# zumál

Magazine of Palacký University Olomouc,

theme

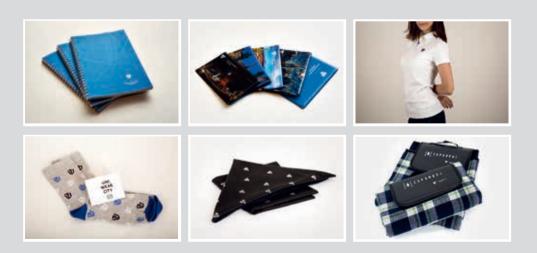
## Unveiling the Mystery

Palacký University Olomouc



## Discover the Summer Offers at UPoint

Find an original souvenir to commemorate your studies in the extensive range of our promotional products. We recommend you check out the unique *UniWearCity* fashion collection – designed by UP alumni and manufactured locally in the Czech Republic.





UPoint

UPoint – Palacký University Information Centre and Shop House of the Black Dog | Upper Square 12 | Olomouc www.upoint.upol.cz

### contents

- 2 UP archaeologist reveals the secrets of medieval Islamic architecture in a war-stricken region
- 6 Inclusion Fair offers opportunities for educating Roma pre-schoolers
- 6 Research results published in a new book: Muslims in Czechia
- 7 UP awards Austrian lawyer Armin Stolz
- 7 Faculty of Health Sciences led once more by Jaroslav Vomáčka
- 8 Faculty of Medicine and Dentistry welcomes two generations of its graduates, including the first Diamond Jubilee
- 8 Experts from the Faculty of Education helping via theatre therapy in Russia
- 9 Thanks to a European grant, RCPTM embarks on new research
- 9 10th International Teaching Week at the Faculty of Physical Culture
- 10 Rewrite the textbooks! The first non-metallic magnet developed in Olomouc
- 11 The uninvited avian guest on the pages of a new book
- 12 Scientists from Olomouc help to save endangered medicinal plants in South Africa
- 13 Geneticists have isolated the DNA of the canonic Czech author Božena Němcová. Will it reveal her origins?
- Olomouc Baroque Festival celebrations guarantee one-of-a-kind experiences
- 15 Portrait Marta Lucie Cincialová
- 18 Success
- 22 Kaleidoscope of News Briefs
- 24 Photostory Academia Film Olomouc
- 25 Interview Lumír Kantor: Every day I am amazed at what we are able to do
- 28 Palacký University can entice even the best "players" in science
- 31 Experience My Study Year Abroad in 2016
- 33 Graduate –/ Marinella Danosová: I love being in the thick of it
- 35 Lifestyle / UP Botanical Garden A source of knowledge and a place of recreation
- 36 Reportage Courses and expeditions spice up studies
- 38 + Heritage Prof Phil Dr Friedrich Franz, OPraem
- 39 Reflection Nigeria
- 40 University in the social fabric

title page: The vanished city of Old Makhmur – surface topography of visible remnants of a church, ca. 8–9th century photo: Czech Archaeological Mission in Northern Iraq archive

Žurnál | Published biannually in English | Czech Registration No.: MK ČR E 12524, ISSN 1804-6754 | Published by Palacký University Olomouc, Křížkovského 8, CZ-77147 Olomouc, Czech Republic | VAT No.: 61989592 | Chairman of the Editorial Board: Petr Bilk | Editorin-Chief: Ivana Pustějovská | Layout: Věra Marešová | Graphic Editor: Michaela Cyprová | Proofreading: Matthew Sweney | Editorial Board | Biskupské nám. 1, Olomouc | Telephone: +420585 631 155 | E-mail: zurnal@upol.cz | Print | Profi-Tisk Group Olomouc | 1000 copies



#### Dear Readers

In recent years UP has been significantly transformed, in all conceivable aspects. UP has become a sought-after workplace for scientists from abroad who are attracted to Olomouc by the university's reputation, splendid infrastructure, the level of safety in Czechia, the beauty of the city and the competitive financial conditions.

They say that people vote with their feet. They leave places without prospects and go to places where they can realise their ambitions and dreams. Palacký University is gradually becoming an attractive destination, especially for young scientists from all over the world who take part in large research projects. The growing international character of UP is strengthening internal competition, thus increasing its quality. At the same time, cooperation with international colleagues has taught us tolerance and respect for those who speak foreign languages and come from different cultural circles. And this is a sine qua non prerequisite for the development of a civil and free society in this country.

Jaroslav Miller Rector, Palacký University



## Satellites, GPS, and Courage

UP archaeologist reveals the secrets of Medieval Islamic architecture in a war-stricken region

The desire to lift the veil of mystery surrounding the medieval architecture in the Middle East was aroused in him after a scholarship in Cairo, Egypt. Ever since Karel Nováček, a Palacký University archaeologist, saw its buildings, he has been intensely working on revealing new findings about medieval Islamic architecture, including the unique architecture in Mosul. Its architecture from the Islamic era, standing unjustly in the shadow of famous antique monuments in Iraqi Kurdistan, has much in common with medieval architecture in Europe and has been vanishing from the world's sight in the aftermath of war. "Cairo is a textbook on Islamic architecture. This is where I realised, seventeen years ago, how largely its buildings are related to our European architecture in medieval times. And how woefully little is known about them," says Nováček, currently at the Department of History, UP Faculty of Arts. When he made his first study visit to the land of the pyramids, he was a postgraduate student in Architecture History at Czech Technical University in Prague and "genuine" archaeology was still far in the distance.

In Egypt, the young scientist noticed that objects which may not be attractive to the ordinary tourist may be as informative as an entire textbook for a construction historian. "In the 1980s, Cairo suffered a major earthquake. People left many buildings to their fates. The upper floors collapsed onto the ground floors, of which only shells remained. Later on people began to re-settle in those historical houses and entire streets in various ways. A construction historian today has a unique opportunity to observe how the historical houses developed until the present. After a comparison with what I knew from medieval Europe, I made a decision then to explore those medieval cities of the Middle East more profoundly," recalls Nováček on one of the decisive moments of his career. And today he still perceives archaeology through architecture.

#### War gives you another perspective

For some time he had been looking for another opportunity to get closer to Islamic architecture. When he was offered a job in Iraqi Kurdistan in 2006, he did not hesitate. Since then he has dedicated all his research to the Islamic era, the period between the 7th and 19th centuries, during which however the majority of the local population remained Christian. He established the Czech Archaeological Mission in Northern Iraq and in addition to that, he often visits this region as a member of various international teams.

He is employed in a region which is associated in the media with the war against the so-called Islamic State. Karel Nováček emphasises that history and presence are not so black and white as on television. "Our team has regularly been to Erbil, located a mere 90 km from Mosul. Whereas Mosul has been inaccessible to Western researchers since 2003, Erbil is a rapidly growing, civilised, and safe city, until recently living off their petroleum bonds," points out Nováček. During their missions he and his colleagues are usually accommodated in concrete houses in Christian as well as Muslim neighbourhoods. "There is less noise and consumerism In Muslim neighbourhoods than in Christian ones," compares the archaeologist.

During his weeks-long stays he is in everyday contact with the locals. His experience has been good. "Local people are open-minded; they will talk cordially with you. I have never experienced anyone making a negative comment concerning Europe. I even think that with all the war, economic, and existential problems, they have gained a better perspective on life. Almost everyone in Erbil has a relative who died at the front during fights with the radicals from IS. Nonetheless, local people are able to face problems with a certain calmness. It is very enlightening for a European to experience their detached perspective. They know what matters in life. I really don't think that we Europeans are happier in general," claims Nováček.

#### Karel Nováček (b. 1968)

Originally an archaeologist with specialisation on medieval times in the Czech lands. A member of the Department of History at the UP Faculty of Arts. Since 2006 he has also been investigating the medieval urban network in northeastern Mesopotamia. He is the main author of a monograph published in Oxford, Medieval Urban Landscape in Northeastern Mesopotamia. Thanks also to his research, an exposition called Architecture in Danger was installed in the Science and Art Gallery of the Czech Academy of Sciences in order to inform visitors on the architectural heritage of the city, devastated by the ideologically motivated attack by the radical Islamic State. The exposition showed visitors how architectural sights can be explored "from a distance". Thanks to Czech experts, some of the destroyed Mosul monuments retained their original appearance in the exposition - albeit in digital form.



Ancient cemetery in a mountain valley near Makhmur, containing about 5,000 visible graves.



#### Archaeologists with satellites

Archaeologists today definitely need more than just the traditional tape measure, trowel, and shovel. Karel Nováček's team includes a specialist on the use of satellite images. "Lenka Starková, a specialist on landscape archaeology and work with satellite data, is one of the pillars of the team. Modern technologies including satellite images are vital for our work today," adds Karel Nováček.

He is a European pioneer among those who take an interest in medieval Islamic architecture. "Those who had travelled to Mesopotamia usually studied the Assyrian era, the Bronze Age, or even older periods. The latest layer of settlement was of interest to barely anyone. And this is how information on approximately fifteen vanished cities, still visible in the terrain, was lost to the world," says the UP archaeologist about precious archaeological sites. He has been collecting data on the unique historic structures in Iraqi Kurdistan for many years now. He and his team make expeditions out of their base in Erbil and explore sites which might conceal a historic masterpiece, with their hunches based on the satellite images. The satellite image reveals the size of the archaeological site, its approximate age and condition. Then they use GPS for further orientation.

"Just to give you a better idea, we're talking about an area which is the size of the greater Pilsen Region. There are almost a dozen historical cities that interest us. First we make a basic survey and documentation of what can be seen on the surface," says Nováček.

Neither top-notch technology nor many years of experience are however any guarantee that the archaeologist will encounter a historical site. "The most powerful moment is when you personally find out that the remains of the settlement are exactly where you had expected them to be and also that they're from the period you explore," as the archaeologist described the moment of suspense. Satellite images only show the presence of some anthropogenic traces after vanished settlements and larger structures. Those, however, may well be only 30 years old - or they may date back to the Neolithic Age. The range may be even ten thousand years.

"When you hit the period you explore, a series of connections begin to rev up in your mind, and your scientific imagination is unleashed at full throttle. It is an extraordinary and very precious moment," confesses Nováček. He never worries about the danger around him, although he knows he may bump into poisonous spiders, scorpions, and other dangerous creatures.

"I have talismans from my kids for good luck. The biggest threat for me are the local stray and very intrusive dogs. I have always feared dogs," he smiles.

### Digital models: the future of Mosul architecture

Not all sites are accessible to Czech archaeologists such as the ones around Erbil. The region has been stricken by war and some of the city ruins are located in the area of Central Tigris, inaccessible on a long-term basis. Similarly, they cannot approach the largest city of Northern Iraq, Mosul, whose destruction is being mapped by the archaeologists only via satellite imagery.

"The radical Islamists have destroyed 47 architectural historical sites. Apart from two exceptions, they had all served religious purposes - the vast majority were Islamic mosques, mausoleums, tombs, and graves. The consequences are devastating. Mosul has lost invaluable historical buildings from the 12th and 13th centuries which had created its skyline and specific appearance." According to the Olomouc scientist. Mosul's architecture is absolutely unique, because the architects who built these structures had extensive experience with Christian architecture and transferred such features to the Shiite architecture in Mosul.

"It is tragic how the diversity of the world's heritage has been decreased. The architectural phenomenon of Mosul, unparalleled in the whole of global culture, has not even been properly documented," laments Nováček. Documentation of Mosul's buildings is scattered in various collections, often private; only a very small portion appears on the Internet.

"We are trying to collect everything we can. We have been thoroughly documenting the destruction of the city. We have examined private collections and used the estates of researchers who had visited Mosul before us. We also contact people who come from Mosul and used to work or still work there," says the archaeologist about



The vanished city of Old Makhmur, a hillock hiding a vanished castle – probably a Christian aristocrat's residence – from the era shortly after the advent of Islam.

The vanished city of Old Makhmur – surface discoveries of ceramic shards provide priceless information on dating this part of the site.

### -

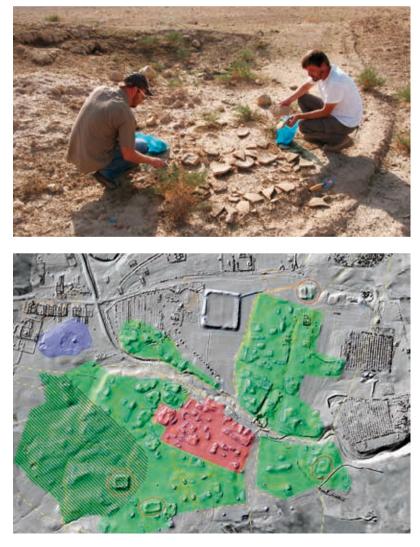
A digital model of the terrain shows Old Makhmur in the basin of the Central Tigrid, the remains of which are unusually well preserved on the surface of the terrain. The town vanished in the 9th century, some two hundred years after the advent of Islam. Its core could be the historically known church and monastery Bet Margana (red area), which was later extended by vast, unfortified urban districts (in green). The settlement was surrounded by squareshaped castles of the local Christian nobility (red-dotted lines).

their rescue mission, incomparable to the work in the terrain around Erbil.

