

# žurnál

Magazine of Palacký University Olomouc, 2019/1

interview

## Vít Voženílek: Maps are a testament of the time and the people



Univerzita Palackého  
v Olomouci

Genius loci...



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title page: Satellite image of Olomouc, colours changed (such imagery is used particularly for vegetation applications, evaluations of plants' health status, differentiation of individual species, etc.)  
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MINISTERSTVO ŠKOLSTVÍ,  
MLÁDEŽE A TĚLOVÝCHOVY



*Dear colleagues, students, and admirers of Palacký University,*

*Here we are, at the beginning of a new year. The one which just ended marked above all one hundred years of the Czech Republic, during which time our country persevered through bad times and good, years of prosperity and peace, as well as those of anxiety and hardship. Some things were beyond the capacities of our predecessors – and beyond ours – however we have the chance to work so that the future will be better than the past.*

*In this respect the role of the university plays a key role, because a quality education is always the key to critical thinking, and on the other hand it also represents an effective guard against populism and the influences of modern propaganda.*

*And this is why I am also glad that our school gained institutional accreditation last year. We thus have the ability for the next ten years to approve and improve our study programmes ourselves. Now we can prepare new programmes for our students, offering the whole spectrum of diverse fields and combinations, and as a result also react to the dynamics of social changes and transformations in the labour market both in this country and the world.*

*In closing, I'd like to thank everyone for their good work in 2018, and wish you all a successful 2019.*

*Jaroslav Miller*  
Rector

theme

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Dagmar and Erik  
Sigmund

"I think that on the work level,  
we're dependable partners  
and we complement each other  
in regards to our stronger  
and weaker sides."

Dagmar Sigmundová

## Married in and to academia

Most of them met during their studies, and in addition to being married to the same academic discipline, they also share a life together in marriage. Even though they take their work home with them and usually spend their spare time discussing the fine points of their profession, they feel having the same profession is a plus. We're talking about "academic marriages" which at Palacký University are not made out of necessity. Let's meet some of them.

Biophysics brought Iva and Petr Ilík from the Centre of the Region Haná for Biotechnological and Agricultural Research (CRH) together roughly a decade ago. "We were in the same department, interested in similar themes. So we used to talk shop a lot, during which sparks flew," remembers Petr Ilík, who runs the biophysics departments at both CRH and the UP Faculty of Science. His wife made the shift from biophysics to molecular biology and genetics, but they continue to work together under the auspices of a Czech Science Foundation project. That's why scientific discussions are part of their daily home routine. "The best time to talk about work

in peace is at night, once the children are asleep. I see our common profession rather as a plus, it never gets in the way of our private lives. My wife is even the first reviewer of my scientific articles. She's not only good in English, she has a real feel for it. Plus she understands the topics, so it is the ideal combination," says Ilík, praising the virtues of an academic marriage.

The adage "birds of a feather flock together," has been confirmed in a study by Alena Bičáková, Štěpán Jurajda, and Lucie Zapletalová from the Institute for Democracy and Economic Analysis (IDEA), an independent think-tank arm of CERGE-EI. The three determined, on the basis of ana-

lysing data from 24 countries, that university-educated people from EU countries have a tendency to live with partners who studied in the same field. In other words, the field homogamy is high: between paired university-educated people, on an average of 36 percent. Czechia is one of the countries with a rather high level.

### How can one combine science and family?

To have a common theme for discussion and a passion for the same field can be an advantage in a partner relationship. But can one combine the demanding profession of a researcher with parental responsi-

bilities? The paths to achieving this are various. For example, Iva Ilíková, after seven years of maternal leave and changing her job, had to start a year ago from scratch. The decision to exchange science for caring for her children however is one she certainly does not regret. “I think it’s important to be with the children when they are young. The decision to stay at home with them for me was natural, I didn’t take it as a sacrifice. What’s more, both of our children require above-standard care, so at that time I did not have enough physical nor psychological strength for science as well. And now I appreciate the possibility of working part-time – life is not only about science,” Ilíková says.

**Veronika and Maxim Tomoszek**

“There is a certain disadvantage to such a relationship, in that you are basically always at work. Even though we just want to talk at home, we always end up talking about the faculty. But even that can be turned to an advantage.”

Maxim Tomoszek

**They even take their work home**

Work has even entered the household routine of Veronika and Maxim Tomoszek from the Faculty of Law. They first met at an Austrian constitution comparison seminar organised by the faculty – he was a second-year student, she was a first-year. From that moment on, they’ve been sharing professional and personal life together, including raising two children. Debates on work however, do enter their home life. “There is a certain disadvantage to such a relationship, in that you are basically always at work. Even though we just want to talk at home, we always end up talking about the faculty. But even that can be turned to an advantage. I always have

somebody beside me with whom I can consult about professional topics,” says Tomoszek, Vice-Dean for Bachelor’s and Master’s study programmes. His wife, thanks to her parents, well knows how a “professional” marriage works. “Luckily, I didn’t copy their example completely – they even worked in the same room together. I think that’s worse than me and my husband: we each have our own office, on different floors, and that works.”

They are both at the Centre for Clinical Legal Education at the Faculty of Law. Tomoszek was its first head, now it’s run by his wife. “We can work together, we know how to do it, I think that the results are visible. →



**Helena and Jiří Pospíšil**

“We can mutually help and support one another as life partners. Because we know the academic environment, we don’t have to explain the details, and communication is easier.”

Helena Pospíšilová





**Iva and Petr Ilík**

“The best time to talk about work in peace is at night, once the children are asleep. I see our common profession rather as a plus, it never gets in the way of our private lives.”

Petr Ilík

Our law clinic is one of the best in Europe,” affirms Veronika Tomoszková. If she could take some skill from her husband, it might be how to act on camera. And Maxim Tomoszek would like to learn from his wife how to better find information. “When she’s sitting at the Internet, she always finds great things I didn’t even know existed. She has a special search intuition.” And he adds another of his wife’s capabilities which is important for him. “She sets the bar fairly high and encourages me to jump. In addition to her law titles she also has a Bachelor’s in Sports Management and Training, so you could say she trains me,” the vice-dean says with a smile.

### Family, academics, and a love for sport

The husband and wife team of Dagmar and Erik Sigmund have a similar story. They met a few years ago when dorm rooms were being distributed; today they have two kids, and both train young floorball players. In the Institute of Active Lifestyle at the Faculty of Physical Culture, they also are interested in the influence of parents on the physical activity of children, and already have several important publications under their belts. She is the serious one, he the more emotional one – in his own words. “I think that on the work level, we’re dependable partners and we complement each other in regards to our stronger

and weaker sides. My husband is a workaholic, who carries things out absolutely precisely to their end, which I lack a bit. I save time during statistical analyses, because I’m better at it,” reveals Dagmar Sigmundová. “It’s not always so easy, but we do everything we can so that our names are a mark of quality, of work done with care. And that’s whether we’re talking about science, education, or even training, where we transfer our results to the children. I think it’s working well,” Erik adds.

### Still learning to accept criticism from your partner

Helena and Jiří Pospíšil work together at the Department of Christian Education of the Sts Cyril and Methodius Faculty of Theology as assistant professors. The fact that they both work in the same department is something they appreciate. That doesn’t mask the fact that it comes with some small pitfalls. “In many cases it is an advantage because we share similar topics in a number of areas. At the same time, it can be a disadvantage, because we are usually the first critics of each other’s work and we’re still learning how to accept such criticism,” reveals Jiří Pospíšil. His wife adds another pro and con to having a shared work focus. “We can mutually help and support one another as life partners. Because we know the academic environment, we don’t have to explain the de-

### IDEA study

- included 128,040 couples, 75% of whom were wedded
- the sample comprised 360,072 women and 321,069 men who graduated between 1993–2013
- the level of field homogamy depended on the equality of the men and women in individual fields
- the least amount of field-paired graduates were in services and agriculture, the most in social and healthcare sciences

tails, and communication is easier. As for disadvantages, the only one I see is that we sometimes take work home. But we’re not alone in this,” she adds.

### Passion for science passed on to the children

According to the aforementioned study, the fields with the most pairs come from social and healthcare sciences. For example, families where both partners are doctors. This is the case of Jiřina and Jiří Bártek. Jiří, one of the most cited Czech scientists, works as scientific support at the Institute of Molecular and Translational Medicine at the UP Faculty of Medicine and Dentistry, and works together with his wife on joint projects at the research institute of the Danish Cancer Society in Copenhagen. Their research group is addressing a wide range of approaches to studying the cell cycle and DNA damage. “The expertise of my wife in the field of cancer pathology suitably complements our team’s focus,” states Jiří Bártek. The scientific marriage in this case is a good start for carrying on the family tradition. “We apparently influenced our kids by our work, because our son is a neurosurgeon and sometimes works with us on brain tumour research. Our daughter is a molecular ecologist and is now completing a project which should contribute to resolving acute problems with regard to global climate change,” adds Jiřina Bártková.

# The Dagmar and Václav Havel VIZE 97 Foundation Prize awarded to former UP rector Josef Jařab

Professor Josef Jařab, UP rector emeritus, became the 20th recipient of the Dagmar and Václav Havel VIZE 97 Foundation Prize. The award ceremony took place on 5 October 2018, the occasion of what would have been Václav Havel's 82nd birthday.

Since 1999, the Dagmar and Václav Havel VIZE 97 Foundation has "awarded its international Prize to significant thinkers whose work exceeds the traditional framework of scientific knowledge, contributes to the understanding of science as an integral part of general culture, and is concerned with unconventional ways of asking fundamental questions about cognition, being, and human existence." Past recipients include American physicist Nathaniel David Mermin, philosopher Jan Sokol, the world-famous sociologist Zygmunt Bauman, and writer Umberto Eco.

Awardees receive a diploma and a commemorative artefact in the form of the crozier of St Adalbert of Prague by Czech artist Jiří Pliešník. "We choose recipients over a long period of time when we carefully ex-

amine their accomplishments to date and their overall activities. Recipients are chosen from the ranks of experts in any field which has inroads into cultural, social, and everyday life," said its founder and chairwoman of the VIZE 97 Prize Board, Dagmar Havlová.

Josef Jařab was introduced at the gala event by eminent psychiatrist Prof Cyril Höschl, whose introduction included these words about the former UP rector: "If the Czech post-1989 pantheon were to include a great personality from the university sphere of both European and transatlantic dimensions, who without doubt should have been already awarded some time ago – even despite or perhaps because of his desire to avoid the spotlight – then it must certainly be our dear Silesian colleague with a friendly, soulful face and similar manners, an expert on American literature and culture, the charismatic rector of two prestigious universities, an avid *homo politicus*, a responsible husband and father, a humorous companion and good friend: Josef 'JJ' Jařab."

The distinguished American studies scholar, translator, and former senator was awarded for developing education and promoting Anglo-American culture and democratic principles. "The Dagmar and Václav Havel VIZE 97 Foundation Prize means something very personal to me, as recognition coming from someone whom I respect. And it's important for me as a citizen, because it gives me the possibility to also acknowledge America, which was an inspiration for our republic, founded 100 years ago this month – America as it was represented by Woodrow Wilson, and as it was perceived and admired by our first Czech president, T.G. Masaryk," said Prof Jařab.

The ceremony took place in the enchanting space called Prague Crossroads, in the former Church of St Anne in Prague, which Václav and Dagmar Havel built not only for the needs of VIZE 97, but mainly as a meeting place for everyone who deeply cares for the future. The prize was given to Josef Jařab by Dagmar Havlová.

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"It gives me the possibility to also acknowledge America, which was an inspiration for our republic, founded 100 years ago this month – America as it was represented by Woodrow Wilson, and as it was perceived and admired by our first Czech president, T.G. Masaryk."

Josef Jařab



8 faculties  
1 university

Main guests of the congress Josef Prchal (left) and Robert Gale (right) during the meeting with the emeritus head of the Olomouc department, Karel Indrák.



## Olomouc Hematology Days hosted top experts from USA

A rich academic programme and presence of globally recognised scientists marked the Olomouc Hematology Days, co-organised by the Department of Hemato-Oncology at the UP Faculty of Medicine, University Hospital Olomouc, and the Haimaom Foundation for the Support of Bone Marrow Transplants.

The world-renowned U.S. doctor and scientist Robert Gale from the University of California in Los Angeles, one of the prominent authorities in radiation effects on blood-forming tissues, informed about his experiences in hematology during rescuing the casualties of nuclear powerplant accidents, particularly in Chernobyl, mainly

from the view of molecular biology of transplantation. The invitation was also accepted by a leading global hematologist with Czech roots, Josef Prchal from the University of Utah, a holder of many awards, including the prestigious Stratton Prize and a specialist in rare diseases of red blood cells. He has been collaborating for a long time with leading experts from the Faculty of Medicine at the UP, which awarded him a doctor honoris causa in 2011.

“It was advantageous to the point of selfishness that many years ago I met with the current head emeritus of the hematology department, Karel Indrák. I found other smart people there to work under me. Their

productivity was extraordinary, and I’m glad there was some contribution for them in it too, that they are successful, and our collaboration still continues,” said Prchal.

The programme included the 22nd Conference in Nursing Care and Health Care Laboratory Work and Patients’ Day. “Despite a number of other hematological events, our participants were loyal to us. More than 600 registered in advance and others kept registering on the spot. More than one hundred participants came as representatives of partner companies, and the large participation of our colleagues from Slovakia was also gratifying,” summed up Tomáš Papajík. (mav)

## Dozens of alumni arrived in the Faculty of Science for their gold and diamond graduation

Fifty-two alumni who finished their studies at the UP Faculty of Science fifty or sixty years ago attended their gold and diamond graduation ceremonies on November 16. The ceremony where participants received commemorative diplomas was hosted by



Vice-Rector Jaromír Fiurášek, Dean Martin Kubala, and Vice-Dean Karel Lemr.

“I think that the gold graduation is an amazing idea. We graduated in 1968. And we made an oath that we would meet again only after the Soviet army left Czechoslovakia. And so we met only after twenty-four years. I’m so pleased to be able to meet my schoolmates who I did not see for a very long time,” said Ludmila Kalábová from Prague, who studied Special Numerical Mathematics.

