eurac
research

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in the future? *Medical research groups have*
of the ***virus***. **Scientific productivity has**
ubmitted 25 percent more proposals for **EU**
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mic has overwhelmed not only our lives but

Activity Report

2020/21

Activity Report

2020/21

Editorial

How profoundly the pandemic has changed our lives is obvious, and although not much else has garnered as much attention recently, where else to start reflecting on the past year? Almost all of our researchers - with the exception of the laboratory staff - had become Smart Workers by the end of February 2020. The transition was so smooth because we had already introduced this working model back in 2018. Congresses were either postponed or held in virtual form, and although there were some time shifts in research in the labs and the field, they were smaller than expected; scientific productivity focused on analysis and processing. The number of technical publications increased, and we are now managing almost 50 percent more European funding than compared to 2019.
The number of large projects with significant research funding also increased by about 10 percent and, having submitted almost 26 percent more applications to various European funding programmes this year, we are confident about our research output for the near future. Research groups from the medical field have helped to increase our knowledge of the virus. The CHRIS Covid-19 study as well as all the initiatives to support sanitary operations in sequencing the viral genome to identify variants, designing studies and storing samples in the biobank and our biostatistical monitoring were indispensable in assisting the local health authority and gaining insights into the unprecedented events of the previous year.
Our research groups have also been looking into the impacts of the pandemic on people and communities, studying its social and economic impact to better prepare us for what's to come - there have been studies on energy behaviour, consequences for tourism as well as possible socio-economic scenarios for the future.
Our activity report has also changed: we have reduced the texts and used more data and infographics to present the main developments and achievements of the past year.

We hope you enjoy this year's edition!
Roberta Bottarin, Stephan Ortner, Roland Psenner

Eurac Research is a private research centre, established in 1992 in Bolzano. Our research activity is rooted in local issues which are then developed on a global level, thanks to a multidisciplinary approach and an international vision. Studies focus on issues that affect people, their health and the environment around them, with the aim of improving life in the societies of the future. Often, in response to regional problems, Eurac Research develops concrete solutions that can be applied in different contexts, exploring new avenues based on interdisciplinarity and scientific excellence. Today, Eurac Research has more than 500 employees from over 35 countries.

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Trust in research is... a parabolic flight above the pandemic, to test zero-gravity automatic heart massage techniques for future use in space missions and suborbital travels.

11 June 2020, skies above Dübendorf military airport in Switzerland, Andrea Forti (left) and Giacomo Strapazzon (right), annual flight campaign organised by the Swiss Sky Lab foundation to allow various institutions and companies to conduct experiments and studies in and on microgravity.

New balances

It's strange to realise how quiet it can be, especially at night. Then, at first light, the dawn chorus fills every corner of the empty and quiet space, it seems as if the number of birds has never been as numerous as this and their songs sound like lively discussions and chatter. But nothing's really changed, they're just singing as usual, it's our attention that has shifted, our perception of what's around us and the background noise that has diminished. You notice each car passing by, whereas the norm before was constant traffic. You don't rush to the office, but - often still in your pyjamas – you log on from home, work and try to produce as much as possible. And the result, the 'lockdown to birdsong' effect has been astonishing: productivity indicators have soared, project proposals skyrocketed and publications shot up significantly. It just goes to prove; we weren't limited by the lockdown.

Roberta Bottarin, Vice Director

Confidently through the storm

What has given me personal support and hope in this very different year is trust: not only my trust in science in general and in my Eurac Research colleagues in particular, but also the trust placed in me as a leader. When it became clear in February 2020 that the virus had arrived in Italy, I assembled an eight-member task force consisting of employees from a wide range of areas - occupational safety, human resources as well as the legal, research and communications offices. Together we managed to steer Eurac Research through stormy waters without any major accidents. Our formula is to approach problems from every conceivable angle. We were thanked in the Great Place to Work survey and 2020 saw us achieve 14th place, the best result on national level so far.

Stephan Ortner, Director

Science in crisis

While some of us would like to erase this strange year from our memories, I'd like to take a second look at 2020. On the one hand, science has proven to be crisis-proof, that is, its contribution to coping with the pandemic has become visible and tangible. Not only am I referring to the achievements of biomedicine, but also of the scientific institution that is Eurac Research: of the care for our staff, especially those with school-age children. On the other hand, we all became aware of how short-lived scientific truths are when they have to be obtained under maximum time pressure and the repercussions of both experiences will echo into the future.

Roland Psenner, President

Smart work vs Lab work

Moving offices home was a seamless shift - the conditions were already in place. And even though our lab and field research slowed down because of the pandemic, it was by far less than expected.

365 days of Corona Task Force

Safety in a year of insecurity

23 February 2020
Setting up the Corona Task Force

28th February
Smart Working is advised

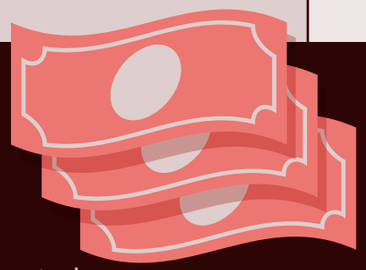
8th March
Smart Working becomes mandatory

4th May
"Phase 2" begins with partial openings where possible, although Smart Working is still recommended

26th June
The first of eleven weeks at the Kids Camp begins; a total of 62 Eurac Research offspring participate

23rd October
The plan for reacting to a positive case is published, outlining what to do in cases of direct or indirect contact, having children needing to quarantine or advice for having to isolate

15th October
Rapid test station is set up



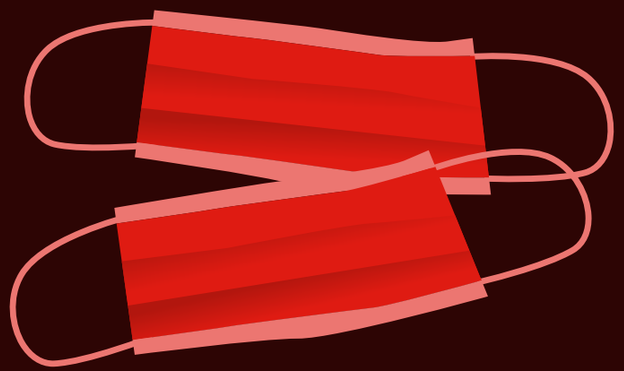
77,232
euros of budget allocated for the emergency

+50%
increase in health and safety costs compared to 2019

176
Litres of hand sanitiser used

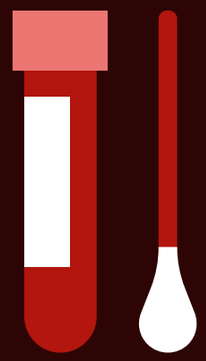
7,046
WhatsApp messages sent between the task force over the course of the year

25,800
surgical masks distributed



1,630
FFP2 masks distributed

1,323
rapid tests carried out in the test station over 3.5 months



378
hours on the phone for internal contact tracing

Our researchers Lydia Pedoth and Felix Greifeneder at their flat in Bolzano/Bozen. Lydia works in risk management and risk communication in relation to natural hazards, Felix in environmental monitoring with remote sensing techniques.

Smart working

Like millions of people around the world, we suddenly had to move our workplaces to living rooms, bedrooms, or kitchens. We rearranged furniture, missed seeing our colleagues, found ourselves in new routines and even discovered advantages.

Prior to the pandemic, 31.5% of our contracts already included smart working and 8.5% teleworking.
In early March 2020, smart working was extended to 100 percent of contracts. During 2020 spring's lockdown it was mandatory, but many people have stuck with it. The transition was facilitated by the fact that every employee already had a laptop and VPN or cloud access.
Many previously cautious managers have come to their senses: "Smart working is productive and, with the right balance, will continue in the future.

80%
of staff worked and are still working from home

5%
couldn't because of their roles as technical staff in laboratories or maintenance workers

15%
are currently working partly from home and partly from the office.

5
new hires from EU countries

5
new recruits from non-EU countries - more than in the previous year, despite more complicated bureaucratic procedures and adventurous journeys

Brain Gain never stopped (although it may have slowed down)

NEW ARRIVALS

Sustainable heating and cooling expert Amir Jodeiri Khosbaf joined us from Iran in January 2020.

Iran, Dubai, Holland, Australia, France, Spain and now Italy - how did you come to Bolzano?
After my Master's at Groningen University of Applied Sciences, I went back to Iran and applied for a PhD position at Eurac Research; there were none so, I got hired as a researcher instead.

What are you working on?
I am mainly involved in modelling hot water storage for district heating. To reduce simulation time, I do the modelling in 1D instead of the usual 3D.

Did the pandemic affect your research work?
Not at first, I worked in direct contact with colleagues, and since I was new to research, it was very efficient. During the first lockdown, communication with the team was more difficult, everyone had to get used to it. The research continued, but at a slower pace.

How were you privately affected?
I didn't see my wife for nine months, but she has since come to Bolzano/Bozen. But even if I had known how hard it would be, I would do the same again: Bolzano/Bozen is beautiful, European culture is very similar to Persian culture.