#### **Cautious optimist**

Despite the deluge of negative news, the UP archaeologist also highlights a positive moment now: "In 2016 I came across a book that contained maps from Mosul's new local plan and registered all historical sites and sacral buildings. It allowed me to detect four more constructions that had escaped our attention. And when I recently compared a satellite image from August 2015 with an image from September 2016, I was relieved to see that destruction in Mosul has stopped," says Nováček. He is only slightly optimistic, however, since he knows that the liberation operation in progress will inevitably lead to more damage. Furthermore, he does not believe that the destroyed objects would be properly reconstructed any time soon.

It took the gigantic destruction of Mosul and the annihilation of the region's cultural heritage to attract the attention of several foreign research teams, which began to investigate the monuments from the Islamic era. Karel Nováček has been successfully collaborating with them, and so he will travel to Erbil again in September 2017 in order to take part in discovering the remains of the neglected Islamic medieval era. Thanks to recently launched collaboration between Palacký University and the Historic Preservation Inspectorate in Kirkuk, he will also educate local young archaeologists. "We want to teach them how to better preserve the historical heritage of their country."



### 8 faculties 1 university



## Inclusion Fair offers opportunities for educating Roma pre-schoolers

Supporting the admission of Roma children into the educational system was the main goal of the Inclusion Fair, which took place in Olomouc and was hosted by the Sts Cyril and Methodius Faculty of Theology with its partners in the ROMSPIDO project. The first year of this public-professional event was aimed at working with preschool children. It offered presentations by non-profit organisations and partners of the project, a workshop for pre-schoolers, films, and a performance by a Roma band. Those interested could attend lectures on the subject of inclusive education and special educational activities held in a professional seminar.

"We want to move the starting line for pre-schoolers, who do not have so many prejudices as their elders in the society's majority, to enter the educational system on the same level as those who have been prepared for elementary school and also further education," explained the co-ordinator of the project, a professional at the Institute of Social Health at CMFT, Zdeněk Meier. The project Preparing Roma Children and Children from Socially Marginalised Groups in the Olomouc Region and its Surroundings for Education through the Help of Volunteers while Paying Attention to Spiritual Needs (ROMSPIDO) was supported by the Czech Ministry of Education, Youth and Sports; European Structural and Investment Funds; and the Operational Programme "Research, Development and Innovation". In the coming years, it will also be aimed at middle school students and "friendly workers" – work positions offered to Roma in the local sector. (mav)

### Research results published in a new book: Muslims in Czechia



Palacký University contributed in the creation of a nearly 500-page book, *Muslims in Czechia: Establishing Muslims and Islam in the Public Sphere*. Daniel Topinka, from the Department of Sociology, Andragogy and Cultural Anthropology of the Faculty of Arts, offers a colourful overview of Muslims living in the Czech Republic in the book.

The book accompanies the reader through the research stages which took place beforehand. It is divided into four main parts. "The first part is dedicated to Muslims and Islam post-1989, the second to Muslims and Islam in the perspective of public affairs management, the third to Muslims and Islam seen in the pub-

lic eye and through the media, and the fourth to the interpretations by Muslims themselves. Moreover, it is a contribution to the discussion which has been recently triggered in Czech society," said Daniel Topinka. The book is also dedicated for example to the situation of Muslims in hospitals, spas and prisons, Muslim cemeteries, ritual slaughter, and the image of Muslims in textbooks and the media. The information found in the book will be of benefit not only to academics, but also to readers who are state and local administration employees and those in non-profit organisations. The publication, the work of a dozen authors over the years 2013-2016, was published by Barrister & Principal. (map)

### **UP awards Austrian lawyer Armin Stolz**

One more name has been entered onto the prestigious list of UP Medal of Honour holders. The medal was given to the leading Austrian expert on comparative constitutional and administrative law, Armin Stolz, who works at Karl-Franzens-Universität in Graz. He received the award for his long-term co-operation with the UP Faculty of Law and for spreading the good name of Olomouc's university abroad.

The Austrian lawyer and academic was nominated by the Faculty of Law. "Armin Stolz has been collaborating with our faculty for over twenty years, and it has been very close co-operation, important for our teaching. He significantly contributed, and still contributes, to spreading the good name of Palacký University abroad and to the development of its international prestige," explained Dean Zdenka Papoušková. The ceremonial awarding of the medal was attended by the Vice-Dean for Bachelor's and Master's programmes at the UP Faculty of Law, Maxim Tomoszek, and Stolz's closest collaborator, Michal Malacka of the Department of International and European Law. "It is a great honour for me, and a joy to accept this medal. I have been working with you since the early 1990s, since the inception of your faculty. We've done quite a deal of work in that time. The faculty is standing on solid feet now, it is known abroad, and still expanding," said Armin Stolz.

"Prof Stolz supported the re-established faculty by co-organising the summer schools in Olomouc and Graz, exchange stays, creating the Austrian Library, realising courses in constitutional comparison law, and also connecting the faculty with the foreign co-operation of Karl-Franzens-Universität in Graz," Michal Malacka noted. (eha)



### Faculty of Health Sciences led once more by Jaroslav Vomáčka

On March first, the former and now current dean, Jaroslav Vomáčka, took charge of the leadership of the UP Faculty of Health Sciences. The Academic Senate nominated him for the period 2017–2021 and he was named Dean by Rector Jaroslav Miller. Dean Vomáčka in his second term wants to aim at further development and stabilisation of the faculty in all areas. Under his leadership, the faculty ought to expand its offer of new fields of study taught in English as well as in Czech, support student foreign study stays, and de-



velop the professional qualifications of its academic workers. He wants to devote intense attention to academic, developmental, and research activities, and improve their close ties to economic and social work. One component of this should be developing and finding new academics by expanding the doctoral study programmes and deepening international co-operation.

One of the important steps in the coming years will be preparing a building project and realising the construction of a new faculty headquarters. "Constructing a new, modern building is key for the material-technical unification of the faculty, and for the development and expansion of the structure of fields of study and study programmes. Several fields are already prepared for accreditation and for their development, and at the same time for the development of the Centre of Science and Education and the Centre of Practical Experience it is absolutely necessary to have adequate spatial capacity," explained Jaroslav Vomáčka. (mav)

### 8 faculties 1 university



## Faculty of Medicine and Dentistry welcomes two generations of its graduates, including the first Diamond Jubilee

Respect, admiration, and strong emotions ruled the atmosphere of the Diamond Jubilee, which took place for the first time at Palacký University's Faculty of Medicine and Dentistry. After sixty years, seventeen graduates from 1957 renewed their ceremonial oaths. "You are some of our most important graduates, because you were there at the faculty's beginnings and throughout your careers you have spread the university's good name," said Rector Jaroslav Miler, who welcomed the diamond graduates together with the faculty leadership.

Jaroslav Rybka, Director Emeritus of the World Health Organization's Centre for the Study of Diabetes and leader of the Diabetes Centre at the hospital in Zlín, reminisced on his student years in the 1950s. "There were 240 of us entering our studies, and 105 of us graduated. We decided to study medicine and after all the twists and turns which infused that period of power, it was a lucky decision. We endured several regimes and finally experienced democracy – and with it, that our faculty's reputation is rising and out of it have come many European and world discoveries," he emphasised. The unique experience was also attended by the Class of 1987, which met on the same day in Olomouc for their traditional event Roots/Radicēs. In addition to their informal meeting, the programme included lectures by graduates from the class as well as a performance by a saxophone quintet. (mav)

## Experts from the Faculty of Education helping via theatre therapy in Russia



Therapists from the Faculty of Education travelled to help deprived children who live in foster families in Armavir, Russia. They also showed how healing is possible via theatre therapy.

Together with other colleagues, Oldřich Müller and Martin D. Polínek from the Institute of Special Education Studies worked with children in a new SOS children's village. At present, there are 80 children with special needs living there. Some of them no longer have parents, others were abused, some of them were born with foetal alcohol syndrome. However, all have something in common: problems establishing relationships. "Drama therapy and theatre therapy can really help in such situations. Thanks to them, children begin to be creative, and they are capable of taking responsibility for their lives," said Oldřich Müller.

Ten therapeutic days meant intense work for the drama therapists from UP, but the end of their stay belonged to the theatrical presentation. "It was probably the biggest event which we have done within the auspices of UP. I am glad that the half-hour presentation, 'Support Me', was a success. Drama therapy and theatre therapy are not very widespread in Russia, and that is why the experts there wanted to see it in action," added Martin D. Polínek. (map)

## Thanks to a European grant, RCPTM embarks on new research

Scientists at the Regional Centre for Advanced Technologies and Materials (RCPTM) began to focus on the development of hybrid nanomaterials, which make possible effective solar water splitting and obtaining hydrogen as a significant maintainable energy source. Thanks to support from the operational programme "Research, Development and Education", the new team is dedicating itself to the problem, led by a world expert in the areas of material chemistry, photoelectric chemistry and renewable energy, Patrik Schmuki.

Hydrogen is considered the energy source of the future, one gentle on the environment. Olomouc scientists are aiming at a method which would make it possible to obtain it from water by using solar energy in what is called the photoelectric chemical process. They are making use of proven and inexpensive materials, such as iron oxide and titanium dioxide, primarily for optimising the anodic photocatalysts, and improving their qualities.

"Despite many advantages, such as their low price, non-toxicity, availability in great amounts and chemical stability, these materials exhibit several drawbacks, which at present prevent their high-capacity use in the production of green, cheap energy. The project's goal is to eliminate these drawbacks by a combination of metal oxides with nanocrystalline materials, which we have been studying in our centre for some time," explained RCPTM Director Radek Zbořil on their goals. The emergent hybrid structures increase the effectiveness of the photocatalyst process, and even increase the volume of hydrogen created. This should help these new technologies enter into real practise. Participating in the project are colleagues from the USA, Denmark, Switzerland, France, and South Korea. (srd)



## 10<sup>th</sup> International Teaching Week at the Faculty of Physical Culture

The teaching reins at the Faculty of Physical Culture were taken over at the beginning of April by foreign lecturers during the 10th International Teaching Week at FPC UP. Students in theoretical and practical lessons held in English met with twelve teachers from six countries, including South Africa, Israel, and Romania. Themes included the relationship between geocaching and move-



ment, aqua gymnastics, simple games which develop co-operation and logical thinking, and the workshop Football for Peace.

The 1st International Teaching Week took place in November 2012 after courses in English were required at the faculty. This significant change in the conception of teaching foreign languages took place within the framework of the ESF project "Internationalisation of the Faculty of Physical Culture at Palacký University Olomouc". "Within ten such weeks at our faculty, seventy lecturers from nearly thirty countries took part in teaching advanced subjects for almost 3000 students; the teaching was not focused only on English. Moreover, we try to place an emphasis on activating forms of teaching," commented Zuzana Hanelová, the advisor for foreign relations, and the head of the above-mentioned programme. Organisation of the 10th International Teaching Week was also shared by the Department of Developmental and Environmental Studies at the UP Faculty of Science. (vim)

### discovery

text: Martina Šaradínová ilustration: Martin Pykal | photos: RCPTM

An illustration of the first organic magnet on the basis of graphene with magnetic properties at room temperature.

### Rewrite the textbooks! The first non-metallic magnet developed in Olomouc

A dream of many generations of researchers has been fulfilled by a discovery made by scientists at the Regional Centre of Advanced Technologies and Materials (RCPTM) at Palacký University Olomouc. By using graphene, an ultra-thin form of carbon, these scientists prepared the first non-metallic magnet that retains its magnetic properties up to room temperature. Its potential applications are vast, particularly in the fields of biomedicine and electronics. The report of the Czech scientists, disproving old beliefs, was published in the prestigious *Nature Communications journal*.

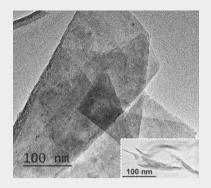
All magnetic materials used until now have been based on metals or their compounds. However, the aim of Olomouc scientists was to prepare an organic magnet. In its development, they placed their bet on a material of the last decade they had bountiful experience with: graphene – a single two-dimensional layer of carbon atoms.

"For several years, we have suspected that the path to magnetic carbon could involve graphene. Amazingly, by treating it with other non-metallic elements such as fluorine, hydrogen, and oxygen, we were able to create a new source of magnetic moments that communicate with each other even at room temperature. This discovery is seen as a huge advancement in the capabilities of organic magnets," said Radek Zbořil, the lead author of the project and Director of RCPTM.

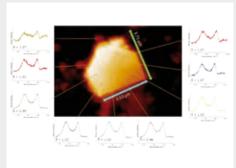
#### A theoretical model was developed

The work arose solely from contributions by Olomouc scientists, who also developed a theoretical model to explain the origin of magnetism in these carbon materials. "In metallic systems, magnetic phenomena result from the behaviour of electrons in the atomic structure of metals. In the organic magnets that we have developed, the magnetic features emerge from the behaviour of non-metallic chemical radicals that carry free electrons," said Michal Otyepka, a co-creator of the theoretical model, whose work on the project was conducted within the framework of a prestigious European Research Council (ERC) grant. "I am pleased that the very first work on the topics addressed by the ERC project has yielded such important results," he added.

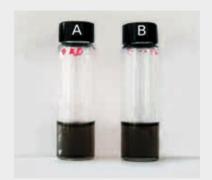
The path from this discovery to practical applications may be relatively long. However, the range of potential uses is enormous. "I think that not only our team in Olomouc but also the broad scientific community will want to exploit the huge surface area of graphene and the potential of combining its unique conductivity and electronic proper-



A photograph of a new graphene derivative – hydroxofluorographene – made by high-resolution electron microscopy.