This year’s diamond participants included ninety-one year-old Miloš Skalický. “I’m glad I can take part in this special occasion. I studied Chemistry and Geography, graduated in 1958, and was a teacher until I was eighty-two,” he smiled.

After the ceremony, the alumni attended a presentation by the Faculty of Science, took a group photograph, had a lunch together with a ceremonial toast, and toured the faculty premises. The gold graduation ceremony has been taking place at the Faculty of Science since 2007, the first to start this tradition at UP. The diamond graduation ceremony took place for the second time. “Today’s ceremony interested me by how truly pleased everyone was. I shook hands with everyone and exchanged a few words. In their eyes I could see how moved and happy they were that we held such a meeting. I wish all participants well in the coming years,” concluded Vice-Dean Karel Lemr, the promoter of the event. (cho)

## Faculty of Physical Culture opened a modern centre for research into human movement

The ribbon cutting ceremony in the middle of the Walk Laboratory by the Faculty of Physical Culture Dean Michal Šafář and his predecessors in the office, Dušan Tomajko and Zbyněk Svozil, symbolised the opening of the new Centre for Kinanthropological Research. Scientific workplaces of the faculty now have another state-of-the-art facility at their disposal.

“Many years of our efforts to define the Faculty of Physical Culture as a top-notch research institution have been completed. Our employees have been able to produce scientific findings of extraordinary importance even in the previous modest conditions. I believe that the current working environment is a well-deserved reward as well as a powerful impulse for increase

in the quantity, quality, and meaningfulness of kinanthropological research,” said Dean Šafář.

Long before the ceremonial opening the faculty was busy with preparations. During the summer the employees of the Institute of Active Lifestyle and the Department of Natural Sciences in Kinanthropology moved in. They have at their disposal offices, conference rooms, three classrooms, and most of all, perfectly equipped laboratories for experts in anthropometry, biomechanics, or stress physiology. A hypoxic chamber which allows the simulation of conditions up to 5500 metres altitude is one of the unique features.

The project of the Neředín campus, joining the research centre and the BALUO Application Centre, began to take shape around 2011, and its architectural form was projected by atelier-r from Olomouc. The overall costs of the complex construction reached €13 million. The renovation of the former military laundry to the Centre for Kinanthropological Research was made possible thanks to funding by the Czech Ministry of Education. (vim)



## King Sejong Institute established at UP

Korean Ambassador Mr. Seoung-Hyun Moon, together with UP Rector Jaroslav Miller commenced the functioning of King Sejong Institute in the university premises. The new UP workplace has been offering courses in Korean as well as cultural events promoting Korean culture.

The institute is the first of its kind in Moravia. It has joined the ranks of more than one hundred institutes of the same name located all over the world. “Palacký University has Chinese, Japanese, and Indonesian studies, and I am immensely happy to announce that Korean studies have joined our family of Asian studies,” said Rector Miller.

The Olomouc workplace was established thanks to the collaboration of the Department of Asian Studies at the UP Faculty of Arts and the Embassy of the Republic of Korea. Korean studies have a three-year history at Palacký University. According to David Uher, head of the Korean section at the Department of Asian Studies, its establishment was pos-

sible due to the efforts of Mi-Young Park. “During roughly ten years of her employment at UP she accomplished a great deal in Korean studies for us. She was the first person in the Czech Republic to write a Czech-Korean dictionary. She was re-

peatedly granted the support of the prestigious Korea Foundation,” Uher said, adding that the accreditation for a three-year Bachelor’s study programme Korean in Economics at UP was approved already in 2015. (map)



8 faculties  
1 university



## Future rescuers instructed by a top Israeli expert on crisis management

A unique series of workshops was made possible due to a visit at the Faculty of Health Sciences by Gary Grosman, a member of the rescue team at the Israeli military air force. Students of the programme Health Rescuer attended the presentation of his experiences from crisis management during disasters and rescue operations after terrorist attacks. The themes involved mainly difficult intubations in pre-hospital care, effective self-defence for rescuers, and preparedness for terrorist attacks. Students were also informed about the system and procedures of the health rescue service in Israel. “Due to the conflicts common in

Israel, local rescuers work under much greater stress, and thus they choose more effective procedures,” said the course guarantor and faculty Vice-Dean Radka Filipčíková.

In a follow-up to the presentation of practical skills, Grosman also introduced the key aspects of emergency and rescue procedures after terrorist attacks. “In Israel, rescuers usually transport all casualties to medical care within 25 minutes, and in four hours the place looks just as it used to before the attack, everything is tidied up and cleansed. We are able to quickly return life to those places and show the attackers that they cannot win over us, cannot intim-

idate us, and that we will still live on and strive for peace,” he emphasised.

The top expert has had 25 years of service in military air force and active participation in rescue missions, particularly in providing operational support during highly dangerous incidents. As a member and later a volunteer of an elite division of the Israeli military air force he took part in frequent rescue operations after terrorist attacks in Israel as well as other catastrophes in Kenya, Jordan, and Turkey. He founded the company Aeromedical Group, specialising in improvement of crisis healthcare service in airborne operations, and is the founder and CEO of Global Medical Service. (mav)

## Faculty of Theology hosted representative of the Ukrainian Catholic University in Lviv



The possibilities of further cooperation with Palacký University and its Sts Cyril and Methodius Faculty of Theology (CMFT) were the theme of the professional visit to Olomouc by Roman Zaviyskyy, Dean of the Philosophical and Theological Faculty at the Ukrainian Catholic University in Lviv. The meeting with CMFT Dean Peter Tavel, Rector of the Olomouc Archbishop's Priestly Seminary Pavel Stuška, and representatives of the UP International Affairs Office was dedicated mainly to the possibilities of student mobilities within the Erasmus+ programme.

“Our students could be interested in getting more familiar with Eastern liturgy and a course in iconography. Preliminary talks on the possibilities of specific collab-

oration, primarily with the Department of Christian Social Work, also involved education in the area of humanitarian aid,” said CMFT Vice-Dean for International Relations, Dominik Opatrný.

The Ukrainian guest demonstrated his professional interest in Eastern religions by his lecture “Churches of the East and West: History, Liturgy, and Challenges of Ecumenism”. He explained the foundations and outlined the formation and status of the Greek Catholic Church as well as some of the key aspects of the current situation of Eastern Christians in Ukraine. “The Christians of Byzantine tradition in Ukraine are divided into three groups: oriented to Moscow, Constantinople, and Rome,” clarified Roman Zaviyskyy (on the left). (mav)

## Book rarity. Team from the Faculty of Law published the complete *Digesta*

*Digesta seu Pandectae* – a book whose impact on European culture can be compared with the Bible, yet it has been practically unavailable in printed form. That has to be changed, decided a team of students and academics from the UP Faculty of Law. *Digesta* or the *Digest*, as the book is commonly called, is the most extensive and most important source of knowledge of Roman Law, and now it has been published in its complete original version. Its 900 pages written in Latin weigh over two kilogrammes and it is the first edition of *Digesta* in the history of the lands which made up the former Czechoslovakia.

The idea to publish the *Digesta* in book form came from Lucie Černá, a fourth-year student of Law. “We need *Digesta* as the most significant source during Roman Law lessons. We used to be instructed on mere fragments, we could analyse some parts, but the complete text is not available as a book. Even specialised libraries in law faculties have only a few copies, and

never on loan. There is only one accessible website containing the complete version,” explained Lucie Černá. It was her teachers who motivated her to publish the *Digesta*. She closely collaborated with Petr Dostalík and Kamila Bubelová from the Department of Theory of Law and Legal History.

The team worked on the book for a year and a half, and used the edition by German scholar Theodor Mommsen, adapted by Paul Krüger. The technical aspects, such as graphic layout and print – were taken care of by the student association Nugis Finem. The publisher is Nugis Finem Publishing.

Michal Skřejpek of Charles University Faculty of Law, one of the greatest experts on Roman law in Czechia, and who has been gradually translating *Digesta* into Czech, has words of praise for the accomplishment of the Olomouc team. “It is more than meritorious that our colleagues from Olomouc undertook this uneasy and

extraordinarily arduous task of providing access to the Mommsen-Krüger edition of *Digesta* for everyone who wishes to work with the text. The entire community of scholars in Roman studies owes them thanks and pays tribute to the job they have done,” stated Skřejpek. (eha)



## Faculty of Education prepared a unique concept: Teacher21

It's about educating teachers in the spirit of modern European trends and societal needs. Graduates should be equipped with skills and knowledge necessary for successful functioning in the current as well as future world.

The new concept Teacher21 was prepared by the Faculty of Education in response to UP's institutional accredita-

tion. “We have a number of departments and institutes that prepare quality teachers and educational workers in various specialisations. There are skills, however, which should be inherent to every graduate. Therefore, on the basis of broad consultations across individual workplaces, we put together a list of key competences that should be acquired by a high-quality

teacher in the 21st century. These are also areas in which teachers should develop in such a way that they succeed in the modern world and are able to develop the potential of their students,” said Libuše Ludíková, the faculty dean. These competences should define what a modern teacher should be capable of. “They should consider the aim and purpose of education, be erudite in their disciplines and knowledgeable about the world around them, lead the students to better understanding of the world as well as themselves, and be able to inspire the students and develop their interest,” she added. The teaching profession is one of the most demanding, according to her. A graduate prepared by the faculty with respect to this new concept will be motivated to further professional and personal development. (map)



Vice-Dean Petra Šobáňová and Kamil Kopecký, head of the Centre for Prevention of Risky Virtual Communication at the UP Faculty of Education, introduced the concept Teacher21.

# Five scientists from UP on the list of world's most cited

Twelve scientists working at Czech universities and research centres made it onto the Highly Cited Researchers 2018 list, published annually by Clarivate Analytics. Five of them are connected to Palacký University – no other Czech university can boast the same.

Four representatives from the Regional Centre of Advanced Technologies and Materials (RCPTM) at UP were included within the select company, along with 17 Nobel Prize recipients. This means RCPTM had more people on the list than all of Hungary or Slovenia. Radek Zbořil, Head of RCPTM and an expert on nanotechnology, made the list of the top one percent of the most cited scientists in the field of chemistry for the first time. In recent years, he has been present at the discovery of the thinnest known insulator, non-ferrous magnets, and bacterial resistance to nanosilver.

“I believe that the citation response of our work reflects not only its quality but also the correct choice of research aims. For some time we have been devoting ourselves to the research of materials and technologies which have huge application potential in medicine and biotechnology or are useful in water purification and finding new sources of energy. On the other hand, this is costly, multidisciplinary research, where there is huge competition. To succeed in this requires capable scientists with great ideas, in an international environment with superb infrastructure,” said Zbořil.

## Research with international impact

After a year off, the physical chemist Pavel Hobza, who works at both RCPTM and the Organic Chemistry and Biochemistry Institute of the Czech Academy of Sciences, returned to the list. “To be listed for the fourth time among the top one percent of most cited scientists in the world is confirmation that our long-term scientific project on non-covalent interactions and their use in bio – and nano-disciplines is very promising. In recent years we have made the switch from basic research to applications, and the

results, based on the close interconnection of theory and experiment, have more than potential,” said the world-famous expert, who made his reputation primarily on the discovery of non-classical hydrogen bonds.

Back on the elite list are other scientists working at RCPTM – the chemist Rajender S. Varma, who also works for the Environmental Protection Agency in the USA, and Patrik Schmuki, an electrochemist who also works at Friedrich-Alexander University in Germany.

The analytic chemist and phytochemist Ondřej Novák is also affiliated with UP, working at the Laboratory of Growth Regulators and the Centre of the Region Haná for Biotechnology and Agricultural Research. “I’m very honoured to be included in the group of highly-cited researchers. I believe that this success is not about rewarding just one person, therefore I would like to thank my colleagues very much. For me it is clear proof that the long-term work of our team has international impact,” said Novák.

## Making the world a better place

According to Clarivate Analytics CEO Annette Thomas, the list represents the scientists who are setting the pace of global research. “These scientists are contributing to pushing the boundaries of knowledge and to society’s progress as a whole, contributing to a healthier, richer world showing a higher degree of sustainable development,” said Thomas.

For comparison, neighbouring Slovakia has no researchers on the elite list, Hungary has three, Slovenia two, and Poland six. On the other hand, there are four dozen people on the list working at Austrian universities and research institutes, while Germany has more than 350. The country with the most scientists on the list is the USA, with 2,639.





**Radek Zbořil**

Physical chemist, renowned scientist in the field of material chemistry and nanotechnology, creator of a number of successful patents and technologies. Czech Ministry of Education, Youth and Sport Prize laureate.



**Pavel Hobza**

One of the doyens of research into non-covalent interactions, famous primarily for his discovery of non-classical hydrogen bonds. He is the recipient of the Czech Mind prize and the prestigious Erwin Schrödinger Prize.



**Patrik Schmuki**

He achieved success in manufacturing photoactive semiconductor materials, e.g. for the technology of solar fission of water. He is the head of the Photoelectrochemistry group at RCPTM.



**Rajender S. Varma**

World-renowned chemist who investigates the use of nanotechnologies in environmental applications. He works at RCPTM in the Environmental Nanotechnology group.



**Ondřej Novák**

He studies the biosynthesis and metabolism of plant hormones and the relations between their chemical structure and biological activity with the help of modern mass spectrometry.

## Scientists from the UP Faculty of Medicine and Dentistry have discovered a new approach in diagnosing tumors

More precise diagnosis and targeted treatment of tumors of the hematopoietic and lymphoid tissues are made possible by a new approach to data analysis, which has been effectively applied by researchers from the Department of Immunology in cooperation with the Department of Hemato-Oncology at the Olomouc University Hospital, the Hematology Clinic at the Havířov Hospital and Polyclinic, and the Technical University of Ostrava. Their results have been published in the prestigious professional journal in the field of cytometry – *Clinical Cytometry B*.

To detect cellular signs or markers characteristic of specific diseases, scientists use an analytical method called flow cytometry. Standard procedures used to date have had trouble in detecting the presence of a few signs and their combinations. “Therefore we applied the data mining method, which had not been used before in cytometry,” explained Eva Kriegová, leader of one of the workgroups at the Department of Immunology.