OTHERS STAYED LONGER THAN PLANNED ...

The Ethiopian federalism expert **Yonatan T. Fessha** was the first scientist to join Eurac Research with a Marie Skłodowska-Curie Fellowship. This EU funding programme supports mobility between research institutions. Last summer, Fessha should have returned to the University of Cape Town, but the pandemic gave us a good reason, to keep him here longer. He researches the role of intergovernmental relations in divided societies, such as ethnic conflicts. The Ethiopian government consulted him when war broke out in Tigray.

Marie Skłodowska-Curie Fellowships
Following the conclusion of Yonatan T. Fessha's time with us, hosting the fellowship hasn't stopped. Of the applications submitted in 2020, five were selected for fellowships: These scientists from around the world will now be able to conduct research at Eurac Research for two more years. Six other applications received the Seal of Excellence, which serves as a recommendation for alternative funding.

33%
Eurac Research's success rate of applications for a MSC Individual Fellowship is more than twice that of the European average (14%).

Events that changed events

88 scholars from 16 countries rubbed shoulders for four days to discuss hydrology, climate and ecology. On the final evening, the well-known Italian meteorologist Luca Mercalli gave a public lecture with many teachers and young faces in the audience. What would once have seemed normal to us and unnecessary to communicate, is now a nostalgic pre-pandemic snapshot - **who would have thought that it would be the last big event in person?** (Snow Hydro International Congress, January 2020)

"We have built an economy like a car without spare tyres. Sure, it saves you a little bit in the short term because you're lighter and you consume less, but it's crazy." Nobel Prize winner Joseph Stiglitz shares his vision of a green economy to almost 600 people attending the Global Mountain Sustainability Forum at the public event organised together with the Free University of Bozen-Bolzano and the Fondazione Cassa di Risparmio (October 2020). Behind him we can see a fireplace, a huge TV and the ubiquitous bookshelves; Stiglitz is speaking from his living room in New York. Although attendance took place partly in the auditorium with the host, most participants joined us from their homes. **Since March 2020, we have broadcast 19,236 minutes of events online,** with 5,754 individual connections. Of course, it's not the same thing, but who knows whether Stiglitz would have been able to fit a trip to South Tyrol into his agenda or whether we could have afforded all the expenses... What if hybrid events will be standard in the future?

When a computer is not enough...

An essential part of research is fieldwork. Conducting experiments in the laboratory, taking samples or measurements in nature is indispensable for increasing knowledge and testing theories. The pandemic inevitably slowed down some activities, but on the whole, it went better than we'd feared.

Biomedicine laboratories

Whether it's Sunday, Christmas or an unknown virus is raging outside, to keep the cells alive for our experiments we have to look after them on a daily basis. We have to feed them by adding microscopic amounts of nutrients with a pipette to the flasks in which they are stored; we also have to regularly 'change the sheets' by cleaning the containers in which they are growing. Even during the lockdown, taking each sample strictly in turn, our researchers looked after the cell cultures. Deadlines for the various studies were more or less maintained whilst pandemic-related activities were added (from page 22).
A few facts and figures show the impact of the health crisis on life in the laboratory.

Cartoplast - biowaste bins: we used fewer of them in the lab (450 compared to the 600 used in 2019), however at least 150 were destined for our Covid test station.

Latex gloves: consumption dropped from 40,000 pairs in 2019 to 29,000 in 2020 due to researchers' limited access to our laboratories. Even today, to ensure minimum risk, the presence of the 40 people who usually work in the laboratories has been reduced by 60%.

Tips are the plastic ends that fit onto pipettes to take and transfer tiny amounts of liquid. They have to be replaced every time they are used to avoid contamination. Deliveries of tips for 1 ml pipettes (p1000 tips) are currently being delayed by more than eight months. This is the size that is used for analysing swabs and priority is justifiably given to hospitals and Covid bio-analysis laboratories.

The rt-pcr master mix, a **reagent** used to amplify genetic material, has become an even more unobtainable commodity. Normally used in laboratories that handle DNA, it is indispensable for analysing molecular buffers and is therefore currently sought after worldwide.

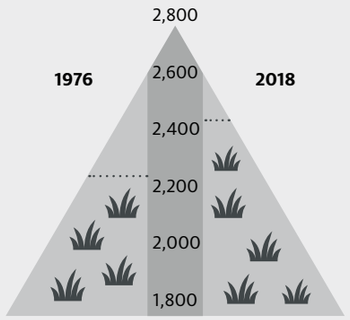
Ornithologist Matteo Anderle during a survey of windthrow areas in the Eggental/val d'Ega valley

Biodiversity: Monitoring continues with in-depth research projects

2018's epic storm Vaia caused a catastrophic wind-throw. How has the forest reacted and how is the biodiversity changing? Our research team is now studying the effects. The study in the area of Welschnofen/Nova Levante is one of several **special projects** in which the **Biodiversity Monitoring South Tyrol** research team is collaborating with various partners such as the Office of Forest Planning and the Provincial Domain. Other special projects include the promotion of biodiversity in intensive orchards or grassland birds. Apart from the special projects, the standard program of the Biodiversity Monitoring continued as planned, with 64 sites investigated in the last year. Three quarters of the fauna of South Tyrol and almost half of the flora have been detected so far, proving the dense network of monitoring observation points laid across the country is suitable to represent biodiversity and trace developments. In total, the research team will examine 320 terrestrial and 120 aquatic sites in all habitats. In order to gain an accurate picture of species and ecosystem diversity as well as their change, the surveys will be repeated every five years in exactly the same locations.
https://biodiversity.eurac.edu

CLIMATE CHANGE AND MIGRATORY PLANTS

The Carex humilis grass species in the Matscher/Mazia valley has migrated by 214 metres in altitude over the past 40 years as demonstrated by ecologist Harald Crepaz, who mapped the distribution of the grass and compared it with mappings from 1976. The expansion is clearly related to rising temperatures. From climate data, Crepaz and his colleagues calculated that the mean temperature in the valley has increased by 0.84 degrees since the temperature recordings began. Our team of scientists in the Matscher/Mazia Valley has been studying how climate change affects ecosystems since 2014 as part of the international LTER (Long Term Ecological Research) network.
http://lter.eurac.edu



Since 1976, in the Matscher/Mazia valley, the Carex humilis grass species grows at an elevation of 200 metres higher than it used to in and the average temperature in the valley has risen by 0.84 degrees.

Nutrition and microbiome of our ancestors

The prehistoric salt mine of Hallstatt, Austria is the oldest in the world. Due to the special conditions in its tunnels, millennia-old remains such as textiles, tools and food remnants, - have been exceptionally well preserved. The site is also home to a wealth of **fossilised faeces** - an archaeological treasure trove for our mummy researchers who have been examining the coprolites from Hallstatt in microscopic and molecular-genetic detail over the past months, not only to reconstruct the diet, but also to gain information on the bacterial colonisation of the intestine by analysing ancient DNA.
Using the coprolites from Hallstatt, the research team based at their NOI Techpark laboratories, can investigate **how changes in diet affected the gut microbiome of our ancestors** over a period of 3,000 years, from the Bronze Age to the 18th century - the most recent of the samples analysed come from a Baroque miner.
According to previous research, the diet at of the ancient Hallstatt inhabitants already differed significantly from the diet of The Bronze or Iron Ages. Cereals, for example, were already more processed than they had been previously and the team of scientists is particularly curious about how this affected the microbiome, as microbiologist Frank Maixner explains: “Did people 300 years ago carry a microbiome that was more like that of their ancestors thousands of years ago or more like that of a person in Europe today?” The toll that the lifestyle and diet of western industrial societies has taken on the microbiome is now recognised by scientists as an important factor in connection with numerous diseases, although its many aspects are still not fully understood. The study in Hallstatt, in which our researchers are working closely with Kerstin Kowarik and Hans Reschreiter from the Natural History Museum in Vienna and with Nicola Segata’s research group from the University of Trento, is therefore of significant and current interest. In addition, the research team also hopes to understand the methods that went into **early forms of food processing** by combining molecular genetic and microscopic analyses.

Secrets of a lady from Basel

Anna Catherina Bischoff, a pastor’s wife, died in 1787,- she was the woman whose mummified body was found in the Barfüsserkirche, the former church of the discalced friars in Basel, Switzerland. The mystery of her identity had already been solved thanks in part to our researchers, but Anna Catherina’s remains continue to merit scientific investigation. Following examinations in the laboratory, Albert Zink’s team found Helicobacter pylori bacterium in her stomach - and can now compare the germ with Ötzi’s version of the bacterium and, the one that is common today. The researchers are also looking into the cause of Anna Catherina’s death which had previously been suspected to be a result of syphilis, but this theory has come into question since the team have now found a different infectious agent in her remains. Genetic analysis has also revealed the woman’s appearance: dark hair and eyes that weren't blue and a medium complexion with freckles.

