Forum

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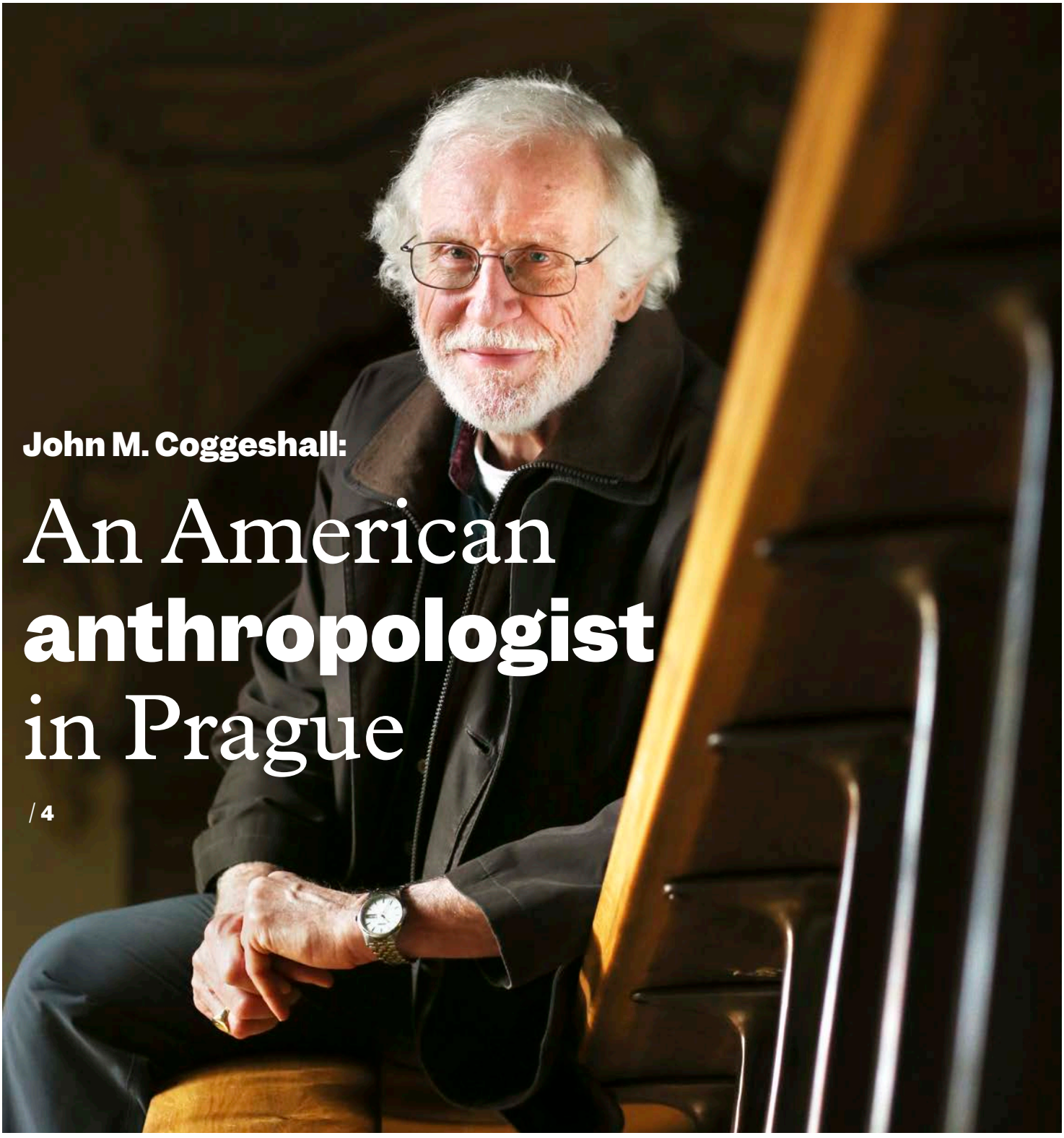

John M. Coggeshall:

An American **anthropologist** in Prague

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Dear students and colleagues,

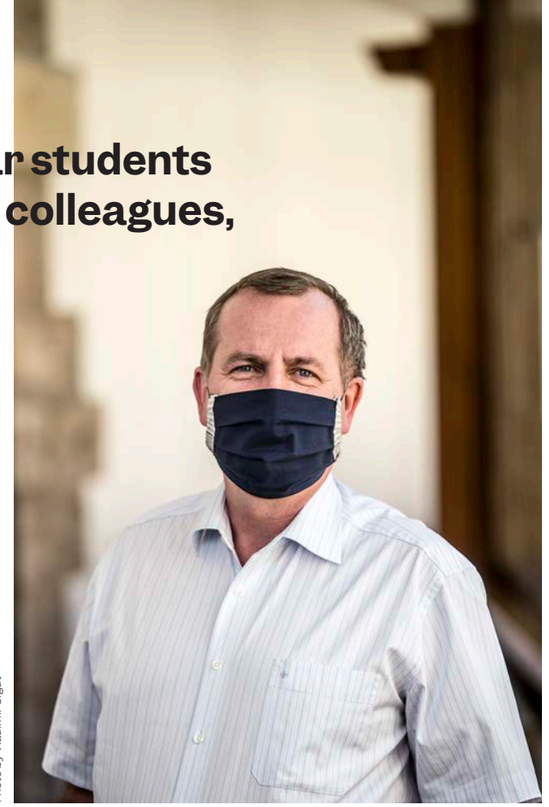

Photo by Vladimír Šigut

The events of the recent weeks and months were both unexpected as well as difficult, forcing us to re-examine and re-evaluate numerous issues and to focus on what is important. Much changed. The Covid–19 pandemic meant that suddenly we had to stay home to stay safe; schools closed their doors and students were no longer allowed to gather; even the country's borders were shut. It was something quite unimaginable for most of us.

Even as Charles University's hallways and classrooms emptied, there was a remarkable lesson or takeaway: a university is more than buildings, lecture halls, or science labs: it is about people. For that reason, university life and most importantly learning, continued at a distance and did not "grind to a halt". Classes continued remotely, as did meetings, consultations, and other communication. Despite initially unfavourable circumstances, the university continued to serve its students as well as society as a whole.

It is clear that science is what makes a difference when it comes to a task as daunting as slowing the curve of a rampant pandemic. It was – and is – up to us to capitalise on science and make use of our skills. At Charles University, more than 3,000 students from across five medical faculties volunteered; researchers prepared test kits; colleagues tested and cared for patients; still other experts conducted research into the novel coronavirus; and the university helped inform the broader public about both the success stories and the risks. Whether they were students or teachers, almost everyone did their utmost to help.

Their contribution had a clear impact and I would like to take the opportunity to thank all of those who volunteered in hospitals, cared for children of medical professionals, taught courses or otherwise took part in numerous volunteer projects. The Carolinum – CU's oldest historic building – was itself the site of the Sousedská pomoc initiative that made a difference. Volunteering and a broader sense of social responsibility came to the fore and we learned a lot about ourselves.

Although numerous challenges remain, this period proved one thing: together, we succeed. Other challenges – from sustainable growth to climate change to an aging population – should not be overshadowed by the pandemic, and shall also require the best from each of us. Now, as in key moments in the past, universities will play a crucial role. We share common values, among them, the desire to learn and discover, the desire to help, and the desire to provide the best possible education to our students. As both a teacher and as a medical doctor, the thing that I look forward to most now is our hallways and classrooms being full again – and to seeing our students in person.

Tomáš Zima
Rector

You can read the articles online too!

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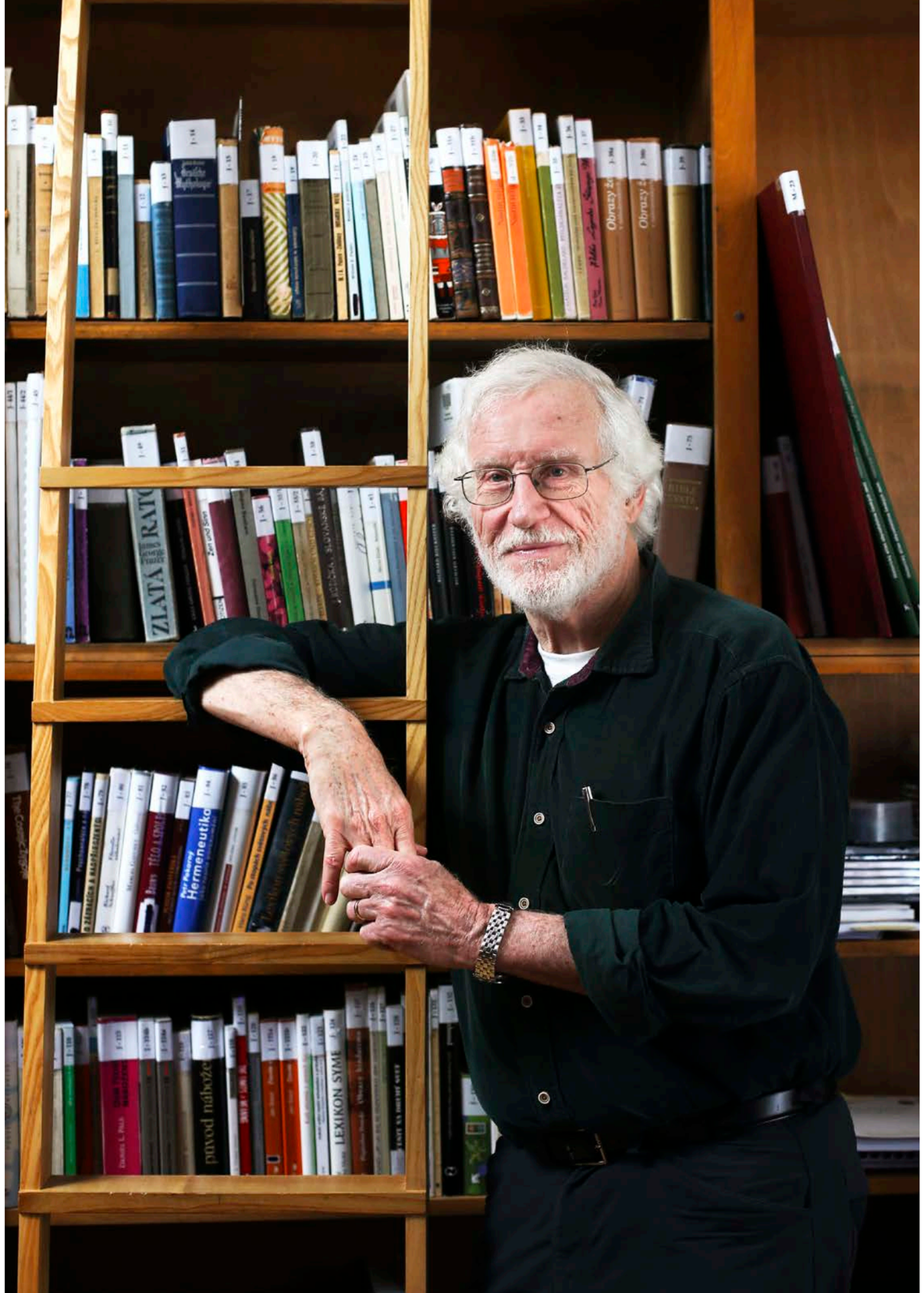


John M. Coggeshall:

An American anthropologist in Prague

John M. Coggeshall is a professor of anthropology at Clemson University in South Carolina. He has spent his career researching American regional ethnic and social groups. He is the author of a seminal paper examining gender roles behind bars, and an oral history called Liberia, South Carolina: An African American Appala-chian Community. Coggeshall was a visiting professor at Charles University last semester.

STORY BY Jan Velinger PHOTOS BY Martin Pinkas, Shutterstock

John M. Coggeshall taught two courses at the Department of Ethnology at the Faculty of Social Sciences in the fall semester – a welcome addition to the team at CU with extensive experience in fieldwork in the US. But Coggeshall was no stranger to the Czech capital: he first visited Prague in the mid–1990s. In the interest of getting to know Czech colleagues in 1995, he walked into the Department of Ethnology off the street and by chance met Dr. Leoš Šatava, a specialist in European ethnic groups; the two became friends and have been in touch ever since. More than 20 years later, Coggeshall saw coming back to teach as an opportunity and challenge: first, arrangements had to be made for someone to look after his and his wife's house in the US. Then, he focussed on the needs of students he would soon be teaching.

"I talked to professors here as well as a number of Czech students at Clemson University and they suggested that students might be a little hesitant about speaking English. Both courses I was going to teach were discussion-based and I wanted the students to be comfortable. I made sure I wouldn't be correcting them all the time in writing and speaking. By-and-large, I think everything went very well. In my anthropological theories class, for example, students were very engaged and their speaking ability was actually really good. I was very happy with how they responded."

Because his students were well-behaved, Coggeshall says he initially thought most were in prison for white-collar crime or crimes like auto theft; but soon he learned that there were inmates in his classes also in prison for murder.

A single course can make a difference

Coggeshall has been teaching for more than 30 years; he himself studied to be an anthropologist in the 1970s and '80s, when new directions and focus in the field proved inspirational and even pivotal. A course taught by Dr. Charlotte Frisbie, he recalls, stood above the rest: the kind of course all university students hope for and, when they luck out, never forget.

"It was called *Women in Cross-Cultural Perspective*. I think this was perhaps the single most important class I took, at either the graduate or undergraduate level. It opened me up to a lot of new ideas, including feminism. Other classes, such as introductory courses into anthropology were important when I was beginning my studies, but this one was revolutionary. This was it for me."

Traditionally, cultural anthropologists immerse or embed themselves in foreign cultures, using methods relying heavily on participant observation. In the 1970s and '80s more and more field researchers opted to study smaller groups "at home". Coggeshall was fascinated by local communities in different states in his homeland United States that in the past had been largely overlooked or ignored.

"I have always studied ethnic and regional groups and what I always find is that there are very interesting approaches to life in different American communities. How we can understand different approaches to life, and present them in a way that does them justice and also enhances connections between people, is what excites me as an anthropologist.

"What is hugely important is finding the differences that create identities among different groups of people yet at the same time link us together as human beings. The primary goal for cultural anthropologists is to study ordinary people in ordinary times and places; but I found over 35 years as a field researcher that the stories that people have to tell are extraordinary."

Life behind bars

One of the groups Coggeshall studied in the 1980s were inmates in medium-security prisons. Initially, he hadn't set out to study them at all. It was something of a happy accident.

"It was a coincidence. I was hitting the jobs market and I needed teaching experience. I noticed an ad asking for instructors who would be interested in teaching university-level courses at men's prisons in Illinois where I was doing my dissertation. I thought I could try it. The idea was that prisons would offer remedial high school courses, what they call a GED (General Education Development), and then university courses so that once inmates would be released they could find better jobs and hopefully start a better life. It was a popular program in the 1970s but later phased out by the government as being too soft on crime. But at the time I think it was fairly successful."

While teaching, Coggeshall says he eventually began taking notes and interviewing guards as well as the students themselves before or after class just to get a better sense of "what life in prison was like". The atmosphere in the classroom was positive, the building where he taught, modern and new, the students generally well-behaved. There was a guard in the facility but not in the classroom itself and essentially Coggeshall was alone with 15 inmates at a time. He smiles when he tells the story of one time the education building lost power and the lights went out. At the head of the class, he exclaimed "Alright, nobody move!" Remembering the moment, he laughs: "They all thought that was the funniest thing they had ever heard".

Such moments are humorous but in the context of prison using one's authority to set clear boundaries and rules was important. Enforcing them was something Coggeshall learned to do early on.

"That is kind of the first thing you learn in prison: to set boundaries and try not to back down. I did that fairly successfully. If I hadn't, the inmates themselves later admitted, they would have continued pressing and would have tried to manipulate me. It's not an uncommon behaviour but the consequences are obviously greater in prison than elsewhere."

Because his students were well-behaved, Coggeshall says he initially thought most were in prison for white-collar crime or crimes like auto theft; but soon he learned that there were inmates in his classes also in prison for murder. One of the most diligent students was an African American who, it turned out, was serving multiple back-to-back sentences for racially-motivated murder after coming back from the Vietnam War. He had served but had gotten involved in drugs and was thrown out of the army. Back in America, he had gotten involved in a gang and, Coggeshall learned from microfilm archives, had attacked a white suburb in Chicago, resulting in multiple killings. Despite having turned a new page in prison, this was an inmate who would never be getting out.

How we can understand different approaches to life, and present them in a way that does them justice and also enhances connections between people, is what excites me as an anthropologist.