Mapping of the new graphene derivative – hydroxofluorographene – by means of combined atomic force microscopy and Raman spectroscopy.



A photograph of a colloidal dispersion of hydroxofluorographene.

ties with magnetism. There are not only potential applications in the fields of spintronics and electronics, but also in medicine for targeted drug delivery and for separating molecules using external magnetic fields," says Jiří Tuček, whose work focuses on solid-state magnetism. The Czech scientists are already collaborating with colleagues from Japan and Belgium to look at applications of organic magnets and to develop accurate theoretical models.

### Successful research into magnetism

At the end of 2016, the Olomouc research team recently reported the discovery of the world's smallest metal magnets, also in *Nature Communications*. This will certainly not be the team's final contribution to research on magnetism. "We have taken several important steps towards developing the first magnetic molecules whose magnetism can be manipulated at room temperature. Re-

cent experiments in our labs have clearly confirmed the possibility. We are currently collaborating with Prof Pavel Hobza's team to develop detailed theoretical explanations for the unique behaviour of these molecular magnets. I am hoping that we'll be, for the third time, faster than competing research teams around the world, especially given the potentially immense impact of organic magnetic materials in fields such as molecular electronics and sensorics," says Zbořil.

### The uninvited avian guest on the pages of a new book

The life of the avian interloper, the common cuckoo, is introduced in a new book entitled *The Cuckoo – The Uninvited Guest*, including unique pictures made by the photographer Oldřich Mikulica. It was published by Wild Nature Press in the United Kingdom, and one of the authors summarising the results of many years of research into this bird species is Tomáš Grim from the Department of Zoology at the UP Faculty of Science.

The book shows the entire life cycle of the cuckoo, from laying the egg to hatching and taking care of the young in and out of the nest. "We have based our work on literature published from the eighteenth century until now, and some of the findings were updated during proofreading. We have included even previously unpublished and new opinions. In addition, we tried to rebut some of the traditional myths concerning cuckoos, and to present the reader with how research into such birds is made," said Grim.

Apart from thousands of articles, forty specialised books have been published on the common cuckoo. The most recent addition stands out distinctively, in particular due to unparalleled photographs. "Until today, no other book has been published that would capture the cuckoo's life in such detail and such technical quality. Oldřich Mikulica spent thousands of hours sitting in his shelter and caught things unseen by any researcher before," revealed Grim.

This popular science publication has attracted very positive press even among experts, and it was selected by the UK journal *BBC Wildlife* as "Book of the Month". One prominent biologist, Tim Birkhead, in his review for *BBC Wildlife* appreciates "the exceptional photographs, text and overall design". The co-authors of the text of the book as well as its concept, along with the Olomouc ornithologist, were Norwegian ornithologist Bård G. Stokke and Karl Schulze-Hagen. (srd)





### Scientists from Olomouc help to save endangered medicinal plants in South Africa

Scientists from the Centre of the Region Haná for Biotechnological and Agricultural Research (CRH) in Olomouc are contributing to the conservation of endangered species of medicinal plants in South Africa. Within the auspices of long-term co-operation with the Research Centre for Plant Growth and Development, University of KwaZulu-Natal in Pietermaritzburg, South Africa, Czech scientists have developed special derivatives of plant hormones that stimulate plant growth in sterile environments and support plant acclimatization both in greenhouses and outdoors. During fifteen years of fruitful collaboration, Czech researchers have significantly contributed to the rescue of at least ten species of endangered plants. A study which maps the latest result of the partnership was recently published in the journal Plant Growth Regulation.

South African researchers use a method of micropropagation in vitro to grow endangered plants. The method is normally applied in commercial companies for growing houseplants and orchids: a small part of the plant is removed – an explant. The whole plant can grow again under sterile conditions in vitro from this little explant. This process requires a special medium that contains plant hormones – especially cytokinins and auxins. These plant hormones stimulate cell division and scientists from Olomouc have been studying these interesting compounds for a number of years. Important research results related to these compounds have been applied in the Czech-South African co-operation. These new derivatives are of use when commonly used and commercially available plant growth regulators do not help.

#### **Tailored plant hormones**

"Thanks to many years of research and working together, we are able to prepare plant hormones tailored for specific plant species for our partners today. We have already identified potential problems, and we are able to identify the cause at the molecular level. Therefore, for certain types of plants, we develop targeted agents to prevent problems and appropriately stimulate plant growth," said the head of the Department of Chemical Biology and Genetics of CRH, Karel Doležal.

Scientists must also ensure that the plant will be able to acclimate to a normal environment. "Acclimatization is one of the greatest problems when using this method of growing plants. Our derivatives can, in many cases, overcome these problems, because we are able to adjust compound properties precisely. Plants cloned from the explant and introduced back into the natural environment have absolutely the same genetic information as the original plant from which the explant was removed. This is another rule that must be respected," said Doležal.

#### Patents in South Africa

Researchers also focus on saving medicinal plants. There is a huge demand for these medicinal plants and therefore many of them become endangered in the wild. Czech scientists collaborate with colleagues from the Research Center for Plant Growth and Development at the University of KwaZulu-Natal. Together they helped in the rescue of certain species of aloe, devil's claw, pelargonium and other important medicinal plants. Scientists from Olomouc have contributed to about ten South African patents.

"It's a great example of blending cutting-edge basic and applied research. Over time we arrived at the development of growth regulators tailored to overcome specific tissue-culture problems. Thanks to such plant growth regulators, we are currently able to gain even more material for the basic research on endangered plants, so the research is even more systematic. We prepare exact molecules for our South African collaborators and conversely, we obtain specially prepared samples of plants, in which we analyze endogenous plant hormones," said Lucie Plíhalová of CRH. Phytohormones, and particularly cytokinins, have been studied by scientists from Olomouc for more than 20 years. Scientists are dealing with the possibilities of their application in medicine, cosmetics and agriculture. For this reason, the laboratory holds many national and international patents related to these compounds. The Centre of the Region Hana is a joint workplace of the Faculty of Science of Palacký University Olomouc, the Institute of Experimental Botany of the Academy of Sciences of the Czech Republic and the Czech Crop Research Institute.

### research

text: Velena Mazochová photos: Velena Mazochová and from the archive of the Božena Němcová Museum in Česká Skalice

### Geneticists have isolated the DNA of the canonic Czech author Božena Němcová. Will it reveal her origins?

Thanks to 21st century scientific methods, researchers have isolated 150-year-old DNA from the Czech writer Božena Němcová and her son Hynek. It was made possible by the systematic analysis of genetic material by a multi-disciplinary team led by an associate professor at the Medical Genetics Department of the UP Faculty of Medicine and Dentistry, Radek Vodička.

The scientists carried out complex genetic research on samples taken from the writer's and her son's hair, deposited in the collections of the Božena Němcová Museum in Česká Skalice. The needs of analysis required just minute pieces of the preserved strands to be subjected to the decontamination procedures. "With respect to that the hair over the course of centuries has been touched by a huge number of people, it was necessary to carefully, but thoroughly, ensure that the foreign DNA was removed. At the same time we had to take care not to damage the hair," described Radek Vodička, who took part in the design of the entire procedure.

The aim of the analysis was to find the type of DNA which is located in the mitochondria – the cellular organelles occurring outside the cell nucleus. "As opposed to the cell nucleus, where the DNA is gradually degraded over time, mitochondrial DNA stays preserved. It can be preserved for centuries in a given sample if it has not been exposed to moisture or some other hostile environment. Because Němcová's hair was kept immediately after her death in a dry and dark en vironment, its structure was almost undamaged, as if it had been freshly cut," said Vodička.

For obtaining and reading the mitochondrial DNA, the scientists chose an experimental method suitable for very small or even trace elements. "The method used, which is also used by the FBI, first requires the hair to be sufficiently 'digested' and then primarily the keratin – the main protein in the hair – to be broken down, thus freeing the remnants of the mitochondrial DNA. Then we sequenced both samples in parallel and could confirm that there was identical DNA found in the mitochondrial haplogroup H," explained Vodička.

Thanks to identifying Božena Němcová's DNA, the scientists at the same time gained a tool for its comparison for other potential genotypes. They could then confirm or reject the speculation on the hypothetical aristocratic origins of the Czech author, about whom some researchers have introduced a rift in the genealogy of her family and in schoolbooks. "We need to obtain the genetic material on the female side, because mitochondrial DNA is passed down from mother to daughter, who then passes it on. In the case of a mother and son, it is possible only into the first generation. That is why we used both the samples of Němcová and Hynek in our research," Vodička elaborated.

According to the Česká Skalice museum director, Milan Horký, who led the research team, the next phase of research should be aimed primarily at the genealogy of Božena Němcová's official family and at obtaining genetic material from its female side. Only in the case that comparison of this DNA with that of Božena Němcová was not in agreement, would the researchers then continue with the still unproven hypothesis about the different origins of the Czech writer. "Because we need mitochondrial DNA, i.e. just on the female side, in the possible case of comparative work we would still have a long road of demanding genealogical research ahead of us," Horký pointed out. The research team, in which are also represented experts from the Charles University Faculty of Arts, the Museum of Czech Literature, the Olomouc laboratories of Genexone and the Czech Academy of Sciences Institute of Chemical Process Fundamentals, will elaborate the next direction in the research when they meet this summer.



Associate professor Radek Vodička at work.



The strands of hair from Božena Němcová deposited in the museum in Česká Skalice come from 1862 and are said to have been cut right after her death. Several examined descriptions attest to this, as well as the presence of grey hair. The Němcová family preserved Hynek's hair as a memento of their prematurely departed son. In 1919, both strands of hair were aiven to the Božena Němcová Museum in Česká Skalice by the author's daughter Dora.

## Olomouc Baroque Festival celebrations guarantee one-of-a-kind experiences

Twenty-three evenings, bringing six newly rehearsed full nights of entertainment with outstanding Czech and foreign soloists and actors. These are the Olomouc Baroque Festival, now in its fifth year, offering exquisite experiences from July 7–30. The Baroque setting is provided by the UP Arts Centre.

All the scores will be performed by the Ensemble Damian group. Part of this year's festival will be made up of original Baroque serenades, and the other part is made up of Neo-Baroque operas, which have been created from historic librettos whose original music has not been preserved.

"We studied for instance two serenades which come from the collection of the Jaroměřice Count Questenberg. The opera Il Natal di Giove - by his secretary. Karl Müller - will even have its modern world premiere," said Tomáš Hanzlík, from the Department of Music Education at the Faculty of Education, who is also the artistic director of Ensemble Damian. He further said that three days of this year's celebrations will be dedicated to his Neo-Baroque opera Endymio, which will be followed in the evening by Yta innocens. Both operas were composed by Hanzlík from Baroque librettos he found in the chateau of the Olomouc archbishops at Kroměříž. Also from the Kroměříž archive is the libretto for the opera Coronide. whose new christening was supervised by the Olomouc composer Vít Zouhar, who is also a member of the Department of Music Education at the Faculty of Education and at the same time a vice-rector at UP, among others.

The Olomouc Baroque Festival's productions will boast over 70 professional musicians, playing on historic instruments. Every night a quintet of machinists will watch over the fluid set-changes of unique replicas of Baroque theatre settings. The performances are accompanied by an exhibition of historic Czech theatre curtains and guided tours of the Neo-Baroque St Sarkander Chapel and the Baroque Church of St Michael, including its tower.



Lacrimae Alexandri magni: Tomáš Hanzlík (7–10 July)

**La Contesa dei Numi**: Leonardo Vinci (11–14 July)

Coronide: Vít Zouhar Harlekýnova dobrodružství [The Harlequin's Adventure]: Tomáš Hanzlík (15–18 July)

Ilnatal di Giove: Karel Müller (19–22 July)

Endymio, Yta innocens: Tomáš Hanzlík La Senna festeggiante RV 693: Antonio Vivaldi (27–30 July)

### portrait

text: Velena Mazochová photos: Gabriela Knýblová

## Marta Lucie Cincialová

Mother Superior of the Merciful Sisters of the Third Order of St Francis in Olomouc and the Vice-Dean of the Sts Cyril and Methodius Faculty of Theology at UP

#### Marta Lucie Cincialová (b. 1966)

Within the "underground" church she attended theological classes of ThDr Josef Zvěřína and her formative training culminated in her secret entry into orders in 1986. After finishing high school, she was certified in Interventional Radiology and worked in the Olomouc Teaching Hospital. She taught at the Healthcare Sciences Middle School in Olomouc and at the Department of Nuclear Medicine at the Institute for Further Education of Healthcare Workers in Brno. At CMFT UP she completed a Master's degree in Christian Education, post-graduate studies in Spiritual Theology at the Pontifical University Antonianum in Rome, and received her doctorate in Systematic Theology from CMFT UP.

As a member of the Congregation of Merciful Sisters of the Third Order of St Francis, she is responsible for studies and formation and she is the chairperson of the group working on a new Constitution for the order. Since 2005 she has been a member of the General Board of the Congregation and the Mother Superior of the Olomouc community.

At CMFT UP she is employed as an assistant professor in the Department of Pastoral and Spiritual Theology, and she also lectures at the Caritas College of Social Work Olomouc and at the Institute of Franciscan Studies in Prague. She is interested in the study of sources of spirituality, the forms of initiate life, and Franciscan spirituality and mysticism. In her role as vice-dean, she is responsible for the division of organisation, development, external relations, and further education at CMFT UP.