Fossilised excrement from the Hallstatt salt mine over the ages. From left to right -a 3,000, 2,000, and 300 year old sample. The fossilised remains have brought a plethora of information to light through microscopic and molecular genetic analyses.

MEASURING SNOW
Kitted out and climbing up more than a thousand metres in altitude to reach various snowfields in the Schnals/ Senales Valley, South Tyrol, Alps, our snow researchers (Riccardo Barella pictured) carry out their investigations; measuring the height, consistency and weight of the snow. In the office they combine the measurements with satellite data and create models to understand how the situation is evolving and what we can expect as a result of climate change. One thing is certain: this snow-rich winter will not be the norm. Two of our recent publications warn: the first global snow cover map shows that there is less snow in 78% of mountain areas around the world and the first study analysing data from 800 monitoring stations across the Alps confirms that in our mountains, the snow season has shrunk by an average of 22-34 days since 1971. The impact on the ski industry and water availability is severe. Two new snow projects have just been initiated in collaboration with the European Space Agency, other research bodies and private companies such as Mobygis, in Trento, Italy. The “Snow” dossier and other popular science articles can be found online in our magazine:
https://beta.eurac.edu/it/magazine

A SMART CITY IS A SUSTAINABLE ONE
Following the conclusion of the European project Sinfonia last autumn, we can report that more than 300 families in Bolzano/Bozen are living in more comfortable and safer flats that consume 50 percent less energy. In a year that saw both wellbeing and energy efficiency in houses being more important than ever, the contemporary façades, solar installations, lifts, new windows and balconies, district heating, geothermal systems, advanced insulation and heating technologies, mechanical ventilation systems and other measures that fell under the project's scope certainly provided both. And that's not all: with a total investment of more than 30 million Euros, South Tyrolean partners - Eurac Research, the Municipality of Bolzano/Bozen, the Provincial Institute for Social Housing, Alperia and Agenzia CasaClima - have been collaborating on many other innovative fronts to initiate a transformation towards the smart city.

The wheels of industry keep turning

Despite lockdowns and multiple restrictions and thanks to the determination of partner companies and strict precautions to keep labs Covid-free, most of the industry testing we'd planned went ahead without a hitch.

Perfect timing for testing heating-saving applications

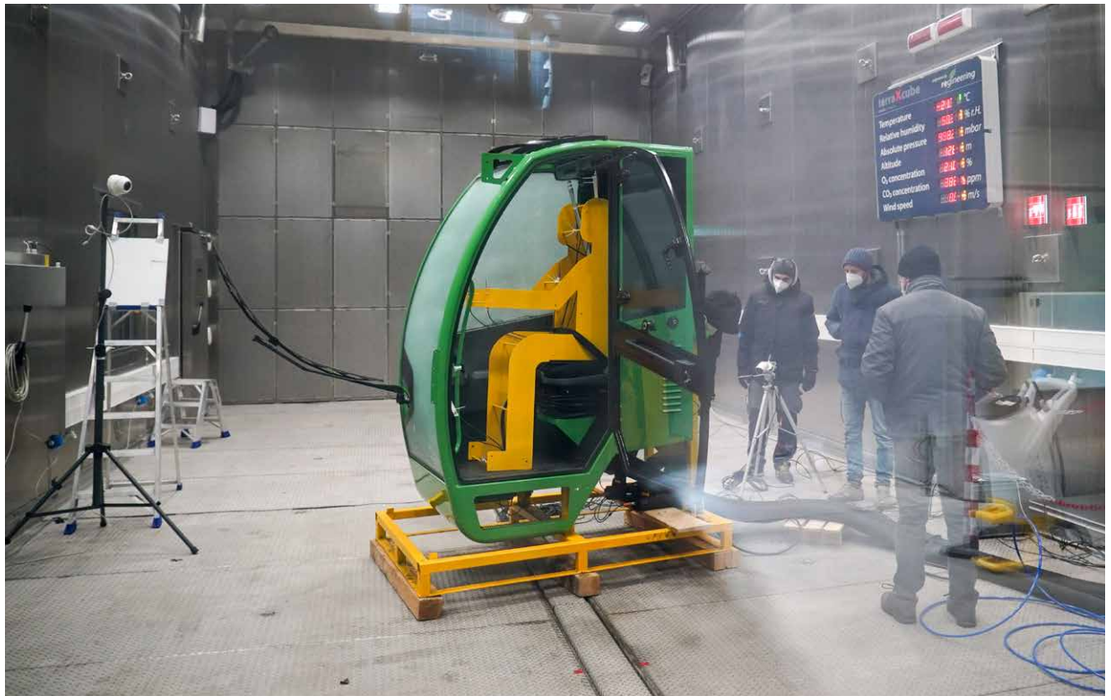
The pandemic saw both higher energy consumption due to more time spent indoors and Italian government incentives to facilitate renovations, making this the right year to review energy habits, energy efficiency in buildings and in particular heating and hot water storage systems.
In 2020, the Energy Exchange Lab, one of our laboratories for testing heat pump systems, tested an application Sybil CT developed by the Alperia Bartucci company. Originally developed to regulate the on/off cycles of large blast furnaces, the application has now been adapted and patented for domestic and commercial boilers. The non-invasive technology optimises flow temperature to the radiators, reduces the energy supplied to the system by 48 percent and promises - according to the company - bill savings of up to 35 percent. In the laboratory, we simulated various hot water production and heating conditions. "Combining an in-depth view of the market and its evolutionary dynamics with innovative technical skills is the way to a sustainable future," says Giovanni Bartucci, executive vice president of Alperia Bartucci and project coordinator for the company. "This collaboration and its encouraging results have proven it."

AT THE FOREFRONT WITH OUR PHOTOVOLTAIC LABORATORY

The Solare PV Lab has been recognised by the Italian accreditation body Accredia, by testing activities in accordance with the requirements of UNI CEI EN ISO/IEC 17025:2018. The lab situated in South Tyrol's innovation district NOI Techpark now guarantees high quality standards that serve as a model for further accreditations. In addition to technical test laboratories in the field of renewable energies, the NOI Techpark also houses four Institute for Mummy Research laboratories, the Sensor System Technologies LAB and the terraXcube.

INTUITIVE ONLINE MAPS

Thanks to a platform that has been further enhanced in terms of calculation and storage capacity, the Maps Portal allows us to share environmental data by collaborating with project partners, private companies and public administration. Thanks to an intuitive web interface, it is now easy to share geospatial data and create interactive maps even for the uninitiated.
https://maps.eurac.edu/



45
companies commissioned assignments from Eurac Research in the past year. In addition, many more companies are partner in research projects.

26
of them are South Tyrolean.

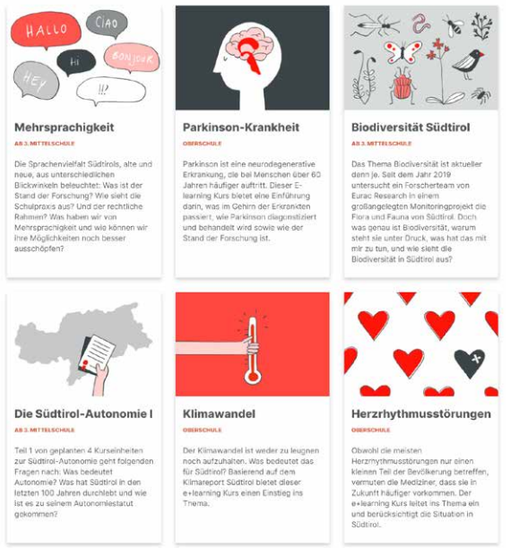
Used for agriculture and produced by Lochmann Cabine Srl, a company based in Truden/Trodena, South Tyrol, the cabin seen here shows a dummy covered in numerous sensors that measure temperatures around the head, chest, hands and feet. Outside, the Large Cube's thermometer reads minus 20 degrees. The test pictured assesses how quickly the cabin's interior takes to reach 16 degrees and how long it takes the windscreen to defrost.

Extreme simulations in the terraXcube

The "Real Time Controller" is the super computer that the Bolzano-based company Microgate is developing for the largest telescope in the United States - the Keck Observatory on the Hawaiian Islands, operated by the California Institute of Technology, the University of California and NASA. During its terraXcube testing phase we took it to an altitude of 4,000 metres to test the efficiency of its cooling system. Its final destination will be the summit of the Mauna Kea volcano (4,207 m). This test, as well as the Lochman cabin test (see above) were both initiated in 2020. In addition, both drone testing activities and the ongoing collaborations with Iveco, Alpitronic and the University of Ulm have been continuing. terraXcube is Eurac Research's centre for extreme climate simulation, located in the NOI Techpark.
https://terraxcube.eurac.edu

Reaching out to schools in new ways

Having dispensed with face-to-face workshops and direct classroom surveys, we've come up with some innovative ways of sharing our science with schools.