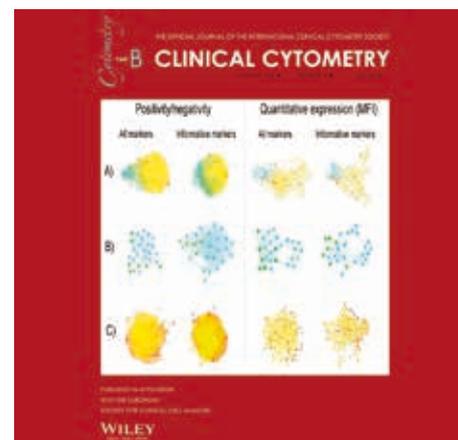
The data mining method allowed the scientists to very precisely determine which markers have the highest predictive value for establishing a diagnosis of a particular type of cancer. “Thanks to quantification

analysis, which creates a visually lucid network, we can follow in detail the relationships between the individual immunophenotype profiles of specific patients and distinguish subgroups according to the type of cancer. By determining the most informative markers, the set of diagnostic procedures can then be improved and refined in order to give the most informative value,” described the first author of the study, David Starostka, Head of the Hematology Clinic at the Havířov hospital and an assistant professor at the Department of Hemato-Oncology.

The main benefit of the data mining method is thus its impact on diagnoses. “Doctors can now get more precise information as to which markers are useful to separate individual groups of patients with different types of hematopoietic and lymphoid malignancies from each other,” said the head of the Department of Hemato-Oncology, Tomáš Papajík. The principle has also been applied by scientists to support treatment methods. Hemato-oncologists now can use it to identify individual subgroups of patients according to prognosis, progression of the disease, or according to responses to treatment.

Taking part in the development of the new method of analysis of cytometric data in addition to the immunologists and hematologists were Miloš Kudělka and Martin Radvanský, experts from the Department of Electrical Engineering and Computer Science at the Technical University of Ostrava, who worked on the analytical approaches. (mav)

One of the data mining analysis diagrams, on the title page of *Clinical Cytometry B*. (July 2018)



interview

text: Martina Šaradínová  
photos: Gabriela Knýblová

A portrait of Jaroslav Doležel, a middle-aged man with grey hair, smiling. He is wearing a blue and white checkered button-down shirt and dark jeans. He is standing in a greenhouse, with large green leaves and stems of plants visible in the background. The lighting is soft and natural, suggesting an indoor setting with large windows.

# Jaroslav Doležel:

**You cannot change the world on your own, but it's good to try**

If your kids are not taking firsts in school and instead they want to play guitar after school, don't worry. Even so, they can go far – become a world-renowned scientist, even win the most important awards for science in the country. An illustrious example of this is the recipient of the 2018 Czech Mind prize, Jaroslav Doležel, who leads the Olomouc workplace of the Institute of Experimental Botany of the Czech Academy of Sciences and is the scientific director of the Centre of the Region Haná for Biotechnology and Agricultural Research. According to him, one never knows what might become handy in life. At the same time, he admits that one needs luck on the road to success and also the ability to grab opportunity by the horns. And this is perhaps how he inspires his students at the UP Faculty of Science.

— I cannot help but start with a very important event – being given the country's highest award for science. How did that make you feel? To be honest, it was a mixture of feelings. Of course it was a huge surprise, I never expected anything like that. Then I realised how prestigious the award is, and how much significance it has. So it carries a certain weight and puts some responsibility on a person. However, being awarded the prize certainly made me very happy.

— Much work preceded the prize, so let's start at the beginning. Were you an ambitious and diligent middle school student? No, I was a B student, I tried to optimise the price-performance ratio. Among other reasons, because my hobby was music. I played in a band, and always did just enough to pass the exams. I was only a good student in English, and that was due to rock 'n' roll. Rock music made me love English, and I excelled at it.

— So you didn't want to be a scientist as a teenager? No, rather it was a case of choosing the right path at certain crossroads in life. I have always been lucky regarding the events and the people around me. At first I didn't even have a clue as to what science is all about. My parents worked in agriculture, my dad was the boss at a big and successful horticultural firm. He was interested in seed production and worked with breeders – maybe there you can trace the beginnings which had an influence on my professional career. In principle, however, he evidently counted on me following in his footsteps and becoming a horticulturist.

— Is that why you went to agricultural school?

That's right, I left to study horticulture, which at the time was quite a prestigious field, at the Agricultural University. There I found myself at one of life's crossroads. That was the time when Prof Lužný sent me for my Master of Science degree to the Institute of Experimental Botany, where I have remained to this day. I had enormous luck, coming from an agricultural background, from a village, to end up at the Academy of Science, where they carried out top research. One whiff of the Academy, and that was it for me. I was entranced by the creativity there, the possibility of discovering new things, communicating with colleagues abroad.

— Tell us about you and plants? When did you start to understand each other?

I've never been an enthusiastic botanist, and that's still true today. Plants interest me from the perspective of their inherited information. At grammar school I had a collection of cacti, but when I started playing in the band I sold them, which really made my dad angry. Even at our house it's my wife who takes care of the plants, I just help out occasionally.

— But agriculturally-important crops are of interest to you. How did that come about?

My life's work began to sprout during my doctoral studies. I was dealing with transformations of hereditary information when cultivating cells in vitro. That was the moment when I became a professional geneticist. At that time the available methods were inadequate, but thanks to my supervisor, I found cytometry, which is my life-long love. I travelled daily to Brno to the pathology department in St Anne's Hospital to measure the DNA content in cells, and I learned a lot. It was also there where I learned about flow cytometers, and after getting my doctorate, I convinced my boss to buy one. I already knew that I wanted to dedicate myself to the study of hereditary information using cytometry methods. Together with my colleagues we took the road of using flow cytometers in a number of areas in plant biology. I really enjoy discovering new things. Playing in a band also helped me with a number of technical things and got me used to working in a team.

— You and your colleagues have had a significant role in decoding the genomes of barley, banana trees – and in 2018, wheat. How long did that road take and which of those crops gave you the most trouble?

So far, the banana tree has been the toughest, despite the fact it has a small genome.

And maybe that's why it interests me. If I could keep only one plant for research, I would choose the banana tree. And since you're asking about the road, that one was long, and nobody at the beginning knew where it would lead. As I said, I loved cytometry, which we used from the start for analysing cell nuclei. However, it was the combination of cytometry and genome analysis which attracted me. It took a few years, but we figured out a method of isolating chromosomes and subsequently sorting them with the help of flow cytometry. We went that direction on purpose. I was convinced that it was the correct approach, and I wanted to apply it to plants. We began with beans and peas, but that didn't get us much notice. Then we focused our efforts on cereals, the first being barley. We fine-tuned the method and then modified it for the much more complicated wheat genome. In 2005, an international consortium was formed to decode the bread wheat genome, and our method became the main approach.

— You've accomplished three great goals. What challenges now lie before you?

We're finishing the sequencing of the rye genome. It needs the final stage – decoding the genome. What interests us now is the organisation of the genome in three-dimensional space in the cell nucleus. In the meantime, we've analysed the genome as a linear sequence of letters. But it is not arranged like that in reality. We should rather imagine it as a twisted string with lots of loops, in which there are billions of letters. We're now studying this, thanks among others to the research package for European projects which the Centre of the Region Haná was awarded in the Excellence in Research call. We're going to make use of a superhigh-resolution microscope which we're now buying. We're going to study how the hereditary information is arranged, and what influence it has on a plant's properties. In that respect, we're back at the beginning, reinventing the wheel.

— The results of the research should help in the breeding of crops which will have bigger yields and higher resistance to the negative effects of environment. Is that still a far-off vision?

Many things are already being done. Crop yields are decreasing due to diseases and pests. Fortunately, resistance to them usually depends on only one segment of hereditary information, which can be identified and isolated. For example, we're now working together with several labs

**Jaroslav Doležel (b. 1954)**

Head of the Olomouc workplace of the Institute of Experimental Botany of the Czech Academy of Sciences and the scientific director of the Centre of the Region Haná for Biotechnology and Agricultural Research. He also works at the Department of Cell Biology and Genetics at the UP Faculty of Science.

He graduated in the field of Horticulture from the Agricultural University in Brno.

He dedicates himself to the study of hereditary information in plants, its structure, and the transformations which accompany plant evolution and the creation of new species. With his team, he is working on new methods which will simplify analysis of complex genomes, and in the framework of international projects he has participated in decoding the genome of important plant species.

The results of his scientific work have won him a number of prizes including the Czech Learned Society Prize, the Czech Academy of Sciences' "Praemium Academiae", and the Czech Mind award. He has published more than 300 articles in scientific journals, nearly 40 book chapters, and has edited three books in his field. His work has over 12,000 citations.



abroad on isolating genes resistant to crop rust and mildew. More resistant strains not only produce higher yields, but we do not have to treat them with so many pesticides and thus stress the environment with chemicals. The same applies to fertilisers. If we teach plants to use the nutrients in the soil better, we'll again conserve nature. Through the help of genetic modification, we are also able to speed up breeding. By the way, I enjoy having visions. Once we begin to understand hereditary information, then we can try to raise plants in the future which will be able to extract nitrogen from the air or increase the effectiveness of photosynthesis and thus yields. This, however, is only possible by using genetic engineering methods.

— Is this the "second green revolution" to which you often refer? When scientists will help ensure enough food for the ever-growing human population?

This process is already underway, but the European Court of Justice is erecting barriers in its path. New methods of breeding are in principle based on the ability to modify plants' genetic information. Luckily for humanity, scientists have discovered the system CRISPR/Cas9 in bacteria, through which it's possible to change genetic information with accuracy, like a surgeon slicing with a scalpel. This principle has been picked up by watching nature; humans have been taught by bacteria. But it's banned. Without genetically-modified crops, we will not be able to feed mankind. Today we already know that the heart of the problem could be in Asia and especially Africa. That is where they are expecting a population explosion. We cannot signif-

icantly increase the area of cultivated land anymore, so there is nothing left but to increase yields.

— What is the biggest engine driving you? The possibility of overcoming the hurdles of research, or the mission or desire to help someone?

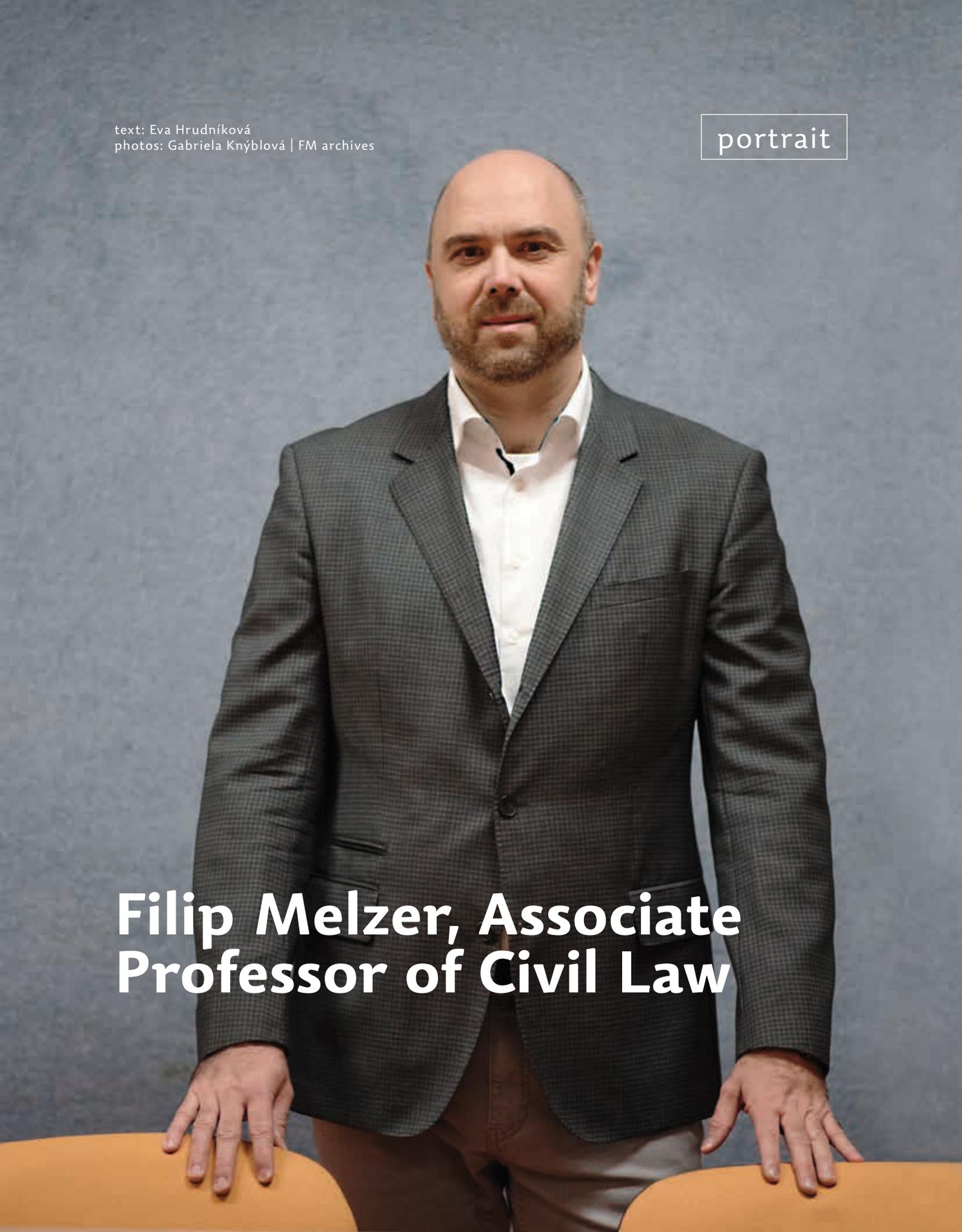
The need to discover something new is very strong in me. But at present, it makes me very happy when I see that my work means something. It's a kind of bonus. When I go to Africa, for instance, and see that banana plant breeders are using the method of flow cytometry and I helped introduce that, it makes me happy. You cannot change the world on your own, but it's good to have the feeling you're trying. Primarily, however, for a scientist basic research is essential. Without it, there would be nothing to apply.