Gender in prison

The anthropologist spent three semesters teaching inmates before he felt he had had enough of life behind bars. But the information he had gathered, combined with some interviews done by an inmate friend (a former student), provided the basis for "'Ladies' behind bars: a liminal gender as cultural mirror" published in *Anthropology Today* (since reprinted in *The Best of Anthropology Today*, ed. by J. Benthall (London: Routledge, 2002).

The article explored gender in prison, essentially how some inmates were emasculated or forced into female gender roles that were to no small degree a distortion and caricature of behaviour and male/female relationships in the outside world. The article pointed to aspects of power, intimidation, sexual violence and abuse but also, importantly, inmates' responses, from acquiescence or acceptance to resistance survival strategies, some successful, some less so, all within the gender framework. In short, gender in jail had little to do with one's biological sex but was determined by one's standing (or lack of it) within the overall power structure among in- ↪

mates. The article, which is a powerful read even 30 years on, began to take shape mainly after Coggeshall was approached by a colleague.

"I was at a conference and Pam Frese was putting together a session on gender. She asked me about the German Americans I was doing my dissertation on at the time but I said the material I had gathered in prison was suitable. It's complex and when it comes to the fluidity of gender, there might be multiple factors involved in prison: but there is a dominant/submissive relationship.

"Men's prisons see a lot of sexual violence and rape, at least they did in the '80s when I did my research. I am positive [being subjugated to a female gender role] is not inevitable for a prisoner: you can put muscle on, or gain power through education or legal means, or if there is something you can trade there are ways to avoid it. It doesn't happen to everyone, but those who are considered weak, who fail to stand up for themselves, who have elements of femininity, are picked on and effectively are 'selected'."

The article gained a certain "notoriety" and Coggeshall says after publication he received an offer to expand his research in a book, but in the end he declined. He says he didn't want to become known as *the* anthropologist who studied state prisons; he had many other ideas he wanted to explore. At the same time, he readily admits the article remains one of his best-known and there's no question it was an inspiration for many, including Czech anthropologist and CU graduate Alena Lochmannová who met Coggeshall during his stay. She herself spent hundreds of hours interviewing inmates in prisons in the Czech Republic for her own dissertation on prison tattooing (which will be the subject of an upcoming article in Forum).

"The prison paper was getting a lot of attention but my dissertation was about German Americans in southern Illinois. What was really interesting for me is how one ethnic group differentiated from another, as well as the stereotypes they often faced and traditions that really distinguished us from them. I have also always been interested in regional groups and in South Carolina. Early on, I figured out that if I wanted to be a top anthropologist I needed to specialize, but I didn't want to do that. I wanted to remain a generalist. For me, that meant studying different groups besides inmates. Being a generalist and exploring different subjects made me happy."

Liberia Road: An unexpected meeting

One of Coggeshall's most recent publications is *Liberia, South Carolina: An African American Appalachian Community* (University of North Carolina Press, 2018). It is a fascinating oral history that branched out of another project, initially.

"I was given a project another researcher turned down and the aim was to document the lives of – the assumption was white people of Irish-Scottish descent – who lived in mountain areas and who had been displaced due to a hydroelectric dam. The valley they had lived in before was now under water. So I began interviews and what was fascinating was the way they talked about land.

"I grew up in the Midwestern United States and land is considered property with a value attached to it which you buy or sell and it's not an integral part of who you are. But these people spoke about land as an integral part of their families. Their land had been in their families for five or six generations, they told stories about it, land became a part of their identity and it was a part of who they were. And to lose that land had meant they had lost a part of themselves. And I thought that would make an interesting subject for a book."

Doing research, the ethnologist came across the name of Liberia Road on a map – an unusual place name in such a vicinity.

"The southern Appalachians pride themselves on Scots-Irish, maybe some German, but basically Euro-American settlements and here was this African place name in the middle of what is often seen as being a traditionally 'white' space. So I drove up there and happened to meet a woman who turned out to be the matriarch of this Liberian community.

"So I set my mountain book aside temporarily and began to study a community of African Americans who had descended from slaves who had been on the very same land before the American Civil War. When they were freed and given land in exchange for their labour, many of them stayed. A few descendants managed to hold onto the land ever since, despite there being plenty of forces over the decades prior to drive them out. The matriarch, Mable Clarke, was really involved in the project and the proceeds from the book are also going to the local church."

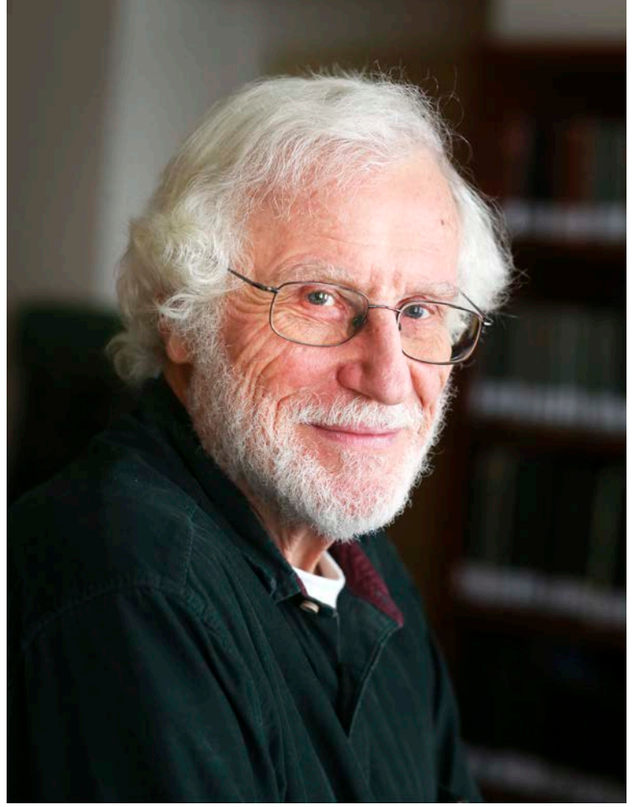
Studying even a tiny community like that at Liberia Road, counting just a few houses and people, proved immensely valuable says the anthropologist, providing a new thread which inevitably challenged or complemented more traditional and dominant narratives.

"Hearing their side of the story was important and it was fascinating to plug that into the story of South Carolina and even American history in general. For me, their community is a microcosm of a century-and-a-half of the American story and it's important to hear their side because that is heard far less often than white versions of history. For me it was a life-changing experience."

Meeting with John M. Coggeshall in the same office he walked in off the street in 1995 must have been curious moment for the anthropologist; certainly Charles University is proud to have had him as a guest lecturer from Clemson for at least a few months. If Coggeshall sounds almost wistful that his stay in the capital has drawn to an end it is because he could probably envision staying a little longer. Next time.

"We really enjoyed it. My wife, Cathy, now retired after also teaching at Clemson, took four months of Czech while we were here and is a lot better at Czech than I am. We love travelling and different cultures and we really loved being in Prague. We both talked about it before I took this job as there were things we temporarily had to leave behind, but we decided that it would be an adventure and that it would be worth it. I loved our time here and getting to know my colleagues, my students, the culture and the city. I would come back in a second!"

I figured out that if I wanted to be a top anthropologist I needed to specialize, but I didn't want to do that. I wanted to remain a generalist. For me, that meant studying different groups besides inmates. Being a generalist and exploring different subjects made me happy.



John M. Coggeshall is a professor of anthropology in the Department of Sociology, Anthropology, and Criminal Justice at Clemson University in South Carolina. He received his Ph.D. in anthropology from Southern Illinois University-Carbondale. His interests and activities centre on American regional and folk groups and sense of place in southern Appalachia. Notable publications include *Liberia, South Carolina: An African American Appalachian Community* (University of North Carolina Press, 2018), *Carolina Piedmont Country* (University of Mississippi, 1996), and "'Ladies' behind bars: a liminal gender as cultural mirror," reprinted in *The Best of Anthropology Today*, (Routledge, 2002).

Those who joined the **fight**

Thousands of med students, scientists, and lecturers from across multiple fields and disciplines at Charles University all played important roles during the unprecedented health crisis. Over the next few pages, we offer a brief overview of how people helped in the fight against the coronavirus.

STORY BY Marcela Uhlíková, Jitka Jiřičková, Martin Rychlík, Jiří Novák
PHOTOS BY Vladimír Šigut, René Volfík, Hynek Glos

"I decided to volunteer at the hospital in the town of Pelhřimov [in the Czech-Moravian highlands] as Prague hospitals already had a high number of volunteers but smaller facilities still needed assistance. I was able to work with an amazing group of people in the hospital's ICU, sometimes helping as a nurse, sometimes as an orderly, sometimes as an assistant," says Kristýna Pončáková from Charles University's Third Faculty of Medicine. "It was an opportunity to get valuable hands-on experience and all of us here hope that things will soon be better. There is reason again to smile even under our face masks," she adds.

Pončáková was one of some 3,000 students from CU's five medical faculties (from the First, Second and Third Faculties in Prague, the Faculty of Medicine in Plzeň, and the Faculty of Pharmacy in Hradec Kralové) who played a role on the front lines. It is easy to forget that a few short months ago, at the start of the crisis, many facilities lacked sufficient personal protective equipment or PPE. Many students sewed homemade facemasks to counter the shortage.

Students volunteered at partner university hospitals, depending on their faculty. Students from the First Faculty of Medicine helped at the General Teaching Hospital in Prague (where a Czech patient was first given the experimental drug remdesivir on a compassionate use basis). They also volunteered at the Institute for Clinical and Experimental Medicine, and the Central Military Hospital (both in Prague).

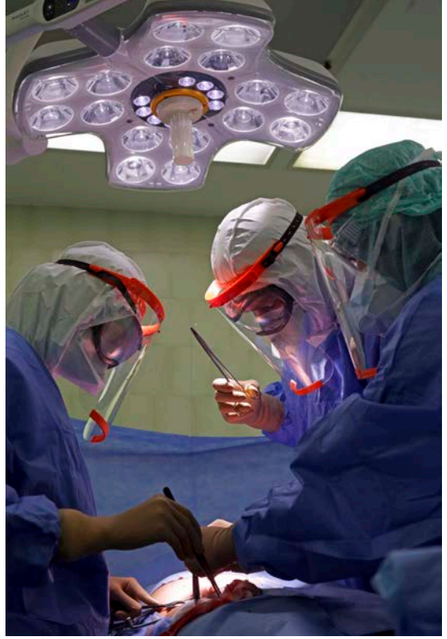
Students from the Second Faculty of Medicine volunteered at their "home base" Motol University Hospital and at Bulovka University Hospital and also helped look after the children of medical professionals. In addition, the Second Faculty of Medicine's dean, Vladimír Komárek, appealed to students to donate blood or blood platelets if they could.

At the Third Faculty of Medicine, sixth-year students Tomáš Sychra and Metoděj Renza coordinated a volunteer initiative called Trimed, which helped place students where they were needed the most. "We tried to cover university hospitals across the Czech Republic," Renza explains. Organiser Anna Malečková of the Faculty of Medicine in Plzeň agrees that Trimed played an important role: "We received a lot of information and suggestions from Trimed about how to put volunteer activities into action in the hospitals in the best way and as quickly as possible. There were several hundred volunteers at local hospitals who worked either as orderlies, assistants, or day care workers keeping an eye on the children of medical personnel. Charles University's rector, Tomáš Zima, himself a doctor, expressed his gratitude for the number of volunteers, which far exceeded a government requirement that fifth and sixth year students help.

Hospitals in eastern Bohemia also called for help in difficult circumstances: medical students with at least four semesters completed were sought. Students of CU's Faculty of Medicine in Hradec Králové volunteered in the regional capital and elsewhere. "As part of the initiative, we shared a map of the country with representatives of other academic senates from Charles University medical faculties. In this way we could put together emergency services offered by students who could also help other medical facilities. We took charge of the Hradec Králové and Pardubice regions and there [was] considerable interest in our students," Dean Jiří Manďák confirmed.

Charles University students worked hard to help those who needed assistance the most during the crisis.

We tried to alleviate the panic and fear, to enable people to remain calm and think clearly.



Doctors at the Motol University Hospital operate on a patient suspected of having contracted Covid-19.

Help to pharmacies and families

Students from the Faculty of Pharmacy also helped pharmacists during the lockdown. "We feel needed and at the same time we're getting valuable experience, be it positive or negative. We see that not all customers are easy to satisfy. They're sometimes rude to pharmacists, but even that is part of our future profession," said Eliška Voříšková at the beginning of April. Voříšková is a 4th year student who started a volunteer initiative called "Pomoc lékárnám" (Help the Pharmacies). Hundreds of future pharmacists got involved; an estimated two-thirds of all students helped pharmacists in this most difficult of periods.

The Faculty of Science, which is strong in research, offered not only volunteers but also research on SARS-CoV−2 and testing for its presence. Dr. Ruth Tachezy (interviewed in this issue) was one of many experts involved. Experts from the Faculty of Mathematics and Physics calculated prospective epidemiological models, and the faculty also provided its research computational capacity for combating coronavirus as part of the LINDAT/CLARIAH-CZ international infrastructure. Faculty students and employees also programmed an application called "Call Back"; using the app, volunteers with the Czech Red Cross were able to contact individuals living alone, to let them know they were not forgotten, combatting loneliness and negative effects of social isolation.

Volunteers from the Faculty of Education at Charles University looked after the children of Motol University Hospital employees as part of the "Chci pohlídat!" (I would like a baby sitter!) initiative. "The group is diverse in age, colourful, and the older ones help the younger kids. The children entertain each other and at the same time we can spend time with them individually. We already have a stable regimen in place. During the month everything fell into place beautifully," said organisers Nela Pastrnková and Tereza Barthová. During the height of the crisis, the Faculty of Education was also involved in the informational website Okoronaviru.cz (About Coronavirus) bringing together experts from a number of schools.

Athletes from the Faculty of Physical Education and Sport also contributed in a novel manner: they gave online advice to people (afraid of gaining weight or falling out of shape during the lockdown) on how to exercise correctly at home. "I like the wave of solidarity that the coronavirus crisis inspired. I don't think sewing masks would have been our strong suit, so I tried to think of a way we could offer help," said Ondřej Regál, a faculty graduate who launched the educational project "Cvič a pomáhej" (Exercise and Help) capitalizing on the talents of coaches and lecturers.

Advice and help for seniors

Not to be left behind, the humanities and social sciences faculties were also active. Their students and employees were involved in countless charity activities and initiatives. Experts from the Faculty of Arts helped in translating important televi-

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One of the most notable roles performed by med students was testing patients.

There were more than a few headquarters where students coordinated volunteering efforts.

Students from the Catholic Theological Faculty set up a sewing workshop and distributed masks to those in need at healthcare facilities.

sion news broadcasts into Czech sign language. "The most significant – after helping the hearing impaired – was of course to meet the demand for interpretation from media and government organisations. Timely information in a comprehensible form addressed to all residents of the Czech Republic can fundamentally contribute to getting through the state of emergency better and more safely," interpreter Naďa Hynková Dingová explained.

Psychologists from the Faculty of Arts in turn gave advice on how to manage stress, the lockdown and working from home, as well as schooling children. "I would especially recommend keeping structure in your day: distinguishing between work and non-work time, physical activity and intellectual work – activities that have visible results. If you're working from home, it's advisable to maintain the structure of a typical working day – getting up, exercising, getting dressed and sitting down at your work station or activities with the children," said psychologist Iva Štětovská.

Gerontologists from the Faculty of Humanities led by Vice-Dean Iva Holmerová prepared "a dozen recommendations" for seniors most at risk. Students and doctoral students, including journalist Judita Matyášová, worked to produce and distribute masks to dozens of elderly care homes. Masks were sewn by academics at the Faculty of Social Sciences, who also made available their know-how in sociology and economics.

All of Charles University's faculties poured efforts into online distance learning which was of the utmost importance. The months of lockdown weren't easy for any students or teachers, including at the Faculty of Law. "I'd like to thank everyone who got involved in volunteer activities or legal and social assistance to people affected by the crisis. We'll be overcoming the impact for a long time, and not just from an economic standpoint. Nevertheless, I believe that the academic environment, founded on the principles of self-government, free thought and pluralism of opinion, will handle the situation and won't be eroded by a far more dangerous virus that threatens to change our liberal-democratic society," Dean Jan Kuklík answered in a survey for Forum.

Comfort and worship online

Charles University's three Theological faculties (Catholic, Protestant, Hussite) were also active during the Covid–19 pandemic. When churches were closed during the lockdown, representatives offered public services online and helped teachers and students in the field.

Students from the Catholic Theological Faculty set up a sewing workshop and distributed masks to those in need at healthcare facilities. The archbishop's seminary helped senior homes in Prague with nursing care and food delivery. Other employees and students were available at the Hospital of St. Alžběta Na Slupi for conversations with patients and healthcare professionals. "This is because the ban on visiting patients weighed heavily on both groups," said Marie Opatrná of the Catholic Theological Faculty.