Digital learning

From climate change to autonomy and neuro-degenerative disease, our team has developed a range of interesting online courses…for all ages. Pandemics aside, so far about 2,500 students per year have learned about our science and research and we hope to return to this normality and our workshops again soon. However, this exceptional time has come with benefits and seen us develop free e-learning courses that may not replace contact with researchers and the joy of exchange and experimentation, but that do reach a much larger circle of interested people. The courses are regularly updated and expanded, and constantly contribute current results to our research.
https://e-learning.eurac.edu

Distance Research on Learning Processes

As schools change, so does research on schools, and thanks to "distance research" our insights into learning have not been put on hold. In fact, our linguists, in collaboration with the teaching staff, are now organising themselves to collect more information and data online, rather than in person. A number of pilot tests have already begun within the framework of ITACA, with the first study about Italian as a first language in South Tyrol (the local schools can use three official languages as first language: German, Italian or Ladin). The research aim is to analyse the degree of textual coherence in written productions and check how motivation, linguistic background and behaviour influence writing. The goal is to collect questionnaires, proficiency tests and two written works from a significant sample of 7-800 school age students who study Italian as their first language. The study "Teaching skills in the multilingual classroom" (COMPASS), which forms part of the SMS 2.0 project, has also launched a new survey on multilingualism in South Tyrolean schools - for all three of our region's language groups. An informative dossier on multilingualism and the learning materials produced so far is available at **https://sms-project.eurac.edu.**

Researching the virus – and its effects

From the very first hour, the pandemic has been a subject of our research. On the one hand, we used our biomedical expertise to gain a better understanding of SARS-CoV-2; on the other, we examined the consequences of the health emergency in the various areas we have been studying for years. However, our aim remains the same: to provide decision-makers with as many tools as possible to make informed choices.

CHRIS Covid-19 study
Exploring genetic correlations, immune response and long-term consequences

13 July 2020 - the first day of the CHRIS Covid-19 study in Vischgau/Venosta Valley saw almost one hundred people come to Latsch/Laces to be tested for the SARS-CoV-2 virus. At that time, the first wave of the pandemic in South Tyrol had just been overcome, and in Vinschgau/Venosta Valley, with less than 20 people testing positive, there had been exceptionally few cases compared to the other districts. At the same time and as the start of the CHRIS Covid-19 study, prevalence studies were taking place not only in South Tyrol, but throughout Italy. The prevalence studies recorded on a large scale how many people had actually come into contact with the virus. While the number of participants in these studies fell far short of the health authorities' expectations, the CHRIS Covid-19 study achieved more than sufficient numbers, with 845 people tested. The biomedical research team was able to extrapolate that one person in a hundred, had come into contact with the coronavirus in Vinschgau/Venosta Valley by the summer of 2020. Twenty times more than compared to the numbers reported in the district during the first months of the pandemic, when it was mainly only the more serious cases of the disease that were tested.
But the study, which Eurac Research is conducting together with the South Tyrolean Health Authority, goes far beyond a snapshot of infections in the valley. The biomedical research team is also investigating the immune response - i.e. how long those who test positive have antibodies for, the connection between genes and the severity of the course of the disease or the genetic and biological risk factors for a disease, as well as the long-term consequences after an infection. To investigate this, the research group has been utilising the CHRIS study, which has been in existence for more than ten years. The population study is a unique resource for biomedical research, each of the approximately 13,500 people who have been involved up to now, represent a wealth of relevant information such as genetic data, data on lifestyle, on the health status of the cardiovascular, nervous and metabolic systems as well as on disease history. Furthermore, this existing and readily available data can now be combined with the new Covid-19 surveys. At the same time, the study is monitoring the spread of the virus with the help of an ongoing online survey on symptoms and possible Covid-19 disease, in which more than 4,000 people have so far taken part. CHRIS study participants as well as their relatives have been participating regularly and their data showed that in autumn 2020, the number of infected people in Vinschgau/Venosta Valley rose to four percent, which indicated an imminent new pandemic wave to the research team and the health service. The CHRIS Covid-19 study will be completed at the end of July 2021. Follow-up surveys of those who tested positive will continue for another year; research into the long-term effects of Covid-19 will be integrated into the CHRIS study, which will continue after a pandemic-related pause, in autumn 2021.
https://en.chris.eurac.edu/

Tests for the CHRIS Covid-19 study in Mals/Malles, Vinschgau/Venosta Valley, South Tyrol.

RESULTS OF THE CHRIS COVID-19 STUDY SO FAR

In terms of symptoms associated with Covid-19, findings are consistent with other studies on the disease: the most common symptom was loss of the sense of taste, followed by aching limbs, fatigue and flu-like symptoms.

Between July 2020 and 28 February 2021, 70 of the 845 people who took part in the tests tested positive, most of them between September and February 2021. Over this period, the study recorded and monitored the spread of the virus in Val Venosta and provided the South Tyrolean health service with valuable information on the course of the pandemic.

Regular follow-up testing of the positive cases showed that the majority of them maintained an immune response for more than five months following infection - a finding that will be verified and developed in the further months.

Data from the CHRIS Covid-19 study fed into the largest global genomics study (COVID-19 host genetics initiative) investigating SARS-CoV-2. The consortium compared data from 1.5 million people tested - both those who tested positive and negative - and identified 15 genetic signals that are risk factors for infection and severe disease progression. This finding is the basis for learning more about the biological mechanisms of SARS-CoV-2 and for developing better and more targeted treatment for Covid-19 sufferers.

Hand in hand with the local Health Service

In the very first weeks of the pandemic, the trilingual and internationally connected emergency medicine team, became an important **information hub**, translating and sharing the experience and protocols gained from real experiences in Italian hospitals to anaesthetists and intensivists all over the world.

Loaning equipment from our biomedical laboratories: biological hoods, a viral DNA extractor, thousands of consumables (pipettes, pipettors, etc.) and three cryo-freezers to preserve vaccines.

6,000 samples from various Covid-19 studies are being stored in the CHRIS biobank and are available for further studies.

Our animation 'The coronavirus explained to children' was seen over a million times worldwide and has even been translated into Kazakh, Filipino, Turkish and the indigenous Peruvian Machiguenga language.

The **biostatistician Markus Falk**, is conducting important studies on the spread of Covid-19 in general as well as in schools specifically. We were involved in a large study involving the White Cross staff.

Since March, we have been helping to **sequence the genome of the SARS-CoV-2 virus for new variants** in our biomedical labs on behalf of the health authority's Microbiology and Virology Laboratory. So far, we have been analysing up to 200 samples per month employing the skills and tools that we have been using for years in human genome sequencing, including the Next Generation Sequencing (NGS) technology.

We developed a concept for **safe re-opening** by implementing tests and immunity detection.

The **rapid test station** we set up in the South Tyrol's innovation district **NOI Techpark** was part of November 2020's mass screening and was officially accredited at the beginning of 2021. The tests are all carried out by CHRIS study nurses.

The ten-year experience gained by our biomedical research group in the CHRIS population study is currently being incorporated into the **design and ethico-legal framework of other Covid-19 studies** in South Tyrol.

Simon Rauch, a resuscitation physician and mountain emergency medicine researcher, is co-responsible for the Covid Intensive Care Unit in Meran/Merano and **other Eurac Research medical staff** are also volunteering in various Covid-19 units both in the region and further afield.

Nurses usually involved in the CHRIS health study have also been working in our rapid Covid test station.

Setting the record straight

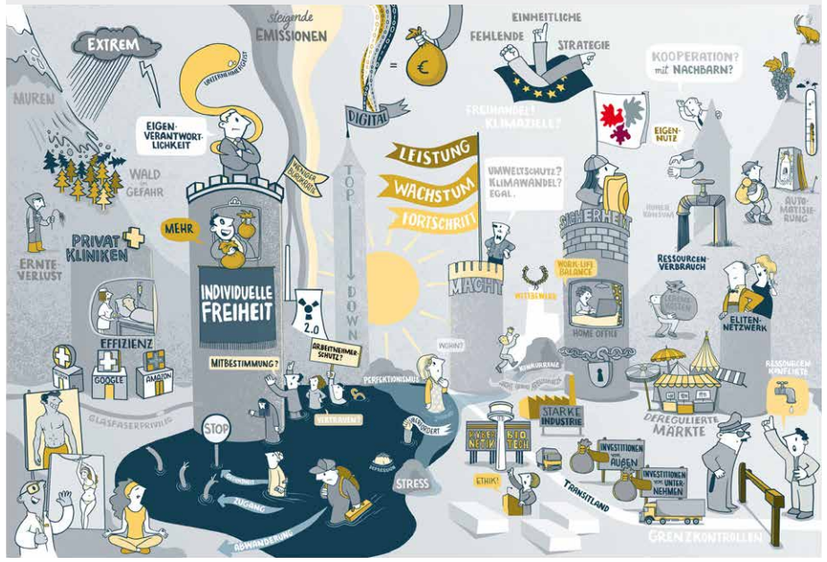
In the first months of the pandemic, our mountain emergency medicine experts debunked two theses by responding to the following questions circulating in international medical circles.