— In Olomouc you've established an internationally-renowned workplace, you are the scientific director of CRH. You must have had a number of lucrative offers from abroad. How is it that they have not tempted you away?

There have not been so many offers, because I have made it quite clear I'm not that interested. First, because of family, who don't want me to live permanently abroad. The main thing, however, was that I knew what I wanted to do and how to get there. I didn't want to leave half-way down the road. We really have excellent working conditions here. Everyone who comes from abroad to our centre – their jaws all drop in surprise. In principle, we are absolutely on par with workplaces abroad. So where would I go? I don't have the slightest reason to do so.

text: Eva Hrudníková  
photos: Gabriela Knýblová | FM archives

portrait

A full-body portrait of Filip Melzer, a man with a beard and balding head, wearing a dark grey patterned suit jacket over a white shirt. He is standing with his hands resting on two orange chairs in front of a plain grey background.

# Filip Melzer, Associate Professor of Civil Law



When he was recently approached by a nationwide daily newspaper on the occasion of the 100th anniversary of the republic to vote in the Lawyer of the Century poll, he refused the offer with thanks. The poll seemed too general to him, and in the last century, he feels Czech legal science has not had the most favourable conditions for development. He considers Antonín Randa as the last Czech lawyer to achieve European renown. Randa was a law professor who participated in the emancipation and expansion of Czech law at the turn of the 19th and 20th centuries. And now he has a bronze medal with a portrait of that extraordinary lawyer in his home. Filip Melzer, Associate Professor of the Department of Private Law and Civil Procedure, was one of 2018's Antonín Randa Medal recipients.

The medal was given by the Czech Lawyers Union for contribution to the development of democracy and active participation in law making. However, all throughout high school, Filip Melzer was considered an average student. "I was a lazy student. Then came the Velvet Revolution and everything changed. All those in authority were removed. And the result? I skipped the most classes of anyone in my class," admits the Brno native. Despite that, he graduated with honours and reinforced by his success, he was certain he would be accepted to law school. He was not. "It was the first big setback of my life. But I am grateful for it. In that moment, I said to myself: something has got to be changed. And a year later I was accepted." And he graduated from law in the top one percent of his class.

### Being abroad was an eye-opener

His career path was significantly influenced by experience abroad. During his Master's studies, he spent two years at a German university, in Frankfurt am Oder. Then another year in Vienna. "Going abroad during my studies was one of the best decisions I ever made. It was a real eye-opener. I could see how law was practised in Germany, and just how extraordinarily bad was the situation here. And it wasn't only that it was shortly after the Velvet Revolution. It was the difference in law education, in legal science, which is still profound." He has stayed in legal science. He was the first to receive the title of Juris Doctor from the UP Faculty of Law.

Legal science is the handmaiden of legal practise, in the best sense of the word. "It thoroughly and systematically resolves problems which are important and interesting for legal practise." And from this perspective, he considers devoting himself to legal science, teaching at the university, and working for a law firm as an ideal combination.

His is one of the foremost names in Czech legal science today: for over ten years it has been associated with the new Czech Civil Code. And how did the relationship between Filip Melzer and the most extensive piece of Czech legislation, with 3081 paragraphs, arise? "It came about naturally, and with luck, for which I thank Prof Karel Eliáš, who revived the recodification commission for preparing a new Civil Code and was looking for younger lawyers with international experience."

He was actively involved in the drafting of the new Civic Code, he worked as a dep-

### Filip Melzer (b. 1975)

He graduated from the Masaryk University Faculty of Law in Brno. In 2002 he completed postdoctoral studies (LLM) at Universität Passau; in 2015 he was the first to receive the title Doctor Juris in Civil Law from the UP Faculty of Law in Olomouc.

He teaches in the Department of Private Law and Civil Procedure and at the same time is a counsel for the law firm HAVEL & PARTNERS. He also teaches at the Czech Judicial Academy.

In the past he worked as a judicial assistant in the Supreme Administrative Court and later as a judicial assistant in the Constitutional Court. From 2007–2012 he was a member of the recodification commission for preparing a new Civic Code at the Czech Ministry of Justice. He is also a member of the work commission on private law at the Czech Legislative Council. From 2010–2012 he was a Czech Deputy Minister of Justice. Since 2012 he was first head and then later a member of the Commission for Application of New Civil Law at the Czech Ministry of Justice. At present he is participating in modifications of the Slovak Civil Code.

He regularly publishes in professional journals. He is the author of the textbook *Metodologie nalézání práva, základy právní argumentace* (Methodology of Foundational Law, Fundamentals of Legal Argumentation). At present he is the managing editor and co-author of a vast commentary on the new Civil Code.

In November 2018 he was the recipient of the Antonín Randa bronze medal for contributions to the development of democracy and active participation in law making.

uty at the ministry when the code was ratified, and he has it to this day, constantly, on his desk. And I dare say he will for a long time. Together with Petr Tégl, a colleague from his department, the two are the main authors of a vast commentary on the Civil Code, the most detailed yet on this fundamental area of private law. The first volume came out five years ago. “Our task is to suggest resolutions to cases which cannot be resolved definitively by a mere reading of the law, and that means also including descriptions of possible gaps in the law. Right now we’re about half-way through.”

### Legal science is not boring

The work is a bit solitary to a certain extent, but it’s definitely not boring. Maybe

it’s similar to when someone likes to solve crossword puzzles or sudoku. They’re also “only” sitting at a table, looking for, and looking forward to, solutions to something. “Legal science is about solving legal problems. The solutions you find must be well-grounded and backed up by quality research. It’s just as exciting a discovery as for example those made in chemistry or archaeology,” he says enthusiastically.

While an archaeologist for the most part knows immediately during the discovery what he has found, the efficacy of legal science is revealed only over time. “Our work makes sense at the moment when it is reflected in practice, when it inspires someone, for example in court-

rooms during the decision-making process. That is probably the greatest reward for us. But it can take years.” One reward for his work on the commentary has already come. The company Carlsbad Legal Days gave its 2016 Author Award to one of the volumes of Filip Melzer and Petr Tégl’s vast commentary.

In addition to demanding legal science work, Filip Melzer also works for the biggest Czech law firm and teaches at the UP Faculty of Law. “I like to teach. Teaching is wonderful in terms of sharing knowledge. It forces me to think, which is essential; however there is not as much room to go into depth as there is in legal science. And expert discussions with students? That’s the most important thing to me.”

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“Legal science is about solving legal problems. The solutions you find must be well-grounded and backed up by quality research. It’s just as exciting a discovery as for example those made in chemistry or archaeology.”



**František Korbek**

Partner,  
HAVEL & PARTNERS law firm

I became aware of Filip Melzer already during his studies in Brno. Then again as a judicial assistant at the Supreme Administrative Court and the Constitutional Court. Our paths crossed over work on the new Civil Code. With Minister of Justice Jiří Pospíšil we took over the project from Otakar Motejl in 2006. At that time I was a deputy for legislation. We added Filip Melzer to the recodification commission, where he quickly became one of the most important figures in terms of proposals. He made use of his deep knowledge of comparisons and legal theory, he was active, he knew how to negotiate, he won enormous respect and had a huge influence on the work’s development. In 2010 he also became a deputy minister, which was our most fruitful period. It was capped by what is for a lawyer a miracle – ratification of the new Civil Code. And now we work together in the biggest Czech law firm, HAVEL & PARTNERS.



**Petr Tégl**

Associate Professor of the Department  
of Private Law and Civil Procedure

Filip is a person who is difficult to categorise. Formally, it can be done: he’s a lawyer-civilian, working at present in academia and in law. But in reality, this typecasting bears only limited resemblance to the facts. If I were to sum him up in a nutshell, I’d say: he’s the *spiritus movens* of Czech private law over the past decade. He was the first of his generation who – strongly influenced by the German example – began to bring classical civil legal dogma into our country. I’m glad that his perception of the law is close to that of mine. That does not mean that we always see things eye-to-eye; not at all, we often see things differently. Filip’s passion for the profession is extreme. These are characteristic of his work: detailed delving into the core of the problem, scientific honesty, precision. Without any exaggeration, I think that as they used to invoke an historic legal authority as *argumentum dixit Randa*, there will come a day when they will conclude a professional discussion with the expression: *argumentum dixit Melzer*.

success



## Olomouc doctoral students excelled in French Embassy contests

In the competition of six dozen scientists younger than 33 years of age, doctoral students of Palacký University succeeded and brought altogether four prizes back from the prestigious contests of the Embassy of France in the Czech Republic. The ceremonial declaration of their results took place in Prague with the participation of French Ambassador Roland Galharague and Nobel Prize winners Jean-Marie Lehn, Jean-Pierre Sauvage, and Serge Haroche.

The highest award was earned by Zdeněk Škrott, a doctoral student from the Institute of Molecular and Translational Medicine at the Faculty of Medicine, who won the Sanofi Award for Pharmacy. In his research he explored the possibilities of using disulfiram in cancer treat-

ment. The study of anticarcinogenic effects of selected natural compounds was done by Lucie Borková from the Department of Organic Chemistry at the Faculty of Science, who placed in the second position in the contest for Jean-Marie Lehn Award for Chemistry. Research into Italian dialects in Brazil resulted in the third position in the contest for the Jacques Derrida Prize for Social Sciences and Humanities for a doctoral student of the Department of Roman Studies at the Faculty of Arts, Jana Fabová. Pavel Hok from the Department of Neurology at the Faculty of Medicine placed third in the contest for the Albert Schweitzer Award for Medicine with his work focusing on the simulation of the peripheral nervous system. He was actively partici-

pating at a foreign conference during the ceremony, so his father replaced him during picture taking.

According to the Faculty of Medicine Vice-Dean Martin Modrianský, who attended the ceremony as a member of the commission for the Albert Schweitzer Award, thanks to the contest organised by the French Embassy young scientists receive not only prestigious prizes, but also important stimuli for further work. “When you place in the first two positions, you get a bonus of a scientific stay abroad. And the prize itself is handed to you by a Nobel prize winner. This is a truly stimulating experience that may persuade them that months of hard work really may move their career forward,” underlined Modrianský. (map)

## Vojtech Regec from the Faculty of Education named 2018 Personality of the Year



Vojtech Regec, Vice-Dean for Science, Research and Doctoral Studies at the UP Faculty of Education, was named Personality of the Year in the ZlatyErb.sk contest, for his extraordinary contribution in the informatisation of Slovak municipalities.

“I perceive it as an acknowledgement of all those who are involved in the problematics of electronic access. At the same time, the award obliges me to continue in this work, because there’s still a lot to change,” said Regec, who has been critical for years as to the state of accessibility of electronic environments for the disabled. “Although the process of informatisation has pervaded the ‘bloodstream’ of our society, paradoxically enough, people with a certain kind of dis-

ability or impairment often are not taken into consideration. One of the goals of our effort is to monitor the development of electronic accessibility, but also point out the current problems in informatisation, prepare new measures, and implement new innovative solutions,” he added. Regec is, among others, a member of the Web Accessibility Directive Expert Group of the European Commission and a member of the working group for accessibility at the Department of the Slovak Deputy Prime Minister for Investment and Informatisation. The commission praised his systematic and years-long work in the development of accessible electronic environments for people with disabilities. (map)

## International federation awarded Jana Vašíčková from the Faculty of Physical Culture

The International Federation of Physical Education (FIEP) awarded Jana Vašíčková from the Faculty of Physical Culture, a national delegate of the federation for the Czech Republic, for her contribution to the development of physical culture.

“It is an acknowledgement of my work in the area of physical activities – and also a certain motivation for the future. I keep trying to work on myself, and this is just the icing on the cake. As there are medals for achievements in sports, this is a medal and acknowledgement in the development of physical culture,” said Vašíčková.

Vašíčková has been trying to promote the idea of “movement literacy” that should be cultivated mainly in physical education classes. She also initiated the foundation of the Czech Society of Physical Education Teachers and undertakes a number of other activities in this field. She has attended FIEP congresses as a representative of the Czech Republic since 2009 and is in touch with important personalities in physical education and physical activities from all over the world.



Jana Vašíčková is the second expert from the Faculty of Physical Culture who has received an FIEP award. The first laureate was Professor Karel Frömel. The federation also appreciates young scientists – Michal Vorlíček has repeated-

ly attended the Future New Leaders programme. His poster and presentation were awarded as the second best at the autumn congress. At the same time he was named the deputy national delegate for the Czech Republic. (vim)

## Lukáš Slodička from the Faculty of Science was presented the Neuron Fund Award

The prestigious 2018 Neuron Award for Promising Young Scientists in the field of physics was presented to Lukáš Slodička from the Department of Optics at the Faculty of Science who specialises in the quantum properties of light. He received the

award by the Neuron Fund for Support of Science together with five other laureates in Prague.

The young scientist studies the interaction of light radiation and matter on the single-atom and single-photon levels. The results of his experiments help explain the fundamental processes of light absorption, reflection, and emission, and their potential use in telecommunications and quantum computers. “I’m happy that our work is so meaningful that the fund acknowledged it even in this early stage of research. It is a big encouragement for the whole team. Perhaps we are doing something interesting enough and relevant at least in the context of the Czech Republic,” said Slodička.

After graduation from the UP Faculty of Science he obtained his doctoral degree in Innsbruck under Professor Rainer Blatt in experimental physics of cold trapped ions. After his return to the Czech Republic he

worked simultaneously on two new demanding experiments in quantum nuclear physics.

In collaboration with the Institute of Scientific Instruments at the Czech Academy of Sciences, he introduced the first Czech experimental setup of cold trapped ions of calcium, which allowed him to demonstrate an unexpected non-classical and coherent emission of light from macroscopic numbers of ions. At the Department of Optics, he constructed the first Czech experimental setup with warm rubidium vapours on a macroscopic scale and observed the emission of non-classical pairs of photons.