It was an opportunity to get valuable hands-on experience and all of us here hope that things will soon be better. There is reason again to smile even under our face masks.

The Czech Red Cross' crisis task force directly requested students from the Hussite Theological Faculty in social and charitable work who were qualified for work with seniors and people with disabilities. Students not yet able to perform nursing activities distributed masks, delivered food and mail, and helped seniors with such tasks as taking dogs for walks. Colleagues from other fields took part in the activities of the call centre at Prague's Na Homolce Hospital, but also helped with such things such as babysitting the children of the Prachatice Hospital's employees. Dean Kamila Veverková said she intended to recognise the volunteer activities of all students involved as work experience as part of their studies.

Representatives of the Evangelical Theological Faculty were also active during the pandemic. "We tried to alleviate the panic and fear, to enable people in their new daily rhythm to find tools to remain calm and think clearly. We offered support so that people could be in solidarity with each other, and so that those who were most committed didn't burn out quickly. We didn't limit ourselves only to people who were members of the church, or who consider themselves believers. After all, everyone is looking for spiritual comfort in some way," said theologian Ivana Noble of CU's Evangelical Theological Faculty.

Volunteers looked after the children of medical staff during the crisis.

The **volunteering** spirit

The Covid-19 pandemic brought together many volunteers from across the country, offering help at a time of unprecedented crisis. Some sewed masks, some helped on the front lines, still others delivered medical supplies. Often the work of universities and the private sector intersected: one group of citizens, recreational pilots, formed an initiative to deliver PPE from schools to hospitals. At CU, even foreign students got involved.

STORY BY Jan Velinger
PHOTOS BY Vladimír Šigut, CU's archive, PragueVolunteering, pilotilidem archives

From medical students to expats

At Charles University, med students got involved early: in the first days of the crisis organiser David Kulišiak, from the First Faculty of Medicine, was one, launching a drive on facebook to bring students together and pool individual strengths. Students at the First Faculty were not alone: similar coordinated responses formed at all of the medical faculties and linked up. Vitaly Fetissov, an American student of Moldovan descent in his sixth year at the Third Faculty of Medicine, founded Prague Volunteering, which found ways to bring together foreign med students and others. The initiative soon expanded to include the broader expat community, Fetissov explains:

"When the government put out the call for fifth and sixth year medical students to help, there needed to be an organisational team to put students in places where they were needed. That was directly organised by the Charles University medical faculties and primarily within the Czech curriculum. I offered to help with English-speaking students. After about a week I realised that even though the faculties' scope was enormous, there was a possibility to expand to include the expat community. I went independent with Prague Volunteering to facilitate matters: it was the logical next step."

Volunteers signing up at the website were directed to areas where they could best help. Medical students fit within the broader faculty framework, Fetissov says:

"We had forms to be filled that were specific for the school and jobs that were specific for medical students. Jobs they were entitled to do and citizen volunteers could not."

When this is over, people are going to realise that the work that mattered was what they did for others.

Medical students were able to volunteer in making masks, running a help line (most often taking calls from people who were displaying possible Covid–19 symptoms), doing research, or helping in clinical work. Citizen volunteers were also able to sign up to make protective masks or collect fabric or in other ways. Even small businesses got involved: one donated fresh-brewed coffee to help volunteers get through the day, and as the work piled up, it was needed. Vitaly Fetissov says interest exceeded his expectations:

"I did not realise so many people would join and with so much enthusiasm. Many people really wanted to get involved. On the ground level, with the way things developed in the Czech Republic, work actually slowed a little bit: even early on there was a sense that the crisis here was almost under control. All the same, we continued our activities – including research and compiling information on the virus – and staffing the helpline." The help from professional sectors was also most welcome:

"The donated coffee shows the specific kind of drive and mentality that I really respect. Many others contacted us, offering help on a larger scale, and we had input from graphic designers who helped us create a more aesthetically pleasing website. It all made a difference."

There is no question that the pandemic – as it spread in Europe – brought many people together; Vitaly says whether one was a med student helping on the front lines or someone working from home, it was inspiring to see so many people get involved.

"Our professor, an expert in infectious diseases, said as students of medicine we were lucky to witness an historic crisis like this in real time; that is not to say that it was a good thing but it provided us with the valuable insight into this kind of virus as opposed to historical records and past analysis."

One question probably contemplated by most in the days of lockdown from behind windows and computer screens when cities had gone eerily quiet, was how much things would change.

"Will the world change? I think it already has: I am seeing more comradery between people, more teamwork, people are starting to take a more human outlook instead of just thinking about themselves. When all this is over, people are going to realise that the work that they did that mattered the most was what they did for others – not for themselves."

The Front Lines

Clara Boettcher Mallmann is a fellow volunteer and second-year med student from Brazil responsible for public outreach at Prague Volunteering. She told Forum how she got involved:

"I originally got in touch and asked Vitaly if he could help me with a video for my hometown in Brazil because I had been so amazed with what he had done. I wanted to provide people there with info about how to set up a similar initiative. And from him I learned that he still needed more organisers in the project here to help with the website and organising duties. So I came in about four days after they began. They were very busy and there were many things to be done."

Boettcher Mallmann suffers from asthma so she worked from home and not at a medical facility. She says that balancing work and distance learning went well, even if it was all a little confusing at first. But she successfully balanced her time between distance learning, reading study materials, and doing volunteer work according to a regular daily schedule. And heard back from fellow students in the field:

"I have some friends in the third year who were on the very front lines: most of the hospitals had ↪

Some Of The Many Places Where Third Faculty Students Helped – A Closer Look

Lukáš Kaňka, a student from the Third Medical Faculty, became the first member of the healthcare team at Vítězné náměstí (in Dejvice in Prague 6) which provided new testing of patients with a risk of COVID-19 positivity.

Special sites for testing patients using rapid-tests for detecting antibodies against Covid-19 were created under the aegis of the Ministry of Health. In case of test positivity, the patients were sent to follow-up with a PCR test, whereas if the test for both categories of antibodies was negative, the general practitioner could decide to end the patient's quarantine.

The testing itself took place outside of the practitioners' offices in specially equipped booths in order to minimize the contact of potentially infected people with other patients and to save protective equipment.

Students also helped at The Institute for the Care of Mother and Child. Almost 30 med students from the Third Faculty of Medicine worked there in various positions regarding not only triage, but helping at individual departments as well.

Jakub Heřman, a volunteer from the Third Faculty of Medicine, told us about his experience at the prenatal emergency ward:

"We are well aware that we are not able to fully substitute the work of nurses and midwives, however, the staff of The Institute for the Care of Mother and Child is training us so that we can be as helpful as possible in case the staff crisis worsens. Our work consists of taking down the history and measuring the blood pressure of pregnant patients who come for regular prenatal check-ups, and CTG monitoring. We also provide administrative support which allows the midwives to do other work which is now much more important."

Dispatch by Veronika Viktoria Matraszek
3rd year student at the Third Faculty of Medicine

With many of us thinking more collectively, I think this pandemic will change the way humanity moves forward, in a way that was needed.

tents before the entrance where they did triage, checking temperatures and so on, so patients would not continue needlessly into the facility and raise the risk of infection. One friend collected data for the National Health Institute every day from 8 am to 5 pm. The thing that I heard the most is that it was an exhausting job but everyone was glad to be involved. It also helped that [the fight against the virus] in the Czech Republic was going well."

Clara Boettcher Mallmann was concerned about how the situation was developing at home, but numerous factors showed early on that how things would unfold in Brazil would be different. Steps that largely worked in the Czech Republic, with the early lockdown, masks and social distancing, would be more difficult or even impossible to implement there for social, economic and demographic reasons, she says. It is also worth considering that Brazil is a country of more than 210 million people compared to the Czech Republic's 10.6 million. Brazil was also behind the Czech Republic in terms of the infection peak.

"I heard Sao Paolo was already 90 percent capacity in terms of hospitals, and feared we were going to hear bad news about Brazil in the coming days. That it would get worse before it got better."

Boettcher Mallmann, like Vitaly Fetissov, says in the Czech Republic it was inspiring that so many people were willing to help in the face of crisis; she says it is an indication the future may be brighter, once the crisis is over.

"With many of us thinking more collectively, I think this pandemic will change the way humanity moves forward, in a way that was needed."

The sky's the limit

The mix of students and citizen volunteers involved in Prague Volunteering at Charles University is inspiring and shows how well schools and the broader public intersect. Another initiative, called Piloti lidem, saw private citizens also do their utmost to help schools deliver needed materials. Pilots flying recreational planes offered their help early on in the crisis to deliver medical equipment and other supplies around the country and their effort made international headlines. One example was the delivery of 3D printed masks designed by covmask.cz connected with the Czech Technical University (ČVUT).

Tomáš Cáp, a pilot and one of the members of the organisational team, told Forum it began with a facebook post, when a member floated the idea of using planes; it caught on almost immediately. Within days there were hundreds of volunteers coming forward who were willing to fly, covering most (if not all) of the costs themselves.

"It all started with a single post in an aviation-related group. Our founding member, Miloslav Chlan, asked if anybody had thought about using private planes to deliver medical goods and Adam Zahradníček replied. Together they built a website and began assembling a team."

Cáp says that pilots came from different backgrounds, some of them former airline pilots or former military, while others were recreational. All of them shared one thing in common:

"What we share is that – under normal circumstances - most of the time we fly for fun."

The love for flying, in this case, provided a bigger opportunity: to not be grounded at home, but to help.

"We had almost 400 pilots. We flew Cesnas, Pipers, usually two- or four-seaters or ultralights. I think many of us were thinking about doing something like this, you know, taking the plane and flying… but it always takes that special individual who gets things in motion for it to happen.

"So when those two guys published the initial challenge, it got a response from pilots across the country. We began delivering supplies for example from Prague to Most, to Ostrava, wherever they were needed."

Jan Bradáč is a private pilot who got involved and flew masks to the ARO section of a hospital in Most and also volunteered to work at least one day a week in dispatching for Piloti lidem. A well-known figure in the Czech film industry, he says he is glad he could get involved:

"Everything these days has become more personal. Because there is not anyone who in some way was not touched by the crisis. My feeling was if I could do something, I would. Here you had a bunch of guys and girls who came from different parts of the country and most of us had never even met face-to-face.

"Everything was done through electronic media: we had a person from the railways, another who was a teacher, some were younger while some were a little older like me (laughs). It was great to watch something like this come together, something I could never have imagined, and I am proud to have been a part of it. I didn't forget my job of course (laughs) and I always hoped that a return to business was really not that far into the future; but of course the health situation took precedence."

In May, the Czech government began easing restrictions, some of them ahead of schedule, when it became clear that social distancing, wearing masks, lockdown and special shopping hours for seniors, had managed to push or keep the rate of infection (the R number) below 1 (preventing infections from spreading exponentially). Officials were able to gain valuable information from a smart quarantine in Moravia and the overall fairly low number of fatalities (over 300) and infections (less than 10,000) meant steps to slowly reopen businesses as well as regular workplaces could be introduced.

Some measures – the requirement of masks and social distancing – remain for the time being (until July 1) in public transport and inside stores: people walking or exercising in the park without masks has become a common sight once again. No doubt there were – and still are - divergent views on where to go from here to restart the economy and return life fully "back to normal". There are questions if that will even be possible given the lack of a vaccine or more effective treatment. Perhaps there will be a new "normal" in which we learn to live with the threat and possibilities of a second wave as many epidemiologists have warned. So far, luckily, no signs of a second wave have emerged, although that could change in the autumn.

No one knows what the future will bring but if there is a "silver lining", it is this: that so many people volunteered and met the challenge head on. The one thing shared by most? The hope that this spirit would continue. Even after the crisis had passed.

The love for flying, in this case, provided a bigger opportunity: to not be grounded at home, but to help.

Hundreds of pilots signed up to fly medical supplies where they were needed.

BIOCEV
Testing for the coronavirus

PHOTOS BY **Luboš Wišniewski**

Address:
Průmyslová 595
Vestec
252 50

At the beginning of April, BIOCEV (a joint centre of the Academy of Sciences and Charles University), was granted permission to conduct large-capacity testing for SARS-CoV-2 which causes Covid-19. Samples tested came primarily from hospitals and nursing homes. Laboratories complying with the strictest criteria for working with contagious biological samples were designated and specially modified to test for the presence of the virus in the population. For security reasons, the lab area has only two entrances: one for laboratory staff to enter and leave and a drop-off entrance for samples to be brought in. That ensures that no samples pass through the main entrance used by BIOCEV employees.

Only specially-trained staff who are part of the BIOCEV Covid-19 team have access to the lab and we are able to watch what is going on inside by monitor. More than 100 BIOCEV staff members came forward to help with testing. Laboratories and research infrastructure from the First Faculty of Medicine and the Faculty of Science at Charles University and the Biotechnology Institute and the Institute of Molecular Genetics at the Academy of Sciences of the Czech Republic all provided their expertise. As a result, we are able to test around 300 samples a day.

Professor Ivan Hirsch
Special supervisor of testing, from the Department of Genetics and Microbiology at CU's Faculty of Science

Taking aim at the **unexpected**

If the novel coronavirus had never hit, Ruth Tachezy would have been doing other things: applying for funding, heading a national reference laboratory, and publishing. She would have been helping her students at the Faculty of Science and would have been preparing for an upcoming conference and a mountaineering vacation. Instead, she opted to tackle a higher "mountain", setting her sights on SARS-CoV-2, the pathogen that changed the world drastically in just a few months.

STORY BY Marcela Uhlíková PHOTOS BY Luboš Wišniewski, Ruth Tachezy's personal archive

Do you remember your thoughts when you first heard about the outbreak in China?
I do. I tried to be optimistic. In interviews I wanted to calm the public and I didn't admit to myself that the outbreak could go global and turn into a real pandemic. I thought the outbreak would remain local in two or three countries, like the original SARS, that it would be contained. In a way, the events as they unfolded reminded me a little of 9/11. Then, I had been waiting to pay at a gas station and a TV was airing images of the planes hitting the World Trade Center in New York. I didn't realise immediately what I was seeing was real but thought it was"just some stupid film". But of course, it wasn't. The start of the pandemic was similar: a week earlier, my son, daughter and I were watching a BBC documentary about pandemics and suddenly here we were… in the midst of one.

It might sound strange, but in terms of your profession it must be an interesting period; is it?
I would never say I was happy to have gone through this experience but it's true that "on paper" it was a situation I had always been curious about. It was within the realm of possibility and one could imagine something like this might happen one day. But a real epidemic or pandemic is extremely distressing and difficult to tackle – for all of us – and is not anything anyone can be happy about.

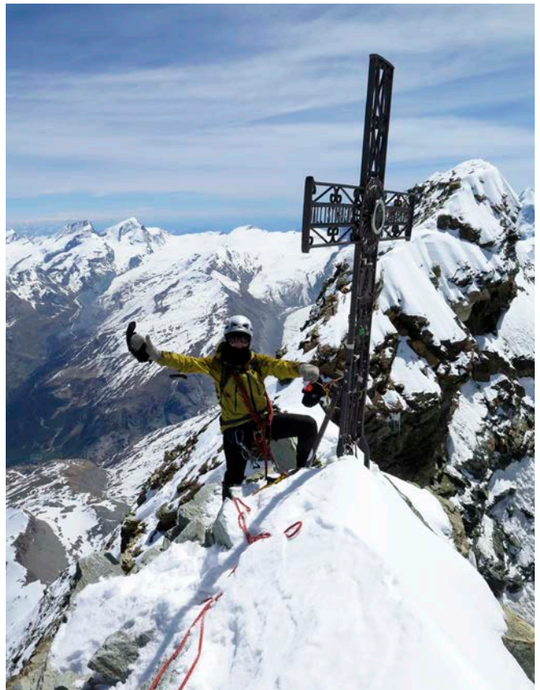
When did you first realise the gravity of the situation?
Before the outbreak spread significantly in Wuhan, friends and I had been organising an annual trip to the High Tatras in Slovakia. We go there every winter. I mostly leave the climbing to others now but still do a lot of trekking and now that my kids are older they often come too and help me carry my backpack to the top (laughs). But as the extent of the crisis became clear, we cancelled our plans – just the first of many restrictions the pandemic brought.

Who did you get your love of the mountains from?
I come from a family of mountaineers and mountain climbers. In the early 1970s, my dad, Jan Červinka, founded a mountaineering club in Vrchlabí. He himself was a famous mountaineer who had been part of Czechoslovak expeditions in the Himalayas, the Hindu Kush, and other major mountain ranges. Today, he is one of the oldest surviving members of the first expedition in Afghanistan. Since he and my mum were passionate about sports and travelled often to the mountains, my sister and I also "caught the bug". That said, I suffered a bad injury in a climbing accident 10 years ago which could easily have cost me my life.