- Could Covid-19 be treated in the same way as high-altitude pulmonary oedema? No. On the contrary, the usual therapies (oxygen and vasodilator drugs) could in fact worsen the condition of Covid-19 sufferers.
- Are people living at high altitudes more protected from infection? No. Rather than physiological characteristics, the spread of the virus in remote mountain areas could be curbed by low population density - high-altitude cities such as La Paz or Mexico City have not been spared.

Details of these studies are available in our online magazine.

HOW DO WE WANT TO LIVE IN 2030?

Sustainability was the focus of a future study for South Tyrol, in which a research team from Eurac Research and Steinbeis University, School of International Business and Entrepreneurship (SIBE), developed a broad spectrum of perspectives and options for action. Four future scenarios were drafted in the first phase; as a next step, stakeholders in the province have now been invited to express their ideas on future development. The goal: to address opportunities and challenges in order to create the future we want, by acting in the present.



The “World of Individual Freedom” is one of four equally important scenarios illustrated by Studio animanova’s professional scenario artist Christoph Kellner.

What does the pandemic mean for tourism in South Tyrol?

Three surveys have provided important clues for setting the post-Covid course.
After the first wave of the pandemic, in the late summer and autumn of 2020, a research team had already begun to build a picture of the impact of the virus that went beyond a collapse in bookings and revenues. How did the hospitality industry respond? What strategies proved helpful?
What was the perception on the part of guests, how did priorities shift? Did the relationship between guest and host change? In two surveys, more than 600 members of the HGV, the local hotelier and restaurateur association, and almost 900 guests were interviewed. How the Covid-19 pandemic affected the South Tyrolean population’s perception of tourism was then investigated in December 2020 by means of a representative household telephone survey. This revealed not only a scepticism about the risk of infection, but also great solidarity with the industry. Above all, however, it became clear that people in South Tyrol are more concerned with the role of tourism than they were prior to the pandemic.

Here are the “commons”!

In these months of social distancing, people have re-evaluated the advantages of living in mountain villages, literally on the doorstep of nature. But the grass is not always greener on the other side. Living in these areas can be very challenging, not just because of the distance from the main centres but also because of harsher environmental conditions. This is well known by those who seek to revive an approach that was common in the past, but which has faded over time: the tradition of self-government and collective management by the local community – the so-called ‘commons’. For example, a century ago it was normal to manage forests, clean canals and organise community services together. Today, this is being done again by creating job opportunities, caring for the landscape and creating recreational and leisure spaces for areas at risk of depopulation. To reflect and share experiences, we are launching **a new blog: Living Mountains.** The very first post traces “commons” around the world and tells the story of four young people from Trentino, Italy who want to manage mountain pastures collectively.
www.eurac.edu/en/blogs

50,000
Eurac Research Blog views in 2020. The 5 most read pieces were from our “Covid-19 And Beyond” blog.

Energy habits during the first lockdown

In April 2020 a group of researchers from Eurac Research prepared and distributed an online questionnaire to observe changes in energy behaviour following the first and the strictest lockdown. More than 3,500 people responded, mainly from Northern Italy; a non-representative sample, but still large enough to reveal interesting insights. As the shortage of yeast on supermarket shelves had suggested, those who took part in the questionnaire confirmed that they had indeed used their ovens (40 percent of the sample) and hobs (almost 35 percent of the sample) much more than they had before the lockdown. In general, there is a perceived increase in energy demands in the living environment. The value of these numbers, even though they relate to a small part of the population, should be read with the idea that an increase in energy demands always corresponds to a potential for energy savings. There are two important indications on the characteristics of the houses: a low level of thermal insulation and a reduced presence of systems to produce renewable energy, confirming the fact that bureaucracy is still a significant barrier to retrofitting, especially in apartment buildings.
The full study is available online in our online magazine.

78.1%
of households don’t have any renewable energy systems.

21.9%
have one or more renewable energy system.

Federalism and the fight against the pandemic

How different constitutional systems have fared in the Corona crisis so far is an intensively debated question in expert circles. Our federalism researchers have contributed to the ongoing discussion with publications, conference papers and webinars. Francesco Palermo and Carolin Zwilling compare the Italian and German experience.

How did the handling of the pandemic differ in Germany and Italy?
Francesco Palermo: In practice, not so dramatically: in the first phase, in which everyone was caught unawares, the central government took control in both countries. But the procedure was quite different. In Germany, no state of emergency was declared, and the "Länder" retained their powers and decided amongst themselves to delegate to the federal government. In contrast, Italy's separate regions were disempowered by legislative decrees and administrative acts from above.
Carolin Zwilling: In both countries the shift towards the executive was similar: the parliaments, both national and regional, didn't play a major role.

Were there changes in the second wave?
Palermo: In Italy, the traffic light system, that divides regions into three categories based on how severe the coronavirus situation is, made differentiation possible; however, it is always the state that decides - so legally nothing has changed. In terms of content, however, it has changed: the measures are now discussed with the regions, which at least have the opportunity to exert political influence. Actually, it is a paradox: when the situation in the various regions was very different, uniform measures were enacted for all, but since the infection situation has become much more uniform, tailor-made solutions are now allowed.
Zwilling: In the second wave, Germany looked much more centralised than it actually is, because the "Länder" made joint decisions throughout. They could have created competition by pitting sides: who took the best action against the pandemic? Then they could have learned from each other, but that's not what happened.

In your opinion, what works better in such crises: federal systems or a strong unitary state?
Zwilling: There is a difference between theory and practice: in theory, I think federalism would be more advantageous, but the question is whether one actually uses its possibilities. In the acute initial phase, the strong unitary state was also able to react more quickly.
Palermo: To put it bluntly, the great advantage of federal systems is that you have a choice. The subnational entities can decide what they do and they don't want to delegate to the federal government. Therein lies an opportunity. Because if the central government makes bad decisions - for example, against compulsory masking in the US - the various subnational entities don't have to follow. In the USA, this meant many lives were saved as a result.

In Italy, could the experience of the pandemic - the effects of which were very different in the regions - advance regionalism?
Palermo: I fear that the development is going in the opposite direction. The majority - in politics, but also among scholars - is very much in favour of taking health competences away from the regions altogether or at least severely curtailing them.

45
consultancy assignments Eurac Research received from governments and administrations last year.

Women in lockdown

The Corona crisis is not gender-neutral: women, for example, were not only laid off more often, they also bore the brunt of most home-schooling and childcare. How women in South Tyrol dealt with the lockdown experience is being investigated by our researchers together with unibz. Verena Wisthaler is leading the project with the Free University of Bozen-Bolzano researcher Claudia Lintner.

How did you yourself experience the first lockdown?
It wasn't easy to be both researcher and mother: the daytime revolved around children and household chores, and afterwards you sat at your desk until well into the night, trying to concentrate and get as much work done as possible. Back then, we often exchanged ideas among colleagues; this networking, also informally in chats, was important, a kind of anchor. And so, the idea arose to investigate it in a study focussing on the challenges for women at that time. What strategies did they have to deal with them? What role did networks play?

Who did you interview?
All kinds of women. Working women and housewives, women with and without children, immigrants to the region and also women who'd been born here. We also interviewed women who'd organised themselves in spontaneous initiatives, established organisations or social media enterprises in some way.

First results?
Some of the women experienced this time almost as a retreat, in which they concentrated on the nuclear family and consciously blocked out outside influences, including social media. These were mostly women who had economic security. Women with a migration background kept closer contact with home - out of concern, and to pass on information and advice. For some of them, Corona was not their first crisis situation: they had experienced war, for example, which was their comparison. This probably made them a little more resilient. But most women saw the lockdown as an extreme burden; only a few had the energy to network and become active. Those who joined forces, started petitions or demonstrated, however, spoke of great solidarity and commitment.

INEQUALITY AND RESILIENCE

A project that compares the experiences of South Tyrol, Bavaria and Styria aims to make regions more resilient to health crises so that they can all learn from each other.
Education and care are at the centre of the case studies, as these areas were hit particularly hard by the pandemic. The research team has not just been analysing the legal framework, competences and actors, but the experience of the professionals directly involved: what worked well, what could be improved?

A successful webinar series on "Minorities and Covid-19" highlighted how the pandemic exacerbated exclusion, inequality and political conflict.
The "democratic" virus was sometimes described as a great equaliser at the beginning, but in reality the opposite occurred, as more than 40 experts from around the world outlined in eleven virtual events. Almost 1,000 participants followed them live on Zoom.

Digital technologies and old age

The Corona pandemic has greatly increased the importance of a field that a research team from Eurac Research has been working on for years: the use of technologies for a self-determined and safe life in old age. To make the enforced isolation more bearable, old age homes provided tablets and municipalities brought laptops including surf sticks, into the homes of elderly people. However, for technology to make life easier, they have to be adapted to the needs of the user. Up to now, South Tyrol has lacked reliable and systematic data on how older people view technology, how they use it, what information is needed and what barriers exist. The researchers have now created a data basis, as a prerequisite for targeted further development, with a representative survey of middle-aged, elderly and very elderly people.