The Neuron Fund Awards are one of the most substantially funded prizes for scientists in the Czech Republic. The laureates are selected from seven scientific disciplines – social sciences, medicine, mathematics, physics, chemistry, biology, and computer science. (cho)



success



## Palacký University acquired institutional accreditation

In the following ten years, Palacký University will be allowed to approve and modify its own study programmes. This privilege has been granted by the institutional accreditation received from the National Accreditation Agency in the middle of 2018.

“Institutional accreditation enables Palacký University to make autonomous decisions about the structure and content of its study programmes. It is particularly important in times when we have to seriously consider what form of instruction

and what content of studies will prepare our graduates to a future that will have different demands on them than today. The institutional accreditation also involves a debate on how to make related disciplines more permeable or what should be the character of doctoral studies,” said UP Rector Jaroslav Miller.

One of the main novelties introduced to students via the innovation of study programmes is the possibility of a “compound study”, which extends the offer of study

programmes across all faculties. “Students will have the option of enrolling, along with their main study plan, a major, in a secondary programme called a minor, and study two entirely different programmes,” explained UP Vice-Rector for Strategic Planning and Quality, Hana Marešová. As she emphasised, study combinations between faculties have a tradition at UP, but their range will substantially expand now. At the same time, the extent of the current offer remains unchanged. (mav)

## A Faculty of Law graduate won a special prize for her diploma thesis



After the successful defence of her diploma thesis, the UP Faculty of Law graduate decided to send her work to a competition. And she did the right thing. Her academic work entitled “Trailers According to Construction Law” interested the jury so much they created a special prize for her, beyond traditional categories. Lucie Gottfriedová was awarded the Jiřina Bergatt Jackson Prize for the originality of her theme and its treatment.

The competition is organised by the Institute for Sustainable Development of Settlements (IURS) and is devoted to defended diploma theses dealing with the issues of urban planning. Sixteen students applied to its third year, coming from nine universities in Czechia and Slovakia. “We bestowed one main prize, four honorary mentions, and for the first time, a prize for original theme,” said Barbara Vojvodíková, IURS director and a member of the commission.

And this new prize for originality was awarded to Gottfriedová, who defended her thesis in June 2018. The student was led to the topic by the supervisor of her work, Veronika Tomoszková from the UP Department of Administrative and Financial Law. The aim of the work was to provide a comprehensive analysis of the issue and answer the research question of whether trailers are vehicles or constructions, and whether their removal can be decreed by law. “I think the award is a symbolic closure of my studies and a possible step to future employment,” added the alumna. “The awarded thesis is proof that if you choose an interesting, original, and narrowly focussed theme, which the student enjoys exploring, it results in a high-quality work that may have applications in practice and may be valued by experts,” added Tomoszková. (eha)

## Highest Mexican state decoration for Pavel Štěpánek from the Faculty of Arts

Pavel Štěpánek, Professor Emeritus of the Department of Art History at the UP Faculty of Arts, was granted the Order of the Aztec Eagle by the Mexican President. He received the highest Mexican state decoration awarded to foreign citizens at the Mexican Embassy in Prague.

“It is a nice surprise, really unexpected, and also a certain moral satisfaction that my efforts have not been in vain, even though I focussed on themes that are mostly neglected and unappreciated by Czech art historians despite the fact that Mexico is part of the Euro-American world and has had amazing civilisations in its history,” said Štěpánek. Although he has received a number of honorary awards, the latest one from Mexico is something extraordinary. “So far most of my awards have come from Spain. The granting of the Order of the Aztec Eagle is an exceptional thing,” added the expert on art history and architecture of the Hispanic and Lusophone cultures.



The Order of the Aztec Eagle is the highest Mexican decoration, awarded since 1932 as a reward to services given to Mexico or humankind by foreigners. In the case of experts, the impact

of their work on Mexican culture is acknowledged no matter which discipline they study. The historian Pavel Štěpánek received it for his popularisation of Mexican art. (map)

## Milan Adamus received the most important anesthesiology award



The laureate of the Award of the Czech Society of Anaesthesiology and Intensive Care Medicine (CSARIM) for the year 2018 is Milan Adamus. The emeritus head of the Department of Anaesthesiology, Resuscitation and Intensive Care at the UP Faculty of Medicine and Dentistry and the University Hospital Olomouc was presented the František Celestýn Opitz Medal for lifelong merit and significant contribution to the development of the field. “I value the award very much. It feels good to realise your work makes sense, helps patients, and is appreciated by the scientific community,” said Adamus, who accepted the medal at the beginning of the 25th congress of CSARIM.

The main professional interests of Adamus include muscle relaxation and its monitoring, the use of statistic methods and research methodology in anaesthesiology. He also furthered the use of digital technologies in providing anaesthesiologic care in the Czech Republic. In collaboration with

the UP Department of Informatics he participated in the development of a system for automatic dosage of muscle relaxants during general anaesthesia, controlled by fuzzy logic, and successfully used it during prolonged neurosurgeries.

“Muscle relaxants, along with analgesics and general anaesthetics, are a part of modern supplemental anaesthesia, which enable doctors to secure the breathing passages of the patient, allow them to let the patient breathe in a controlled way, and improve conditions during surgery. The procedure we have developed for measuring the muscle relaxation contributes to the safety and comfort of anaesthesiology,” explained Adamus.

The highest award that anaesthesiologists can receive in the Czech Republic is intended for leading Czech specialists who have dedicated their professional lives to meritorious scientific and organisational work. (mav)

## Olomouc hosted the national commencement of the academic year



Czech university rectors commenced the new academic year at Palacký University Olomouc. Almost fifty representatives of Czech academic institutions, rectors of public, state, as well private universities, attended the ceremony with the participation of the Czech Minister of Education in the Faculty of Arts auditorium. (ipu)

## The largest conference on a healthy lifestyle

Top experts in research and support of a healthy lifestyle will come together in the beginning of June 2019 in Prague's Congress Centre for the International Society of Behavioural Nutrition and Physical Activity (ISBNPA) annual conference, co-organised by the UP Faculty of Physical Culture. It is one of the largest academic events in the field, with an expected 1400 participants. The confirmed keynote speakers include Greet Cardon from Ghent University, Belgium, British epidemiologist Sir Andrew Haines and Barry M. Popkin from the University of North Carolina. (vim)



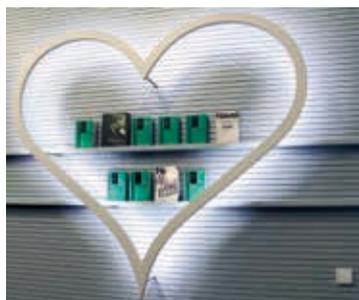
## Hall of Fame for tennis



Helena Suková, one of the most successful Czech female tennis players in history, was inducted into the International Tennis Hall of Fame in Newport, USA, and became one of the legends of the sport. Suková is also a UP alumna, who studied psychology at the Faculty of Arts. She is a model of an athlete who has managed to launch yet another career, but not in sports. The picture shows another two UP alumni – plastic surgeon Bohdan Pomahač and his wife Hana – congratulating Helena on her achievement. (ipu)

## Two Václavs at the Faculty of Arts

The Department of Politics and European Studies at the UP Faculty of Arts boasts the Václav Havel Auditorium and the Václav Burian Classroom. Both were ceremonially opened on the commemoration of the Velvet Revolution. “Václav Havel’s thirst for education was profound, persistent, and unyielding. Naming a place where students obtain education after him is therefore deeply pleasing and meaningful,” wrote the widow of the former Czech President, Dagmar Havlová. The importance of Olomouc journalist and translator Václav Burian was pointed out by political scientist Pavel Šaradín: “Sometimes in the course of our lives, we happen to meet a person who has a lifelong influence on us. In my case, Václav Burian was such a personality. His well of knowledge was immense.” (map)



## Gardens succeeded in a regional contest



The city wall ramparts gardens at UP are one of the most attractive places in the Olomouc Region, according to the results of the Olomouc Region Tourism Prize. The ramparts gardens succeeded in the category Genius Loci with a silver position. The online contest had five categories and the winners were voted by the public. (ipu)

### A new member of the Austrian Academy of Sciences



Ingeborg Fialová, a German literature scholar from the UP Faculty of Arts, has been named a corresponding member of the Austrian Academy of Sciences. The ceremonial reception of 29 new academics and scientists in various disciplines from seven countries took place in Vienna. “Being chosen a corresponding member is a huge honour for me and a totally unexpected surprise,” said Fialová. She was proposed by Prof Konstanze Fliedl from the University of Vienna, acknowledging her remarkable output and the academic reputation of her works. She highlighted her activities in the Research Centre for German Moravian Literature and the Austrian Cultural Forum. (ipu)

She highlighted her activities in the Research Centre for German Moravian Literature and the Austrian Cultural Forum. (ipu)

### Miroslav Ovečka awarded Best Talk Award at a prestigious conference

The prize for best talk at SPAOM2018 – Spanish Portuguese Meeting for Advanced Optical Microscopy – was awarded to Miroslav Ovečka from the Department of Cell Biology in the Centre of the Region Haná for Biotechnological and Agricultural Research. He succeeded in the competition of 38 lectures presented in the main scientific programme by representatives of leading European laboratories. He interested the participants with the presentation on how he monitored the development of living plants by means of advanced microscopy. The Olomouc laboratory is one of the top global institutes in the exploration of plant development and inner structure by means of fluorescence microscopy. (mš)



### University awarded its volunteers for the second time



For the second year, the university has expressed its acknowledgement of student and employee volunteering by awarding the UP Rector Awards. Four new laureates joined the club of those who devote their time, along with their study and work, for the sake

of others and for free – students and alumni of the Faculties of Arts and Education, Kristýna Doubravová, Adéla Hazuchová, Nela Chudová, and Ivo Černík.

“Apart from the fact that university provides education and research, it has always played an important role in the public space. And that involves charity and volunteerism. Therefore I have great respect for your helping others, and I am proud of you,” said UP Rector Jaroslav Miller during the award ceremony. The ceremony was organised by the UP Volunteering Centre within the ROMSPIDO project. “Volunteering has gradually got to the level of excellence in research or sports, which are areas that have been awarded at the university for several years,” added Tatiana Matulayová, Head of the Department of Social Work at the Sts Cyril and Methodius Faculty of Theology and the project guarantor. (mav)

# DIY is cool! TechnoLab proves it



Would you like to create an original piece of jewellery or a wooden bowtie? Would you like to show your child how to make a wooden spoon? And you don't have your own workshop or the proper tools? There's a place in Olomouc which can help. All one has to do is go to the Faculty of Education, which has just opened their one-of-a-kind TechnoLab to the public.

"In addition to other skills, a person should be somewhat 'literate' in DIY (Do It Yourself) – know how to handle a screwdriver, hammer, saw, be able to hang something up, screw something down, or fix something," explains Jiří Dostál, Head of the Department of Technical Education and Information Technology, in the middle of the fully-equipped shop.

"I believe we should start with children. It's necessary to foster their DIY interests, which might transform into their future careers. Through TechnoLab, we are able to show them that working with tools is not only necessary, but can be fun," he adds.

And the individual workshops which children, students, and parents keep coming to prove he's right. "My son is always concocting something in the garage. He loves doing it, but he doesn't have enough tools. And they don't have the space at his high school for teaching shop," admits Monika Poláčková from Prostějov. She herself created wooden "jewellery" in the Technolab Christmas workshop.

Another who cannot hide her enthusiasm is Adriana Příkladová, a student of pre-school education. "The offer of a shop for the public at the Faculty of Education really excited me. Today I made a wooden bowtie, which I want to give my brother as a present," she said with a smile.

The Faculty of Education with its TechnoLab is filling in one of the blank spaces in the Czech educational system. And that's not all. It's trying to bring "shop" back into school education. And not only in the traditional sense of the word. In addition to "old school" tools and methods, it also features new technology such as 3D printers, computer-controlled machine tools, and much, much more.

text: Ivana Pustějovská  
photos: Gabriela Knýblová

interview

A man with short brown hair, wearing a blue button-down shirt, stands outdoors on a balcony or walkway. He is holding an open map that shows a coastal area with a sunset or sunrise over the water. He is looking directly at the camera with a slight smile. The background is slightly blurred, showing a building with large windows and a red wall.

# Vít Voženílek: Maps are a testament of the time and the people

He takes a book in hand and is able to read for hours and hours. There would be nothing strange about that, if it weren't – an atlas. He's written a book which became a bestseller. Nothing strange about that, if it weren't – an atlas. On account of his collection of school atlases from all over the world, he had to build special bookcases. At the beginning of our interview, when I had barely peeped into his study, he fires a question: "What's your favourite country?" I blurt out for some reason, "Austria". The tall man casts a glance at the long line of mugs on display behind glass and reaches for one with the Austrian flag. When he brings a coaster with a map on it, I'm certain that we won't go off course during this interview – we're going to stick to the map. Perhaps one of the ones he's made himself. Geographer, cartographer, geoinformatician, professor at the Faculty of Science, and head of the Department of Geoinformatics. Vít Voženílek.

— Each one of us sees something different on the map – I see the places I've been, the people I've met. What do you see?

Thousands of things. I'm a trained geography teacher, so I see the landscape it captures. I'm a professor of geoinformatics, so I see the technology behind it. I lecture on cartography, so I see the arrangement, the colours, the symbols. After many years in the field I also see something else – I see the person who made the map. I think about who they were, what their past was like, their education.

— I stand like that in a gallery in front of paintings, thinking about the painters....

That story is similar, but the basic difference is in the result. You look at a painting, it operates on you, it evokes feelings. It evokes different ones in a different person, and everyone can see something else in the image. Not in cartography. A map must be equally clear to thousands of people. Its graphic resolution relays information and does not allow you – as opposed to a painting – any room of your own. When the map says: Turn left, then you cannot choose to go left and I to go right. We all have to turn to the left.

— Can a map say something more about the state of the world than written history?