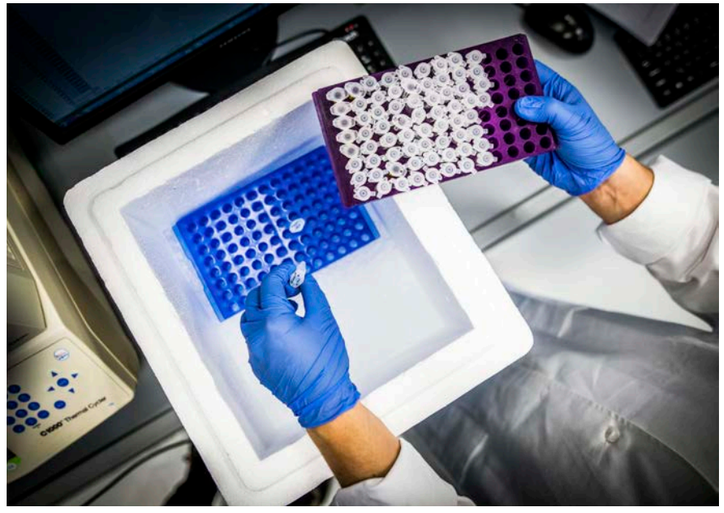
My kids love climbing too, though: my daughter has been climbing since she was 15 and my son, who I tried to dissuade a little from taking up the sport, does orienteering. Now he has gotten me interested in orienteering as well. We all the love the mountains, including my husband, whether on foot or on cross-country skis.

Do you remember your first bigger climb?
My father took me to the Caucasus Mountains and I remember the climb as being extremely difficult and long; in terms of energy I hit rock bottom. Later in life, it helped greatly: whenever I faced a difficult situation where I thought I was "down", I knew that I still had reserves I could draw upon. The mountains taught me discipline, strength of will and the ability to take responsible decisions at tough moments. It's like that with many sports.

The mountains taught me discipline, strength of will and the ability to take responsible decisions at tough moments.



My aunt, who was a microbiologist at the National Institute of Public Health, was also a big inspiration for me. I longed to become a doctor and even to take part in rescue missions around the world.



I was a downhill skier, who attended a sports academy and raced and even later competed at university. Regular training teaches you to organise your time. But even though sports were important, my parents still emphasised academic excellence. Had my marks suffered in school, I don't think they would have let me continue doing sport.

If we turn to work, the coronavirus soon became the main focus, didn't it?
At first, colleagues and I prepared testing at the Institute of Hematology and Blood Transfusion. Once the lab was successfully up and running, I began testing samples at BIOCEV. Usually I'd be there from around 7 am sometimes to midnight and at home I'd still have to prepare for the next day. The period was intense. Things are now changing: responsibilities at the department are calling; although I remained in touch with my students throughout the crisis, I still felt like it wasn't enough. I am trying to balance things out now with online courses and individual consultations. I also gave a lot of interviews, for which I had to study all of the latest information. I am continuing to follow the latest epidemiological information, answer dozens of emails a day and handle numerous calls. On top of that, you have regular organisational tasks and problems that arise. And of course each day at BIOCEV, we have to release the results from hundreds of samples.

What first drew you to microbiology when you were younger?
I was always interested in medicine. My mum, a paediatrician, worked until she was 86! I liked going with her to the hospital. I wondered who her patients were and what treatment they were receiving. My mother liked microbiology and recommended me a book on the subject that became my favourite. My aunt, who was a microbiologist at the National Institute of Public Health, was also a big inspiration for me. I longed to become a doctor and even to take part in rescue missions around the world. Circumstances, however, kept me at home: first the former communist regime made it impossible to travel, and later when we founded a family, I did not want to be away from my children.

How did you put together your current team?
There was a lot of enthusiasm. It was an emergency situation and we were in a position to help. Scientists are a very specific community: most of us are happy to stick to our research and there is usually quite a bit of rivalry. But here a lot of people got involved very quickly and one of the reasons we got up and running so successfully was because of support from BIOCEV management, the Faculty of Science, and also Vice-Rector Jan Konvalinka. They made it possible to begin proper testing, quickly.

Have you ever joined forces against a "common enemy" with others? With someone who might otherwise have been a rival? It happened a lot before the fall of communism in Czechoslovakia in 1989 when the common enemy was the regime. That brought us together then – in the labs and even in the mountains. We had a lot of fun, felt safe in each other's company, shared a lot similar views and felt very little rivalry at all. This was a little bit similar.

Do you have a favourite story from those days?
The most personal one is from my marriage. My husband is a parasitologist; in 1986, before we ↪

What happens next will depend a great deal on how people will behave and whether they will continue to respect restrictions as they are lifted. If you suddenly have crowds of people waiting for beer, that's not following recommendations. It would be easier perhaps if the virus were "visible".

married, he left for two years on an internship in China. There were no mobile phones, email didn't exist, and letters took weeks to arrive and were censored. I was head-over-heels in love and he just disappeared. I very much wanted to travel to see him but wasn't given permission by the state. So we came up with the idea of getting married at the embassy in China in line with the Helsinki Accords. But that was also rejected. You know what happened? My partner filled in the necessary papers in China, and I got married in Vrchlabí with a friend acting as a surrogate during the ceremony! Once married, I thought the authorities would have to let me go and see him. And they didn't! They claimed I didn't have the sufficient capital to go.

At the time, my father was at basecamp at Mt. Everest but when he heard about it, he contacted his sister in Switzerland and asked her to send me 300 dollars. I got the funds and became eligible. I hunted down all the necessary documents from the ministries of education, finance and foreign affairs and then waited for three days at the then-state travel agency Čedok to get a train ticket from Ulaanbaatar to Beijing. No obstacles remained and I was able to reunite with my husband.

And here we are: today, you are a highly-respected scientist and once again China is the centre of the story...

I try to do my job as best I can and I enjoy it. In science, nothing is ever complete, there is always more to be done, and there are always things that could be done better. My parents didn't teach us to relax. In the 1990s, I worked with great enthusiasm to improve screening for cervical cancer. I was focusing on related viruses. I spent a considerable part of my career fighting for vaccines against human papillomavirus, and it wasn't easy and came down to money.

The intensity was similar to what I am experiencing now: it was necessary to fund research through grants and to back studies running then. It made sense to me. I always asked people I wanted to work with if they wanted to do something together that would matter, or make a difference. Something they wouldn't be paid for, for which there'd be no medal. I don't know what must have gone through their minds, maybe they would rather have killed me (laughs). But the fact that people came on board was great: on your own, you wouldn't get the same results.

Where are we when it comes to the coronavirus pandemic? Is the end far? Or near?

I am a little afraid that the "easiest" solution, developing a vaccine for broad immunisation, is probably not just around the corner. A vaccine stimulating the production of antibodies is certainly the best hope, but it may not succeed, for many reasons. Another approach can be a vaccine stimulating a T-cell response, capable of wiping out infected cells. That road is even more uncertain and difficult. All the same, I want to be optimistic and believe we will come up with a vaccine, even if it takes longer.

What about effective treatment?

There might be a greater chance there: tens of thousands of molecules are being tested and it is possible some will prove effective against the illness. If they stopped the potential infection of additional cells, they could be used preventively. But to manufacture enough to"cover" the entire world population is a much greater challenge than tackling a local epidemic.

How do you see the lifting of restrictions and return to normal life?

I think that the head of the country's healthcare statisticians, Ladislav Dušek, and Professor Roman Prymula, who is the deputy health minister, did a fine job and I think decisions that were taken were correct. What happens next will depend a great deal on how people will behave and whether they will continue to respect restrictions as they are lifted. If you suddenly have crowds of people waiting for beer, that's not following recommendations. It would be easier perhaps if the virus were "visible". The coming days will determine where we go from here, but if people who are annoyed and tired of restrictions suddenly throw all caution to the wind, there could be local outbreaks and hot spots. On the other hand, if people are careful, the warmer months may see transmission of the virus stop.

And then?

It's possible the novel coronavirus will just disappear one day with "a snap of the fingers", but it's not very likely. If it comes back, it could become seasonal, like the flu. Ahead of us is a period where there will be fewer serious cases, I think, but in my opinion, it will take roughly a year before restrictions are completely lifted. But I think it's the only way forward. We'll have to keep a close eye on developments and in the case of sudden increases of cases, temporarily tighten restrictions again. The main task is to ensure the virus doesn't ever swamp the healthcare system. Certainly, it hasn't been easy, especially for families with little kids. But also for people who live alone.

Ruth Tachezy, Ph.D., was born in Olomouc, in the former Czechoslovakia. She studied molecular biology and genetics at the Faculty of Science at Charles University, receiving her doctorate in molecular virology. She is a researcher in the Department of Experimental Virology at the Institute of Hematology and Blood Transfusion and the head of the National Reference Laboratory for Papillomaviruses and Polyomaviruses. She heads the Department of Genetics and Microbiology at the Faculty of Science.

Bats' remarkable **immunity** and Covid-19

A number of deadly viruses are believed to have originated in bats, including Ebola and the original SARS. The indications are that the novel coronavirus SARS-CoV-2 also made the jump from bats, most likely through an intermediary species. Why are so many pathogens linked to the flying mammal? Radek Lučan of CU's Department of Zoology says the answer lies in the animal's robust immune system. In short, bats can weather viruses that in "a perfect world" would never spill over to humans.

STORY BY Jan Velinger PHOTOS BY Vladimír Šigut

Bats are fascinating creatures – why is it that so many viruses seem to come from them? The first time I read about Ebola, for example, was in Richard Preston's *The Hot Zone* quite a while ago, and even there they were linked…

Bats are ancient: there are fossils showing they were around more than 50 million years ago; by comparison, Homo habilis lived two-and-a-half million years ago. Many species of bats have simply been around for a very long time and encountered viruses of all kinds throughout their evolution. Bats do not only have the capability of powered flight. They have remarkable social organisation, longevity and thermoregulation, they also developed very strong immune systems over time.

While they may be hosts for a number of deadly diseases, we lack evidence of any direct transmission to humans. Historically most zoonotic viruses have come from domesticated animals and not wild animals at all. Also, the number of zoonotic diseases that are transmissible from human to human are minimal to the number of viruses out there, but there are of course exceptions.

Deadly viruses from Ebola to Marburg or the first SARS were found in bats; but in order to know for sure how pathogens jumped to humans (whether it was directly or through an intermediary animal) we would have to be able to locate Patient 0. That is practically impossible. For example, we have no idea who patient zero was in the transmission of the coronavirus SARS-CoV–2 that causes Covid–19.

Experts warned for years that a deadly pandemic was coming and there were earlier threats: SARS, MERS, avian flu. Covid-19 is the one that went global, becoming an unprecedented health crisis…

Human population density plays a central role: if a pathogen is especially virulent and human-to-human transmission proves possible, it can move very quickly. When you combine this with how interconnected the globe is today through air travel and trade, a pathogen can pop up on the other side of the world in a matter of hours or days.

I am not sure how we can change that. As we press up more and more against nature, it seems ↪

more and more likely that such situations will happen. If you take into account the diversity of wildlife as well as the density of local populations in tropical areas, the chances of an outbreak are even greater. The main difference is, in the past pathogens could not spread as quickly.

Many of my colleagues lay the blame with humans for encroaching more and more on nature, but paradoxically more people live in big cities than ever before. Half the people around the world live in cities and have less contact with nature than ever. Eighty percent of kids in the Czech Republic, for example, are unable to recognise a blackbird. Even when I take my students at the university on fieldwork to study wildlife, it is a real eye-opener for some of them because it is the first time they have ever slept under the stars. A lot of them have never been in the forest at night.

If we have less and less contact with nature – what about other countries?

I spent a lot of time in the Middle East and in North Africa and the contact between locals and wild animals was not as common as you might think. If we are talking about bats, they might feature in local shamanistic rituals. If we are talking about parts of Southeast Asia and some parts of Africa, they hunt bushmeat, consuming bats such as "flying foxes", along with domestic animals like cats and dogs. All of these animals are cooked or roasted and heat of course kills viruses. The danger is in the actual preparation of the raw meat: that is the point where the virus can make the jump.

It is hard to imagine how things might be different in the future. If your city is at the very centre of an outbreak there is even less time to respond, even if you know how.

Short of living in some sci-fi fantasy, it's not clear how much can really be done. We'd have to be completely apart from nature and be living in some kind of sterile aquariums hooked up in a Matrix-like VR existence, which is nonsense. We will have to get used to the fact that there will be epidemics and new illnesses and we have to prepare for them as best we can. I strongly believe we have enough technologies and know-how to manage such threats successfully.

To come back to the current outbreak, there has been a lot of speculation about where Covid-19 originated, including no shortage of conspiracy theories.

I don't think any serious scientists are entertaining the idea that it was bioengineered but certainly it is striking, at least for many of us who study bats, that the outbreak happened in the same city where a level–4 lab was studying bats for zoonotic illnesses including coronaviruses. The lab in Wuhan is located just around the corner from the wet market where China officially said it began. And of course

Throughout my career, I never heard of a scientist dying from anything caught from a bat.

the lab was almost immediately shut down as news of the outbreak got out. Only conspiracy theorists think that Covid–19 is man-made but it is not hard to imagine it could have been the subject of study in the lab in Wuhan – and got out.

Given it is a novel virus and given it is often asymptomatic, a scientist could have been exposed to the virus and accidently carried it out of the lab without knowing. He or she could even have gone shopping at the market and the sheer number of people there, in the subtropical humidity, would have ensured that it spread quickly.

Do you think an international investigation will ever uncover the truth?

One question is China's regime: I don't think it will be at all easy to get to bottom of what happened. The only information that gets out is what the regime allows. Methodologically, I don't see any way it can be done either: it is simply extremely difficult to trace back what happened. Even in scenarios where a lab followed all of the necessary protocol and we even if we had a lot of the missing information, it would still be hard to piece together the exact chain of events.

In terms of future threats, what is something we *can* influence?

The unregulated hunting of wild game and the eating of bushmeat remains the problem: the easiest restriction would to limit the consumption of bats and wild game. At the same time, plenty of places have restrictions in place and locals do it anyway and not because their livelihood depends on it: it may simply be a question of tradition. I spent some time in the Philippines where hunting for bushmeat is banned but every local has a firearm using CO_2 cartridges. They hunt by flashlight and fire these glass balls at any creature that blinks in the dark.

They could live without the bushmeat but for them the meat has a deeper significance. They see it has having medicinal properties and – illegal or not – bushmeat is simply is part of their way of life. For that to change, there would have to be people monitoring the situation on the spot, which is unrealistic. It comes down to education and upbringing and that is not something that can be done "overnight".

By comparison, in the Czech Republic, the hunting of traditional game like wild boar or deer is of course also regulated and meat has to be tested and meet veterinary standards for parasites and dangerous known pathogens. But there is no reason a novel virus couldn't slip through undetected the same way even here. It doesn't have to be in some place far away in the tropics.

When it comes to studying bats in the field in the Czech Republic, are any precautions required?

There are around 45 different species of bat in Europe and most of them are tiny: while we usually have gloves and carry disinfectant, their bite wouldn't even break through your skin. We wear gloves especially when it comes to the bigger species and bites are simply unpleasant. The threat of rabies exists but incidence is very rare – much less than 1 percent of the bat population have antibodies which still does not mean they have rabies. We are vaccinated of course but here's another interesting fact: unlike dogs, bats do not have rabies present in their saliva so the threat of transmission is absolutely minimal. Throughout my career, I never heard of a scientist dying from anything caught from a bat.

You have done a lot of conservation work as well as popularisation. Do bats enjoy a better reputation today because of it?

They do. The Czech bat conservation trust – which I was a secretary of for many years – does a lot of public education, such as International Bat Night, attracting around 10,000 visitors at around 50 sites in the Czech Republic annually. We are involved in Czech schools with presentations and lectures. The public perception has certainly changed.

In the old days, if someone found a bat in their attic they would just bash it with a shovel. Now, people know better and they know whom to call. In all seriousness, people have learned what fascinating creatures bats are. The protection of bats is in our legislation so when you have the renovation of pre-fab apartment blocs underway and bats are found, bat houses are put up for their protection. Without question, we have seen a lot of progress over the last 20 years.

Historically, bats got a bad rap as well, didn't they...

