to advertise for employees." And particularly in those professions that are affected by a shortage of skilled workers.

The x28 software bots comb through job advertisements from thousands of Swiss companies every day. The platform has an average of 200,000 vacancies. "In the case of advertisements for software developers or engineers, sometimes not a single application will arrive for days or weeks," said Müller.

SHORTAGE IN MINT FIELDS

The shortage of highly qualified people from the fields of mathematics, IT, natural sciences and technology (MINT) has held back Switzerland as an innovation location for years. Scale-ups are particularly affected since their success depends on the speed with which they manage to capture market share.

For example, Lausanne life sciences scale-up Lunaphore launched a research tool two years ago that shortens the analysis of tumor tissue from a few days to half an hour. LabSat outcomes can show in particular how the body's defenses react to the tumor and is thus of great interest to immuno-oncology researchers at university hospitals and pharmaceutical companies.

Lunaphore currently has 70 employees with 15 vacant positions. "Some of the most difficult profiles to find can be software developers and specialists at the interface of technology and marketing," explained cofounder Déborah Heintze. The search is international so far, mainly in Europe, but now also in the US. Nevertheless, it can take months, sometimes six months, until a position is filled.

The Swiss third-country regulation is particularly annoying for companies such as Lunaphore. "We get candidates from EPFL on a regular basis and, of course, these include non-EU foreigners," said Heintze. But if Lunaphore wants to employ these specialists, a mountain of administrative obstacles arises.

In order to shorten this recruitment time, Lunaphore relies primarily on social media

EMPLOYEE Participation

Startups and scale-ups depend on highly qualified employees. Since they are unable to pay market salaries due to their limited financial resources, they offer their employees the opportunity to participate in the company. Figures for Switzerland are not available. A survey of ICT startups by German digital association Bitkom suggests that about every fourth company offers an employee participation plan. The fact that there are not more is due to the high administrative effort of such programs - for example, regulation of the shares of departing employees and at what price they can be bought back by the company. In addition, the taxation of employee shares in Switzerland is not very startup-friendly. The cantonal tax offices tend to value them as a component of the salary, and as a result employees lose part of the tax-free capital gain.

IF AN OPTIMIZATION PROPOSAL IS IM-PLEMENTED, THE ORIGINATOR RE-CEIVES ADDITIONAL VACATION DAYS visibility. "We often find applicants via LinkedIn," said Heintze. What also helps the company is its good equity base. Since its start in 2014, the Lausanne-based company has raised about CHF 40 million in venture capital. "As far as salaries are concerned, we are not too far from the market level," she said.

Only a company such as Google can pay much more than the average. Müller estimated that the American company offers a freshly trained ETH software engineer up to CHF 180,000 as a starting salary: "A scale-up has to show other strengths."

At Oviva, employees are wooed with a range of benefits. "Part-time work is always possible with us, even in management positions," explained Iten. The hierarchy is flat: every employee can request a 15-minute meeting with CEO Kai Eberhardt and suggest improvements. And creativity is rewarded – if an optimization proposal is implemented, the originator receives additional vacation days.

STARTUP GROOVE IN DEMAND

"It's about giving potential employees a certain startup groove," said Müller. Applicants should be able to see that they can make a difference in their new position. Ata Tuna Ciftlik and Diego Gabriel Dupouy, CEO and CTO respectively of Lunaphore, began to recruit the best early on. The two microsystem engineers had a business idea, and went to EPFL's knowledge and technology transfer office, where they were helped by an intern. They were so satisfied with the help and service provided by the 23-year-old bioengineer that they offered her a place on the founding team.

Heintze – who was that intern – already had a job in view at the time at the European headquarters of a US medtech group. She recalled: "My friends and relatives all advised me against it, but I listened to my gut instinct." Today, at the age of 32, she is coowner and member of the management of a life sciences scale-up with global ambitions.

CALL FOR PROJECTS FOR DEEP TECH SPIN-OFFS

INNOBOUSTER CHF 150,000 TO ACCELERATE THE MARKET ENTRY OF SPIN-OFFS IN THE VENTURE KICK PROCESS.

Gebert Rüf Stiftung supports university-based, high-potential businesses from the Venture Kick programme with the aim of substantially accelerating market entry.

The funding line is calling for top talents with convincing proposals of how a research δ development or design boost can speed up a successful market penetration of their deep tech business. For this purpose, the sum of CHF 2.5 million p.a. is reserved.