The pandemic of words

The pandemic has overwhelmed not only our lives but also our vocabulary: certain terms, such as ‘asymptomatic subject’ we’ve learned from specialist contexts, others, such as ‘positive person’, have changed their meaning and associations. The media have put their own spin on it, sometimes preferring different words to those used by institutions, for example ‘curfew’ instead of ‘travel ban’, and with time the meaning of certain terms has changed nuance: the first ‘lockdown’ was quite different from those that came later. **And if it wasn’t already challenging enough to understand each other in the same language, the matter became even more complicated when translating had to take place, especially in the legal field.** To support those who translate, write or have to interpret technical texts in German and Italian, our team of terminologists has updated the Bistro, our Information System for Legal Terminology, in collaboration with the Autonomous Province of South Tyrol’s Office for Language Issues. The new terminology ranges from administrative, labour and social law to commercial, public and criminal law and is expressed in Italian and German in the variants of South Tyrol, Austria, Germany, Switzerland, the European Union and international law with a range of terms relating to health emergencies, social economic recovery plans, distance learning, tests and vaccines and more.
http://bistro.eurac.edu

1,100
pandemic-related terms have been added to the Bistro database to date. If we count all the German variants, the number reaches over 1,500.

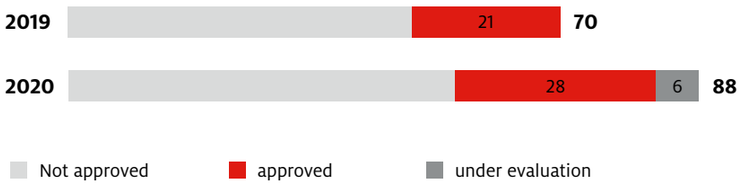
Threats other than those posed by the pandemic are at the centre of our **cooperation with the United Nations University-UNU** which motivate our collaboration to conduct applied research in the fields of climate risks, sustainable development and disaster prevention in mountain areas. Mountain areas in particular are strongly affected by global warming and are therefore especially vulnerable to natural hazards, as Shen Xiaomeng, the UNU’s Vice-Rector for Europe, emphasised in Bolzano/Bozen (pictured between local Governor Arno Kompatscher and Eurac Research Director Stephan Ortner). The occasion of her visit officially sealed the cooperation, with the hoisting of the blue UN flag in front of the Eurac Research headquarters cementing the alliance. From the far left side of the picture Eurac Research’s Stefan Schneiderbauer, who heads the research programme together with Joerg Szarzynski from the UNU (next to him). President Roland Psenner stands to the right side of the photograph.

A virtue of necessity: writing and growing in isolation

Research trips, congresses, project meetings - unfortunately all cancelled. But the enforced rest also meant more time to write technical papers, develop project ideas and write funding applications.

Developing EU projects

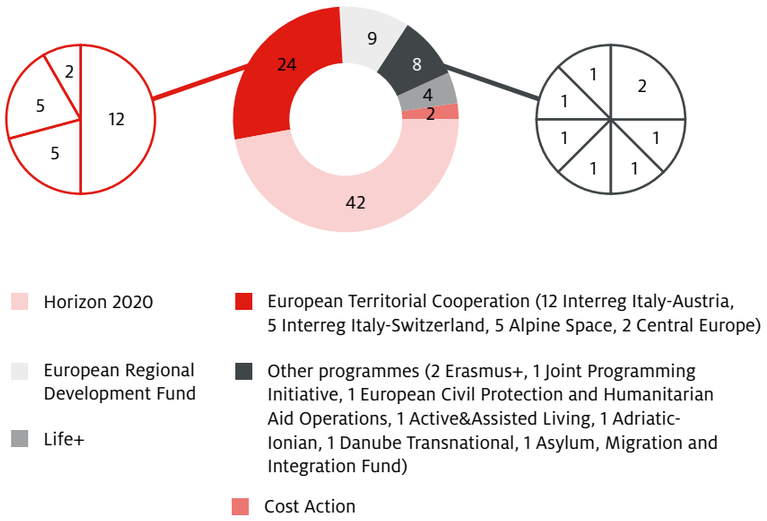
International collaboration wasn't always easy. Pandemic peaks didn't always coincide as well as lockdowns with having to put the brakes on certain activities. In general, however, the data is uplifting. Especially with regard to new proposals.



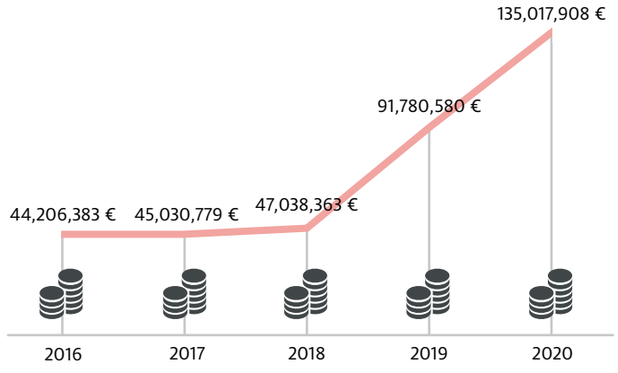
+25.7%
more project proposals than in the previous year. We were inspired in our isolation!

We submitted 88 project proposals in 2020 and had an acceptance rate of 31.8%.

The projects are part of **several funding programmes.**



89
By December 2020 we had 89 ongoing EU projects. We completed 21 over the course of the year and also started 23 new ones and are the lead partner in 8 of them.



+47.1%
Is how much the total cumulative budget we administered in 2020 for all our ongoing EU projects increased by. Almost 22% of which was retained by Eurac Research while the rest was distributed to project partners.

7.5 million euros
In funding was received for EU projects that started in 2020 alone.

NEW EU PROJECTS: GOOD THINGS COME IN THREES

MEZeroE, which deals with near-zero energy buildings, has the **highest total budget of all projects launched in 2020** weighing in with a total of 17,133,862.50 euros. Eurac Research, as lead partner of the project, manages the largest portion of the budget: 2,174,125 euros.

On average, about 20 partners are involved in our new largest projects: 25 in MEZeroE, 17 in LIFEstockProtect (herd protection and wolf conservation) and 19 in INFINITE (energy renovation through all-in-one modules for building envelopes).

For the first time, Eurac Research is involved in a Directorate General **European Civil Protection and Humanitarian Aid** project for the EU - and moreover as lead partner. The Trans-Alp study aims at assessing the risk of extreme climate events in the Alps more accurately as well as evaluating their impacts through transnational cooperation in order to improve existing prevention measures.

… and scientific publications

A large number of the conferences and congresses planned for 2020 were cancelled or postponed and as a result, the number of scientific presentations fell by more than half compared to the previous year. On the other hand, we were rather productive when it came to writing!

In all categories, more than 500 contributions were published (books, journals, etc.) with about 300 articles appearing in scientific journals alone - more than three quarters of them peer reviewed. The complete list of scientific publications is available online in the Bolzano/Bozen Institutional Archive (BIA). Set the "Open Access" filter to find contributions that can be read in full.
https://bia.unibz.it

+ 20.4%
articles accepted for publication in scientific journals

63%
percentage of peer reviewed articles accessible in Open Access

NEW REPORTS

"There are more people on the move – with different motivations and resources – than you think."
Rapporto sulle migrazioni – Alto Adige 2020 / Migrationsreport Südtirol 2020

"Agriculture uses and influences natural resources like no other sector."
Landwirtschaftsreport zur Nachhaltigkeit – Südtirol 2020 / Rapporto sulla sostenibilità dell'agricoltura – Alto Adige 2020

Excerpts in German and Italian in our online magazine. Free copies can be requested by email.

RESCUE OPERATIONS IN THE MOUNTAINS – A REFERENCE STANDARD
80 authors from all over the world covering all aspects of emergency medicine in difficult-to-access mountain terrain on 700 pages: from accidents caused by lightning or the rescue of avalanche victims to altitude-related psychoses. Hermann Brugger, head of our Institute for Alpine Emergency Medicine was one of the editors of the anthology.

Awards and nominations

Ulrike Tappeiner - Winner of this year's Research Award South Tyrol.
"For her outstanding career and multifaceted research activities, including on biodiversity, climate change and ecosystem resilience".

Claudia Notarnicola - winner of the first edition of the Women in Science prize – South Tyrol
"For her outstanding scientific career in the male-dominated field of aerospace physics".

9
awards received from scientific associations and administrations worldwide.

56
employees serve on scientific committees or boards of directors of research consortia, institutions, organisations and trade associations.

Staying connected

Be it a strategic energy plan for the Ukrainian government or a councelling on the subject of rights for the Council of Europe – each year our collaborations are varied and involve, in addition to research partners, bodies and institutions, private companies and public administrations - both locally and internationally.