A nun, theologian, and vice-dean. And also a former secret novice, now a tourist-pilgrim and occasional hairdresser, who likes running. Her story is one charged with energy, vitality, and love, breaking the common preconceptions about the aesthetic world of nuns. And she is joyous from the richness of life.

"When somebody says 'she lives like a nun,' most people think that that woman probably doesn't have much fun in life. But it's all about how we understand 'enjoyment'. For me, it's the art of receiving joy from life, which I perceive as a gift and a challenge. Only what I am capable of appreciating is worth sacrificing for the greater good, and so is giving up that 'enjoyment'. And then I enjoy that I can, that I do not have to, that I want to," says the sympathetic blonde with the charming smile. "Asceticism for me is the study of inner order, balance, concentration, discipline. That is what brings me satisfaction in life. It's quite simple: in my experience God is enough. He is in me and in the world, where I look for Him and find Him, and most of all, in the people around me."

#### Courageous and best choice

She chose the life of a nun in full conscience and has never regretted it. "It doesn't mean that a person never makes a wrong move, doesn't get stuck, nor get detoured. But I haven't found anything better." She has been lucky with the people who have had an influence on her, and is grateful for being raised in a family where faith was taken for granted, like "bread and butter". Her model in her time of searching was Mother Theresa. "I told myself that when she dies, she would have had a full life behind her. But the final path was my own doubts. I was eighteen and I was considering whether my life should play out in that I would enter into marriage and life with the boy I was dating. And I asked myself - is that all there is?"

To choose the path of noviciate life in what was then Socialist Czechoslovakia meant at the same time to have the courage to enter the order secretly. "We knew we were taking a risk, which is why nobody in my family except for my brother knew about it. But we did not consider that we were doing a courageous deed; we were young and followed our own path."

#### A slightly oversized household

The community of four sisters and one candidate on Olomouc's Academic Street is reminiscent of a family household with all the everyday duties, including cooking, cleaning, and upkeep on the house and the chapel. "It is a slightly oversized household and we need to earn money for its operations and maintenance. But we live quite humbly, we have a joint bank account and our expenses are still smaller than our earnings. So we can also support various benevolent activities or specific families." The convent on Bishop's Square is at the same time open to friends and collaborators, and hosts events for the public.

The sisters are together daily for the morning session of prayers and meditation and they also meet evenings for prayer and group dinner. "And then there are those rare free days, when we go out somewhere or even just stay at home together. During the day we mostly live out our employment responsibilities." Her congregation is an apostolic or active one, and because they do not have their own mission - for example a hospital or school - they work in various civil professions. "We earn a living just like everyone else - by working. Within the framework of religious charismata, this means work in the social sphere: healthcare and schools, or in the area of education and pastoral work."

#### Favourite teacher

Her service has been connected for the past 15 years with the Sts Cyril and Methodius Faculty of Theology at UP (CMFT), where she works as an assistant professor at the Department of Pastoral and Spiritual Theology. "Spiritual theology is actually a reflection of the spiritual experience coming from the content of faith, which is projected into our everyday lives. It is quite difficult, because it lays emphasis on authenticity, but it is also beautiful-the interpretation of classic works of spiritual literature, the spiritual experience of important personages in church history, and the actualization of their message is an enriching challenge."

She loves to teach and students seek her out. "They are lovely in their searching, their openness, and their doubts. Often they are also quite confused, due to the numbers of various spiritual directions which they come across. I love those moments of discussion when everything comes out, and the inner questions carry the germs of possible answers."

As a vice-dean, she understands the role of creating good interpersonal relationships. "And even organisational affairs are something we experience in relationships and the most important thing is to have mutual trust, to want to communicate, or to say even unpleasant things. I'm lucky that a good atmosphere in the workplace is a prerequisite for good work, and I wish that our employees, teachers, and students would look forward to going to school. I am aware that the function of vice-dean is connected with a certain power, but for me that is intended for service. I am joyous from the success of others and the feeling I get when I am able to help them."

#### Rest without the veil

She rests mostly in motion. She does Pilates, swims, and runs. "I like running, it clears my head, I like the exhaustion after being in motion. I love the endorphins." She answers the question whether she runs in her habit with amusement: "But that would lose the effect." And adds: "Sometimes it does get a bit tiresome to be seen so much in a habit. So sometimes I leave the veil at home, for instance if I go out at night to meet friends." Thus "incognito" she also travels for several days a year to a half-deserted Greek island, or to the mountains. She spent part of last summer on an almost 1000 km pilgrimage to Santiago de Compostela.

She doesn't get much time for her unusual hobby – "to make people better-looking" and to fix their hair. "I like to help people find their natural beauty. It doesn't have to take much – fix the styling, make-up, or cut their hair. I'm just an amateur, but the few friends with families and children whom I occasionally meet to do their hair leave satisfied." Sometimes she even goes to a halfway house to cut homeless people's hair: "They usually come spanking clean, and it is lovely to see the transformation and them newly-charged and self-assured."

#### The art of loving

"I have plenty to learn, there is so much I do not know. Nevertheless – sometimes it comes down to only one thing: learning to love. I understand every day as an opportunity to learn to love, because thy neighbour, according to the Gospel, is a specific being, with whom I am speaking now, meeting, working with, and whom I do not choose. In short, I cannot be all words about love for the entire world, if I cannot stand the person sitting next to me."





Patricie Plášilová Master's student in the field of Social Studies Teacher Training at the UP Sts Cyril and Methodius Faculty of Theology

Lucie is a woman of action, always there at the right time and place: the CMFT Vice-Dean.



Vít Hušek CMFT Vice-Dean for Science and Research, permanent deputy dean

I got to know Sister Lucie when I was still a student at the university in Olomouc, more than 20 years ago. I have the feeling that she hasn't changed much since then: I still feel her youth, optimism, and good spirits; she still has understanding and a kind word for those in the most diverse life situations. Lately I have gotten to know her as a fellow vice-dean and thanks to that I can appreciate with what kind of perspective she is able to manage even the most difficult work situation. I appreciate her reliability and honesty - she is able to communicate even unpleasant news directly and positively.

"A sentence by Abbé Pierre really speaks to me: 'Living is a short amount of time given over in freedom, if we choose, to learn to love in anticipation of the meeting with Eternal Love in the Forever beyond time.' So, I still have some work to do...."

### success



Successful project authors (left to right): Tomáš Pour, Tomáš Pohanka and Antonín Benc.

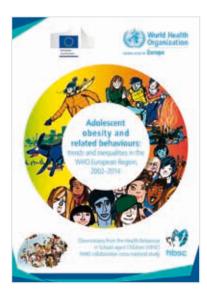
### Geoinformaticians succeed in a German contest

Doctoral students from the Department of Geoinformatics at the UP Faculty of Science, Antonín Benc, Tomáš Pour, and Tomáš Pohanka, succeeded in the Farming by Satellite Prize in Berlin. They placed second with their project that allows a more efficient and cost-effective control of agricultural areas and crops grown thereon via satellite imagery. Their success in an international competition has increased the chances that the project will be applied in practice, and the authors have been contacted by representatives from the commercial sector as well as state administration.

The postgrads have found a way how to use the satellite imagery of the European Space Agency in agriculture. "We based our project on agricultural land evaluation which is carried out annually in all EU countries. On the basis of this evaluation, the farmer may apply for subsidies. The state administration oversees whether the submitted information is in accordance with reality; however inspections have been made randomly, via aerial imagery. Our solution offers a bigger amount of data and saves both time and finances," explained Antonín Benc. According to him, even the farmers will benefit from the project. Thanks to satellite images and their online analysis they'll be able to detect unwanted changes in the development of crops.

The contest is organised by the European Environment Agency and European Global Navigation Satellite Systems Agency with the support of private companies. (srd)

### Czech children increasingly obese, unlike in the West



While in Western Europe the increase of obesity has been put on hold, in the Czech Republic and most Eastern European countries the number of overweight children keeps growing. Currently, a quarter of Czech boys and 13 percent of girls are obese. Children from poorer families tend to be overweight or obese. These are the conclusions of the international report by the WHO "Adolescent obesity and related behaviours: trends and inequalities in the WHO European Region, 2002–2014", based on the findings of the HBSC study on the health and lifestyles of schoolchildren.

Experts from the UP Faculty of Physical Culture significantly participated in the study. "Trends in the occurrence of overweight or obesity, sedentary behaviour, and physical activities in Czech children are strongly negative. Insufficient attention is paid to prevention and the amount of finances allocated for prevention is low," said Zdeněk Hamřík. According to him, municipalities might be able to crucially affect the situation, for instance by supporting children walking/biking to schools or by building public infrastructures for sports and recreation. (vim)

### Three Olomouc scientists on a prestigious list

The Regional Centre of Advanced Technologies and Materials (RCPTM) at Palacký University has three representatives in the prestigious list of Highly Cited Researchers 2016. The chemist Pavel Hobza has been featured for the third time successively; two other RCPTM employees, foreign experts Patrik Schmuki and Rajender S. Varma, were also listed.

"It is a demonstration of a huge scientific force, once we realise that a young and relatively small institute has three scientists in such a prestigious list, whereas other big scientific institutes and universities with long traditions are not represented at all," said Hobza, a world-renowned expert in computational and theoretical chemistry. Patrik Schmuki has also repeatedly placed in the list made by Clarivate Analytics In-Cites<sup>™</sup>. He focuses on electrochemistry in the RCPTM; he is also employed at the Friedrich-Alexander University in Erlangen-Nürnberg, Germany. RCPTM is also associated with an expert on nanotechnologies for environmental protection, Rajender S. Varma, whose other workplace is The United States Environmental Protection Agency (EPA). The list contains the names of roughly 3 000 elite researchers on the basis of analysis of highly cited works from the Web of Science (ESI) in the years 2004-2014. (srd)



## Olomouc immunologists stand out among dozens of Czech and Slovak research teams

The experts from the Department of Immunology at the UP Faculty of Medicine and Dentistry came back garlanded with success from a convention of Czech and Slovak allergologists and clinical immunologists. They won three victories and one third place in individual sections of the contest for best poster presentation.

Olomouc immunologists succeeded in the competition of more than 70 poster presentations by Czech and Slovak research institutes. Their scientific presentations had superior evaluations in sections specialised in clinical aspects of immunopathology, laboratory methods and their contribution for practice, and onco-immunology, where they also placed third. The awarded works presented the research outcomes of serious autoimmune and haemato-oncological disorders such as systemic lupus, multiple myeloma, and Hodgkin's lymphoma. Another award-winning work dealt with Lyme disease.

"Nominated as among the most impor-

tant presentations were new serum biomarkers associated with serious clinical manifestations of systemic lupus and the description of changes in serum profiles after blood-forming stem cells transplant in multiple myeloma, presented by doctoral students Anna Petráčková and Petra Schneiderová," said Michal Křupka, an assistant professor at the Department of Immunology and an author of one of the award-winning posters. All in all, Olomouc researchers presented eight posters. (mav)

Successful first authors of awarded posters (left to right): Petra Schneiderová, Eva Kriegová, Michal Křupka and Anna Petráčková.



### success

## Faculty of Law instrumental in the establishment of Work Group for Mediation

Support for broader use of mediation, its embedding in the system, and the development of the profession in the Czech context – those are the main objectives of the Work Group for Mediation at the Czech Ministry of Justice. A significant contribution to its establishment were the academic and professional events organised by the UP Faculty of Law. In addition, the faculty has two representatives in the group.

The establishment of the work group has been long required in both theory and practice, which was confirmed by the events organised by the Olomouc Faculty of Law – the international conference on mediation and ensuing round tables. "For me personally, the establishment of the work group confirms that the long-term work we have done with my colleagues makes sense. It is the first step towards a systemic application of mediation," said Lenka Holá, from the Department of Politics and Social Sciences at the UP Faculty of Law, who runs the team. The other person from the Olomouc faculty who is also a member of the group is former dean Milana Hrušáková. The constitution of the special group, which has been in operation since the beginning of 2017, is permanent, and it includes representatives of institutions and experts on mediation from professional as well as academic spheres. The fundamental tasks the team has set up include the identification and analysis of the current issues in mediation in the Czech Republic, proposals for the improvement of its use, support for the development of mediation in the areas of theory, research, and education, definition of standards for execution of mediation and the preparation of conditions for the foundation of a national bureau for mediation. (eha)



The UP Faculty of Law organises an international conference on mediation.



### Faculty of Arts students succeed in National Model United Nations in New York

Kristína Pitoňáková and Patrik Zvirinský, students of the Department of Politics and European Studies, took honours for their essay at the prestigious National Model United Nations conference in New York. They received the Outstanding Position Paper Award for their excellent representation of Polish interests in the refugee area.

"In the competition of 3,000 worldwide delegates, our students managed one-hundred-percent success on an essay with a predetermined theme. This time they defended Poland's interests, and in order to receive the Outstanding Position Paper, they had to study the Polish stance to refugee policy in the domestic as well as international context really thoroughly," said their teacher, Ivana Častulíková, on their successful mission. According to her, Palacký University is the only Czech university to take part regularly in this prestigious meeting and also the only Czech university which teaches a course based on the Model UN. (map)

### Vojtech Regec became a member of the Expert Group of the European Commission

Vojtech Regec, a docent at the Institute of Special Education Studies and Vice-Dean for Foreign Affairs at the UP Faculty of Education, was named a member of the Expert Group of the European Commission. Its goal is to implement equal opportunities in electronic communication for persons with disabilities.