In medieval Europe, or in the Christian world, they were associated with night and areas underground that brought to mind Hell; their wings were seen as demonic. In many cultures in the past, bats were feared or disliked but one exception was Japan, where they were a good-luck symbol. Bats are remarkable and they are very beneficial in many ways. They play crucial roles in tropical and other ecosystems, responsible for pollinating all kinds of plants, including banana or durian. They keep insect populations, such as mosquitos, in check. A single bat can eat one-third of its body weight in mosquitos in a single night. In 2007, a study in *Science* showed that in the US one single species, the Mexican Free-Tailed Bat, saves America four billion US dollars per year in insecticides. They have a positive impact.

While they certainly carry viruses, as I said, there is no record of any direct transmission to human beings. If anyone was ever at threat it would have to have been Ozzy Osbourne [in the infamous] incident when he allegedly bit off a bat's head. And he was okay and has been going strong ever since. (laughs) But otherwise? Ordinary people almost never come into contact with bats and even when they do, they are far more likely to simply spot them flying overhead than to ever hold one in their hands.

Radek K. Lučan, Ph.D., is an expert in vertebrate zoology, chiropterology and biogeography at the Department of Zoology at the Faculty of Science at Charles University. His professional interests include the population ecology and conservation of bats in the Western Palearctic and bird and bat migration. Current projects include a study of the biogeography of the fruit-bat (Rousettus aegyptiacus) in the Mediterranean region and conservation ecology of grey long-eared bat in the Czech Republic. He is a leader of a large project focused on long-term monitoring of bird, bat and insect migration at Červenohorské sedlo Mountain Pass in the Jeseníky Mountains.

Smart quarantines: a **“first step”** back to normal life

As the coronavirus held the world in its grip – claiming lives across the globe – it grew apparent that an important tool in fighting the spread was the introduction of smart quarantines: tracing the movement of infected individuals to free up at least some sectors of society. The potential impact was examined in a study by economist Ole Jann, published by CERGE-EI.

STORY BY Jan Velinger PHOTOS FROM Shutterstock, Ole Jann‘s personal archive

I asked Dr. Jann in April about how smart tracing was used in Asia and how it was expected to help in the Czech Republic, where a pilot project was run in South Moravia.

Why have South Korea and Singapore largely been success stories in reining in the number of new cases?
Both learned from the experience of narrowly avoiding catastrophe several times in the past: there was the SARS epidemic in 2002-2004, and later, MERS. They looked at how close they came to disaster and began planning. That meant building infrastructure, organising training exercises, and preparing testing kits. In Europe, we were maybe more complacent: these were problems that just seemed “far away” and there just wasn’t as much preparation here.

What they did – and did early on - was to test a lot. In South Korea, they were able to run tens of thousands of tests per day. In most cases, the results were negative but of course in other cases they learned that many infected people were asymptomatic and that was a very useful result.

In South Korea, they were able to run tens of thousands of tests per day. In most cases, the results were negative but of course in other cases they learned that many infected people were asymptomatic and that was a very useful result.

How important a role did the smart quarantines play there?
This is something else they implemented very quickly. When we talk about contact tracing that is something that all countries already do to an extent, but with different degrees of success. The big difference was that South Korea was very diligent in testing and very carefully followed the chain: when someone tested positive, the South Koreans were very careful to follow up on all others who were in the chain. In Europe, until now, we put the main contacts in quarantine, but it often stopped there. We didn’t follow others on the chain diligently; because this illness can be largely asymptomatic in many cases, that has a negative effect.

What kind of data was monitored?
In South Korea, they used many different sources: medical histories and histories of recent doctor’s visits. Then, they tracked cell phones (usually with consent even though the legal situation suggests they can do so without a warrant). They traced credit card transactions (which is very useful in a society where everyone pays by card) and they used CCTV cameras to check where people had been. They also used data from apps. Apps tailored for monitoring, which can be used very quickly, are an asset while data from cameras is far harder to gather and verify.

What is, potentially, the weakest link in smart tracing or a smart quarantine?
If people don’t cooperate, that can hurt these efforts significantly. There are different reasons why they might not be helping: someone might shrug off only mild symptoms and not report them. And that can lead to the downfall of the system: the whole idea is that people take part and want to help. We can talk about incentives to cooperate but above all people should not have any reason NOT to cooperate.

By that, you mean guaranteeing that the information will remain private, not be passed on and not be accessed by other state institutions, where the risk of abuse would exist...
The information absolutely needs to be protected, to be kept secret from everybody else, there needs to be a clear outline when the data will be destroyed and people need to know for what purposes it will be used. And it needs to be separate from all other state purposes. What I think makes sense there is to build a really separate infrastructure because that will both reassure people and also make it physically very hard for the state to abuse that data. It is also something that can be torn down easily and removed once the crisis has passed. The only other state records you need are addresses because obviously if someone has been infected, you need to find those people. But you don’t need the data to otherwise be cross-referenced.

What we saw at the height of the crisis in the Czech Republic were blanket restrictions, requiring people to stay home, to work from home if they could, to keep children out of schools. Almost all businesses were closed and a great deal of commercial activity was stopped, to flatten the curve.
Yes, it is effectively a “dumb” quarantine where you have to treat everyone as if they were infected: everyone has to wear masks, to stay at home and avoid meeting others including older family members. But as we learn who is likely to be infected, to be part of the chain, that means we can free up other parts of society and economic activity. ↪

An infection is a stochastic thing and it is a question of probability: we can't say for sure even if you met someone for an hour who has it that for sure you will get it or that you will not get it if you met for only two minutes.

In the Czech Republic, one worry was that people might be wary about being so closely monitored - even during such a crisis...
There are cultural differences and there are different approaches to community and the individual's role in community, but another reason is that the Czechs have a very recent history of state surveillance and the state invading peoples' private lives and using what it finds against them. In South Korea, they don't have that kind of experience and also they have more community enforcement, more enforcement of the rules. All of these things matter a lot.

In South Korea, how well did their smart quarantine work? Were there blind spots? Did they plan for the data not being complete?
I think they did and it's the only reasonable thing to do: there are going to be contacts you miss. You can't catch every case. Not everyone will be forthcoming, things will be overlooked; also, an infection is a stochastic thing and it is a question of probability: we can't say even if you met someone for an hour who has it that for sure you will get it or that you will not get it if you met for only two minutes. The goal is to make the system as reliable as possible and if something does pop up that we didn't expect, to follow up very quickly. Find the initial contact, then contacts of contacts, and test them.

How great an impact can a single missed contact have?
It can be enormous. In South Korea, they reacted so quickly and looked at so many people travelling from China, they had the epidemic pretty much under control for the first 30 patients. But then came the famous patient number 31, who continued to participate in daily life, did not follow the measures, did not tell anyone although she had the symptoms, went to church and was in close contact with others and infected up to 1,000 other people. They infected still more people and then it became very difficult to get back under control. That's why South Korea, instead of having cases in the hundreds, rose to around 10 thousand.

And of course we see how serious the situation became, from country to country.
The number of deaths rose and the strictness of the measures by the government sent a message. We also saw what is going on in other countries. One snag is that, if you are successful, it will never become fully apparent how serious the situation was. If you look at the past cases, SARS or the swine flu, governments did react and did so quickly and effectively. In the case of SARS, SARS had a mortality rate of 10 percent: if that had broken out uncontrollably, there would be fewer people living in the Czech Republic and elsewhere now.

Many people rediscovered or learned about Bill Gates' now famous Ted Talk from 2015 where he warned exactly of the danger of microbes and that the next crisis the world faced would be a pandemic. Many steps are now being implanted to try and curb the spread but given how many countries were caught off guard, do you think we will be better prepared next time, if and when Covid-19 is in the rearview mirror?
You can never learn the lesson completely, even looking back. There will be lots of differences between what happened here, what happened in Germany and what happened in the US. There will be different analysis and various explanations and factors, such as the age of the population and so on. Of course, we will learn from Covid-19 but what we learn may not be applicable next time. We have been talking about South Korea and Singapore: they were very lucky in the sense that the kind of outbreak they prepared for was similar to SARS or MERS. But the next such pandemic or epidemic might well be very different. The lessons might not be as useful or could even lead us down the wrong path. You have to do more than just learn from what happened but have to simulate or try to anticipate the next kind of threat.

I suppose a super flu was the biggest hypothetical worry before Covid-19?
Sure, or if you take the 2015 Ebola outbreak. With Ebola, people have symptoms and succumb very quickly, meaning they can't infect as many others. But imagine something as dangerous as Ebola which would be asymptomatic - that would be very hard to control.

Your paper mentions very clearly that when a society tries to implement a smart quarantine it only gets one shot. Why is that?
The rules and procedures have to be well-designed and clear and have to dissuade people from being clever about the rules and trying to trick the system. For example, someone may try to be clever to shorten their quarantine and so on. There is a bit of a culture sometimes about being clever with rules and some people take pride in getting around them, from labour to tax laws. In the case of tracing, that would be very detrimental and could be catastrophic and then the only solution is to reintroduce blunt rules for everyone. And as we talked about, someone who is having an extramarital affair, or someone dodging taxes or someone who goes to a brothel, needs absolute assurance that no one is interested in that information or will pass it on. The only thing that is needed is to trace the route of infection.

That's a line that stuck in my head from Dr. Emily Landon at her press conference in the US near the start of the crisis when she said "It's really hard to feel like you're saving the world when you're watching Netflix from your couch."
(laughs) Yes, but that is what is expected when you have a lockdown. Not to fight in the trenches but to sit on the sofa and stay at home.

Ole Jann is an assistant professor of economics at CERGE-EI, a joint workplace of Charles University and the Czech Academy of Sciences. He was previously prize postdoctoral research fellow at the University of Oxford. He studied economics in Berlin and Copenhagen and he received his PhD from the University of Copenhagen. He is principal investigator of the Charles University PRIMUS project "Information Revelation and Privacy in the Information Age".

Ideas for **restarting** the country

They aren't as visible as medical workers wearing masks or face shields, but that doesn't mean they haven't been hard at work, weighing numerous models and considering different approaches on how to stop Covid–19, while limiting as much as possible damage to the economy. Scientists at CERGE-EI began their mission in mid-March. Central in the fight against the virus was the launching of the *IDEA anti-Covid–19* project, issuing recommendations to help mitigate the impact or negative effects which hit, and are likely to further affect, Czech society.

"In the first phase of the fight against coronavirus, doctors, nurses and epidemiologists helped. Now it's time for us – the economists. We want to use our knowledge so that a minimum of people lose their jobs, so that they don't drown in debt, so that as few companies as possible go bankrupt, and so that the economy can return to normal as soon as possible after the crisis," explains IDEA Executive Director Daniel Münich. He adds: "We also want to contribute to people's understanding of how all crises can affect us all and how they can be prevented."

Solutions for quarantine and debt

Top scientists published more than 20 papers focusing on how to "freeze" the economy so that it can be restarted quickly after the pandemic subsides, how to best set up data collection for smart quarantines, or how to communicate with the public. Contributions were often based on foreign studies but recast or examined within a Czech context and the Czech milieu. Some of the economists involved, such as Filip Matějka (a holder of a European Research Council ERC grant), Štěpán Jurajda or Daniel Münich, temporarily joined state advisory bodies.

In the first phase of the fight against coronavirus, doctors, nurses and epidemiologists helped. Now it's time for us – the economists.

In the first phase of the fight against coronavirus, doctors and other healthcare workers helped. But experts from CERGE-EI, the joint workplace of Charles University and the Czech Academy of Sciences, also contributed. They were determined to do their part, having worked on dozens of potentially beneficial studies throughout the crisis.

STORY BY Pavla Hubálková
PHOTOS BY Hynek Glos, CU archive

Scientists have not only addressed current issues such as how to best end the across-the-board measures related to the pandemic and return to normal life without the threat of making it worse, but have also dealt with epidemiological models.

Another project is the *Život během pandemie (Life during the pandemic)* survey, which examined developments in 2,500 Czech households. Every two weeks, researchers asked how the epidemic and related measures were affecting the country's households and family life, learning how participants' attitudes had changed, how much their economic situation had shifted and, in the case of students in the family, how well they had adapted to distance learning.

"Our recommendations are based on best practices, and are supported by data and relevant research. They are intended for the government, experts from ministries, journalists and the general public. We don't want to give princely advice. We want to help," says CERGE-EI's director Sergey Slobodyan.

More than 20 anti-Covid studies

In the first two months of the crisis, IDEA produced more than 20 studies presenting knowledge from wide-ranging areas of modern economics relevant in the context of combating the epidemic.

Everything began on March 14 with an email from a colleague, Jakub Steiner (himself a holder of an ERC grant who works at CERGE-EI and at the University of Zurich), which describes the story well.

"Dan, I found a very good text on the economics of epidemics by Kevin Bryan. It explains the standard epidemiological model from the perspective of game theory in the context of the Covid–19 crisis. What do you think about this proposal: what if we quickly translated it into Czech, and shared it widely across social networks as an IDEA study… It's important to quickly explain in the Czech environment that economic motivations and externalities will be important for handling the epidemic. It could be very useful in public discussions during the crisis. If we divide up the text and I edit it, it can be done within 24 hours," Steiner's e-mail read.

And on 18 March it was the first in a series of studies titled The *Economics of Social Distancing for Everyone: The Covid–19 case* with a foreword by the original author and a comprehensive summary for the public. Other original studies on various topics followed in rapid succession. Dozens of scientists and doctoral students from both CERGE-EI and other Czech and foreign research institutes gradually got involved. The benefits can be traced not only from the rich responses in the media and replicated in public discussion, but can also be seen in a number of measures adopted. For example, our proposals for temporary amendments to insolvency laws were soon put into practice. We proposed a low interest-bearing payment of insurance premiums from employee wages as a first aid measure in the middle of March and now it is going to the Senate.

We benefited a lot from our know-how in constructing the Czech version of the German *kurzarbeit* (short-time work system). The *Model Initiative anti-Covid–19 for the Czech Republic* was created in early April by René Levínský and Pavel Hroboň. The initiative covers and supports coordination and logistics for the complicated agenda of epidemiological modeling, which has proven to be crucial to the Czech Republic from a number of perspectives. Unfortunately, we encountered a relatively chilly reception for these models from the state, as well as a reluctance to provide certain necessary data for a better calibration of the model. Cooperation was also established with the PAQ Research organisation on an agenda of collecting research data in real time: *PAQ – Life during the pandemic*. The *IDEA anti-Covid19* project encompasses wide-ranging inter- and multi-disciplinary efforts by dozens of scientists from a wide variety of workplaces in the Czech Republic and abroad. Although academics are involved mainly out of enthusiasm for the cause and with an awareness of social responsibility, the effort has already received operational support from the Experientia Foundation and the Česká spořitelna foundation.

Daniel Münich, Ph.D.
IDEA Executive Director at CERGE-EI

Six ways to restart the economy

In May 2020, the IDEA think-tank run by the leading and award-winning economist Filip Matějka compiled six goals for the following months. The steps explained how best to reawaken the economy.

1. Reduce uncertainty.
2. Encourage payment morale and restore market efficiency.
3. Provide liquidity to companies that are useful or viable in the long term.
4. Stimulate demand intelligently through state purchases.
5. Promote international cooperation.
6. Avoid distraction from anything not related to the current crisis.

Source: IDEA, CERGE-EI

New **"corona words"** helped us laugh

"Czech is not a global language, so we don't feel as much pressure to be comprehensible as with languages such as English. We can play with it at will," says journalist and copywriter Martin Kavka. "At the same time, there's no need to worry about its future," adds lexicographer Michal Škrabal of the Institute of the Czech National Corpus at the CU Faculty of Arts. Eleven years ago, Kavka founded a website for neologisms, or newly-invented words, called Čeština 2.0 (Czech 2.0).

STORY BY Jitka Jiřičková PHOTOS BY René Volfík, Shutterstock

Now Kavka and Škrabal have published some of the new words in book form. Of course they weren't happy about the current crisis, but thanks to their fondness for Czech, they were able to have at least a little fun.

On average, how many neologisms got added to your online dictionary every day?

Martin Kavka: More than 20, which is about triple the usual number. The coronavirus is beyond all previous benchmarks. The first word, *'skoronavirus'* (*'skoro'* meaning 'almost' plus coronavirus) appeared on our site on 28 January. It signifies a flu so strong that it raises suspicions of being sick with Covid–19. Since then, more than 300 words were added. We're going to jump over 400 soon, maybe 500, because the rise has been massive.

Where does this increased need to create new words spring from?

MK: It's one of the ways to describe a new situation, often with exaggeration, and thus a kind of coping mechanism. If you recall, when Facebook, Twitter and other modern sites appeared, they brought with them new terminology taken from English, so for example, instead of saying *"líbí se mi"* you'll hear *"lajkuju"* (a Czech transposition of "I like"). Words that are simple and concise are the ones that catch on. Why be held back with lengthy transcription when we can express ourselves quickly? What's more, Czech is incredibly malleable. It enables us to easily handle the neologisms' declensions and verb tenses, add prefixes and suffixes like *'(v)olajkovat'* or *'(v)odlajkovat'* (an informal Czech transposition of the English 'like' and 'unlike'). It doesn't seem forced or artificial.