I don't know if it can say more, but certainly it can say something else. Written words cannot adequately describe what a map does. I tell students that if they were to write in sentences what is in a single map, then

they would have to write a book. I'll show you an example: I'll take a clean slate and I'll draw a circle. I'll ask, what have I drawn? They'll say: "Probably a city." Good. I'll draw a line through the circle. What's that? "A river." Agreed. Now while I only have two symbols, there are immediately several pieces of information: a river runs through the city, it flows for example from north to south, or it's on the left or right, it's narrow, wide, it meanders. In this way I can add more and more symbols and the amount of information increases enormously. Now try to do that in words. No chance. When you look at an old map, in addition to information you also get a testament of the time and the people living in it. You can read from it how they thought, how they worked, what was important to them. You can determine how they ran the country, where they set up fish ponds, you can see if they straightened river bends and built bridges.

— Does it depend on for whom the map was intended?

The life of a map does not end by its drawing, that's only the beginning. Purpose is the keyword. A cartographer must have the user foremost before his eyes, one who would be able to read what was drawn. This is why they make different maps for children than for lorry drivers or pilots or politicians. In a children's atlas, you can find the occurrence of some animal species with a picture which would be an inappropriate picture of an elephant in a scientific book. What is essential for a child is to know that there is a language of maps and why it is good to know it. That's why we teach our students how to learn to read maps even at the university. As the famous quote goes: "Education is what we have left after we've forgotten what we learned in school."

— To what extent can things be mapped?

Everything can be mapped. Everything that has a spatial element, about which you can say "where", to which you can give coordinates. Thus I have called on colleagues in various fields, and explained to them that if you provide us the data, we can work it up into maps and atlases. I've opened many of their eyes. We've cooperated with political scientists and created an atlas of elections to town councils, we've worked with transportation experts and now we have a transport availability atlas. We have a phenological atlas in which – simply said – you can find where something is flowering, when it is flowering, when it wilts, when it sheds its leaves. Demographic data can be very well depicted onto maps – the incidence of divorce, mobility, accessibility of facilities.



**Vít Voženílek (b. 1965)**

Head of the Department of Geoinformatics of the UP Faculty of Science. A graduate of Masaryk University Brno, in Geography – Mathematics. In 2007 he was appointed professor of geoinformatics. He devotes himself to thematic and atlas cartography and geoinformatics. He has had a number of foreign stays, including a Fulbright grant at Pennsylvania State University. He is vice-president of the International Cartographic Association (ICA) and the author or co-author of more than 25 books, including atlases, monographs, geography textbooks for primary and secondary schools, among others *Methods of Thematic Cartography – Visualisation of Spatial Data*, *Geoinformation Aspects of Czech State Information Policy*, and *Cartography for GIS – Geovisualisation and Map Communication*.

Find the most impossible theme for mapping, and it still could be done.

— Show me a specific purpose. For example, the *Atlas of Activities of Special Education Centres*. What's that?

We prepared it with Jan Michalík from the Faculty of Education. The centres help with educating children with special needs and their parents. It was created about twenty-five years ago because experts were interested in how available those centres were at present for special needs children. We worked together with special needs educators employed in the field. After finishing therapy they filled out a questionnaire and recorded how old the child was, what kind of help or therapy was required, who brought them there and from where, and so on. There were tens of thousands of pieces of information which we worked into the map and we discovered an interesting thing. Such centres are financed by the region, but we showed that the catchment areas from which the clients came did not correspond to the borders of the regions. There were experts to whom they had to travel across regions. What does that mean in practice? We found that there are places where it is as if there were no autistic children. But that's not the case. It's that the closest specialist on autism is so far away that parents are unable to make such a trip due to time and maybe even money. So they don't make the trip and the children do not get the care.

— It's a good basis on which experts could convince perhaps politicians.... Indeed. This is why I speak of the cachet of the map. A map is a unique document which is able to communicate a vast amount of spatial information quickly and precisely. If you want to invest and you're looking for cheap land, you go to the map; if you're going to move somewhere for retirement where there are no mosquitoes, you go to the map. And so on.

— I've done countless interviews with successful authors. Successful novels, detective stories, poetry. This is the first time where I'm sitting before an author who has written a bestseller which is – an atlas. Your *Atlas of Czech Climates* was a hit. Is it a cartographer's dream to make an atlas?

It was mine. One of my life's goals was to make at least one atlas. Now I've got eight behind me and I'm still thinking about the next one. Personally, I consider the atlas as the most difficult cartographic discipline.

— Why?

There are cartographers who do not make maps, but they're still cartographers. I do not blame them. There are those who go in for drawing, and those who like historic maps. But for me the highlight is creating maps. In doing so, you must respect all the components of which we have spoken. And once you make the map, it has to pass muster. And an atlas? To make one map is not at all simple. But when you make two maps and put them side-by-side, then they are not two independent images, now you have to pay attention to their connections. And if you place four maps on two pages? And twelve to a chapter? And if you make two hundred into one book?

— Why an atlas of climate?

The Czech Hydrometeorological Institute called me and said that I was probably the only person who could make such an atlas for them. The last climate atlas was published in 1958. My task was to put their data and information into such a form and shape that it would stand up to their liking and to all who would use such an atlas: farmers, politicians, insurers, academics, students. It did, and the entire print run sold out – about four thousand copies. I have the last two at home and I'm not giving them to anyone. We introduced it during the first year of our Cartographic Days here in Olomouc. We unwrapped the plastic foil and showed it to the public. That was great, really great. I felt a bit like director Jiří Menzel, when his first feature film won an Oscar.

— Is there an atlas you are still dreaming of?

I'd like to make a school atlas. But not a Czech one. I'd like to make one for a country, perhaps a developing country, which doesn't have one so far. There are many of them.

— Isn't it easier to make an atlas of the country where you live?

Sure. But I like taking the more difficult path. It's a huge challenge. I was in Ecuador, for example, and I really liked that country. Beautiful, laid-back, good people. Somewhere on Amazon.com I came across an American atlas, a small one, which had a few maps of Ecuador. But Ecuadorean children and teachers do not have a school atlas. That attracts me, because it's not only cartographic work, I'd have to study their educational system in order to fulfil some function where it would have meaning and sense for children.

— Our entire interview is about maps, dates – the world is jam-

packed with them. Yet we have no idea where we are actually headed. A while ago during a drought you asked people on an Internet video to conserve water. It had a huge response. Is this the way for a scientist to help save the world?

Sometimes you talk for ten minutes, sometimes you write a dozen pages, and sometimes one sentence is enough. With that video I wanted to say: Believe scientists. We can all spend hours analysing in pubs. But rarely do we reach any truth. The pub does not suffice. For the time being, we do not have a better tool than scientific knowledge. So let's go, we scientists and academics, and with our knowledge help those who make the decisions. They ought to make use of our knowledge and build upon it. It doesn't have to be drought, it can be city transportation, population development, the mortgage crisis, migration policy. And the answers don't only have to be from cartographers. We go hand-in-hand with other specialists – geologists, soldiers, climate scientists, botanists. They know the content, we know how to give it form. We want all our academics to write for impact journals, where their article will be read by three people in the country and four hundred in the world. Let's try to explain to ordinary people what we do and what it's about, and what it can bring for them. I'm convinced that every scientist should be capable of writing one sentence about his or her work for a primary school textbook.

— What do you like about "mapping"?

My professor of geomorphology took me into the field and I learned how to look at the landscape and at the Earth's surface through his eyes. It's beautiful. I love the process: I see something, and I record it. From time to time I read the books of the Czech globetrotters Zikmund and Hanzelka and I marvel at the beautiful language they used to describe what they saw, what they recorded. I had the luck to meet Mr Zikmund when he received an honorary doctorate at our university. There have been only a few people in my life whom I approached with such a beating heart. In one interview they asked him if he was still tempted to travel and if he ever opens an atlas. His answer is one I'll quote in my *Atlas Cartography* book, my life's work. He said: "Of course. For over an atlas one can always dream and make plans."

— So even we non-cartographers have our private maps – of dreams, of life...

... and we also have our own map of the heart.

# Researchers change the perspective on cancer treatment

Breakthrough information to be used in targeted cancer treatment has come via new research by scientists at the Institute of Molecular and Translation Medicine (IMTM) at the UP Faculty of Medicine and Dentistry in cooperation with the Danish Cancer Society in Copenhagen. The results contribute to a more thorough understanding of the DNA replication mechanism and point toward an entirely new concept in treatment strategy for tumours. The importance of the data has been proven by the publication of a study in the prestigious journal *Nature*.

“To date, anticancer researchers have been aiming primarily at reducing the speed of replication – resulting in an incomplete reproduction process during the given time limit, which leads to cell death, or in further deepening of genome instability,” explained team leader Jiří Bártek of the IMTM team and the Danish Cancer Society.

Scientists are making use of their findings regarding interruptions in DNA replication to explore the possibility of target-

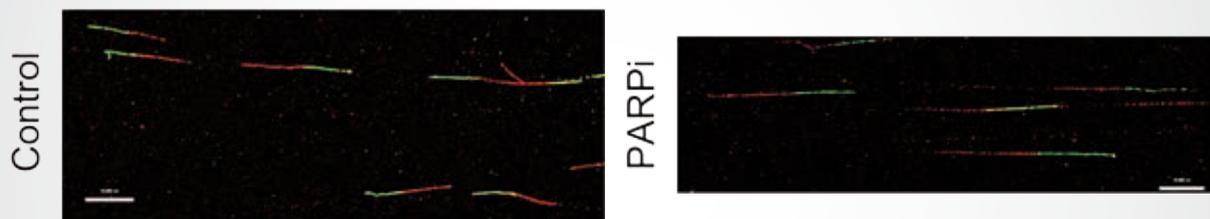
ed introduction of “cell death” into tumour cells. In the just-published study, they looked at the drug olaparib, known under the trade name Lynparza, recently registered for treatment in ovarian and breast cancer. “We predicted that this drug would slow or even stop reproduction; nevertheless, the theory had not yet been proven by experiments,” said Pavel Moudrý of the IMTM, the first author of the publication in *Nature*.

The research team behind Jiří Bártek however came up with surprising findings. The drug olaparib can not only slow replication but can also contribute to substantial acceleration of the process. “We have demonstrated that excessive reproduction speed in tumour cells leads to so many serious errors that the cells will then die. The PARP enzyme is the important ‘brake’, and it is also the very same molecular target of the drug olaparib,” explained Bártek.

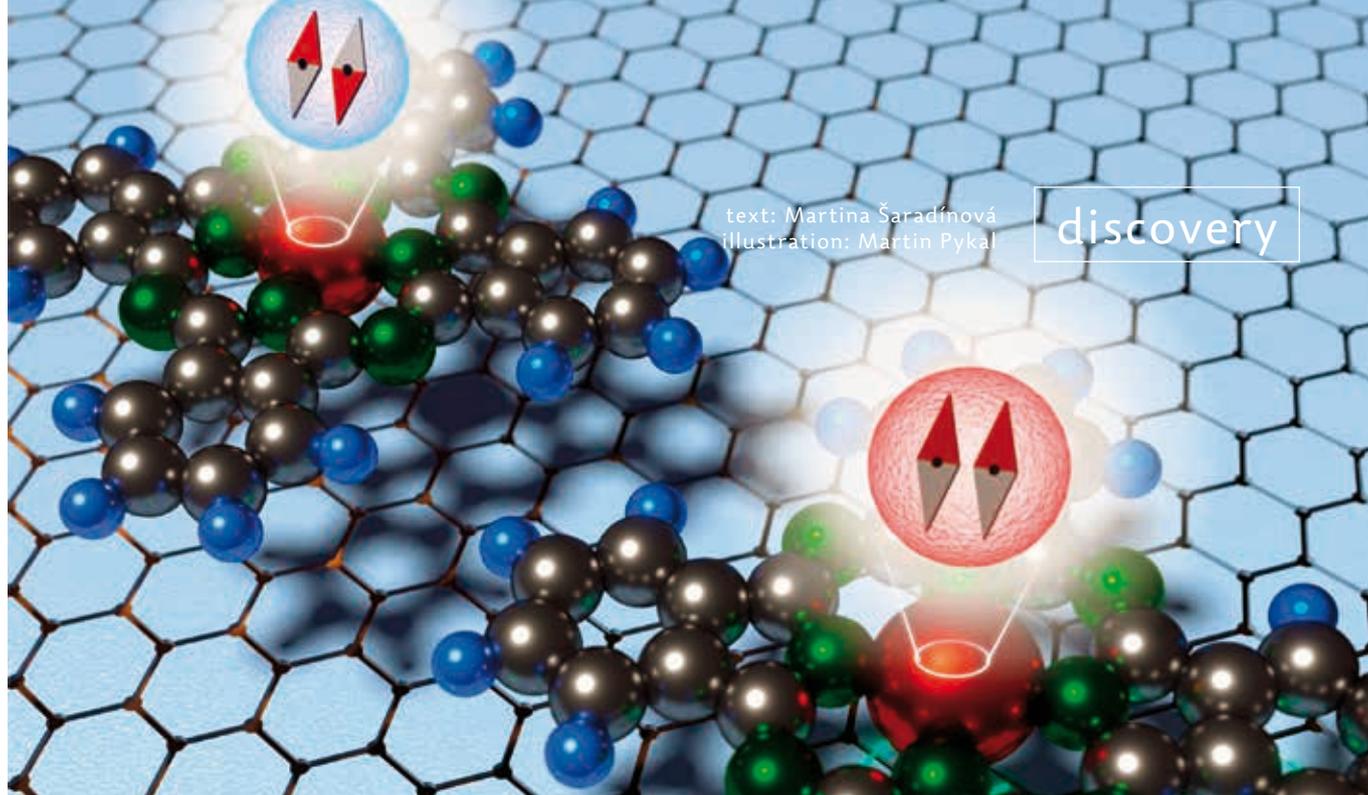
Duplication errors occur not only during too slow DNA reproduction but also during increased DNA reproduction rates.

Artificial introduction of increased reproduction speed is a completely new concept in cancer treatment strategy.