Docent Regec has been investigating the digital inclusion of people with disabilities for almost ten years. This problem is also dealt with by a new EU directive on making the websites and mobile apps of public sector bodies more accessible. A seven-member Web Accessibility Directive Expert Group was established because it has not been made clear how EU countries will implement the new standards according to the directive. Until 2016, this issue was resolved separately on national levels.

"Many legal transactions today are done electronically, so the aim of the new directive is to make that possible even to the disabled. So when a blind or deaf person will want to communicate with any office, the office must guarantee to provide the communication in an accessible form," said Regec, who was hired as an independent expert to supervise the issue in the EU expert group. The expert group should help apply the directive in the entire EU within three years. Afterwards, all related regulations will be obligatory in all EU countries. (map)



## 20 years of a successful transplant programme in Olomouc

Twenty years ago, the first transplantation of blood-forming cells was conducted in Olomouc. Since then more than 1,200 patients with leukaemia, lymphomas, and other malignant diseases of blood formation have gone through the transplant programme at the Department of Haematology and Oncology in the Olomouc Teaching Hospital and the UP Faculty of Medicine and Dentistry.

"The very idea, however, was born much earlier, and it was due to the professional erudition and great managerial skills of Prof Karel Indrák. He realised that you need to establish a strong team and obtain new premises in order to begin writing a new history," noted the



Head of the department and Vice-Dean of the UP Faculty of Medicine, Tomáš Papajík (in the photo) at the opening of the evening lecture of the Society of the Czech Medical Society of J.E. Purkyně, organised by the department in collaboration with the Haimaom Foundation on the occasion of the 20th anniversary of the commencement of the transplant programme.

According to the director of the Transplantation Centre and Deputy Head of the Department of Haematology and Oncology, Edgar Faber, the future of blood formation cells transplantation aims, as other medical areas, at individualisation. "We will be increasingly able to 'tailor' an optimal donor for the patient, and with the help of other examinations, we'll be able to contribute to better selection of the donor, or use new medications during an adverse reaction of the graft against its host and other complications."

The programme also included a recapitulation of the activities conducted by the Haimaom Foundation for the Support of Blood Bone Marrow Transplants, which is celebrating twenty years since its founding. (mav)

### kaleidoscope

Medicinal Silybum marianum has three new varieties



Three new varieties of Silybum marianum, or milk thistle, often used by people with liver disorders, have been cultivated in the Centre of the Region Haná for Biotechnological and Agricultural Research in Olomouc, together with the company Teva Czech Industries. The new cultivars with varied content of active compounds - flavonoligans - were created on demand of the company for use in their pharmaceutical programme. "The strains are grown for their extract, which is added to preparations for regeneration of liver cells. These are used as a supporting treatment for patients with liver disorders such as cirrhosis. The cultivars were created in collaboration with a commercial partner; our inventor's share is 25% in one of them and 50% in the other two," said the main investigator, Radoslav Koprna. (srd)

### Prize for saving a life



Miroslava Plchová from the UP Rector's Office was awarded one of the main prizes by the Czech Fair Play Club for 2016. Last year during the relay race Bobr Cup in Litovel she saved the life of another cyclist who fell into the river while crossing it and remained unconscious lying under the surface. Although her team was fighting for second place, she jumped into the water and pulled the man out. "In that moment, I didn't care about the race. I just put my bicycle down and ran to help the man. I finished the race eventually; we kept on fighting and ended up third," said Miroslava Plchová, in an account of the seconds that saved another racer's life. (ipu)

#### **Historians mapped Czech exiles**

Three UP historians – Jaroslav Miller, Jana Burešová, and Miloš Trapl – wrote a book about the history of Czech exiles in Australia. "In 2010 I was a guest professor at the University of Western Australia in Perth and came across a Czech community, the offspring of 1948 and 1968 exiles. They had only a vague idea about

their identity. At the same time, they had an archive of their exile club and did not know what to do with it," said Jaroslav Miller. Together with his colleagues, he decided to fill in the blanks on the map of exile history. The book *Czech Exile in Australia, 1948–1989* was published by the Lidové Noviny press and supported by the Czech Science Foundation. (ipu)



photos: M. Navrátilová M. Šaradínová M. Višňa M. Hronová V. Mazochová E. Hrudníková

### Faculty of Physical Culture hand-in-hand with Czech Olympic Committee

The possibilities of mutual collaboration were negotiated by the representatives of the UP Faculty of Physical Culture and UP Rector Jaroslav Miller with the representatives of the Czech Olympic Committee, organisation President Jiří Kejval and Vice-President Zdeněk Haník. "In particular, we discussed our potential partnership in the programme Dual Career that would help top sportspersons who have



finished their professional career to move on to the next phase of their careers and lives. We also talked about strategic communal planning and construction of sport infrastructure and about possible research topics for grant schemes," said Dean Zbyněk Svozil. (vim)

### Film on UP

Czech Television filmed a documentary about Palacký University on the occasion of the 70th anniversary of its re-establishment. "The university is perceived as a locale where history meets modern trends, as a space blending with the beauty of Olomouc, as a scientific institution and a specific community," said Vice-Rector Petr Bilík. The film features academic personalities such as the American Studies scholar Josef Jařab and the haemato-oncologist Karel Indrák, as well as famous alumni such as the former tennis star and now psychologist Helena Suková. The film Palacký University is available online in the iVysílání section on the Czech Television website. (ipu)

### **Ombudsperson debated with students**



The Czech Ombudsperson Anna Šabatová held a talk at the UP Faculty of Law and discussed the issue of discrimination with future lawyers. "The mission of my office is to provide methodical help to victims of discrimination, conduct research, publish news, issue recommendations to all issues related to discrimination, and also ensure the exchange of available information with relevant European subjects," said Šabatová. (eha)

### Czech and foreign experts discussed the safety of healthcare in crisis situations

Health Care in Danger was the topic of a meeting during which experts from several countries paid attention to the issue of violence against medical staff and wounded

persons in war conflicts, terrorist attacks, and the current refugee crisis. It was organised by Palacký University and the Olomouc Region Medical Rescue Services in collaboration with the Czech Red Cross and the International Committee of the Red Cross in Geneva as part of the 12<sup>th</sup> Olomouc Days of Urgent Medicine. (mav)



### kaleidoscope





AFO: More than 5,600 registered visitors, almost 150 films, dozens of talk shows, seminars, concerts and workshops – that was the 52nd year of the international festival of science documentary films Academia Film Olomouc, organised by Palacký University Olomouc. The festival carried the motto "The Future Is Now" and was attended by guests from all over the world. AFO granted the Award for Outstanding Personal Contribution to the Popularisation of Science to the astronomer Jiří Grygar; among institutions, CERN – The European Organization for Nuclear Research – was awarded for science popularisation.





text: Ivana Pustějovská interview photos: Gabriela Knýblová

## Lumír Kantor: Every day I am amazed at what we are able to do

#### Lumír Kantor (b. 1962)

Doctor, 1990 graduate of the UP Faculty of Medicine, since 1997 the Head of the Neonatal Department of the Olomouc University Teaching Hospital. Twelve vears Head of the Czech Neonatal Society of the Czech Medical Association of J. E. Purkyně. In 2013, he co-founded the Foundation Děti na dlani (Children in the Palm of Your Hand), where he is Chairman of the Board. For twenty vears he was also a court expert in paediatrics; he lectures at the UP Faculty of Medicine. He is the professional guarantor of mobile hospice care for the non-profit Nejste sami (You Are Not Alone). In 2016 he became a Senator in the Czech Parliament. He is an independent member of the Christian Democratic Senators' Club.

Crucial here is his doctor's white gown. Very few people are aware that it was once blue. That was when he was trained as an electric technician: he graduated from a technical university and went to work for the MEZ electrical products company. A career in marketing awaited him. And blue was the colour of his uniform. In order to fulfil his dream of wearing hospital white, he had to take a huge detour. This man, known as Bison to his camping friends, who loves woodworking (with basswood, especially) and classical music, eventually became a top specialist in his chosen field. His patients are not complaining, because they are not able to. Some have only gone through twenty-four weeks of pregnancy, compared to the ordinary forty. They weigh half a kilogramme and have to fight for their lives. But he and his team are helping to fight for their fates. This neonatologist, head of the Neonatal Department of the Olomouc Teaching Hospital, and since last year a Senator in the Czech Parliament, is Lumír Kantor.

#### — There are huge opportunities in medicine today. How have these changes entered your field – how was it possible to save children in the past and how are you able to save them now?

Neonatology has changed immensely. Under communism, a new-born's life did not have great value. If children were born very prematurely, they died in undignified conditions. It was this fight against the high mortality rate to which we dedicated ourselves in the 1990s. Thanks to our enthusiasm, the work performed by our personnel and improvements in technical equipment, we were able to drop the rate of perinatal mortality - i.e. child mortality, those who are stillborn or die in the first week of life - to beneath 4 per 1000. Thus less than four children out of one thousand are stillborn or die in the first week. By the end of the 1990s we had already reached the top global position in such care. Or to say it more simply... only 1.2 out of one thousand liveborn children die during the first month of life!

In later years we then began to count how many children we have who suffer from longterm illnesses. According to the methodology of the European Association of Perinatal Medicine, they are counted at age two. At this age we already know to what extent their handicaps will be severe. We keep gathering data and the data shows that the children's results are improving. Many people criticise us for "manufacturing cripples" and for saving children who would otherwise die, only to be seriously handicapped for life. But the present data shows that is not true. Neonatology here has excellent results, and every day I am amazed at what we are able to do.

### - Has communication with the parents changed?

From 2010, we entered into a new era which I personally, and the majority of my staff in

the department, really enjoy. We opened up our department as much as possible to families, we communicate with diverse organisations such as the non-profits Nedoklubko for prematurely born children and their parents, the Society for Early Care, the society for children with cleft lips Happy Smile, and home hospice for children. We try to work with them. These are steps which would not have been possible twenty years ago. We continue to try to put the newborn in closer proximity to their parents. We dedicate ourselves to what is called developmental care. For example, we know that a child who is born in the 24th week of pregnancy has different needs than a child who is born in the 27th week of pregnancy, and so on.

#### — How does such care look in practise?

I'll give you a simple example. When we need to touch a baby, we have to disinfect our hands. But before we touch it, we allow the disinfectant to air for a bit. Why? For one reason, so that our hands don't irritate the children in the incubator. It seems banal. But today we know that by this small gesture, these few seconds of delay, we are saving their sense of smell. There are dozens of such details, which our nurses carry out daily. And it is the nurses who give this work its human dimension. Would you like another example? We try to save children from needless stress. Imagine this: the baby is lying, its eyes are closed, and suddenly someone touches it. It startles. It gets afraid. This happens to grown-ups too. But what if it is only his mum, wanting to caress the baby? And so we figured a way to differentiate when the mother touches the baby and we touch the baby. First the mother touches the baby on a certain place, the head perhaps. When she leaves the baby, she touches it on the same place. And she does this at every visit. The child then knows that it is her, and there is nothing to fear. Then when we, who represent a certain danger from the child's perspective, need to touch the baby, we touch them in a different place. These are mere details which, however, work wonders.

### — You even make use of technology, you play the children back recordings of their parents' voices. Why?

It is very difficult to measure something with newborns. They refuse to co-operate... but seriously, we try to make use of any kind of natural state of things. My dissertation was on the theme of variability of the pulse rate in healthy newborns. From that data it was possible to read how the autonomic nervous system works in a baby; i.e. the sympathetic nervous system, the parasympathetic nervous system, and in what mutual proportions. So now we try to do the same for premature babies, and find differences in the autonomic nervous system between mature and premature babies. Our head nurse worked on her dissertation under my guidance on the impact the mother's voice has on a baby, which is one of the few exact values which can be measured. We have known for some time that the mother's voice reacts in a drop in the child's pulse. But that is a very rough indicator. Now we are able to measure that some of the delicate elements of the parasympathetic, the sympathetic, and the vegetative nervous systems change. It shows that the mother's voice not only calms the child, but that this effect lingers even in the course of the next few minutes.

#### — A few years ago you brought in webcams and offered parents the possibility of watching their child on-line. What were the reactions?

I was inspired by our nurse and at the same time a colleague in IT by a German film. It took four years. To resolve the legal and organisational problems and to find sponsors for the first two cameras - our director paid for the next ones. What is interesting is that our colleagues from other cities had a negative reaction. I think here it is easy to see how technology outpaces philosophy. While I saw it as a positive thing, how parents, grandparents could have contact with the child, they saw it as negative. They said that it could be used against the doctors and nurses. I heard their opinions, that we were preparing wrapped-up court cases, by providing evidence. But nobody asked why we were doing it. For example we were able to help a father who was on a mission in Afghanistan who could not be with his newborn. The child was born with complications and he could watch the child. Isn't that worth it? The parents, just like with the possibility to play recordings to the child, were in favour of it. And that makes me happy. And a few years later, the method was introduced to Ústí nad Labem and Ostrava. We were able to provide expertise on everything we knew. Now you see in the media that the first such technology was installed in Ústí. Right... that's three years after us....