It seems to me that these new words relieved social tension at a difficult time. They sound sympathetically unforced. For example, the word *"koronáč"* doesn't seem as depressing as *coronavirus*.

MK: Exactly. The new words tell a story not only about the present, but also about the national culture, such as its specific sense of humour. They reflect our attitude toward life. The crisis measures affected absolutely everyone, and people had a need to react to it by, for example, creating new words.

Michal Škrabal: A nice current example is the word *"promořování"* (herd immunity), which sounds dreadful – it must provoke horror and panic in the average person, especially if they're glued to their television screens, going over statistics and getting massaged by this media hysteria. But if you then listen to an interview with an expert who really understands the given topic because he, as opposed to others, has been working on it for a long time, he can explain everything in plain language. It never would have occurred to me what a balsam for the ears and soul a simple interview would be with someone who at this time can speak calmly, soberly and matter-of-factly.

Do you look for the authors of the neologisms that you receive?

MK: I try to, but it's something like a good joke. If I can find the person who used the word first from open sources, then I mention it in the dictionary. But what mostly happens is that five different people will claim that they thought up a certain term. I deal with it by publishing the name of the person who sent me the neologism first, which of course doesn't mean they're the author.

Do we play with words more than other nations?

MK: I don't think we're exceptional. There are dictionaries of slang and new words such as urbandictionary.com, which is kind of our English equivalent and a foreshadowing of our own website, *Čeština 2.0*. But as the linguist and Czech scholar Jiří Marvan, who has given lectures on the Czech language on almost every continent once said, the advantage of Czech is that it's just the right size. It's neither large nor small. Also, it's not a global language which has to be comprehensible to everyone, it can allow itself more insight and wit. It uses its potential for itself, and doesn't have to take non-native speakers into account. The whole world speaks English, and the pressure for simplicity is much stronger, while we can play with our language as we please.

Martin Kavka graduated from the business academy in Ostrava. He worked as a journalist, editor and marketing specialist. Now works as a copywriter and copy editor. In 2008 he founded the online dictionary *Čeština 2.0* (Czech 2.0). Ten years later, together with Michal Škrabal, he prepared its printed version, *Hacknutá čeština: Neortodoxní slovník dnešní mateřštiny* (Hacked Czech: An unorthodox dictionary of today's mother tongue) which includes their selection of the 3,000 most interesting expressions of non-standard Czech, mostly neologisms.

Lexicographer Michal Škrabal (left) and Martin Kavka, author of the online dictionary Čeština 2.0

MŠ: All people on the planet have had to adapt to new situations and this includes their language, to frame things verbally. In this regard, we really won't be any more or less playful than the Uruguayans or the Tongans, although from what I know about the Tongans … What I really see is sort of pan-human universalism, which gives the genus Homo an admirable degree of adaptability to new conditions and the ability to survive in them.

Do you remember the first word that brought you to the idea of collecting neologisms?

MK: Quite clearly. I once heard a young lady on a tram tell another young lady that her boyfriend was a '*sračkogán*' ('sračka' meaning 'the runs' plus 'tobogán' meaning 'toboggan'). I started writing down these new words, and when I had a nice collection of them, it occurred to me that I could start a website and let other people add their own. The advantage of an online dictionary is how up to date it is. It gains new words quickly, continuously, everyone can take part in it and help to understand the neologisms as soon as they are created. Classic academic printed dictionaries get old quickly. Before it's published, certain words or neologisms aren't included but become part of ordinary speech, while others just fade away and become incomprehensible to readers.

But you yourselves decided to publish the dictionary in book form. Were you afraid it might meet the same fate?

MK: We prepared it for the 10th anniversary of the founding of *Čeština 2.0*. This isn't a classic dictionary. Instead we wanted to try to present the past decade from the perspective of a modern living language. Because every word was added by someone different, their emotional colouring is different. They're these playful little feuilletons of our time. We didn't try to play arbiter and judge whether a specific word was appropriately formed or not. It should be comprehensible to as many people as possible, and it should be clear from its definition why it was created at all.

MŠ: *Hacknutá čeština* (Hacked Czech) wasn't intended as a serious dictionary work. That's a task or even a fate for other colleagues. We rather intended it as a sort of chronicle of our time, as Martin says; a specific cross-section of the timeline. It was primarily about entertaining our readers and secondarily about forcing them to think about certain issues related to vocabulary and language in general.

How did you divide tasks when working on the book?

MŠ: I was the notional guarantor of lexicographical staff culture. As a conscious and conscientious amateur, which is to say a lover of the Czech language, Martin turned to me as a person from a field where he felt a bit wobbly – he visibly didn't want to risk that the resulting artefact would be rushed off, half-baked, bungled. I appreciate this kind of approach, and I'd wish for it to be shared by as much of the population as possible. The current crisis shows us, among other things, that despite any number of gasbags and wiseacres, we need educated and professionally trained people; we simply won't make it without specialisation. Today we need epidemiologists. Tomorrow it'll be entomologists and who knows, the day after tomorrow it might be etymologists.

Can you predict which new words will settle in the Czech dictionary for good?

MK: I like *haranténa* (*'harant'* meaning 'brat' plus *'karanténa'* meaning 'quarantine' or spending the quarantine with your kids at home) and *naroušitel* (*'narušit'* meaning 'to disrupt' plus *'rouška'* meaning 'mask' or a person being disruptive in public without a mask). They accurately capture the atmosphere in society, yet there's a bit of a smirk in them, a pleasant exaggeration. As to whether they'll really stick around, that's up to time and people. Some clues are already in the online dictionary. People can evaluate every newly added word – they either give a thumbs up or down. The most popular words are the ones that cross over to the regular vocabulary most often. Language is a tremendously democratic organism. People will use only what they like, what fits in their mouths and what has emotional value for them. Words that sound too artificial or too difficult to pronounce will disappear.

MŠ: I don't want to make any predictions but I will say that we have several candidates for Word of the Year already. For example, '*rouška*' (mask) or '*ústenka*' (disposable mask) have had a remarkable "career". So it occurs to me, Martin, that *'ústenka'* could also be a free pass to the city of Ústí nad Labem if necessary under quarantine. I remember when that city was flooded, the country's jokesters had renamed it *Ústí pod Labem* (Ústí-under-the-Labe). Yet one more of the countless pieces of evidence that we really don't have to worry about our mother tongue or the "risk" of English taking over.

Michal Škrabal, Ph.D., Studied Czech language and literature – Latvian and mathematical linguistics at the Faculty of Arts at Charles University. Since 2015 he has worked as a researcher at the Institute of the Czech National Corpus at Charles University He has worked as the editor of the magazine Tvar and as a language proofreader, and occasionally translates Latvian fiction. During the crisis, he began his long-postponed study of Lithuanian to become a full-fledged, so-called 'two-eyed' Baltic scholar.

Neologisms in the time of coronavirus

(taken from the online dictionary Čeština 2.0):

koronaut [kəˈrəʊnəːt]
a healthcare worker dressed in personal protective equipment during the coronavirus epidemic (combining the words 'koronavirus' and 'kosmonaut')

netkafe [netˈkæfeɪ]
to meet someone for coffee, but online (referring to the internet and Nescafe)

koronáfuka [kəˈrəʊnəːfukʌ]
a person who knows absolutely everything about the coronavirus; if he ran the state there would be no infections and no deaths ('korona' from 'coronavirus' plus 'nafoukaný' meaning 'a blowhard')

koronášup [kəˈrəʊnəːʃuːp]
the second wave of infection ('korona' from 'coronavirus' plus 'šup' meaning 'whoosh')

zoombík [zuːmbiːk]
a user of the Zoom videoconferencing app who has become zombified

koronovela [kəˈrəʊˈnɒvəla]
never-ending and detailed news reports about the coronavirus ('koronavirus' plus 'telenovela')

prymulex [prɪmulɛks]
the set of government measures against coronavirus; named after chief epidemiologist Roman Prymula (and referring to Primalex, a popular house paint, as well as 'lex' meaning 'law')

rouškomil [rəʊʃkəʊˈmɪl]
a person who wears a mask even during activities where it isn't required ('rouška' meaning 'mask' plus the suffix -mil meaning 'lover')

covidět se [kəʊˈvɪgɛt]
to co-videoconference, to see each other by video chat in the time of coronavirus

deprymulovaný [deprɪmuːləʊˈvæni]
depressed by the measures proposed by chief epidemiologist Roman Prymula

Reading makes us who we are

CU graduate Anežka Kuzmičová returned to Prague after more than a decade abroad to conduct new research into children's reading, made possible largely thanks to the Primus programme.

STORY BY Martin Rychlík PHOTOS BY Martin Pinkas

Kuzmičová completed her Master's in comparative literature and Scandinavian studies at CU's Faculty of Arts back in 2007; from there, she continued her studies at Stockholm University, where she received her doctorate. Research took her to other places as well: to Denmark, England and Canada. Now – some 12 years later – she's back at Charles University.

"I had a post-doctoral position in Stockholm that I knew would be ending in January, and had taken some time to complete. In Sweden, you can postpone work – including research – for maternity leave and I had had two children. For the last two years, I had been thinking intensively about what to do next, and we wanted to return to the Czech Republic," Kuzmičová says. Now she's researching reading – ultimately how reading informs who we are – at the Institute of Czech Language and Theory of Communication at the Faculty of Arts.

She first prepared to apply with the Grant Agency of the Czech Republic, but the head of the department, Jan Chromý, suggested that she try Charles University's internal Primus programme as a viable alternative. Primus exists primarily to help young researchers establish new research teams at CU; it started its fifth year in March. Alongside 21 other researchers, Kuzmičová won support and has CZK 4 million at her disposal for her research over the next three years.

Getting to the core of readers' experiences

Kuzmičová's focus is research into reading, especially children's reading, in a natural environment. "I wanted to work in a team that would be formalised in some way. Until now, I've held an individual postdoc position, and for the last two years I worked in Bristol; all contacts and collaborations depended on my personal initiative. It was informal academic cooperation, not consolidated by an official grant, so to speak," she says in Prague.

From the start she knew exactly whom and what she wanted. "There are four academics on the team. Each member brings something completely different to the project and that is the main joy for me," she says. The three-year project is called *Integrating Text & Literacy Research* (InT&L). Kuzmičová's senior colleague is Markéta Supa of the Faculty of Social Sciences at Charles University, who researches media education, as well as how children experience media, its messages and narratives. "She's inspired me a lot. She's got a lot of experience from abroad and a doctorate from Great Britain. She's building something that didn't exist in the Czech Republic," Kuzmičová says. The researcher is also betting on two younger colleagues who are doctoral students: Jana Segi Lukavská who focuses on children's culture and Kamila Homolková whose area of expertise includes didactics and communication in education.

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In 2019 the Swedish magazine Fokus published a list of the top researchers in Sweden in which Anežka Kuzmičová came first among researchers in the humanities; "her" Stockholm University was the most successful overall, while Malmö was the most effective.

For a long time and on an interdisciplinary basis, Kuzmičová has been delving into the depths of reading as a cognitive process and activity, and has published a number of studies. Her work shows, for example, how important the inner experience is for reading, as well as what different reading situations and visual scenes stored in memory do for text comprehension. In other words, she focuses on how books co-create or help form readers' personalities (and vice versa).

Given the context, it seems natural that a psychologist would be a part of the team, but that isn't the case. Kuzmičová explains: "I've already worked with psychologists a lot, and I will be using them as consultants. This time I'm not planning experimental research. We're interested primarily in reading in its natural environment. For us it's about what happens in the field, for example in school. How reading is approached both at home and in school," she replies, adding that she has already made arrangements at different schools in the Czech Republic. In addition, the team will analyse primary level reading anthologies and leisure books. "We're aiming at lower primary. In our case it's from third to fifth grade which is a period when it's very important to develop reading on a volitional basis. We would like our findings to be applicable. For me, it's extremely important to build a more lasting relationship with the education sector, but at the same time I realise how difficult the profession is in practice and that there aren't that many teachers exactly waiting for theoretical advice," she laughs.

Enjoying learning

Anežka Kuzmičová's older child transferred from a British school to a regular Czech school. "After returning as a parent, I've noticed a few things. It seems to me, for example, that not very many teachers try actively to make the child happy and enjoy learning," Kuzmičová says. One way to increase enjoyment is through activities promoted by the Reading and Writing for Critical Thinking (RWCT) initiative which trains educators to cultivate the joy of reading in children by sharing experiences and feelings and talking about them.

"The purpose of our project is to see how children are – or could be – led to start perceiving reading as a holistic experience; that it isn't just something abstract that happens in their heads, but also something that they can experience physically and that can shape them," Kuzmičová says, adding that reading is also a social activity where, in the words of Ondřej Hausenblas, "people commune with text." But children have to enjoy it enough to feel motivated to talk about texts in depth. She is interested in how the will to read can be skillfully developed, promoted and stimulated.

Swedish children's literature used to be a buzzword and category unto itself. What's it like there today? "The image presented by the media is not surprising: just like here, the perception is that Swedish children don't read. But of course they do. Some schools have introduced 10 minutes of listening to a self-selected audiobook every morning, so children have a moment of experience and concentration. The teacher doesn't care what the topic is; what's important is the setting – 'now I'm enjoying this and I have the time to notice how I feel,'" Kuzmičová says. She adds that expert and parental experience show how important it is for children in various stages of life to be enchanted by themes presented in books: children then concentrate on selecting what they're interested in: football, adventure, nature… Early literacy instruction in the Czech Republic apparently focuses on reading for information and then in later stages it is all learning *about* literature. That risks missing important aspects: experiences, scenes, visualisation and the pure joy of reading itself.

"It's a shame when teachers don't tell children anything about how they read themselves," she says. This is why she wants to teach a new course at the Faculty of Arts called Reading: Theory, Practice, Reflection. During the semester, university students will take one book they've long wanted to read but were never able to get around to, and during 12 weeks they'll read it in a self-reflective style and thoroughly analyse not only the book but above all their own reading processes.

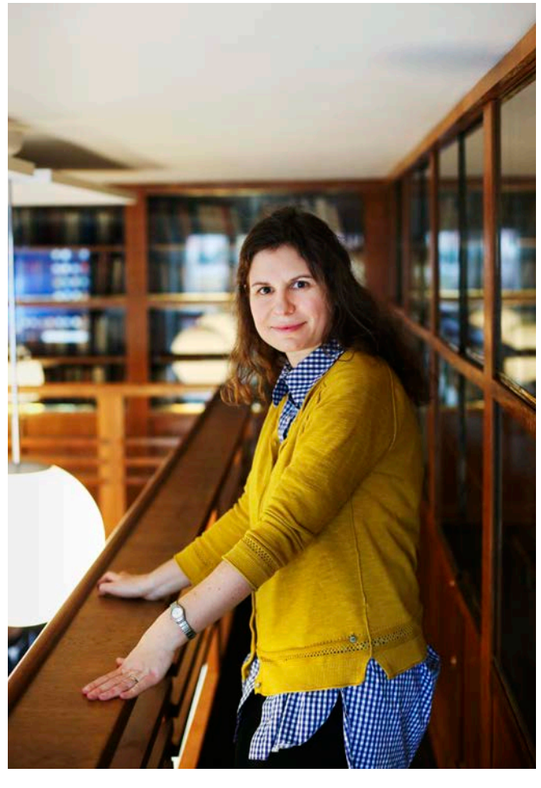
Results for research and practice

The team intend to use the findings from their research in primary schools and elsewhere in academic publications as well as in developing recommendations for practitioners. Kuzmičová already has extensive experience in this regard; she has been published in academic journals such as Semiotica, Communication Theory, the Journal of General Psychology or Poetics Today. Last October, in a ranking in the magazine Fokus, she was ranked first among all humanities researchers in Sweden, something which surprised her considerably. "I thought they'd made a mistake," she laughs. The ranking's methodology was based on work published between 2012 and 2015 and citation tracking adjusted with a subject coefficient, which was overseen by an expert who led the latest reform of Swedish university financing. A religious studies scholar from Stockholm came in second place, while a lecturer in ancient culture from Gothenburg placed third.

What would she say was the most important skill she learned abroad? "Mainly how to work in an environment where nobody knows me. In different countries, even the disciplines look different; it gave me the possibility to define myself, what I do and how I do it, and to concentrate on relatively big topics. And the best decision right at the beginning was to start writing all publications in English," says Kuzmičová, who originally studied Swedish.

