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INTERNATIONAL CLINICAL RESEARCH CENTER
OF St. ANNE'S UNIVERSITY HOSPITAL IN BRNO

MAYOR OF BRNO VISITED OUR CENTER

In June 11th, our center was visited by the Mayor of the City of Brno, Markéta Vaňková.

After the introductory presentation of the activities, the tours of selected research teams followed. The Mayor of Brno thus had the opportunity to visit our unique sleep laboratory where we treat patients with sleep disorders, as well as

the laboratories of the Biomedical Engineering team, where we presented our new systems for a more accurate diagnosis of cardiac ventricular dyssynchrony and epilepsy. As part of the tour, we also showed the Clinical Pharmacology Unit, where studies of new active substances on volunteers from the Brno population are held for the first time and introduced a new project of research on the use of

medical cannabis for the treatment of selected chronic diseases. Representatives of the city of Brno also met with the unique project Kardiovizie Brno 2030, a program of cardiovascular prevention in Central and Eastern Europe based on population analysis. What does Brno's mayor think about us? Find out in an interview below.

INTERVIEW WITH BRNO'S MAYOR MARKÉTA VAŇKOVÁ



What did you like most when you walked around the laboratories of our research center? What are your impressions?

My impressions are really good. I am very happy that Brno has a cutting-edge research center – we have something to be really proud of. I was also positively surprised that the citizens of Brno can join in some of your research projects, which means it brings tangible benefits for them.

Is there anything else that caught your attention?

I am also very happy that the International Clinical Research Center has attracted foreign researchers to Brno, both for short- and long-term stays, and that it has been promoting our city abroad, which I also see as very important.

In your opinion, what is the level of research in Brno? Does it compare well with other cities in the Czech Republic and abroad?

From what I know about this topic, and from looking at the contacts and visitors that I have seen as the mayor of this city, I would say that the level of research in Brno is excellent. Brno is proud to have

been the city of science, research and innovation for a long time.

Is the city of Brno planning to continue supporting science and research in the future?

For clarification, let us not forget that the city of Brno has been developing the potential of our universities, research and development centers for a long time and since 2009, it has been directly investing into projects under the Regional Innovation Strategy. At the moment, the regular annual budget for science popularization is CZK 31 million and the city is spending another CZK 45 million to support research centers, talented students, innovative small- and medium-sized enterprises and the South Moravian Innovation Centre.

Do you see young talents leaving for abroad as being a risk?

Generally speaking, it is important that Brno is a pleasant place to live. This does not mean just providing good work opportunities to people, but also a comfortable standard of living. In other words, we have to try our best so that people want to stay here. So that they believe, just like I do, that Brno is the best place to live.

Thank you for the interview.



MU RECTOR'S AWARD FOR ASSOC. PROF. PARUCH



Assoc. Prof. Kamil Paruch who has been leading the FNUSA-ICRC Medicinal Chemistry research team since 2011, was awarded the Masaryk University Rector's Award for the development of biologically active compounds with high potential for use in practice. Masaryk University is his alma mater, he

graduated from the Faculty of Science at MU. Then he spent 13 years in the United States where he earned a doctorate in organic chemistry at Columbia University. He also worked on research and development of new drugs in the pharmaceutical company Schering-Plough (Merck since 2009). Since returning to Brno in 2009 he has continued to research new organic compounds with targeted biological activity, especially in oncology.

This research within FNUSA-ICRC and Masaryk University has already brought publications and patents for new drug substances with potential use as drugs for serious diseases. For example, he co-authored the first FNUSA-ICRC patent granted to us in 2015: *Substituted furo[3,2-b]pyridines intended for use as medicaments.*

NEW RESEARCH FOCUS: MEDICAL CANNABIS



In June, Dr. Václav Trojan, who worked at Mendel University in Brno and has been dealing with medicinal cannabis for a long time, joined our center.

FNUSA-ICRC Clinical Pharmacological Unit, which is implemented for Phase I and II clinical trials, when the active substances are administered for the first time to healthy volunteers for safety assessment (Phase I) and volunteer patients to evaluate efficacy (Phase II). "Studying the use of medicinal cannabis to treat some chronic and untreatable diseases is now a major trend in the world, and FNUSA-ICRC is at the forefront of research in this area," says Dr. Trojan.