### — You are also dedicated to children's hospice. Why?

Because it is necessary. Preparing children for inescapable death is a very serious affair. I am one of the few who leads long debates on these subjects. Over the last twenty years, in our department, hundreds such have died .... I have been carrying this thought in my head for some seventeen years. We were probably the first in the country who let the child die in its parents' arms. When I first read some time in the 1990s that the Dutch were doing this, it seemed strange and morbid. But it kept buzzing in my head: What if it makes sense? A few months later we tried it and it was obvious that for the parents, it was incredibly important. When I started as a doctor, we didn't even show these children to their parents. "Better not," they said in 1989. They thought it was best. But those women-moth-



ers carry their traumas to this day. Recently, after a lecture at the university's University of the Third Age programme, an older woman came up to me. She said that thirty years ago, she bore a girl who had no hands. She died after a month. That shy woman had two questions for me: "Did my daughter suffer?" and "Was there a point?"

#### — What did you say?

I told her of what I was convinced. That certainly there was no suffering, because not having hands does not hurt. A month-old child does not even notice that handicap. And the point? That the girl, in that one month, lived an entire life. We have the feeling that life must be lived from birth to old age. Decades. But it can last only hours, and always it is impacted or even often changes. When I said that, the woman broke down into tears. She said that after thirty years she finally felt relief.... She sent me a modest collection of poetry expressing endless sorrow. She wrote it during that time.

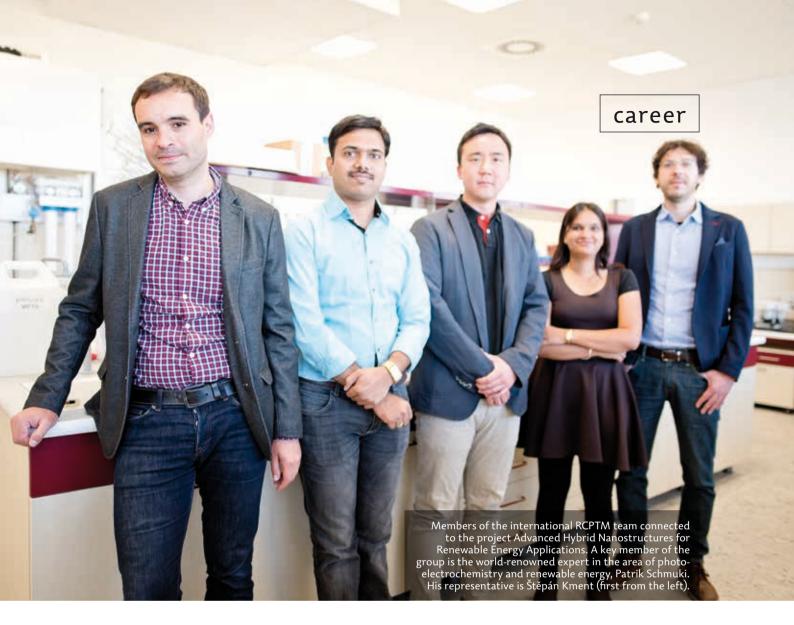
### - What do you think the point of such a short life is?

Last year we had a child born who was carried to term, but with such a serious metabolic disorder that basically every cell was diseased. We knew that it would not live out the year. Its mother had two wishes: to take it for a stroll in a pram and to have the baby at home. We had never allowed anything like that before, but we decided to honour the requests. My expert nurses gave the baby an oxygen tank, put it into a pram and the mother could take the baby for a stroll around the hospital. I spoke with the mother often, and when I was sure that she accepted reality, I decided to grant her second wish. I asked at several children's home hospices. What was necessary, how does it work, etc. For in such situations here, at present there are no rules. Brno selflessly loaned us the necessary equipment. I told my nurses, who had gone

through a lot with that mother, "I am going to visit the family twice a week. This is a rebel act, we don't have the funding for it, we don't even have a company car or other equipment. Anyone want to go with me?" Six nurses agreed on the spot. So we went there, and the child prospered, even though its prognosis was without hope. The parents took the baby for walks, they were with it every day. After a month it died. The experience was incredibly important, not just for the parents, but for us too. You asked about the point of such a short life. There is your answer - that little boy lived one month, and during the period of his life he led us to the idea of changing well-established procedures, he forced us to think differently and inspired us to try harder and find new paths. The result was the founding of a children's mobile hospice. The fourth in the country. There's one in Ostrava, one in Brno, one in Prague, and since October Nejste sami-You Are Not Alone-in Olomouc. So know that a small child in even one hour of life can change more than some are able to do in their long, entire life.

#### — You haven't used the word, but it's a part of everything you do. Dignity. Is it important for you to provide dignified care for your patients who are not yet thinking individuals?

Of course. I have been inspired by Albert Schweitzer: "Reverence for Life" was his phrase. And that goes hand-in-hand with dignity. He said "I am life that wills to live in the midst of life that wills to live". And that can go still deeper and deeper. Simply the continuity of development. I am fond of American Indians and their philosophy, which values all the living and the non-living. Water, air, animals, stones, and above all mutually with oneself. So yes. Dignity is important for me and I get really annoyed, when someone acts above someone else or without dignity to them.



## Palacký University can entice even the best "players" in science

Similarly as professional sportspersons, scientists often make strategic career choices, carefully picking the most renowned team with the best conditions and greatest personalities. Radek Zbořil, Director of the Regional Centre of Advanced Technologies and Materials (RCPTM) at the UP Faculty of Science, likes to use this analogy to compare the world of science and sport. At the same time, it is in fact a very good tip on how to recruit outstanding experts from abroad including the "best brains". The scientific centre led by him is proof that this strategy works. Foreign scientists, however, are employed in many other scientific centres and faculties of Palacký University.

text: Martina Šaradínová Velena Mazochová Milada Hronová photos: Gabriela Knýblová Thanks to generous EU funding, the infrastructure of workplaces at UP has significantly improved in the last few years, currently standing in comparison with institutes abroad. Regarding the number of foreign scientific and academic workers, the local scientific centres such as RCPTM, the Centre of the Region Haná for Biotechnological and Agricultural Research (CRH), and the Institute of Molecular and Translational Medicine (IMTM) are leaders in this aspect, with the ratio of foreign workers around 20 percent.

"We must pay serious heed to internationalisation. Our students and incipient scientists will be able to grow under the world's elite experts, and their presence may attract other important researchers from abroad. Also, competition brings quality," asserts Zbořil.

#### Three representatives in Highly Cited Researchers 2016

In engaging top scientists from abroad, RCPTM sets no small goals. Among others, three personalities were featured in the prestigious list of Highly Cited Researchers 2016. Along with the "local" physical chemist Pavel Hobza, there is also Rajender S. Varma, whose other workplace is the United States Environmental Protection Agency (EPA).

"I am honoured to be associated with the Regional Centre of Advanced Technologies and Materials. The vision of its leaders to develop a top-notch world-class research centre with scientists from various disciplines and countries is very close to my heart. The Centre has made a very long journey in a short time, and I am positive that before long, it will be a model for everyone," claims Varma, who came to Olomouc to investigate the use of a broad range of nanomaterials in catalysis and environmental technologies.

The third RCPTM world-class expert is Patrik Schmuki, who is also employed at the Friedrich-Alexander University in Erlangen-Nürnberg, Germany. He is the key person in the project "Advanced Hybrid Nanostructures for Renewable Energy Applications", funded by the Operational Programme "Research, Development, Education". Out of 105 projects that applied, 32 received funding. The 7-year-long RCPTM project funded with €5 million, interconnecting worldwide elite teams in nanomaterial research, received the highest evaluation from them all.

#### Betting on quality post-docs

Approximately one-fifth of the foreign scientists are employed in the Centre of the Region Haná for Biotechnological and Agricultural Research (CRH). The CRH Director and also Dean of the Faculty of Science, Ivo Frébort, lays emphasis especially on creating post-doc positions for foreign scientists. "We are capable of hiring world-renowned scientists from abroad; most recently, Japanese professors Katsuyuki Tanizawa and Takashi R. Endo have worked here. "We must pay serious heed to internationalisation. Our students and incipient scientists will be able to grow under the world's elite experts, and their presence may attract other important researchers from abroad. Also, competition brings quality."

Radek Zbořil Director of the RCPTM

"I am fond of Olomouc, it is such a nice student town, with everything at hand. But most of all, I am fascinated by how science is done here. I particularly appreciate the large degree of independence in thinking and methods that I may apply during my research." Viswanath Das

"I'm very happy in Czechia. As an academic I'm freer to make choices on what would be the subject of my research. Perhaps it will surprise you but one of the reasons I like living in the Czech Republic is that there is more freedom than in Germany."

Jörg Krappmann



They participated in our research projects and shared their abundant experience even with the youngest graduates of our doctoral programmes. Such outstanding personalities, however, usually stay only temporarily, usually due to their involvement in a project. What seems a better solution for us is to hire foreign scientists as post-doc fellows who may become established here and stay permanently," suggests Frébort.

A similar strategy has been applied by the UP Faculty of Medicine and Dentistry. Graduated doctoral students from foreign universities have been using the opportunity to find employment in biomedical disciplines within the all-university projects POST UP I and II. After graduation, more than half of the students decided to continue their research at the faculty in Olomouc.

"Some were enticed by the names of top experts, such as Jiří Bártek or Marián Hajdúch. Not only professional factors, however, had an impact on their decision to stay in Olomouc. Many of them could have applied for positions at important European institutes, but they are not comfortable with large agglomerations such as London or vast laboratories such as in Heidelberg. Olomouc is not an unknown place, and its atmosphere of a university town is extremely attractive to them," explained Marián Modrianský, Vice-Dean of the UP Faculty of Medicine and Dentistry.

### New impetus for science as well as education

The main contribution of foreign postdoc fellows lies, according to Modrianský, in the new impetus they bring into the world of science and research. "By having graduated from another educational system and having obtained postgraduate education abroad, they bring new ideas and concepts which affect their research as well as the classes they teach. Currently we have an interesting ensemble of eight young talented scientists from Italy, the United Kingdom, India, Slovenia and Poland. Most of them focus on research into genetics and proteomics," said Modrianský.

One of those employed as a post-doc fellow in the Laboratory of Experimental Medicine at IMTM is Viswanath Das from India, who defended his Ph.D. at Victoria University in Wellington, New Zealand, and has been working in Olomouc for four years. "I am fond of Olomouc, it is such a nice student town, with everything at hand. But most of all, I am fascinated by how science is done here. I particularly appreciate the large degree of independence in thinking and methods that I may apply during my research," explained the scientist, who specialises in 3D models of human tumours and research into protein inhibitors that are involved in Alzheimer's disease. He values the opportunity to consult his work with colleagues who have achieved a great reputation in science.

### The first German endowed professor in Czechia

When he arrived in the Czech Republic twenty-five years ago, German Studies expert Jörg Krappmann thought it was just an adventure. He came to spend one semester at the Department of German Studies at the Faculty of Arts - and stayed permanently. "I happened to personally experience the reforms that followed after the Velvet Revolution. It was something I'd never experience in Germany. Also, it'd never occur to me that I would be one of those who prepared fundamental changes in the curriculum and that I'd stay here for twenty-five years," confessed Krappmann. In 1997 he and his colleagues founded the Centre for German Moravian Literature and in 2000 he received an offer from the German Ministry of Culture to establish an endowed professorship in the Czech Republic. Krappmann was named Endowed Professor in 2002 and Palacký University became the first foreign university to receive a German endowed professor.

"I'm very happy in Czechia. As an academic I'm freer to make choices on what would be the subject of my research. Perhaps it will surprise you but one of the reasons I like living in the Czech Republic is that there is more freedom than in Germany. The society here seems to be more open, even more tolerant, to some degree," added the German Studies scholar who habilitated in the Czech Republic. He also got married in Olomouc and started a family.

Many more similar stories of foreign scientists unfold elsewhere at the university. They are testimony to the fact that scientists are willing to move abroad for the sake of high quality science and education; also, facilities with top-notch technology play a role. In addition to this, however, one has to admit that foreign experts simply like being in Olomouc. The genius loci lives on.... "I am honoured to be associated with the Regional Centre of Advanced Technologies and Materials. The vision of its leaders to develop a top-notch worldclass research centre with scientists from various disciplines and countries is very close to my heart."

Rajender S. Varma

"Olomouc is not an unknown place, and its atmosphere of a university town is extremely attractive to them."

Marián Modrianský Vice-Dean of the FMD text: Eva Hrudníková photos: Gabriela Knýblová | Jan Borunský archive

My Study Year Abroad in 2016

Olomouc ↓ Seoul ↓ Olomouc ↓ Manila ↓ Olomouc



He learned how hot and spicy the foods served in South Korean restaurants are. He did not get lost in Seoul, a city of ten million. He experienced corruption in the Philippines... and all during one year. And one should add that he is a passionate tourist. For Jan Borunský certainly has travelling in his soul. But primarily he is a student at the UP Faculty of Law, one who has the courage to fulfil his study dreams.

The majority of law students look at a map of the West when selecting a choice of study stays and work experiences abroad, whereas Jan Borunský looked East. "I began thinking about studying at an Asian university in 2015, when I was visiting Beijing with my brother, as a tourist. I was pleasantly surprised at the high educational standards offered at the university there." He was enticed by the possibility of high quality studies connected with the chance of getting to know a country with a completely different culture.

### I saw the most guarded border in the world

And the result of Jan's dreams and strong will? He spent the spring semester at prestigious Hankuk University of Foreign Studies in Seoul, a partner school of UP. Studies were four days a week, he lived on campus, and shared a room with a Korean. "School is the top priority for Koreans. They invest a lot into education, and pay for private English courses. The university regime seemed more strict to me than at home. Perhaps it is due to the state of hostilities which exists in North Korea. Young men have to serve for two years in the military," says Jan Borunský, a fifth-year law student, thinking aloud.