In excellent company

Kuzmičová is among 22 young researchers who received Charles University internal Primus grants for three years to start their own research teams. The largest number of successful applicants so far were from the Faculty of Mathematics and Physics (6 recipients), the Faculty of Science (5 recipients) and the First Faculty of Medicine (4 recipients).



Anežka Kuzmičová, Ph.D., literary scholar, originally in Scandinavian studies, returned to CU's Faculty of Arts in January from work stays at Stockholm University and in most recently Great Britain. Last year, the Swedish magazine Fokus listed her as the most cited humanities researcher in Sweden. She received internal support from the Primus programme and as of 1 January 2020 leads the InT&L research group investigating reading in natural environments and its impact on personality.

“I have actually never done anything else,” is how Marek Stibal, who has been studying biological processes in glacial ecosystems for almost 20 years, sums up his career as a scientist. Stibal, from the Faculty of Science at Charles University, is the co-author of a study published in *Nature* that brought evidence of the release of methane from the melting Greenland Ice Sheet during the summer period.

STORY BY Marcela Uhlíková
PHOTO BY Vladimír Šigut

Boreholes in the ice in **Greenland**

Further research of biological processes under the ice sheet have been made possible by an ERC CZ Consolidator Grant worth CZK 58 million.

As the scientist admits, this will be the greatest challenge he has ever faced. At the same time, there are plenty of reasons to be excited: the boost in funding means he will be able to hire the best possible colleagues for his team. The project will start on 1 July 2020.

Kilometre-deep boreholes

The project will be split into several phases: during the first, six sections of the western margin of the Greenland Ice Sheet will be mapped for methane release. To be able to answer fundamental questions regarding the release of greenhouse gases, he and colleagues will need to obtain samples of undisturbed subglacial sediments. That means taking samples not only from easily accessible areas at the margin of the ice sheet which have been used for research so far, but from places where sediments are not affected, for example, by the presence of oxygen.

“It is this sampling that is potentially going to be the most interesting part of the research,” says Stibal, adding “we will have to get through a layer of ice that in some places is up to a kilometre thick. Due to the demands of the drilling process, this is where we face the greatest risks and have to take the greatest care, but we will at least give it a try”. If the scientists succeed in getting the samples needed, the field phase will be followed by laboratory work with incubation experiments, and computer modelling.

The presence of methane under the Greenland Ice Sheet has been confirmed: its release was discovered in 2015 by a team of scientists from eight institutions including Charles University. The concentrations of dissolved methane in samples of meltwater from a 600 km² ice sheet catchment were determined and its origin analysed. The measured amount of six tonnes per melting season corresponds to the methane production of a hundred cows. The new project should provide deeper insight into how much greenhouse gas could potentially be released from the entire ice sheet.

“We want to find out whether the rapid melting of the ice sheet may contribute to an increase in methane concentration in the atmosphere and so constitute a positive climate warming feedback.” This is where the microbiologist sees one of the benefits of the research, to which he adds immediately “We’re realists. We already know that there are much more significant anthropogenic methane sources. The amount of methane coming from Greenland’s subglacial ecosystem will probably be negligible globally, but still, it should not be ignored.”

The team led by Marek Stibal will also be interested in how and when methane appeared under the approximately million-year-old glacier, whether it has been produced continuously or whether it is old gas released due to accelerating melting. “I am mostly interested in the microbial processes occurring under the glacier,” he says.

We want to find out whether the rapid melting of the ice sheet may contribute to an increase in methane concentration in the atmosphere and so constitute a positive climate warming feedback.

An international team is being assembled

“It does look like a significant amount of money,’ Stibal agrees with a smile in answer to a question about what he is going to do with the 58 million crowns he was was awarded by the Ministry of Education, Youth, and Sports of the Czech Republic. That was based on submitting the project to the European Research Council. A simple calculation, however, reveals that about a half of the amount will cover the salaries of the team members, including three postdocs, two Ph.D. students, a logistics manager (who will organise transportation and coordinate the field work), and a project manager responsible for administration.

Team members will be recruited in several steps, as required by the project structure. The limited pool of national expertise in the subject will likely result in an international team. “A substantial part of the grant amount will be required to cover the drilling itself as well as flight hours of helicopter transport,” Stibal says. He made dozens of trips to Greenland, especially during the time he worked in Copenhagen – he would just take his backpack and fly there for a weekend. To do science, naturally.

A return to science… and the band

Marek has not seen a glacier for almost two years. Not that they have lost their charm for him, far from it; the reason is prosaic – he became a father last August and wants to spend as much time as possible with his son. “Gradually, I am starting to focus more on science again. What other choice do I have now that the project’s been funded?” he asks. The microbiologist is a little reluctant to speak about his hobby, playing in a band; he says that he and his fellow musicians are rather lazy, all have small children, and their plans have also been affected by the coronavirus. This year, they have only met three times in the rehearsal room and not more. “Don’t ask me about the musical style – it is different every time,” Marek laughs, concluding: “I won’t tell you the band’s name – you could google us!”

Marek Stibal, Ph.D., is a microbial ecologist interested in cryospheric ecosystems (especially glaciers), based at the Department of Ecology of the Faculty of Science at Charles University. He has a degree in biology from the University of South Bohemia and obtained his PhD in glacial biogeochemistry at the University of Bristol.

Although his ERC Consolidator project was not funded directly by the ERC, it received the highest evaluation – A – and received support from the Czech Ministry of Education, Youth and Sport through the ERC CZ programme.

I can see for miles and miles: on the ground in Greenland.

Theoretical **mathematics** inspired by the real world

“Most of my work still takes place on paper,” says theoretical mathematician Zdeněk Dvořák from the Computer Science Institute of Charles University. He focuses on combinatorics, graph theory, and theoretical informatics, and he received the ERC CZ Consolidator Grant for his research.

STORY BY Pavla Hubálková PHOTO BY Vladimír Šigut

“Being awarded the grant will allow me to focus on research and fund a postdoc and other doctoral students who will work on the project with me. Most importantly, it will allow me to continue in international cooperation,” the mathematician says. “We cooperate especially with McGill University in Canada and the National Institute of Informatics in Tokyo. I was supposed to be leaving for Japan, however, due to the coronavirus this had to be postponed,” he adds.

Dvořák obtained more than CZK 7 million for solving a project named *Algorithms and complexity within and beyond bounded expansion*. “It is a graph-theory project, which may be misleading for non-experts. A non-mathematician usually imagines a graph as a line, perhaps the exponential. Mathematicians imagine a graph as something which may be called a network. A computer network, a Facebook relation network, a road network, for example: some points interconnected by relations. What we are interested in, is solving problems occurring in these networks. To show it in an example – on social networks, we may study the patterns of relationships appearing there, and deduce certain qualities based on that, such as: has this community appeared spontaneously, or was it purposely created by somebody? Studies of real networks open problems which we then want to solve also in abstract networks. And we can see that numerous problems cannot be solved effectively in an entirely abstract network,” the mathematician explains.

This is why mathematicians invented the theory of bounded expansion. It may be explained as limiting the complexity of networks. Once again, they find inspiration in the real world: “Roads, for example, cannot intersect arbitrarily – there are rules and limitations in their use. At the same time, there are numerous imperfections and exceptions: bridges are a good example.” Zdeněk Dvořák’s research is purely theoretical: “The goal of the project is to find the hierarchy of qualitative network limitations – whether there is, for example, a certain geometrical structure that might be described.”

The entire approach is entirely new and unknown: “We do not know whether there actually is any related geometrical structure. If we succeed in finding it, it will give us new tools for solving problems as well as inspiration for further research.” The question about examples’ possible practical use of solving these algorithms is one he finds slightly annoying. The reason? “Science should be done out of interest and curiosity. Practical use is, of course, important, but it shouldn’t be the primary motivation. These algorithms might help improve the efficiency of navigation – they might help in finding the required path quicker.”

Cooperation is motivating

As a general rule, research teams in mathematics tend to be small, and many mathematicians work individually; Zdeněk Dvořák, however, prefers working with colleagues: “I am glad when a foreign colleague visits us, or when I am visiting somebody for a few weeks. It is great motivation – both in terms of different approaches and thus more ideas, and of performance. I would feel stupid in front of my colleague if I didn’t get any idea after several hour’s work,” he laughs.

The work of theoretical mathematicians takes place in discussing ideas and solutions to problems and trying to apply the concepts and verifying whether their ideas are valid in the remaining time. They use computers, sometimes. “Ninety per cent of my work takes place on paper. Sometimes, we also use blackboards – ideas written there may be easily erased, and blackboards are great when you are working with somebody – but a pencil and paper are winners for me.”

Zdeněk Dvořák, Ph.D., works at the Computer Science Institute of Charles University focusing on combinatorics, graph theory, and theoretical informatics. He spent two years as a postdoc at Georgia Institute of Technology in Atlanta, USA and Simon Fraser University in Vancouver, Canada. This year, he was awarded an ERC CZ grant for his project *Algorithms and complexity within and beyond bounded expansion*.

Dvořák tries applying various principles that proved effective in other areas on solving problems. “From time to time I get an entirely unique idea. This happens, when I have been working for about two weeks on a problem, and then this new idea comes suddenly, when I am taking a walk, perhaps,” he says.

Greater interaction is needed

The mathematician focuses on teaching and popularization, among other things: “We organize an informatics-oriented version of Mathematical Olympiad for high school students and also correspondence seminars of informatics,” he points out.

He got inspiration also during his postdoc stays in the USA and Canada: “The science itself is quite similar there. In our field we need no special equipment – a pencil and paper is used abroad as well as in the Czech Republic. What is interesting, is the way of teaching – university education is broader in the United States. Students may combine mathematics with such subjects as literature or theatre. I found that interesting.” After returning home, the thing he misses most is more interaction of students with teachers: “What I liked in the US was that the students were more active in their interaction and communication with tutors – they would have consultations. I tried introducing it here in the Czech Republic, however, with less success,” he states.

Dvořák has been recognised on multiple occasions for his work and received the Neuron Prize for young scientists in 2011. However, the one he values the most is the European Prize in Combinatorics: “This prize is awarded to young promising scientists in the field of discrete mathematics, combinatorics, and graph theory. I feel honoured that they saw me as promising at that time,” he admits.

In his leisure time, he enjoys reading sci-fi literature and doing the Japanese martial art Shinto Muso Ryu Jodo. “Jodo has several levels for me; it is, of course, a physical activity – I spend most of the time at work sitting, which means that exercise is a welcome change. But there is also a spiritual level, mental relaxation. I also like the fact that although I have been doing it for 15 years, there is still a lot to learn or improve.”

Japanese culture has been his interest for a long time: “I would say it is one of the few developed countries which is not a western-style one. The Japanese culture and mentality is completely different. I enjoy discovering more about it and I love the Japanese landscape. Within two hours, you can get from a metropolis like Tokyo into the heart of intact nature. I love the contrast,” he says.

ERC grants are awarded by the European Research Council and funded from the EU budget. These are very prestigious grants aimed at supporting excellence in science in all fields. A great emphasis is on entirely new revolutionary ideas with the potential of influencing the given field significantly, of extending its boundaries, or even opening new perspectives of research.

Presently, it is possible to apply for 5 types of ERC grants: Starting (early-career researchers), Consolidator (young researchers with their own teams or projects), Advanced (excellent senior researchers), Synergy (groups of 2 to 4 researchers), and Proof-of-Concept (support in the early phase of commercialization of research outputs).

ERC CZ grants are awarded by the Ministry of Education to researchers who have achieved great results in the ERC competitions, but received no EU funding due to funding limits.

Enchantment and **spirituality** in Eastern Europe

Italian scientist Alessandro Testa has already written four book-length monographs. The works focus on different topics, such as on the relationship between ancient myths and modern mythology, public rituality, and the history of religions. He has been published in renowned journals such as Folklore, Method and Theory in the Study of Religion, and Social Anthropology.

STORY BY Martin Rychlík PHOTO BY Hynek Glos

Testa's erudition, diligence and ideas have now been awarded with a prestigious ERC CZ Starting Grant, which is the Czech version of support from the European Research Council for outstanding applicants. Although Testa got high marks from the committee in Brussels, there wasn't enough funding left in the demanding competition to secure his project. Testa's research project, titled "The Re-Enchantment of Central-Eastern Europe," received CZK 12 million (around EUR 435 thousand) from the Czech Ministry of Education for two years, with the obligation to compete again for other international funding – especially the EU's ERC grant.

Charles University won three ERC CZ projects; in addition to Testa, the theoretical mathematician Zdeněk Dvořák of the Faculty of Mathematics and Physics won one, as did ecologist Marek Stibal of the Faculty of Science.

"People confuse ERC and ERC CZ quite a lot. The interview before the commission in Brussels, a kind of 'executioners' squad' of more than 20 experts, who also read about 10 external opinions about the project and who carefully considered every word I said, was very stressful and mentally draining," Testa says today – although now with a smile – now that he has a rich career and a number of successes behind him.

Teamwork in archives and the field

What will his two-year project deal with? "My project examines religious phenomena that are re-emerging in the countries of so-called Central and Eastern Europe. Put simply: I'll be interested in religiosity in the Visegrad countries and eastern Germany. I don't necessarily deal only with forms of official religiosity such as Christianity, for example, but with various alternative cults and new religious movements. I'd like to capture a broader picture in comparison with more countries, and how the situation has changed after the fall of the communist regimes," Testa says.

His ambition is to map the reasons and effects that are part of religiosity, but which have not yet been sufficiently taken into account. As a trained historian, religious scholar and anthropologist, Testa has extensive experience with revealing the subtler layers of religiosity through historical and ethnographic methods. The methods include field research, participant observation, interviews and research in archives, as well as the collection of other written materials, such as gray literature. There is a wide range of sources. The scientific team plans to purchase software for data analysis as well as necessary books and documents.

"The key task will be to study and understand the reasons for the return of spirituality or the general cultural conditions and motivations that made it possible for Central and Eastern Europe to rediscover this phenomenon, and to understand the historical and societal factors that underlie this social transformation," Testa says, explaining that he has the Czech Republic, Slovakia, Poland, Hungary and eastern Germany in his sights. This will be the focus of a five-member team. In addition to Testa, there will be an three doctoral students chosen in an international selection process and one postdoc, most likely from a Czech university. "The postdoc will be my right hand," Testa adds. Although the sympathetic globetrotter has worked at the Faculty of Social Sciences for more than a year, he fell in love with Prague long ago.

A longtime passion for Prague

Testa visited the Czech metropolis for the first time in 2002. During his studies and academic activities, he then worked in Spain and France (at the Sorbonne), but also went to Estonia, Iceland and Vienna, where he worked at various universities. In the meantime, he spent two years as a postdoc at the University of Pardubice (2013 to 2015). Why Pardubice? Testa explains:

"That was a bit of a coincidence. A couple of days after my doctorate, I received an offer from eastern Bohemia, to Pardubice, and I said to myself, 'Carpe diem. Try it.' It's a nice region and moreover close to Prague, which I fell in love with," Testa recalls. He was also enchanted by eastern Europe; he lived in Vienna in the following years.

What enriched him the most? "It's extremely important for researchers, especially at the beginning of their careers, to expand their horizons as much as possible. Living and working in different countries helped me enormously. I learned seven languages – we could have done this interview in Czech as well – but English is more accurate for expressing myself. Absorbing knowledge in different places is invaluable. I have been exposed to various scientific environments, approaches."

Testa praises Prague and his work at Charles University. "There's a good ratio between the cost of living, quality of life, and enjoyment, and working infrastructures. I'm very content and satisfied here. Students rate my courses well; I have enough time to write and publish, and I've received interesting opportunities for national and international cooperation. I want to be worthy of this new opportunity here. I also have a lot of friends in Prague. And of course, the secret reason is the excellent beer. During the months of lockdown, I was extremely disappointed because I couldn't go with my friends to the pub!" he laughs, switching to fluent Czech.

Epidemics as an opportunity for creativity

The Covid–19 pandemic hasn't threatened his project, luckily, or at least so far. Limited mobility is devastating for science, but nevertheless, the ERC CZ plan will start within the next few months, and field research is planned for the end of the first year. "There's a pretty safe time cushion. But the doctoral students should come for interviews next semester, so I believe that what President Zeman said – about the borders being closed all year – isn't going to happen," Testa says.

"Fortunately, my family is ok. The region I come from, Molise, is the least affected in the entire country. I'm using the current quarantine as a sabbatical and I'm concentrating on writing," Testa says. In a couple of months, another book will come out with the Routledge publishing house: *Ritual and Social (Dis) Order: A Cultural History of Popular Carnival in Europe* which will be the first comparative historical-anthropological study in English on carnivals in Europe.