His activities will aim to launch clinical trials on the use of medicinal cannabis for the treatment of selected diseases such as chronic pain. This research will use the

ONDŘEJ LUDKA APPOINTED PROFESSOR

Appointment letters to new professors were awarded by the Minister of Education, Youth and Sports Robert Plaga last week.



The appointees received the highest academic degree in the Karolinum Large Assembly Hall, Prague. One of them was Ondřej Ludka, the Head of our Sleep Medicine research team, in the field of

internal medicine. Prof. Ludka's research focuses on the importance of risk factors, such as breathing disorders during sleep or its disruption - the so-called sleep apnea, and their association with obesity and other cardiovascular diseases including myocardial infarction. He is the leader of our Cardiovascular Sleep Center - one of the few institutions specializing in the diagnosis and treatment of sleep disorders in the EU in patients with cardiovascular disease. Prof. Ludka represents the Czech Republic in European sleep associations and participates in their activities. For example, since 2017, our center has been part of the European Sleep Apnea Database (ESADA). We have provided data on more than 700 patients and are now among two institutions with the highest number of patients included in the project each year. Thanks to Prof. Ludka's effort, we are going to host the ESADA European Sleep Research Society project meeting in January 2020. Therefore, for a few days, Brno will host experts from different parts of Europe whose research contributes to healthier sleep, which in turn decreases the risk of further health complications.



JOINT U.S. PATENT WITH MAYO CLINIC

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Epicardial "outer" heart surface is often crucial for treatment of arrhythmias but cannot not be reached by standard venous or arterial access. Thus, percutaneous techniques were developed using novel devices, as manipulation vastly differs. Our Interventional Cardiac Electrophysiology research team (ICE) and Electrophysiology group at Mayo Clinic developed specific tools - sheaths and catheters, for novel methods of pacing ablation and defibrillation in pericardial space.

The method is reserved for patients with pericardial location of arrhythmic sources and pathways, possibly also patients after cardiac surgery, requiring specific pacing and eventually defibrillation (e.g. pediatric patients and adult patients with depression of systolic function).



ICE team has been conducting device testing and optimization since 2011. Its leader Zdeněk Stárek led experiments taking place in our Electrophysiology lab at Veterinary and Phar-

maceutical University. Both stimulation and defibrillation required much less than currently used energy (e.g. allowing new battery strategies). Moreover, lower utilized energies of ICD defibrillation (Implantable Cardioverter Defibrillator), will presumably result in absence much lesser pain in case patient is conscious during shock delivery.



EUROPE DAY IN PRAGUE

In May, we participated in Europe Day in Prague, an event held every year by the Permanent Representation of the European Commission in the Czech Republic.

This year, Europe Day was all the more important as on 1 May, it was the 15th anniversary of the Czech Republic's accession to the European Union. The accession of the Czech Republic to the EU was crucial for FNUSA-ICRC, as most of the costs for building our center came from the EU Structural Funds. Without this financial aid, we probably wouldn't have formed at all. Our booth at the Day of Europe was in the vicinity of the stands of the Czech Centers, the Václav Havel Library, the People in Need Foundation, and the Association for International Affairs as well as the embassies of European countries. The event was attended by European Commissioner Věra Jourová, Foreign Minister Tomáš Petříček or Prague Mayor Zdeněk Hřib.



15 YEARS SINCE EU ACCESSION FNUSA-ICRC: A PROJECT OF HIGH IMPORTANCE



15 YEARS OF CZECHIA
IN THE EU

Our center was built between 2011 and 2015. It was one of the priority projects financed from the EU structural funds.

The EU contributed more than CZK 2 billion from the Operational Programme Research and Development for Innovation. Since 2011, FNUSA-ICRC has been awarded 36 other projects funded by EU funds totaling more than CZK 1.5 billion.

With the help of grants funded by the EU and the Czech Republic, between 2011 and 2015 FNUSA-ICRC bought approximately 1,200 new pieces of equipment with a total value exceeding CZK 1.2 billion. The majority of the equipment is used not just for research, but also in our departments to treat and diagnose patients; other pieces are shared with Masaryk University, the Czech Academy of Sciences and the University of Veterinary and Pharmaceutical Sciences in Brno. The Center is also involved in 14 international projects funded from the European Horizon 2020 programme.

Over a relatively short period of time, FNUSA-ICRC has become one of the most dynamic research centers in Brno.