Our network

915 partners in research projects

659 **171** **85**

89 companies and organisations that commissioned assignments

35 **14** **40**

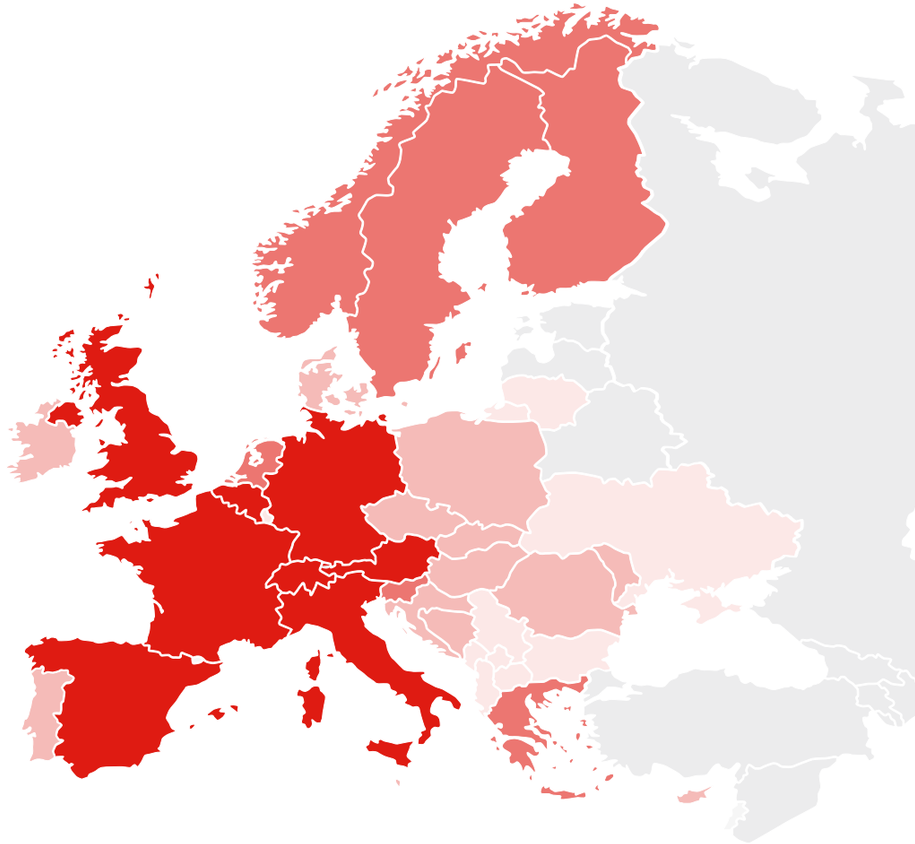
126 institutions with diverse collaboration contracts

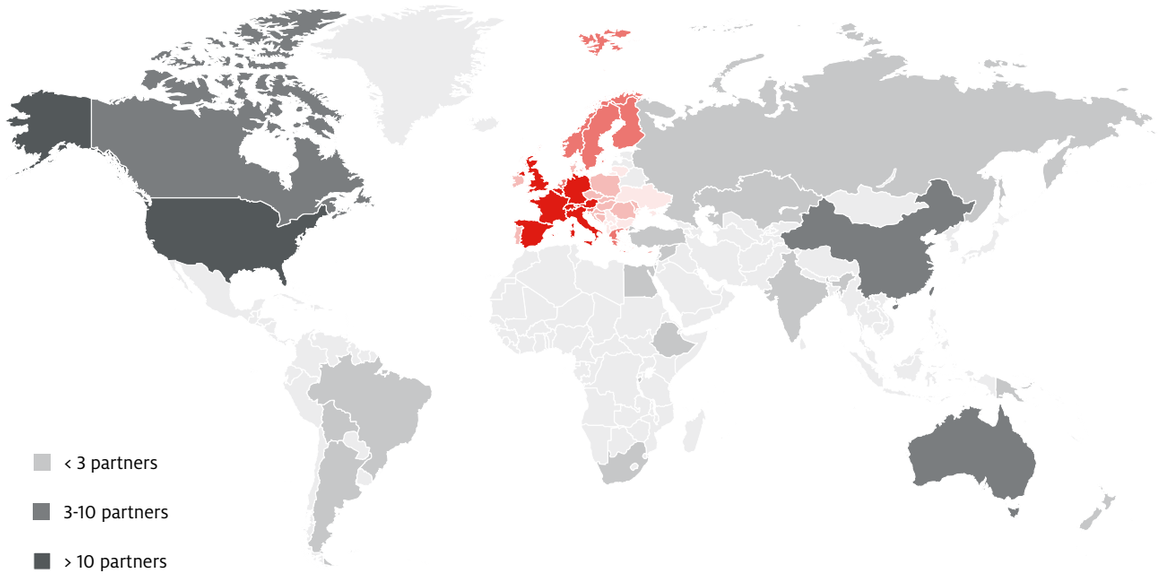
49 **54** **23**

international

Italian

South Tyrolean





Personnel

Who we are and how we work: an overview in numbers

Personnel

550 staff members make up Eurac Research, of them

14 with a habilitation

173 with a PhD degree

75 are PhD students (36 employees and 39 in the Grant Programme)

In addition, there are

6 visiting scientists (professors and post-doc profiles)

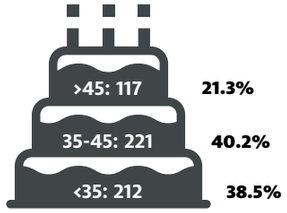
+6.4%
increase to our staff compared to the previous year. More new projects equals more new people. In February 2020, 6 new staff members were recruited, whereas in February 2021 we almost doubled that with 11 new additions to the Eurac Research team.

Personnel by gender[x]

53.1% **46.9%**

[x]This information is derived from databases that record identity card details. We would like to stress that it does not necessarily coincide with each individual's self-perception.

Average age and personnel by age



21.3%
40.2%
38.5%

39

Personnel by nationality

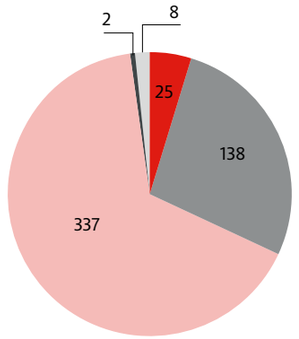
Italy
434

European Union
85

Non-EU countries
31

Contracts

- Continuous and coordinated collaboration (CoCoCo)
- Contractual employees
- Permanent employees
- Apprenticeships
- Other contract types



Flexible working time

Apart from the fact that all employees currently have the option of Smart Working (see page 10),

69.4%
work full time

30.6%
work with part-time contracts

(This information concerns those working under fixed-term, open-ended and apprenticeship contracts)

21
babies were born to our employees

All data from 31.12.2020

Finance

Basic financing from the Autonomous Province of Bolzano/Bozen	**56%** **26,657,130 €**
Third party funding	**44%** **21,354,784 €**
Partner funding	891,933 €
Project partner funding (Budget administrated by Eurac Research)*	19,789,130 €
Courses	199,581 €
Meeting management	216,966 €
Sponsorships	55,750 €
Other revenues	201,424 €
Total	**100%** **48,011,914 €**

*
Of the budget administered in the financial year 2020 by Eurac Research (19.8 million euros) 15.6 million euros comes from EU funding. Eurac Research manages 10 million euros of these EU funds on behalf of EU project partners. The total budget also includes 1.2 millions euros provided by the Autonomous Province of Bolzano for special funding of specific projects.

Institutes and Centers

LEGEND

STAFF

- Staff members
- *with a PhD degree*
- *PhD students*

OUTPUT

- Books
- Contributions in edited books
- Journal publications
- Contributions in conference proceedings
- Presentations at scientific conferences
- Contributions to thematic blogs

PROJECTS AND ASSIGNMENTS

- Research projects
- *with international partners*
- Assignments (services and consultancies)
- *with international agencies*

LABORATORIES AND FACILITIES

- Laboratories and facilities (ˣaccredited)

INSTITUTE FOR ALPINE ENVIRONMENT

Head of Institute
Ulrike Tappeiner

Vice Head of Institute
Roberta Bottarin

Staff

33 15 5

Projects and assignments

16 11

Laboratories and facilities*

2

Output

2 **43** **1** **39** **1**

**Eco-Lab, Open air laboratory Matsch-Mazia*

INSTITUTE FOR APPLIED LINGUISTICS

Head of Institute
Andrea Abel

Staff

24 12 4

Projects and assignments

21 6 **1**

Output

2 **5** **9** **16** **31**

INSTITUTE FOR BIOMEDICINE

Head of Institute
Peter P. Pramstaller

Vice Head of Institute
Andrew A. Hicks

Coordinator
Vera Amon

Research Group Leaders
Christian Fuchsberger, Francisco Manuel Lopes da Silva Domingues, Deborah Mascalzoni, Cristian Pattaro, Alessandra Rossini