Their findings also made possible a better understanding of the role of the PARP enzyme as a kind of regulator of reproductive speed. “The PARP enzyme is now the molecular goal of a whole group of promising substances called PARP inhibitors, including olaparib. These agents are used in treating tumours carrying mutations of the BRCA1 or BRCA2 gene, whether as the result of inherited mutation or mutations occurring in the tumour itself. Olaparib is now registered for treating breast and ovarian cancers with mutations of the aforementioned genes, and we believe that this effective treatment will soon be available to the majority of patients in Czechia. The new mechanism of the activity of PARP inhibitors thus will soon offer better-targeted treatment and development of more effective combinations of other drugs which would potentiate anticancer effects,” IMTM Director Marián Hajdúch emphasised.



Measuring the DNA replication speed by the method of DNA fibres: DNA of control cells (left); DNA cells influenced by the PARP inhibitor (right)



text: Martina Šaradínová  
illustration: Martin Pykal

discovery

# Scientists have discovered a new way to control the properties of molecules

The ability to simply and reversibly change the properties of molecules represents a big challenge to the scientific and industrial world. Molecular switches offer applications in nanoelectronics, biology, and medicine. So far, changes in the electronic configuration of molecules have been induced by application of external stimuli, such as light, temperature, pressure, and magnetic fields. Scientists from the Regional Centre of Advanced Technologies and Materials (RCPTM) at Palacký University Olomouc, together with colleagues from the Institutes of Physics (FZU) and Organic Chemistry and Biochemistry (IOCB) of the Czech Academy of Sciences have come up with a revolutionary solution, betting on weak non-covalent interactions with a chemically-modified carbon surface. Their achievement has been published in the prestigious journal *Nature Communications*.

Not only are the electrical, optical, and magnetic properties of molecules determined by the arrangement of electrons, which move around in orbitals, but also their biological activity. Molecules with orbitals containing only one unpaired elec-

tron possess magnetic properties. However, molecules containing two paired electrons in each orbital are non-magnetic. So far, the process has been to induce the switching process by employing environmental stimuli, which is technologically demanding.

“Instead, we have employed an atomically thin layer of graphite, known as graphene, and intentionally replaced some of the carbon atoms in the structure with nitrogen atoms. By changing the lateral position of molecules on the surface using a scanning probe, we were able to reversibly switch from one magnetic state of pure graphene to non-magnetic states in the area of nitrogen atoms. Moreover, we observed changes in the arrangement of electrons in a molecule by atomic force microscopy. This represents considerable possibilities for the scanning probe microscopy resolution,” said Pavel Jelínek of RCPTM and FZU.

Generally, the properties of molecules can be tuned by covalent chemical modification, leading to alteration of the molecular constitution, i.e. the termination of old and the formation of new chemical bonds

within the molecule. These strong interactions involve sharing electrons that participate in the chemical bond. However, this approach is not applicable for developing molecular switches, as the chemical modification usually induces irreversible alteration. Therefore, Czech scientists have attempted to employ weak non-covalent interactions despite the fact that such a strategy has never been contemplated before.

“Using a combination of theoretical calculations and experimental measurements, we confirmed that the non-covalent interaction between the iron atoms and the nitrogen atoms is strong enough to disturb the magnetic state of the molecule but, at the same time, is too weak to allow transition of the molecule back to the magnetic state as soon as the molecule is returned to a pristine graphene surface,” said Pavel Hobza of RCPTM and IOCB.

This new way of controlling molecule properties offers possibilities in other areas. “Chemically modified graphene may serve in the development of new optical sensors, photoluminescent materials, catalysts, and pharmaceuticals,” said Radek Zbořil, RCPTM Director.

# Children on a dangerous path: not enough movement despite opportunities

The current state of physical behaviour of children and youths has been summarised in a new report by the international organisation Active Healthy Kids Global Alliance, whose authors have assessed and compared data from fifty countries according to ten indicators. The project also issued a Czech national report, created by a team led by Aleš Gába from the Faculty of Physical Culture.

According to experts, the level of physical activity of children today is not sufficient for their healthy growth and development. The modern lifestyle – including among other things, too much time spent in front of the TV, PC or phone screens – leads them down a very dangerous path. “We are responsible for this change in reality. Non-active children are jeopardised by physical, mental, and social problems; at the same time, they will face a number of challenges in relation to climatic changes, technological development, and growing globalisation. Only the healthy and physically able adults will be able to cope with the changing world,” said the president of the organisation, Mark Tremblay

from the Canadian CHEO Research Institute.

The international comparative study of physical activities of children and youths was prepared by more than five hundred experts. The Czech team included scientists from the UP Faculty of Physical Culture, and from the Faculty of Science, Humanities and Education at the Technical University of Liberec. They worked mainly with data from the Health Behaviour in School-aged Children (HBSC) study dealing with the lifestyle of the youth and from the International Physical Activity and the Environment Network (IPEN) study exploring the impact of environment on the level of physical activity, as well as government documents such as the strategy Health 2020, and methodical reports by Czech School Inspection.

The Czech Republic had its best results in the ranking of school environment. “Most of our schools have equipment and devices for high-quality education in the field of physical activities, and in addition to physical education, they even offer other opportunities, such as swimming courses.

A threat for the forthcoming years, however, can be seen in the long-term decrease in qualifications for teaching physical education,” said Gába. The Czech Republic also scored well in the ranking of residential environment and organised physical activities, which are according to the findings undertaken by 62% of adolescents.

The worst problem was revealed by an analysis of sedentary behaviour. Almost 80% of teenagers spend more than two hours in front of the television or on computers or mobile devices every school day, whereas during the weekends it is almost 90%. “Pilot studies conducted among younger respondents show similarly alarming results. Mobile devices cannot be totally excluded from the lives of children and youths; however, their good implementation may increase the levels of physical activity in leisure time. Good examples are geocaching or the game Pokémon Go,” commented Gába.

In total, the Czech Republic scored similarly as Germany, New Zealand, and Zimbabwe, i.e. in the second deced of countries. The top of the ranking is occupied by Slovenia, Japan, and Denmark.



text and photo:  
Milada Hronová

research

A colourful range of hats and head decorations from the Middle East, Central and South-East Asia, Siberia, and Oceania was shown at the exhibition "Hats Off". It was prepared by the Department of Asian Studies at the UP Faculty of Arts thanks to the project "Sinophone Borderlands – Interactions at the Edges".



## China as neighbour: a research study at the Faculty of Arts

Scientists from the UP Faculty of Arts have obtained almost €7 million for a primary research of Chinese border areas. The five-year project called "Sinophone Borderlands – Interactions at the Edges" redefines the concept of Asian and Chinese studies – in the sense that it focusses on China from the "outside", i.e. as it is perceived by its neighbouring countries and their inhabitants.

"It is a major success, one of the most prestigious research grants one can acquire in the Czech context. Only two projects from the humanities were supported in the Excellence in Research call in the Operational Programme Research, Development and Education. And the Chinese border areas are one of them," said Dana Bilíková, Vice-Dean for Project Management at the Faculty of Arts.

The project strives for a complex understanding of China. That should be

achieved by an analysis of the intersection of neighbour relationships and by consideration of the historic development and geopolitical interests in all given regions. A research centre of excellence will be created for the project, hosting language and computer laboratories for processing large amounts of data as well as a laboratory of material culture. Apart from experts who specialise in specific geographical regions, the research also includes three distinct methodological overlaps: social anthropology, linguistics, and the study of material culture.

Sociological surveys and field anthropological research will take place directly in the countries neighbouring the People's Republic of China and its border areas. "We are going to map cultural, political, social, and linguistic aspects, and we will process the data by means of new methods of digital humanities. This con-

cerns the authorship of various literary relics and other texts, analysis of linguistic acquisitions, non-linguistic data, and so forth," said Ondřej Kučera, the main investigator of the project, from the Department of Asian Studies at the UP Faculty of Arts.

The strategic partners of the Olomouc project include the University of Cambridge, George Washington University, Humboldt University of Berlin, the anthropological Quai Branly Museum in Paris, the Russian Academy of Sciences, and other six foreign institutions. The project unites top experts in the field from all over the world and is based on interdisciplinary dialogue. Researchers believe that its results will be so unique that they will influence the science and thinking about China and will introduce a new perspective on the global impacts of the rise of China.



## We're still UP for it!

Prague, Opava, Ostrava, Prostějov, the Krkonoš Mts, and of course, Olomouc. These are just a few of the places from whence former students came to attend the September UP Alumni Reunion. D-Day was Saturday, 8 September 2018, and its slogan was: We're UP for it!

Groups stood in front of the UP Armoury Library before 9 am, the official start of the programme. First in line for her registration card was Jiřina Lavičková from Kostelec. This alumna of English and Czech philology from the Faculty of Arts was looking forward to meeting old friends and going on a tour of very familiar places. Just like the two thousand other alumni who came to visit their alma mater. "I'm still in touch with the university. I'm very fond of both the university and Olomouc, and it makes me happy to see how things have changed since our studies here in the 1950s. Take the Maria Theresa Armoury here, where we're

standing – its windows used to be boarded up. There's truly no comparison with how it used to be. I love it," the sympathetic lady from Kostelec shared.

UP alumni came to Olomouc from all over the country. Drahomíra Vaňková also got up early, coming from not-so-distant Opava. "I studied biology at the Faculty of Science and also physical education. I'm looking forward to seeing my girl friends, and I'm going to see the new Faculty of Science building for the first time," she said.

Barbora Moravcová travelled from Ostrava. She graduated in 2009, so rather than taking a trip through memory lane, she was looking forward to meeting her friends. "I studied philosophy and theatre. I'm looking forward to meeting somebody, soaking up the atmosphere, and taking a look at the newly-remodelled faculty building. I love to come back to visit," she confided.

text: Ivana Pustějovská  
photos: Milada Hronová

During the day the Armoury courtyard filled with groups of alumni from various faculties, all catching up, taking pictures, and sharing memories with one another. Many came with their children, and took advantage of the Fort Science tent, which demonstrated science experiments. Michal Sedláček was in the courtyard with his young son. “I’m an alumnus of the Faculty of Education, including its doctoral programme, and I’m still in close contact with the university,” he said with a smile and then took advantage of the special photo booth placed in front of a wall with the UP logo on it.

In the afternoon, alumni were welcomed together by rector emeritus Josef Jařab, and vice-rectors Hana Marešová, Jiří Lach, Petr Bilík, and Martin Kudláček. The programme also took place at the various university faculties, which interested parties could visit comfortably thanks to a special minibus. The Faculty of Science combined the Alumni Reunion Day with its Silver Graduation ceremony.

There were memories, and then there was a baptism. Prof Jařab launched his new book of reminiscences published by Palacký University UP, *A Rector’s Reminiscences*, before a packed house in the Faculty of Arts Ceremonial Hall. “I searched my memory for those worthwhile moments, ones which should never be forgotten,” he said, adding that the book, copies of which he signed for dozens of admirers, is his “interpretation of the Velvet Revolution at Palacký University.”

The evening belonged to singer-songwriter Terež Wrau, who had a concert in the Armoury courtyard. For the closing, the UP Audio-Visual Productions prepared a special projection: on the walls of the darkened Armoury, a ballerina danced next to the motto of this year’s reunion “We’re UP for it!” as all were reminded of the genius loci of the town and its university.

“We’re very pleased that our invitation brought so many alumni, and that you’ve enjoyed the programme. We’re glad that so many came with their entire families and showed their loved ones not only where they studied, but also how their alma mater has changed. Alumni are an important part of our university, and caring for them is one of our priorities. I’d like to thank all of you who made the trip to visit us,” said Eva Blažková of the UP Conference Service.



lifestyle

text: Šárka Chovancová  
photo: Gabriela Knýblová



## Helena dreams of a world without garbage collectors

She always takes with her a bottle for water, a sack for groceries, a box for food, and she loves to cook. You will not find any foods wrapped in plastic in her house, and instead of tropical fruits you'll find apples and pears on her table. Helena Škrdlíková, a student at the UP Faculty of Science, has been a long-time supporter of the “zero waste” lifestyle, whose adherents are trying not to produce any waste.

Helena comes from a village and was used to sorting waste and protecting the environment as a child, first thanks to her parents and later to her friends in scouting. “It was a kind of an unconscious heeding my parents and following role models. And later, when I began to study environmental studies and having a greater awareness of ecological and environmental problems, I said to myself, I have to do something,” she remembers.

A friend suggested perhaps choosing a life without waste and writing a blog about it, where she could share her experiences with others. She published her first post in January 2015 and others came quickly. “At the beginning it was quite

tricky, because there weren't so many opportunities to practise zero waste. It took me a while to figure out the how and the why,” the student said, with a smile.

The recipe for minimising household waste is simple according to Helena. “I try not to produce any unnecessary waste, so for example I do not buy anything wrapped in plastic. I go to a no-packaging shop, and my diet is somewhere between vegetarian and vegan, because animal husbandry has a huge impact on the environment. I make my own toothpaste and vegetable milk, and I eat local fruits and vegetables – no bananas nor oranges.”

According to Helena Škrdlíková, it's important for a person to be able to give up things which they don't really need. “It's about habits. It would be better for us to prevent the creation of waste, to make the best use of seemingly unnecessary things, to compost and recycle. And throw things into the waste bin only as a last resort,” she says, adding with slight exaggeration that while young children dream about growing up to be garbage collectors, she dreams of a world without them.



Young children dream about becoming garbage collectors. We dream about living a life in which we won't need garbage collectors. We want to live a life free of garbage.

Every day, tonnes of new waste see the light of day. The majority of it ends in dumps, in the ocean, or just lying somewhere in the streets, in the forest, in the fields. Part of it is burnt, and only a tiny portion is recycled.

In a parallel universe called zero waste, the majority of waste is not created at all, part is recycled, and a tiny portion decomposes.

Czech Zero Waste is exploring how to live a waste-free lifestyle (not only) in Czechia. We inform, inspire, and advise, but primarily we are gradually documenting how we can wean ourselves from the dustbin men.

We're Helena, Jana, and Míša. Travellers, volunteers, discoverers, and dreamers. We're Czech Zero Waste.

experience

text: Ivana Pustějovská  
photos: Veronika Žižková archives,  
Fernando T. Zamuner



# Veronika Žižková: I no longer walk the streets of Baltimore

“Dear Veronika, yes, you are welcome.” This brief sentence was the decision that allowed Veronika Žižková, a doctoral student in Medical Biology at the UP Faculty of Medicine and Dentistry, to go to Baltimore, USA, a few years ago. The same sentence decided the direction of her research and these few English words actually are responsible for her return in 2018 to a prestigious scientific workplace which was made possible by the Palacký University Endowment Fund.