SUBMISSION DEADLINES: 1 FEBRUARY, 1 MAY, 1 SEPTEMBER, 1 DECEMBER

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VERITY ZURICH 08. 07. 2014 www.verity.ch

MEDTECH

AVA ZURICH 11. 09. 2014 www.avawomen.com

DISTALMOTION VAUD 23. 02. 2012 www.distalmotion.com

LUNAPHORE TECHNOLOGIES VAUD 24. 04. 2014 www.lunaphore.ch

> WEFOX ZURICH

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www.wefox.ch



KANDOU BUS VAUD 12. 01. 2011 www.kandou.com

SKYCELL ZUG 19. 11. 2012 www.skycell.ch AVRIOS INTERNATIONAL ZURICH 05. 02. 2015 www.avrios.com

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SCHWYZ 11. 12. 2014 www.1plusx.com

ICT

BEEKEEPER ZURICH 12. 03. 2012 www.beekeeper.io

BRING! LABS ZURICH 14. 04. 2015 www.getbring.com

FRONTIFY ST. GALLEN 04. 04. 2013 www.frontify.com

GUURU SOLUTIONS ZUG 20. 10. 2015 www.guuru.com

OVIVA SCHWYZ 18. 09. 2013 www.oviva.com

PROTON TECHNOLOGIES Geneva

18. 07. 2014 www.protonmail.com

TERALYTICS ZURICH 27. 03. 2012 www.teralytics.net

> FARMY ZURICH 06.06.2014

> > www.farmv.ch

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CRISPR THERAPEUTICS

ZUG 31.10.2013 www.crisprtx.com

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www.immunostherapeutics.com

MEMO THERAPEUTICS ZURICH 27.11.2012 www.memo-therapeutics.com

POLYNEURON PHARMAGEUTIGALS BASEL 03.12.2014 www.polyneuron.com

SOPHIA GENETICS VAUD 18. 03. 2011 www.sophiagenetics.com

T3 PHARMAGEUTICALS BASEL 06. 05. 2015 www.t3pharma.com

VERSANTIS ZURICH 18. 03. 2015 www.versantis.ch

On a growth path

FINTECH

Entrepreneurship is not an exact science; startups do not automatically become scale-ups five years after their foundation. Engineering and biotech companies often take longer than ICT companies to reach this expansion phase. But all scale-ups have several things in common: The founders have proven that their innovations work, they have attracted customers, and they are now scaling their business models.

SCALE-UPS

SELECTIVE INVESTORS

THE SCALE-UP **JURY: 25** EXPERTS



Lukas André.

Zurich Managing partner venture capital company Redstone Schweiz. www.redstone.vc

Fatou Diagne, Zurich

Managing partner Bootstrap Europe. www.bootstrap-europe.com

Dieter Gericke.

Zurich Head corporate law practice team/M&A commercial law firm Homburger. www.homburger.ch

Markus Gleim,

Stockholm Northzone.

Investment manager British venture capital company www.northzone.com



Andreas Goeldi. St. Gallen

Partner venture capital company btoy Partners. www.btov.vc







Markus Hosang,

General partner

BioMedPartners.

www.biomedvc.com

Basel



Investment partner Swisscom Ventures. www.ventures.swisscom.com



Chandra Leo,

Zug Partner HBM Partners, investment advisor HBM Healthcare Investments www.hbmpartners.com



Reza Malekzadeh, San Francisco

Partner US venture capital company Partech Ventures. www.partechpartners.com

Nicolas Meier,

Zug Director Temasek International (Europe), a subsidiary of Singapore-domiciled investment company Temasek. www.temasek.com.sg





Palo Alto Co-CEO California-based investment bank Menalto Advisors. www.menaltoadvisors.com



Zurich Business angel, partner Swiss venture capital company Redalpine Venture Partners. www.redalpine.com

Nick Nigam, Berlin

Head Samsung NEXT Ventures Europe. www.samsungnext.com

Stephanie Opdam,

Vice president venture capital company Notion Capital. www.notion.vc

Ted Persson, Stockholm Partner Swedish venture capital company EQT Ven-







Investment officer asset management company Schroder Adveg Management. www.schroderadveq.com



Managing partner venture capital company Acton

Business angel, CEO Swiss Entrepreneurs Foundation. www.swissef.ch



Andrew Thomas,

Zurich Managing partner investment company Helvetica Canital www.helvetica-capital.ch



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venture capital company LBBW Venture Capital GmbH. www.lbbwvc.de

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066



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Bern

Stefan Steiner,

Business angel, co-managing director Venturelab. www.venturelab.swiss







Stefanie Wojciech,









Matthiev Repellin, Paris Investment manager venture capital company Airbus

www.airbusventures.vc Nils Rode, Zurich



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Capital. www.actoncapital.de

Peter Stähli,









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EXITS / PORTRAIT

BILLION-FRANC DEAL WITHOUT CHAMPAGNE

In the right place at the right time. Or why a successful company sale always needs luck. *Dominik Hertach*

veryone dreams of it; he did

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it. In January 2021, Ulf Grawunder sold his Basel startup NBE Therapeutics for EUR 1.2 billion to Boehringer Ingelheim. Anyone who thinks that the champagne flowed the evening after the contract was signed is wrong. "I fell into bed exhausted," said Grawunder. A buyer does not suddenly appear at the door with a suitcase full of money - a company is not buying a sandwich at Migros: "A company sale is always the result of a long process, the conclusion of extensive negotiations." And the timing has to be right: "You can't force a company to sell if the market is not ready."