Technical Group Leaders
Chiara Cantaloni, Alessandro De Grandi, Clemens Egger

Staff

74 33

Projects and assignments

35 19 **2** 2

Laboratories and facilities*

2

Output

2 **33** **8**

**Biomedicine laboratory, Biobank*

INSTITUTE FOR COMPARATIVE FEDERALISM

Head of Institute
Francesco Palermo

Coordinator
Carolin Zwilling

Staff

23 14 1

Projects and assignments

31 19 **10** 10

Output

6 **37** **30** **1** **64** **17**

INSTITUTE FOR EARTH OBSERVATION

Head of Institute
Marc Zebisch

Vice Head of Institute
Claudia Notarnicola

Research Group Leaders
Alexander Jacob, Claudia Notarnicola, Massimiliano Pittore

Staff

35 15 2

Projects and assignments

33 19 **3** 3

Laboratories and facilities*

1

Output

1 **6** **30** **9** **32**

**Satellite Receiving Station*

INSTITUTE FOR MINORITY RIGHTS

Head of Institute
Joseph Marko, Günther Rautz

Research Group Leaders
Alice Engl, Roberta Medda-Windischer, Verena Wisthaler

Staff

18 10 2

Projects and assignments

18 6 **6** 6

Output

10 **6** **14** **1** **24** **11**

INSTITUTE OF MOUNTAIN EMERGENCY MEDICINE

Head of Institute
Hermann Brugger

Vice Head of Institute
Giacomo Strapazzon

Research Group Leader
Hannes Gatterer

Staff

19 9 1

Projects and assignments

25 14

Output

52 **9**

INSTITUTE FOR MUMMY STUDIES

Head of Institute
Albert Zink

Coordinator
Frank Maixner

Staff

12 4 4

Projects and assignments

14 9 **4** 4

Laboratories and facilities*

4

Output

5 **7** **4**

**Ancient DNA Lab, Modern DNA Lab, Physical Anthropology Lab, Conservation Technology Lab*

INSTITUTE FOR PUBLIC MANAGEMENT

Head of Institute
Kurt Promberger

Vice Head of Institute
Josef Johann Bernhart

Staff

11 3 1

Projects and assignments

9 7 **6**

Output

2 **7** **2** **3** **5** **1**

INSTITUTE FOR REGIONAL DEVELOPMENT

Head of Institute
Thomas Philipp Streifeneder

Research Group Leaders
Filippo Favilli, Christian Hoffmann, Elisa Ravazzoli

Staff

26 6 3

Projects and assignments

34 19

Output

3 **23** **16** **19** **25**

INSTITUTE FOR RENEWABLE ENERGY

Head of Institute
Wolfram Sparber

Vice Head of Institute
Alexandra Troi

Research Group Leaders
Roberto Fedrizzi, Roberto Lollini,

David Moser, Daniele Vettorato

Technical Group Leader
Giorgio Belluardo

Staff

129 36 10

Projects and assignments

63 45 **61** 7

Laboratories and facilities*x

9

Output

44 **34** **6** **16**

**Solare PV Lab (^1785L, accredited according to ISO 17025:2018 by Accredia), Accelerated Life Testing Lab, G-value Lab, Multifunctional Facade Lab, Heatpumps Lab, Hygrothermal Testing Lab, PV Integration Lab, Energy Exchange Lab, Facade System, Interaction Lab*

CENTER FOR ADVANCED STUDIES

Head of Center
Harald Pechlaner

Co-Head of Center
Roland Benedikter

Staff

18 7 3

Projects and assignments

10 6 **1**

Output

3 **10** **12** **8** **22**

CENTER FOR AUTONOMY EXPERIENCE

Head of Center
Marc Emanuel Röggla

Up and running for one year now, the Center for Autonomy Experience has the goal of bringing South Tyrol's model of autonomy and the protection of minorities to the world stage: to share experiences, to pass on knowledge, and build a strong international and local network.

Staff

3

Projects and assignments

3 2

Output

5

CENTER FOR GLOBAL MOUNTAIN SAFEGUARD RESEARCH

Head of Center
Stefan Schneiderbauer

Vice Head of Center
Jörg Szarzynski

Global Mountain Safeguard Research (GLOMOS) is a collaborative programme and scientific alliance, which was initiated in July 2019, between Eurac Research and the United Nations University Institute for Environment and Human Security (UNU-EHS) based in Bonn.

Staff

6 1

Projects and assignments

4 1 **1** 1

Output

2 **4** **4** **4**

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Head of Center
Roberto Monsorno

Staff

13 4

Projects and assignments

14 6 **5** 1

Laboratories and facilities*

1

Output

1 **2** **10**

**Environmental Sensing Lab*

TERRAXCUBE

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8 2

Projects and assignments

12 7 **14** 3

Laboratories and facilities*

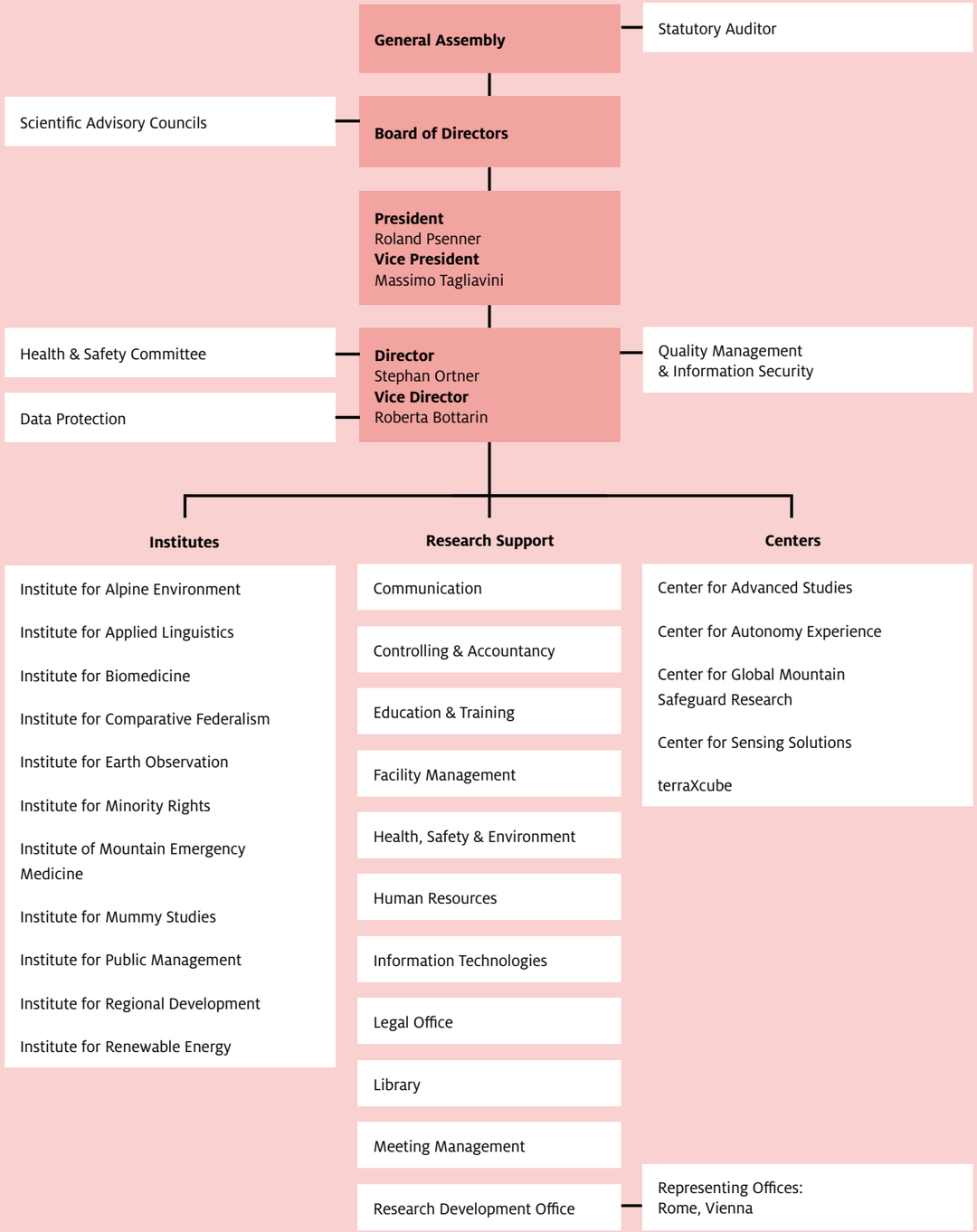
1

Output

2 **1** **2**

**Extreme Environmental Simulator terraXcube*

Organigram



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We rearranged furniture, ***misse***
new routines. **We were alread**
conditions. We used the tim
hybrid events be standard i
helped expand our knowledge
focused on reworking. We s
projects. ***The wheels of indus***
from 45 companies. On aver
largest projects. **The panden**
also our vocabulary.