Another book should be borne from his research on Central Europe. "Let's hope that a lot of publications will be created from the ERC CZ project, but in research you always take a risk because you don't know how the research will come together. But there will definitely be a book, articles and a conference. In addition, I'd like to get the acquired knowledge to a wider audience – at lectures, events in museums and the like. My ambition is to advance knowledge not only among scientists and experts, but also among the general public," Testa concludes.

Alessandro Testa is an Italian historian and anthropologist working at the Institute of Sociological Studies at the Faculty of Social Sciences at Charles University. Alessandro Testa studied history, religion and classical studies at universities in Italy (Florence, Rome, Messina) and in Paris (at the Sorbonne). He later worked in Tallinn and Vienna, as well as at the University of Pardubice. He focuses on the anthropology of religion and cultural heritage, and has lectured at a number of universities. He is the author of four monographs and several edited volumes. He speaks 7 languages including Czech.

The secret of **binary** star V1309

In late 2019, three young researchers at Charles University won the Neuron Prize for promising scientists in the Czech Republic. One of them was astrophysicist Ondřej Pejcha, an expert on binary stars who studied at CU and at Princeton University.

STORY BY Martin Rychlík PHOTO BY Luboš Višniewski

What was it like to win a Neuron Prize? Does it have a reputation among Czech scientists abroad?
I was really happy about it and I appreciate it very much. It's a recognised award and the people who received it before me have my respect and admiration. I already knew about the Neuron when I was in the USA.

You have been described as one of the "most talented astrophysicists" by the council of the endowment fund. What prompted you to return to Charles University from Princeton?
The internal Primus programme made it possible. That created a place for me and ensured the operation of my team. I came in September 2017 and a year later I received a so-called starting grant from the European Research Council (ERC) to study interactions of binary stars.

You'd been abroad for several years; how did you find things upon your return?
Some things really pleased me. I am very happy, for example, that my colleagues from the Institute of Theoretical Physics at the CU Faculty of Mathematics and Physics are very inquisitive and smart people and capable scientists. They're working on different problems than I, so we cannot discuss the details of our work right away, but they quickly understand what the problem is.

A large part of the research at our institute focuses on the theory of gravity, the general theory of relativity, and the physics around compact objects such as neutron stars and black holes. There is also a group here working on quantum physics, which recently hired Zdeněk Mašín after a doctorate in England and a postdoc in Germany with a Primus project. Our groups are related to each other by doing calculations on supercomputers. After all, I invested part of the money from the ERC grant into the expansion of the computing cluster at the Faculty of Mathematics and Physics in Karlín.

What did you find less than optimal? Are there areas that the university should improve?
It's hard to take a general position because I get the impression that the situation varies greatly between individual faculties and departments. The uni- ↪

versity is divided into a large number of faculties and each one often consists of many departments. With so many voices, it's hard to find the necessary harmony and to coordinate cooperation on larger goals. I also think that many departments and Charles University as a whole lack consensus on a truly long-term and detailed vision of development over a period of 20 or 30 years.

You're primarily a scientist, but last year you told me you also wanted to teach.
I advise one bachelor student and two master students, which I enjoy. I've also been teaching a new class: the astrophysics of gravitational wave sources. It's related to the spectacular detection (LIGO detected gravitational waves for the first time in September 2015, which saw those behind the project receive the Nobel Prize two years later), but I focus more on what gravitational waves reveal to us about celestial objects. I try to teach a little differently: with my students we've tried group work, interactive teaching, panel discussions, papers, literature reviews… My goal is to show students current issues, how the scientific method works and that results are often not as polished to detail as they are in the textbooks. The paths to knowledge are often quite tortuous and many interesting and important problems are left unresolved in the end because ideas and experiments run out.

Are there any differences between students in the USA and here?
My limited impression is that our students are ahead of those abroad in depth of knowledge, but are behind in soft skills: in the ability to communicate, which is also related to thinking about why and where they're heading. Even for me, during my doctoral stay in Ohio it wasn't easy at first to learn these abilities, but there were classes to work on these issues. For example, we had a class on order-of-magnitude astrophysics, where a randomly selected student would go to the blackboard and write down the thoughts and ideas for the solution from other students, so there was also teamwork and communication.

How has your research into binary stars progressed in Prague?
In 2019, we wrote several articles both with people from our team and with foreign co-workers. Last year, our team grew by two postdocs and two students. We focused on theoretical models of gas and dust dynamics as well as the transport and emission of radiation, which is our main source of information about events in the Universe. The idea of the project is to understand one of the phases in the evolution of binary stars, called the "common envelope phase," when two stars start to interact so strongly that they can merge into a single object, or shrink their orbit significantly. This is probably the most important phase in the evolution of interesting binary stars, such as those composed of black holes, neutron stars or white dwarfs. The phase is essential for the formation of sources of gravitational waves.

Is this just a theoretical model, or have we as humanity observed something like this already?
Astronomers observed one case where it was extremely clear that two stars merged. A binary star was observed, noticeably shortening its orbital period, followed by a flare-up and brightening. I've worked on this object for several years. Its name is V1309 Scorpii.

Do you still dream about it?
Not any more (laughs). That stopped after I came to Troja and published an article explaining all the observations of this object. That was also the basis of my ERC grant.

My limited impression is that our students are ahead of those abroad in depth of knowledge, but are behind in soft skills: in the ability to communicate, which is also related to thinking about why and where they're heading.

Ondřej Pejcha, Ph.D., is a theoretical physicist and astrophysicist who won an ERC starting grant in 2018. He studied theoretical physics at the CU Faculty of Mathematics and Physics (2008) and continued in his study of astronomy at Ohio State University (Ph.D. 2013). He then worked as a postdoc at Princeton University in the USA, where he also won a NASA scholarship. In September 2017, he returned to CU thanks to the Primus programme. He is the author of around 30 studies; he is raising two children with his wife, Eva.

Tell me more about the members on your team: who are they?
Our group is made up of three postdocs, two master students, a bachelor student, and myself. I'm now looking for a doctoral student and we're gradually coming to a natural change of postdocs after their three-year stints. We have four years of the ERC grant left, during which I anticipate that other successful scientists will become part of the team.

What would you advise colleagues who want to apply for such a grant?
Aside from the usual lessons, like that the application has to answer a number of basic questions – why this topic, why you specifically and why now – with the ERC I would advise that they really push on the "high risk, high gain" threshold. From my point of view, the project design was a lot riskier than any other thing I'd ever written. The committee appreciated that, but then you're afraid that they'll come to the conclusion that you can't fulfill it.

Will you try for a higher academic rank in the Czech Republic?
It's probably necessary. The local academic system requires associate professorships and professorships; it's also important for access to students, accreditations and so on. I want to habilitate.

In one interview, I was interested to learn that you described your advisor from Ohio, Professor Todd Thompson, as a great role model.
He was a different type of scientist than anyone I'd known before that from the Czech Republic. He inspired me with his curiosity and the style of work, his original ideas, and an effort to take everything to the higher level. At the beginning of my doctorate I found it interesting that people in the department there were each successful in a completely different way. Todd was an excellent mentor.

Life at CU

Honouring women in academia

The year 2020 has largely been the Year of the Woman in Academia at Charles University, recognising the enormous contribution of female academics, pedagogues, scientists and researchers. In January, the university marked the 50th anniversary of the death of Milada Paulová, the first female full professor in the history of the school. Paulová, an expert in Slavonic Studies, received the professorship in 1925.

17/1

21/1

Gaudeamus: a “must” for students applying at university

Thousands of visitors attended the Gaudeamus exhibition fair promoting university education and lifelong learning, among them many high school students on the eve of graduation considering where to continue their studies. Charles University, as always, was a major participant.

Voršilská facility reopens

3/2

CU’s Rector Tomáš Zima and the director of Charles University’s Refectories and Dormitories, Jiří Macoun, reopened the university’s refectory in Voršilská Street in a special ceremony after renovation was complete. The site houses not only the canteen but also offices used by the Faculty of Arts, the Faculty of Social Sciences, The Institute for Language and Preparatory Studies and numerous student organisations.

Honorary degrees awarded

18/2

American geneticist Eric S. Lander (a professor at Harvard and MIT) and Israeli biologist Joel L. Sussman (from the Weizmann Institute of Science) were honoured for their lifelong contributions, receiving the degree honoris causa in a special ceremony at CU’s historic Carolinum.

20/2

Cutting-edge educational initiatives were the focus of a 4EU+ conference in Copenhagen in February, with key speakers including the alliance's Secretary General Volker Balli and CU's Vice-Rector for Education Milena Králíčková. The vice-rector discussed Transferal skills that are essential for students within 4EU+: multilingualism, data literacy, entrepreneurship, critical thinking and social engagement. Forum interviewed the University of Copenhagen's Rector Henrik C. Wegener about the alliance.

4EU+ focuses on cutting-edge educational initiatives

29/2

The walls of CU's historic buildings were transformed by a special videomapping project coinciding with an exhibition about the history of Charles University. The event also marked the 100th anniversary of Czechoslovakia's Constitution, and the 100th anniversary of the reinstatement of the name "Charles University" on 19 February 1920.

Videomapping event celebrates CU's history

László Lovász receives honorary title

4/3

The world-renowned Hungarian mathematician László Lovász received the honorary title of doctor honoris causa, recognising his enormous contributions in graph theory and combinatorics.

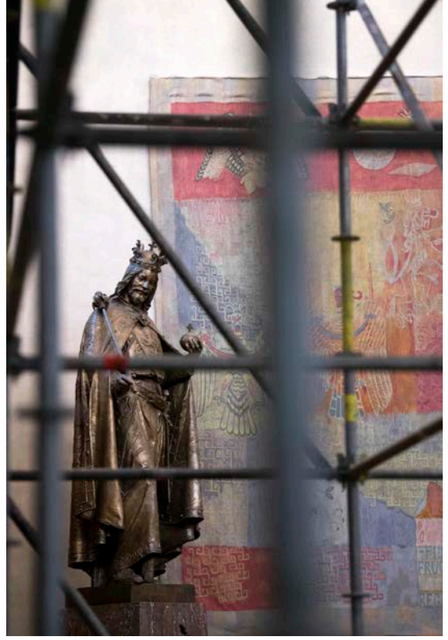
"Mirroring Venice" at the Carolinum

5/3

A gala vernissage was held at the opening of an exhibition called "Mirroring Venice", held at the Carolinum under the auspices of Rector Tomáš Zima and Italian ambassador to Prague Saverio Nisio. The show featured works by academic painter Jakub Špaňhel and exhibited Venetian mirrors from the Ongaro e Fuga artistic mirror company in Murano, Italy.

The ceremony traditionally held at the Carolinum's Grand Hall (Aula Magna) was cancelled this year due to the coronavirus pandemic. Instead, Rector Tomáš Zima delivered his speech in a taped video address. He said that while the emptiness of the hallways and buildings at Charles University was far from pleasant, he was "filled with pride, energy and optimism" by all those at the university who were helping in the time of crisis. One silverlining? The crisis allowed for the renovation of the historic site to be completed.

7/4



Charles University marks 672nd anniversary in midst of crisis

21/4

The appeal of 11

Eleven top personalities from Charles University including the professors Jan Pirk, Pavel Kolář and Rector Tomáš Zima, published a public appeal outlining ways in which the country could gradually reopen following the worst of the pandemic. They expressed the view that public health, economic wellbeing, and the prosperity of the country (based on epidemiological data and the prognosis at the time) required restrictions to be lifted faster than had been planned.

World War II victims honoured

8/5

Representatives from the Association of Czechoslovak Legionnaires and Charles University honoured the memory of WWII victims. The event took place on the occasion of the 75th anniversary of the end of the global conflict. Together, representatives unveiled a new bronze memorial featuring the words *Universitas Carolina* and a statue of the Greek goddess Nike holding a broken wreath, symbolising the paradox of victory combined with suffering and loss.

17/4

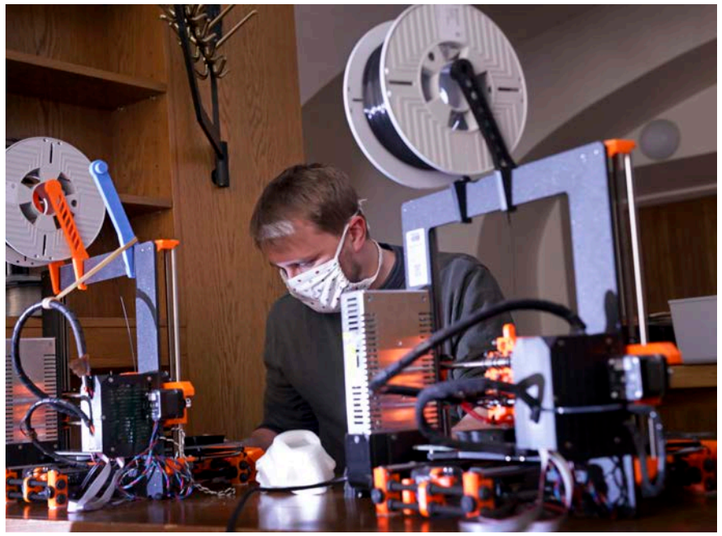
The Orchestra of Charles University in Prague received special recognition as Orchestra of the Month by ENUO (the European Network of University Orchestras) in April. Chief conductor Haig Utidjian described as "wonderful" the opportunity to present the orchestra's work to the broader public at a time when rehearsals and performances were on hold because of Covid-19.

Charles University orchestra and chorus receive special recognition

Slovakia's education minister welcomed at Carolinum

22/6

In June, Slovakia's Minister of Education Branislav Gröhling travelled to the Czech Republic for his first official foreign visit, taking part in a debate at the Carolinum. Fellow speakers included Charles University's rector, Tomáš Zima, and other school representatives. Czechs and Slovaks traditionally have a strong understanding and close ties due to their past history. Rector Zima wrote on his Facebook page that his meeting with the minister had focused on expanding international cooperation with universities in Slovakia. More than 3,000 Slovak students are studying at CU.



Jan Hrabovský is a student at the Faculty of Mathematics and Physics in the Quantum Optics and Optoelectronics Group. In the current crisis, he was a member of the Sousedska-Pomoc.cz (Neighbourly Assistance) platform, and with other colleagues from the Alumni scientae Bohemicae cooperative (www.czechscience.cz) he broadcast a series of educational lectures and workshops on the YouTube channel CovidEdu.

The mask maker

STORY BY Jiří Novák PHOTO BY Hynek Glos

For now, it appears that the worst of the pandemic is over in the Czech Republic. But we wanted to take one last look back. Our focus? Respirators made by a CU student at the Carolinum – the heart of Charles University – during the peak of the crisis.

During the pandemic, CU doctoral student Jan Hrabovský wanted to help but at first wasn't sure how. "I didn't want to sit at home, and I can't sew. On the other hand, I do have a 3D printer," says Hrabovský, who is doing his doctorate at the Faculty of Mathematics and Physics. His "workshop" is right in the Carolinum, and it's there that he ended up printing original respirators for hospitals and other institutions in need.

Hrabovský first offered his respirators on his own website, where he also posted print files so that others could print their own and provided basic information on cleaning and disinfection. He then became actively involved in the Sousedská pomoc (Neighbourly Assistance) volunteer initiative and offered his respirators through the organisation.

"I've had this 3D printer for three years, so I thought I could put it to good use," he recalls. After getting approval, he borrowed a second printer from the lab, to increase the speed of output. I used the basic print files from the Thingiverse.com database, and based on my own experience, I prepared models in two sizes for smaller and larger faces. It's also possible to adjust the shape a bit when you soak part of the mask in hot water," he advises.

"Essentially, they were better masks. You could say they were semi-respirators," Hrabovský explains. In the first weeks of the pandemic, he produced around 200 respirators, and these went to places like the Vinohrady University Hospital, Motol University hospital, to fellow colleagues from Sousedská pomoc and to the crisis task forces at Prague 1 and Charles University. He even printed a respirator for the school's rector, Tomáš Zima.

How were the masks manufactured? PLA plastic was used as the base material: in the process, a thin fibre is gradually melted as it unwinds from a wheel. It is printed layer by layer – first the body of the mask and then the front cover with an inner barrier. The finished plastic skeleton is then supplemented with a filtration layer; the simplest could be made of 100% cotton. A single unit took about two-and-a-half hours to print.

The masks weren't meant to replace certified PPE; they served only as a replacement at a time when respirators and masks were almost impossible to get. But they made a difference: yet another example of how much even just one person, in a time of unprecedented crisis, can help.

koronaut [kə'rəʊnənɔːt]
a healthcare worker dressed in personal protective equipment during the coronavirus epidemic (combining the words ‘koronavirus’ and ‘kosmonaut’)