NBE Therapeutics works in the field of precision medicine. It couples

strong chemotherapeutic agents with antibodies to target cancer cells, allowing the strong side-effects of traditional chemotherapy to be contained. Until recently, the still young technology had been met with great skepticism; however, its efficacy has been proven in preclinical and clinical studies. Currently, nine products are on the market, five of which have been approved in the last two years. "That has given NBE and the entire industry a boost and ultimately accelerated the sales process," said Grawunder.

Anyone who sells a startup usually sells not only the substance but also the expectations of the company's potential. To determine the price, benchmark deals are important, and there were several in the months before NBE was sold: Merck acquired VelosBio in November 2020 for USD 2.75 billion, and Gilead Sciences bought Immunomedics in September 2020 for a record-breaking USD 21 billion. Both companies had products similar to those of NBE Therapeutics in the pipeline, albeit further developed.

"That set a high benchmark, even for our early products," said Grawunder. In addition, the price is always a matter of negotiation, and it is worth obtaining competing offers. "A competitive buyer environment always pays off," said the NBE founder, who sold his first company, 4-Antibody, in 2012.

The exit - sale or IPO - becomes the logical stage in a company's development as soon as the first investor joins, as the backers have a clear goal: to multiply their investment. On the one hand, this offers the founder opportunities - financing of projects and research - but also risks, such as the loss of independence. "You always give up a certain amount of control," said Grawunder. It is, thus, important to be able to attract "value-add investors" - investors that understand the subject matter and the technology. Boehringer's venture fund came on board early at NBE, which was very positive for the further development of the Basel biotech startup.

With the sale of the company, Grawunder is now giving up his "baby," founded in 2012, but not entirely – he remains CEO and is responsible for the smooth integration at Boehringer Ingelheim and further expansion. For him, the sale is not a farewell but a confirmation of what has been achieved in recent years. "What has been built over the years has acquired value," he said – and for the whole team: "All employees have benefited financially from the exit."

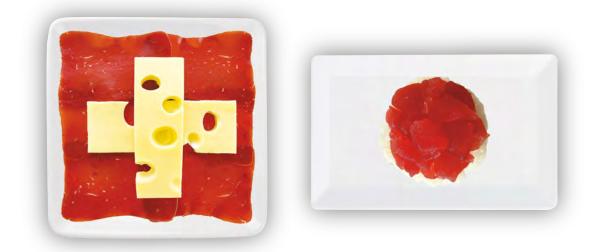
For the 56-year-old biochemist and cell biologist, the journey does not end there. He will continue to support and establish startups, and he is already co-founder of a new one: "Yes, there is a new project, but it's not official yet." No sign of farewell: Ulf Grawunder remains CEO of NBE Therapeutics and is responsible for further expansion

S. Bar

069



"Swiss startups into the limelight among Japanese investors"



"A sustainable Food System for the world"



"Apprecia Capital is Switzerland based and funded with Japanese investors. We invest in foodtech & agritech, which we believe will have great impact to redesign a healthier planet, consumption, and economy."

Hidemi Naganuma Founder and General Partner Apprecia Capital / Apprecia Partners AG

MAKE WAY FOR...

Sparks – preparations are going according to plan, with Venturelab as the official partner of the new equity segment for SMEs and scale-ups.

nvestment in unlisted companies is rising steadily in Switzerland: in 2020, Swiss start-ups raised more than CHF 2 billion in venture capital, which is equal to a five-fold increase over seven years. However, what is still missing is a stock exchange for innovative SMEs and scale-ups. In addition to the main segment of the Swiss stock exchange, Swiss companies seeking access to the capital markets must depend on foreign technology exchanges such as the Nasdaq.

That is about to change: The Swiss stock exchange is planning to open a new segment for fast-growing and capital-seeking SMEs. In addition to a minimum age of two years, conditions for an Initial Public Offering (IPO) on Sparks comprise a shareholder base of more than 50 investors at the time of listing and equity of at least CHF 12 million, of which CHF 8 million must come from a capital increase as part of the IPO.

Fabian Gerber from the Primary Markets team at SIX has



In close contact with companies, investors and banks: Fabian Gerber from the Primary Markets team of stock exchange operator SIX

accompanied the project from the start. He is convinced of its appeal: "With Sparks, we are closing a hole in the Swiss financial center." The synergy effects will be big, he said.