He likes that the Korean educational system uses a "curved" grading system, where the best student on any given test gets 100 percent and the rest are graded accordingly. "In the Czech system, grades are not so important during one's studies. They play no role in being hired. In Korea, the most lucrative companies require a better-than-average grade. And that's awfully motivating for students."  $\rightarrow$ 

#### Jan Borunský (b. 1991)

Fifth-year law student at UP. His Master's thesis is on the European Parliament and national parliaments in light of the Treaty of Lisbon. His hobbies include travelling, sports, and music.

- Main university building in Seoul, also housing the Ceremonial Hall.
- 38<sup>th</sup> Parallel, according to which Korea was divided after the war.
- Core of the demilitarised zone. In the foreground are South Korean soldiers; in the background a North Korean soldier.

He gives another comparison. This time on the quality of teaching and teachers. "I'm not afraid to say that Olomouc is comparable with the top universities in the world. At our faculty there are a number of academics whose expertise and way with languages is first-rate."

He speaks of Korea as a country with a high quality of life, and safe. He sees Koreans as very tolerant. "The only drawback for me is the spicy hot food," he says. It took him about a month to get used to it. "Waiters don't speak English and the menus are only in Korean. So there was nothing left but pure random choice," he reminisced on his trial-and-error method.

He was not able to travel much; school attendance was compulsory. Despite this, he experienced (in his own words) the most intense travel experience of his life. "The university took us to the most guarded border in the world, between North and South Korea. It was literally just a few metres from the demilitarised zone to North Korea. On the North Korean side, from the first visible village, we could hear the propaganda broadcasts." When the semester ended and Jan could finally travel, instead he went back to Olomouc, to take his exams. He managed them over the summer, and then time for another dream....

#### To a Law Office in the Philippines

To fulfil this dream, Jan Borunský was helped greatly by an Indonesian teacher under whom he studied Southeast Asian Law in Seoul. "We spoke during my studies and I said that I'd like go to some local institution for work experience and deepen my knowledge. He took my contact info and sent me a few tips." In the end, Jan very quickly settled on a small law firm in the Philippines. He flew to Manila in September and spent almost three months there. "They promised me interaction with clients. When I arrived, they met me in the hall of the office and handed me over to one of the lawyers. I could read briefs, compare legal reports, and take part in resolving specific cases," he explained, and chatted about a case when they helped an Australian client start up a business in the Philippines. Successfully. This son of Polish emigrants is now cooking traditional pierogies in Manila.

The legal language of the Philippines is English. "This was a big advantage for me. Legal documents are in English, court proceedings are in English." He was in court several times on the job. Someone expecting sombre court buildings in Manila would be disappointed. "Courts there are often housed in buildings in very bad shape. In no way are they dominant city edifices – just the opposite." And the performance of legal power there according to Borunský is just as dire. Bribes and corruption are an everyday way of life.

When he looks back over the entire year of 2016, he does not omit mentioning the role of his home law faculty. "The foreign studies department supported me from the beginning. Co-operation with them was excellent. They were even able to provide me with a travel stipend on both trips, covering a significant portion of the expenses. The dean allowed me an individual study plan, and the teachers were very helpful," added the future lawyer. And what did he get out of that hectic year? "I got perspective, experience. I had the opportunity for professional comparison. I got to know a different culture. And I could add a few interesting entries into my CV. Maybe I could go to work for Hyundai, the Korean automobile maker which has a factory close to where I live," added the young man from Silesia.











#### Marinella Danosová (b. 1982)

Graduate of the UP Faculty of Education, Teaching in Healthcare Middle Schools. This certified paramedic works for the Olomouc Region Emergency Health Services, as an assistant professor at the UP Faculty of Sciences, and is president of the Czech Chamber of Paramedics.

Brakes squeal, the car makes an abrupt stop, the doors open, a man and woman run out. A petite blonde quickly slings a heavy backpack over her shoulder, her partner carries nothing. A passing driver is so incensed by the scene that he stops, rolls down his window and shouts, "What's the matter? Can't you carry her backpack, big boy?" He cannot, even though he feels awkward in that moment and even if he had wanted to. It is necessary to add two important details to the scene described above: the man and the woman are wearing reflective orange jackets, and they are running out of an ambulance. The man is the driver and the woman is a paramedic. "And a paramedic has to carry her equipment herself. That rule is non-negotiable," says Marinella Danosová with a smile.

Her career might look at first glance like a Rubik's cube: variously coloured squares mixed-up and apparently not belonging together. Apparently. But a few correct moves, made at the right time, and everything fits together. In the beginning, in 1997 when she was fifteen, there was one cube – her nursing studies at a healthcare high school in Opava. Some years later, in 2017, there are more professional cubes, and they make up an interesting picture. They include her studies at the UP Faculty of Education, a certificate in paramedics from a technical university, work as a paramedic at the Olomouc Region Emergency Health Service, lecturing at the UP Faculty of Health Sciences, and being president of the chamber of paramedics. Lots of cubes, with one resulting integral picture: helping others.

#### Orange to fight stereotypes

"I think that combining the theory which I teach future paramedics, and practise – for at the same time I work shifts as a paramedic – goes very well together. I need adrenaline in my life, and if I only taught, I would miss the rush, I'm afraid I would fall into a stereotype. But the moment I put on my orange jumpsuit, that stops being a problem. Every situation is different and everyone must make decisions on the spot, again and again. I love that, and it motivates me. And then in teaching, I can make good use of what I know well," she says in her office at the Faculty of Health Sciences.

She's in "civilian" garb, an elegant dress, wearing black-rimmed glasses. But on the coat stand by the door there is a reminder of the other Marinella: her orange paramedic's jacket. She works up to fifteen 12-hour paramedic shifts per month. She admits that as a woman paramedic she must fight for her position in an overwhelmingly male world. "You have to prove that you can handle the work, that you understand and know it. Then they will respect you and you will become part of the team."

When the phone goes off in the paramedics' operational headquarters, the dispatcher has to decide within a few seconds whom to send into the field. They often have to evaluate the situation according to insufficient or confusing information. "The dispatcher determines the priority and then sends either a tandem – paramedic and driver – or a triad, two plus a doctor," the paramedic explains. She has experienced joyous moments, like delivering a child, and moments when it is too late for help.

The work of paramedics is physically and psychologically demanding. And today the risk of being attacked is increased. "It's happened to me twice during the five years I've been a paramedic. You become more cautious and with certain types of patients you have to be very careful. In certain states we can expect aggression. For example when someone has extremely low blood sugar, when the person is unconscious, it can happen that when giving them glucose they begin to come to and before they are fully conscious they can be aggressive, defending themselves. Luckily I have never experienced an intentional attack."

#### Gratitude will find a way

The moment she puts on her work uniform, she becomes anonymous for many people. She is just a young woman who came in the ambulance. She doesn't let it bother her. "When someone wants to give thanks, then they find out your name and maybe write a thank-you note. It happens. Not often, but it's heart-warming."

In addition to teaching and working as a paramedic, she also heads the Chamber of Paramedics, where she is the president. This professional association has 270 members and Marinella Danosová has to meet with bureaucrats and to lobby. "They invite us to meetings on legislation, and we try to convey the diverse levels of need in our profession. We meet with various institutions and ministries."

Like with everybody else, everything comes at price. "I don't have much free time," she admits. And she takes her work home with her. Her partner is a flight paramedic. "Sometimes we are saving lives up to supper time, and then we compare stories." And who looks out for the paramedic at home? "We have a Staffordshire bull terrier, Timmy, he's kind of my canine therapy. And walking him keeps me fit."

And she needs that, for she has new plans: "Finish my Ph.D., expand my qualifications as an urgent medicine paramedic, help the faculty in the development of a new Bachelor's programme in Paramedics... and then? We'll see, but I am certainly not giving the ambulance up right now," Marinella Danosová says, resolutely.



### UP Botanical Garden – A source of knowledge and a place of recreation

Should you seek an oasis of quiet in Olomouc, then you should head for the Botanical Garden of the Palacký University Faculty of Science. This green kingdom in the vicinity of Smetana Park is not only a resting place but it also serves for education and scientific research. It is also a destination of many amateur as well as professional gardeners who have been able to mutually exchange and share seeds since the beginning of March in the local seed bank run by the Arion division of the Czech Union for Nature Conservation (ČSOP).

The botanical garden covers an area of over one acre. There are approximately 1,500 domestic and exotic plant species. A major part of Central European flora can be found there, such as species grown in flower gardens and parks on regular basis – even rare ones. Considerable attention is dedicated to the flowers of the north-eastern part of North America. An integral part of the botanical garden are species of value in human use – that is, cultural, medicinal, and aromatic herbs.

"Our visitors are often surprised to see how even well-known species of grains, legumes, vegetables, and plants for nonfood use look in their vegetative phase. There is growing attention to chickpeas, quinoa, our collection of chilli peppers or the two most often-grown varieties of tobacco. Even rock gardeners are pleased – they come to admire an old rock garden from 1908 when the garden shed was built, as well as the new slate garden. The slate garden houses a growing collection of mainly Balkan mountain flora, but even the Caucasus, northern Turkey, Patagonia, South African Lesotho and New Zealand have their representatives," says the garden's director David Cigánek, enticingly.

The botanical garden has a noteworthy history. It is a continuation of a monastic garden mentioned for the first time in 1787 and used for the needs of the Medical and Surgical Lyceum which was part of the university. After its dissolution, the garden has been gradually renovated since 1901 at its current location thanks to the efforts of the Botanical Society and to contributions by various benefactors it was maintained in excellent conditions practically till the end of World War 2. The first plants were donated by the custodians of botanical gardens in Lednice and Vienna-Schönbrunn, and significant financial contributions were made by Czech and particularly German and Jewish intellectuals. After the war, the city briefly took charge of the garden, and in 1956 it was transferred to the then University of Pedagogy and three years later to the Faculty of Science. The garden is used by students of botany as well as other disciplines. During the garden season (April to October) it is open to the public without charge and is teeming with activities overreaching its botanical orientation: mothers with prams, kindergarten children and students mix with UP Go Club players or enthusiasts from various student clubs. It was due to the initiative of students associated under the auspices of ČSOP Arion that the first seed bank in Olomouc was opened therein; its goal is to provide a non-commercial exchange of seeds of all kinds and cultivars among enthusiastic urban gardeners. Dozens of interested growers have used it as a source of their seeds this year - and in the autumn the seed bank should be replenished thanks to their own harvests.



## Courses and expeditions spice up studies

With regard to the character of studies at the Faculty of Physical Culture, it is obvious that not everything can be learned in classrooms, gyms, or libraries. That is why students are allowed to enrol in a number of training courses that provide them with priceless experience as well as lifelong memories.

reportage

Skiing comes to mind, but their offers go far beyond that. The training courses also include snowboarding, windsurfing, cycling, white water trips, mountain hiking, and basic alpinism. Or technical sports. "These are the remnants of sports associated in Svazarm, the Union for Co-operation with the Army, the largest paramilitary organisation in Communist Czechoslovakia before 1989. Students are trained in shooting air rifles, archery, finswimming, radio orientation running, or summer biathlon," clarified the course guarantor, Michal Šafář.

Not only technical sports are available at their destination, the training resort Pastviny at the foot of the Orlické Mountains, where many current UP employees have lost litres in perspiration. Reminiscing on his student years, Šafář tells a story from another resort. "There is a legendary story about skiing on Mt Chopok. The course leader, Dr Bank, turned to his students and said, 'Whoever can't keep up, does not belong on the first team,' and disappeared in the fog. He was not seen by anyone on that day. To be exact, I know this story from my colleague Pavel Háp. I was in team no. 4, but I could not keep up with our leader, Dr Formánková, either," confessed Šafář.

#### The Captain Nálepka Commemorative Medal

"In the early morning, we woke up freezing, our camping mats frozen to the ground in the tent, which had warmed up with our breathing and microdrops made our sleeping bags wet on the outside. Clear sky, but awfully cold, minus 13.5 °C. Getting out of the sleeping bag was a reward in itself, jumping into frozen boots was worse, but there was the final stage of the trip ahead of us." This is how Barbora Fialová from Recreology described their winter trek in the Low Tatras, reportedly the most demanding course of them all.

Its guarantor, Michal Petr, admits it is true. "You're either fully absorbed by the winter landscape, which often creeps into your skin, or you're not present at all. There is nothing in between, you cannot lock yourself up in your room and rest. The purtext: Martin Višňa photos: UP Faculty of Physical Culture archive pose of the course for the participants is to experience how to work with such natural conditions with the aim of personal growth. Winter nature is a harsh master, gives immediate feedback, and cannot be sweet-talked," explained Petr.

Due to the better conditions, the recreologists take off for Slovakia, where snow is more certain and they can choose a trail further from civilisation. This year, they travelled on the ridge of the Bukovské Mountains all the way to the Ukrainian border; some time ago, the Slovak Union of Anti-Fascist Fighters even awarded the participants of the course on the Slovak National Uprising with their Captain Nálepka-Repkin Commemorative Medal.

#### Unparalleled in Europe

Courses attended by students of Civil Defense are no bed of roses either. For instance, when they practise rescuing a drowning man from the freezing waters of the Lipno Dam.