But first things first. “In 2013, thanks to a grant, I was able to travel to America. So I wrote to many workplaces asking for an internship. Only Prof Califano of Johns Hopkins University in Baltimore replied. To my long e-mail with a CV and letters of recommendation, he reacted with only that single sentence,” the smiling blonde remembers. But a one-sentence invitation, of course, was not enough in the end. “Johns Hopkins is a very prestigious university, with a lot of rules and regulations. In order to be accepted, a person must have plenty of patience, write dozens

of e-mails, and go through a mountain of paperwork.”

But Veronika tackled the paperwork successfully and crossed the ocean in January 2014 for four months. Even though she had had an internship in Germany, America was something else entirely. Perhaps because Baltimore, where she was headed, is infamous for crime. “Johns Hopkins is crucial to the city and a prestigious employer, one which takes great care about the safety of its employees. In practice, it looks as though there are guards everywhere, that the entire campus is under watch. You cannot just go where you want. You have to show a special badge that you’re from Hopkins.” There’s no chance of taking some walks through the centre of this city of more than 600,000. University employees live on the outskirts of this city, one where the majority of the population is African American, living in poverty. “The commute to work takes an hour and a half – a car is a necessity, almost nobody walks. Today I no longer wonder why safety, or rather danger, can vary from street to street,” says Veronika. →

## Veronika Žižková (b. 1986)

From Šternberk, she studies in the Medical Biology doctoral programme at the UP Faculty of Medicine and Dentistry. She has had foreign internships in Germany and the USA. This past year her project on researching head and neck tumours was supported by the UP Endowment Fund.

However, when she was getting ready to go to the USA, she could not even imagine something like that. She looked for accommodation which was cheap and near to work. Through Airbnb she found a shared room, she paid a month's rent, and got on the plane. The first day on the job, her boss asked how her journey was. "The flight was okay, and then I walked ten minutes to work," she bragged. The professor's reaction was immediate: "Go home and pack!" He moved her out, and even hosted her with his family for a week until they found her a place to stay. "He even paid for my accommodation, because he knew what the month's rent cost," Veronika shared about her experience. Americans' friendliness and willingness to help are what she appreciates most about them. "They're incredibly communicative, they want to talk to you, even if you're only going together one flight up in the elevator."

Veronika disproves the mistaken impressions of how better equipped American laboratories are than ours. "They do

not have the newest equipment at their disposal which is standard in the majority of laboratories here. On the other hand, they have no problem getting more money for research. When some experiment is not going right, they sit down at the computer and order different chemicals and they go back at it, again and better. Research is an absolute priority for them."

Their enthusiasm for work is huge, according to Veronika. "They usually start work around nine, and if they leave at six, they are among the first. Even I sometimes left at midnight. You get caught up in the enthusiasm." But as a young woman who between the two American stays bore a son, she also sees its dark side. "It's quite sad when mothers with small children spend so much time in the lab that someone else has to look after their kids. That kind of day care can cost 2000 dollars a month."

Her first American stay determined her contemporary scientific direction. "The workplace offered studying head and neck tumours, and I joined the project." During

her work however, she did not work with tumours found in the human body. It would be too risky for the patients. They used cells which were similar to such tumours. "My entire research is on cell lines, which are actually cell cultures which have all the same qualities, are virtually immortal, and have the capacity for unlimited cell reproduction," she explains, adding: "I was using head and neck cell lines where I turned off individual genes through a molecular biology technique and then observed what it does to the cell, whether that specific gene is so necessary that after it's been turned off it is not able to survive and then dies." When she explains to a lay person who can't understand what such research is good for, she laughs and answers: "I want to force cancer cells to commit suicide."

Veronika Žižková recommends stays abroad to everyone. "You gain perspective, you learn a different approach. It's an experience which enriches you. Don't plan too much: it's better to take every opportunity as it arises – it's really worth it."



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**"Americans are incredibly communicative, they want to talk to you, even if you're only going together one flight up in the lift."**



text: Velena Mazochová  
photos: Jiří Pasz, JP archives

alumnus



## Jiří Pasz: Photography can make life and death decisions

He was able to connect his experiences as a humanitarian worker aware of the pain of the contemporary world, and the ability of a photographer to say something about it. He has photographed child soldiers in Uganda, the prostitute caste in Nepal, skateboarders in Myanmar, devastation in Haiti, refugees in Jordan, and an operation on a three-year-old child who was wounded in war. And also an invincible will to never leave things up to fate. The power of the stories which Palacký University alumnus Jiří Pasz tells via photographic “shortcuts” is not only due to mere witnessing of suffering and ruination. At the same time, he is able to illuminate a message of understanding, hope, and human solidarity.

He says that photography can change the world. “It has the power to give a voice to those who have none. In its extreme form it has the power to make life

and death decisions – for example when a photographer takes pictures of famine, and is then able to organise help for the afflicted area afterwards. It’s an artistic shortcut which can help us to understand the issue better and perhaps even more quickly,” explains Jiří Pasz, who graduated in Humanitarian and Social Work at the UP Sts Cyril and Methodius Faculty of Theology.

At first it was a desire to travel, which soon gave him a taste for wanting to help. “Travel enthralled me right after high school, but I soon began to notice not only captivating landscapes, monuments, and culture, but also the huge amount of suffering going on around them. Then I began studies in Olomouc on how to help people in the most effective way. It’s one of the most difficult things that humanity is still struggling with,” Pasz says. →



With Kenyan cameraman Simon Okongo, with whom he collaborated on a documentary film on Kibera, the largest slum in Nairobi and in all of Africa.

He has visited nearly fifty counties in the world and dedicated himself to a wide range of topics – from the problems of poverty and social inequality to domestic violence, preventing corruption, the rights of ethnic and sexual minorities, and refugee situations in lands torn by war. He has also documented biogas generators for small farmers in Cambodia, the electrification of a huge refugee camp in the Middle East, and educating children in Haiti. In Czechia he has travelled with hospital clowns, skied with people in wheelchairs, and photographed the Bohnická theatre company made up of psychiatric patients. “I’ve been aiming at the broad and complex picture, supported by the study of specific political, economic, and social phenomena. All that however is often connected to great material poverty, drama, and sometimes even tragedy,” Pasz explains.

The most powerful moments in his career were those spent getting to know child members of the Ugandan armed forces and his stays in an African slum and in a refugee camp on the border of Jordan and Syria. To get the necessary distance of a photographer who “only” presses the shutter release requires a great deal of sympathy, he says. “The ability to emphasise with the other, with people, makes community. Empathy comes from recognising we are not isolated units,” he underlines. He photographs serious topics. “However, the dignity of a man is always first: I’m never separate from these people – we speak together, we’re in contact, we work together.” Maximum solidarity must also at the same time be balanced with a self-protective distance. “I learned how to have a larger perspective in school in Olomouc, and I’m very grateful for that. It’s a way of getting close to people, but at the same time not to take on all the world’s pain. I would go mad if I didn’t have that.”

At the amount of suffering with which he has met, he has been reacting in re-

cent years by “passing along good news”. “Without leaving out the often very dramatic context, I meet wonderful people everywhere who are not consigned to their fate but are bravely and proudly fighting for themselves and others. And these are the ones whom I think should be seen the most,” Pasz says. This “good news” includes missions by Czech doctors whom he has accompanied to lands affected by war. The photo documentation which he made during the voyages has become the foundation of the travelling exhibition “Flying Doctors”. “I saw miracles such as how to disconnect the heart of a three-year-old girl and then operate on it, how to drain a brain tumour, or how to use a hammer and chisel to perform knee surgery. And mainly, I was witness to the unbelievable professionalism with which the Czech team of doctors works.”

With the help of his stories, he wants to lead a dialogue, putting facts into it. “I’d like to separate the debate from emotions, connect people, and provide them with the biggest basis possible to make good decisions – for example into the current heated debate on refugees, which is dominated in Czechia by irrational fear,” says Pasz.

To date he has made use of his experiences as a humanitarian freelancer in the areas of public relations, journalism, production, graphics, and of course photography. Collectively, his most recent activities can be summarised under the concept of social marketing. “There is a battle being waged over space in the human mind, occupied by advertising and scandal pages. And I’m interested in how social themes can reach that place, because if we can better understand the causes of the problems surrounding us, we’ll be better able to solve them. I’m convinced that we can only survive this together. If we fail to be interested in the other, and if we refuse to help him or cooperate with her, humanity is lost.”

### Jiří Pasz (b. 1981)

Graduated with a degree in Humanitarian Aid and Social Work at UP Sts Cyril and Methodius Faculty of Theology and VOŠ Caritas, International Development Studies at Utrecht University, and is now in the Social Geography doctoral programme at Charles University Prague. He has worked together with a number of non-profit organisations (UN, Amnesty International, Caritas, ADRA) and the Czech Ministry of the Interior in Cambodia, Nepal, Uganda, and Myanmar. In recent years he has been documenting Czech foreign aid in Haiti, Ukraine, in refugee camps in the Middle East, and has worked with HateFree Culture. He founded the initiative Czech on Board with Myanmar and has taken part in voyages by Czech doctors to the Middle East (MEDEVAC). His work has been featured in dozens of exhibitions in Czechia.



photo:  
Gabriela Knýblová

**Bumo KAWK** teaches Korean at the Department of Asian Studies, UP Faculty of Arts, under the auspices of the Korea Foundation's Professorship Program. Its main goal is to better standards and increase awareness about Korean Studies at Palacký University.

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*Although at the beginning I was not entirely sure whether I should set out to Olomouc, today I know that it was a good decision. I was handicapped not only by a fracture of my arm, but most of all by my lack of competency in Czech. On the basis of my experience with many overseas universities I know that it is difficult to address the local people without a knowledge of their language or culture. When we communicate only in English, our understanding is limited. That's why I'm grateful to many of my colleagues and students who have helped me in this respect.*

*One of the biggest achievements we made in 2018 was the opening of the King Sejong Institute at UP in cooperation with the Korean Embassy and our university colleagues. It took place in the winter term 2018, and Palacký University became the first European university that opened this "co-type" King Sejong Institute in collaboration with the Embassy. The institute offers the possibility to learn the Korean language and study Korean culture not only to UP students, but also the public. I really wish that in the future Korean language and culture will become more and more familiar to people in the Czech Republic by means of Palacký University Olomouc.*

# First successful human organ transplant

## Ophthalmologist Dr Eduard Konrad Zirm (1863–1944)

Eduard Konrad Zirm was born in Vienna, the capital metropolis of the Austro-Hungarian Empire. Soon afterwards, Eduard's father died, and so he and his sister Adela were raised by their mother. After graduating from the Medical Faculty of Vienna University, Zirm worked as an assisting doctor at the 2nd Vienna Eye Clinic. In 1892, he found a position at the Olomouc hospital, at that point named the Moravian Land General Institutes. The head of the Internal Medicine department, Emilian Mick, complied with the professional interests of his young colleague, and in 1894, he pushed for Zirm's appointment to the eye disease surgery. At the same time construction had begun on the new Land Institutes at Tabulový Hill in the Olomouc suburb of Nová Ulice (the current site of University Hospital Olomouc). Thanks to the efforts of E.K. Zirm, the Ophthalmology department got its own pavilion in 1902 with 165

beds, becoming and remaining for many years the largest and most modern eye clinic in the German-speaking lands.

### World's first successful cornea transplant

Olomouc's ophthalmology gained extraordinary fame on 7 December 1905, when E.K. Zirm conducted the first successful transplantation of a human organ in history – the cornea. Zirm's patients were forty-five-year-old householder Alois Glogár, who lost his sight after burning both eyes with quicklime, and eleven-year-old Karl Bräuer, whose eye was seriously injured by a metal shaving. Zirm attempted to extract the shaving with a magnet, but due to the loss of the vitreous fluid, he was forced to remove the lad's eye. Because the cornea remained intact, he used it for the transplant. He placed the eyeball in a warm saline solution, with a trepan he cut two grafts from the donor's cornea, one from its centre and the second from its periphery, he put the grafts between two pieces of gauze hung over steam from a vessel with boiling sterile water, and gradually transplanted them into Glogár's eyes, who was under general anaesthesia. The graft taken from the cornea's periphery and fixed to the conjunctival flap of his right eye had to be removed after three weeks due to pain caused by increased intraocular pressure, while the graft taken from the cornea's centre and fixed by a cross stitch to the conjunctiva so that it covered the cor-

nea healed well and the patient was able to see with his left eye until the end of his life.

In the years following, Eduard Konrad Zirm carried out further keratoplasties in Olomouc, but none were successful. His work did however stimulate further developments in surgical techniques, including transplantation of corneas from deceased patients, and the emergence of eye tissue banks. During his tenure in Olomouc, Zirm carried out a total of 7,886 cataract operations.

### Gardener, beekeeper, and writer

Eduard Konrad Zirm built a villa according to his own design on Tabulový Hill, and spent the years of his retirement working in his extensive gardens and keeping bees. His essays, poems, and stories were collected in the book *Die Welt als Fühlen, Eine naturphilosophische Studie für Fachleute und Laien*, published in Leipzig and Vienna in 1937. He asked that an urn with his ashes be placed in his beloved garden. In 1945, however, it was taken to Graz in Austria, where his widow Irena and two sons, Konrad (a doctor) and Eduard (a lawyer) lived. The ophthalmologist Eduard Konrad Zirm is commemorated by a plaque on the building of the Eye Clinic at the University Hospital Olomouc and the blind (!) Zirmova street on Tabulový Hill. The University Hospital Olomouc Eye Clinic has been organising a medical conference called Zirm's Olomouc Colloquium since 2010.



Robert Hofmann (1889–1987): Ophthalmologist Eduard Konrad Zirm  
Oil painting, 1929. Private collection.





Palacký University  
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*Genius loci...*

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