Over-the-counter investors will have an additional exit option, institutional and private investors will be able to invest directly in the flourishing innovation ecosystem, and will fast-growing companies have the opportunity to raise equity quickly and efficiently: Capital increases of up to 20% of those equity securities that have already been approved will not require a listing prospectus in the Sparks segment.

Sparks will begin operations as soon as approval from the relevant authorities has been received. From that point on, the first scale-ups and SMEs should be able to list themselves. "We have been working hard for months to show stakeholders – investors, banks, private equity and venture capital investors, and entrepreneurs – the advantages to them of the new segment," said Gerber.

The Swiss stock exchange relies on a partnership with Venturelab to address business angels, investors, and founders: "No other Swiss funding organization," said Gerber, "enjoys as much credibility with startups and scale-ups as Venturelab."

WELCOME TO New York

About two years ago, it became known that the former US Vice President Al Gore had invested in SOPHIA GENETICS. Since then, banks and private investors have also had the opportunity to participate in the Vaudbased bio-informatics company. On 26 July this year, the traditional bell rang for the IPO on New York's Nasdaq. SOPHiA, founded in 2011 in EP-FL's Innovation Park and since then a frequent guest among the TOP 100 Startups, offers a standardized analysis of genetic patient data for hospitals and identifies characteristic mutations for genetically determined diseases. The data analysis is fully automatic and the algorithms are continuously improved - the broader the growing database, the more precise the results. The flotation brought founder and CEO Jurgi Camblong and his team USD 234 million in new capital.

ACQUISITIONS OF TOP 100 STARTUPS SINCE SEPTEMBER 2020

Closing date	Startup	Category	Acquired by
18.09.20	Bluebox Shop (Amorana)	ICT	Lovehoney
24.09.20	DeepCode	ICT	Snyk
24.09.20	CoreMedica	Biotech	Swiss Medical Group
10.12.20	NBE-Therapeutics LLC	Biotech	Boehringer Ingelheim
10.05.21	IRsweep	Engineering	Sensirion
29.06.21	Crypto Finance	Fintech	Deutsche Börse
06.07.21	Zurich Instruments	Engineering	Rohde & Schwarz

→ DAILY STARTUP NEWS

The **Startupticker.ch** news portal provides information on the startup scene across Switzerland. A summary is available every Friday afternoon in the newsletter, as is a reminder of the next deadlines and dates. The platform maintains a list of investors with links to the individual investments, as well as information on all providers of grants and loans. If you want to stay up to date on startup awards, subscribe to the awards alert. Magazines such as the Swiss Venture Capital Report can be downloaded free of charge.



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Cheers for entrepreneurship: impressions from the awards ceremony at the TOP 100 Startup Award 2020

TOP 100 SWISS Startup Ecosystem

hat started as a one-evening award ceremony in 2011 has grown into a true benchmark in Switzerland, including a range of comprehensive activities that support the TOP 100 Startups. A strong and networked community has come together under the umbrella brand "TOP 100 Startups," which provides deep insights into the latest proven concepts, strengthens networks, and establishes new business relationships for and with the 470 Swiss deeptech startups that have been featured in the ranking over the past eleven years. So far, these

teatured in the ranking over the past eleven years. So far, these award-winning startups have created 11,577 jobs and raised CHF 7.3 billion, with 59 exits and five IPOs topping off the achievements of these innovators.

Sponsors' representatives listen to the words of Venturelab's Jordi Montserrat









----- AGENDA

In collaboration with the TOP 100 Partners, **regional pitch and satellite events** are organized throughout the year to bring startups, investors, and corporations together:

13 October 2021

TOP 100 Event with Credit Suisse Private Investors Club in Lausanne

24 November 2021

TOP 100 Event with Credit Suisse Private Investors Club in Zurich



Discover more about these events:

https://www.top100star tups.swiss/investorcircle

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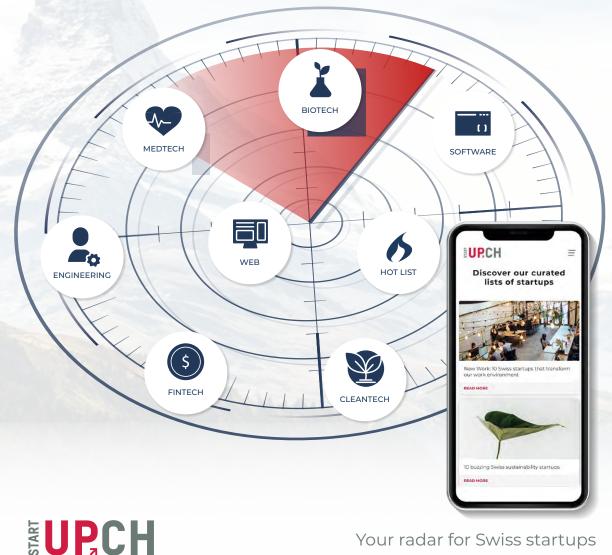




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