Their colleagues from the Department of Applied Physical Activities, on the other hand, may boast that their integrated winter training, providing students with practical experience and at the same time allowing handicapped children to enjoy winter sports, is unparalleled in Europe. This year in Kouty nad Desnou, they had some 150 participants, including children with vision or hearing impairments and wheelchair users. "Our various target groups and provided services and also collaboration with sport associations of vision- and hearing-impaired sportspersons make our course unparalleled in the Czech Republic, and as far as we know, even in all of Europe," said the course guarantor, Ondřej Ješina.

#### Intense introductory courses

The training courses include expedition projects that enable students to try out the realisation of a planned event from scratch to finish. In recent years, they have practised team work during their voyage on a historical sailboat, and made non-traditional sport experiences accessible to handicapped persons during expeditions to the Alps or Norway.

Needless to say, some students will never forget the introductory adaptation courses. "I reached the nadir of my mental and physical strength then – but I'd do it again, anytime. I never knew what was going to happen during my studies, and I lived in the magic of the moment. For me, and I believe for the others too, those were very essential times, the times of first university experiences," revealed a second-year student, Kristýna Navrátilová.







### heritage

## ...now making quite accomplished daguerreotypes... Prof Phil Dr Friedrich Franz, OPraem



Dated 1 December 1796 in the parish register of Vysoké Veselí, there is a record of the christening of Jan Evangelista Franz, son born to Antonín Franz, "neighbour" living at no. 78, and Terezie Franzová, daughter "of Jan Žatecký of Czar in Hungary" (in the record of the christening of Jan's younger brother František Xaver Franz on 19 October 1798, his father's profession is listed as "barley man"). In 1815, 19-year-old Jan Evangelista Franz was accepted as a novice to the Premonstratensian monastery - the canonry of Sts Peter and Paul in Nová Říše, and after his three-year noviciate, he took the order's oath and was given the brotherly name of Fridericus (Friedrich, Frederick). In 1820 Friedrich Franz, OPraem, was ordained as a priest in Brno; in 1831 he was promoted to a doctor of philosophy at the Karl-Ferdinand University in Prague. and from 1824-1842 he worked as a professor of physics at the philosophical college in Brno.

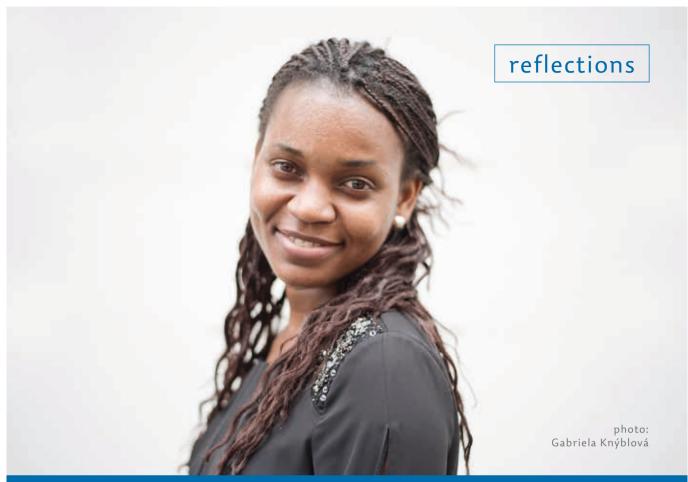


### The art of the daguerreotype

In 1839, the French artist and inventor Louis Daguerre (1787-1851) completed his long research into a photographic technique named after its inventor, the daguerreotype; in essence, a photographic image captured on a plate coated with silver iodide, exposed to light for 15 to 20 minutes. The Czech-language periodical Květy published an article as early as 9 July 1840 that in Brno, "Dr Franz is now making quite accomplished daguerreotypes, with many new images such as the church in Zábrdovice, the Augustinian church and monastery, and more," - which meant that at some point earlier, Ph. Dr. Friedrich Franz, OPraem had been acquainted with the daguerreotype technique, which had been perfected in the meantime by Daguerre's pupil Antoine Claudet (1797-1867). On 3 May 1841, the German-language periodical Moravia, published in Brno, had the following: "Senior Professor of Philosophy in Brno, Dr Friedrich Franz, brought us a daguerreotype made on 27 April with the Voigtländer daguerreotype apparatus [i.e. an instrument made by the Viennese optician Peter Wilhelm Friedrich, Knight von Voigtländer, 1812-1878)], the first portrait completed in one minute, and with tireless industry he is expanding the range of this handsome and successful invention. Bringing astonishment and verisimilitude, the ray of light draws human lines, capturing the slightest movements of the face and facial expressions with an accuracy which cannot be achieved in any other way." In the collections of the Moravian Gallery in Brno, five Franz daguerreotype portraits are preserved, including a self-portrait (see photo), captured on the same apparatus as daguerreotypes of the Corpus Christi Celebrations at the Vegetable Market in Brno on 10 June 1841, now part of the collections of the Moravian Museum in Brno (see photo).

#### Dean of the Philosophical Faculty and Rector of Kaiser Franz University in Olomouc

On 6 November 1842, Phil Dr Friedrich Franz, OPraem arrived as a professor of physics and applied mathematics at the Philosophical Faculty of Kaiser Franz University in Olomouc; apparently he had put daguerreotypes aside in order to focus on his studies of the Earth's magnetism. In 1844 and 1850 he was named Dean of the Philosophical Faculty and in 1847 he helmed the Rector's office of the university in Olomouc. His distinguished students include the founder of genetics, Gregor Johann Mendel (1822-1884), whom Prof Franz recommended in a personal letter to be accepted to the Augustinian order of St Thomas in Old Brno. After provincial elections on 31 May 1848, Prof Phil Dr Friedrich Franz, OPraem was one of five representatives from the Olomouc university curia elected to the Moravian Diet up until its adjournment on 24 January 1849. After the Philosophical Faculty was closed in 1851, Phil Dr Friedrich Franz, OPraem went to Salzburg, where he became the director of a high school, and in 1853 he was named Abbot at the Premonstratensian monastery canonry of Sts Peter and Paul in Nová Říše. Phil Dr Friedrich Franz, OPraem died there on 12 April 1860 as an abbot.



Joy Igoni came to Olomouc from Nigeria. She is a postgraduate student of Special Education at the UP Faculty of Education. She is in the third year of the programme.

### Àyípadà lohun kanşoşo tó dúró lójú kan

Ìrírí ayé nínú àwùjo òtun, máa ń fé kí à tè sí ibi àyípadà. Lái fi ti ìrírí mánigbàgbé tí moní nígbà tí mo dé si olomouc lásíko àgìnnitìn, títí láéláé ni ìlú yìí yóò je òkan lára, àwon ìhí tí mo féràn. Àwon ewà nnkan mánigbàgbé aje mótàn ní àwon gbàgede káàkirin ibi ìgbafé ati nnkan ojútò ìtàn, ni ó mú ìrírí mi gbòòrò ni pa ilu yìí si. Idakéróró ati ìmótótó olomouc ló yàá sótà gedebge.

Pàápàá jù lọ àwọn oúnję Czech, àwọn bii akànşe búrędi, omitooro obę màlúu, ànòmó aláàşáró àti eran adìye àti àwọn nìkan míràn. Agbékalè ìgbòkègbodò nìkan ìrìnnà tó dúróore jé kí n lè lo àsìkò mi bó ti tó àti bó ti yẹ. Ohun ìwúrí ni láti pàdé àwọn eèkàn ilu Czech, pèlú àwọn akékòó ilè òkèrè, èyí tí ó fún ayé mi ni ìrírí manigbàgbé, ni pàtàkì ayẹ yẹ kérésímesì funfun èyí tí wón şe, kò lè kúrò lókàn mi títí láé. N kò tìílè gbàgbó pé nínú gbàngàn aręwà ìlu Olomouc ni mo ti şe ìgbéyàwó mi.

Ìrírí tó ręwà ni kíkó èkó ni ojútò àkànşe èkó ni fásitì Palacky ni Olomouc. Èyí ló fún mi ààyè lati pade àwon olùkó ti mùsèmúsè won da músémúsé, àwon aláàkóso ófísì ní àgbáyé atí àwon akegbé mi tí wón jé kí n ní ìmò kún ìmò, láfikún ni ìmò mi nínú ètò èkó pàápàá jù lọ inípa bí a ti ń lo èro ìgbàlódé gégébí ohun èlò ìdánilékòó.

Mo le fowo soya lori àyípadà òòrèkoore ati ànfààni eyi tí mo ri ní ilu olomouc ati fásitì Palacky lápapò.

### The only thing constant is change

Being in a new environment often requires adapting to changes. Even though I arrived in Olomouc in the middle of a severe winter, which was an unforgettable experience, the city will always be one of the places dearest to my heart. I was astonished by the beauty of its historical monuments, all those squares, parks, and museums. Olomouc is unique in how quiet and clean it is. I love typical Czech cuisine such as goulash and dumplings or chicken steak and mashed potatoes. Thanks to the efficient public transportation system I'm able to manage my time better. I enjoy meeting wonderful people from Czechia as well as other foreign students – they'll always have a place in my memories. Celebrating a white Christmas was an amazing experience for me. Also, I would have never thought that I would get married in the beautiful historical building of the Olomouc Town Hall.

Regarding my studies at the Institute of Special Education Studies at the UP Faculty of Education, I am maximally satisfied. Thanks to this I have come to know nice and understanding teachers, officers at the International Relations Office, and my schoolmates, and I gained knowledge, experience, and skills for further academic growth. The use of electronic teaching tools interested me especially.

Being in Olomouc and studying at Palacký University has been a constantly enriching experience. I look forward with trust to what the future in this city will bring to me.

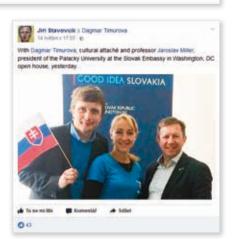
### university in the social fabric

www.zurnal.upol.cz





4 131 97





We are happy to welcome 24 new students from the United States (University of Nebraska at Kerney), who have just come to Palacký University Olomouc to spend 3 months studying at the Department of History, Faculty of Arts within the Nebraska Semester Abroad programme. # #olomouc #upol #nebraska2017 #Internationalstudents





"Every day I am amazed at what we are able to do," confessed the neonatologist Lumír Kantor during an interview. His words inadvertently captured my feelings during the preparation of the UP Žurnál. With every new issue, I am still more and more amazed how many personalities and stories are hidden behind the UP brand. Scientists, lawyers, doctors, artists, teachers, theologians, athletes.... We have no idea how ubiquitous they are - they jump out of an ambulance to treat our head wounds; we can bump into them in the Middle East, where they search for lost cities under the scorching sun; they are ready to offer a hand when our souls feel lost. They wear white coats, paramedic's jumpsuits, sport outfits, judge's gowns, monastic habits, or plain T-shirts and jeans. No matter what they have got, they amaze. With their work, their enthusiasm, their endeavour, their visions.

Wishing you all amazing days with Palacký University,

Ivana Pustějovská, UP Media Editor-in-Chief

7.



### Palacký University Olomouc

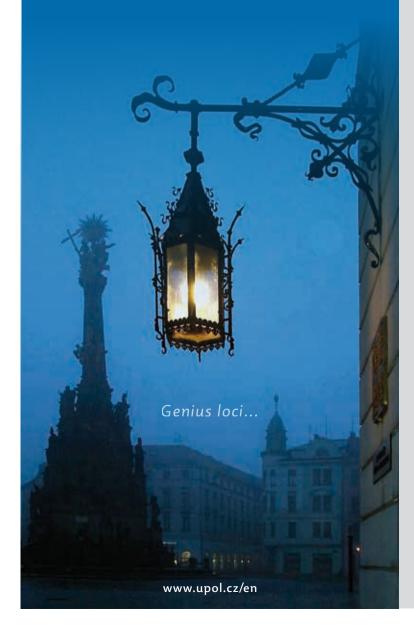
Genius loci...

www.upol.cz



Palacký University Olomouc

### STUDY PROGRAMMES IN ENGLISH



### **BACHELOR PROGRAMMES:**

#### Humanities

Chinese Philology | English Philology | Jewish and Israeli Studies

### Education

Special Education – Afterschool Supervisor | Preschool Special Needs Education Teaching – Nursery School Teacher Training | Special Needs Education – Afterschool Education | Special Needs Education – Andragogy | Special Needs Education – Intervention | Special Needs Education – Drama Therapy

### MASTER PROGRAMMES:

- General Medicine
- Dentistry
- Science

Applied Mathematics | International Development Studies | Material Chemistry | Nanotechnology

International and European Law

#### Education

Speech and Language Therapy (5 years) | Primary School Teacher Training in Special Needs Education (5 years) | Pre-Primary Education | Upper Secondary School and Primary Art School Teacher Training in Visual Arts | Special Needs Counselling | Special Needs Education – Counselling | Special Needs Education – Drama Therapy | Leisure Time Activities Counselling and Management

- Physical Activity and Active Living
- Applied Physical Activity
- Humanities

Chinese Philology | English Philology | Jewish and Israeli Studies | Euroculture

### **DOCTORAL PROGRAMMES:**

Science

Algebra and Geometry | Applied Mathematics | Geoinformatics and Cartography | International Development Studies | Biochemistry | Ecology | Optics and Optoelectronics | Physics

- European and International Law
- Education

Education | Special Education | Music Theory and Education | Art Education (Theory of Art Pedagogy and Art Production)

- Kinanthropology
- Humanities

Clinical Psychology | Educational Psychology | Philosophy | Political Science | Sociology

To see the complete offer please visit: www.study.upol.cz