"We are a member of several research networks, have participated in the implementation of fifteen international research projects, are collaborating with researchers

from over one hundred research centers, universities and hospitals in other countries, and we work with leading global corporations such as GE Healthcare, Honeywell, ResMed and Stereotaxis," explains the Head of FNUSA-ICRC, Gorazd B. Stokin. "In addition, we work with universities in Brno and local companies including BioVendor, Cardion, Contipro and Enantis," says Stokin.

Since 2011, FNUSA-ICRC researchers have published more than 1,700 scientific articles; we have received 3 patents for new active substances, methods and technologies, and 8 registered industrial or utility models for new equipment

and devices, and have also received more than 20 awards, including Kapsch Invence Czech Brain Award for one in the leaders of our research groups.

Working on quality research projects also attracts foreign researchers and students to Brno. "We have attracted almost one hundred researchers from 25 countries – we have eighteen Italian employees, to give you one example, which is the largest group of Italian researchers among all research institutions in the Czech Republic. There are also people from Argentina, Portugal, Spain, England or South Korea. We also have foreign students and young researchers coming from abroad, such as from the USA, India and Japan, and every year, around twenty top scientists from abroad come to give public lectures. I think that we help to build a positive image for Brno as well as the Czech Republic for people from other countries," concludes Stokin.



FNUSA-ICRC PRESENTED IN PRAGUE AND BRNO

The Science Fair organized by the Czech Academy of Sciences took place from 6 to 8 June 2019 in Prague's Letňany and was visited by over 30,000 visitors this year.



Representatives of our international center presented the activities of our research teams, not only to the public but also to companies and other scientific institutions and institutes with which cooperation could be established. Thanks to the presence of our Kardiovize Brno 2030 project, people could measure, for example, their pressure, the strength of the handgrip, the thickness of the blood vessels, the amount of carbon monoxide in the blood, and other indicators of human health.

On June 10, "How to Live Healthy?" event was organized in Brno by the **Brno - Healthy City Project** Office as part of the "Where Are You Heading, Brno?" festival.

The event was focused on prevention and healthy lifestyle in practice. At the event we presented our research center and Kardiovize Brno 2030 and HOBIT - Hour of Biology for Life projects.



FAECAL MICROBIOMA THERAPY WAS DISCUSSED AT THE 9TH FNUSA-ICRC PARTNERSHIP FORUM

FNUSA-ICRC held its Partner Forum on May 20, focusing on faecal microbiom therapy and its perspectives.

The meeting was attended by over 30 participants from healthcare facilities, research centers and companies specializing in the production, development and research of probiotics and prebiotics or microbiome analysis. Faecal microbioma therapy represents the the-

rapeutic transfer of faeces in native or processed form from donor to recipient. It is done for the treatment of the recipient; high efficacy is especially proven in the problems caused by *Clostridium difficile*. However, according to recent studies, this method is also effective in addressing other diseases, such as nonspecific intestinal inflammation, as participants in the forum have shown.



VISIT OF MEMBERS OF THE AMERICAN CHAMBER OF COMMERCE IN THE CZECH REPUBLIC



Following the visit of U.S. Ambassador in March (see Newsletter 1/2019), groups of members of American companies branches in the Czech Republic and members of the American Chamber of Commerce in the Czech Republic (AmCham) visited us in April and June.

We prepared a lab tour and showed the work of our research teams. They were most impressed by the laboratories of the Center for Translational Medicine, Department of Clinical Studies and KardioVize 2030. The aim was to present our activities to potential bu-

siness partners, which is confirmed by the visiting Sales Manager of 3M Česko Mariana Ludányiová: "Thanks to the visit, I could get acquainted with a part of the ICRC team who, with their professionalism and enthusiasm literally breathed. I would be very happy if we managed to set up a 3M R&D team with such a high-quality research center." AmCham representative Katarína Bendiková added: "More and more of our member companies have been recognizing the value of this research hub in the heart of Central Europe. FNUSA-ICRC is a player to be considered in R&D strategies."

WORKSHOP WITH GE HEALTHCARE RESEARCHERS

Following the visit of GE Healthcare Vice President Global Health Research, Mr. Stolk, a two-day workshop with GE Healthcare researchers in charge of developing selected healthcare technologies took place in May.

The aim was to further develop a discussion of collaboration on the deve-

lopment of these technologies, such as magnetic resonance imaging, ECG, ultrasound diagnostic devices, computed tomography, or vascular intervention devices. 9 GE Healthcare representatives attended the workshop and it will be followed by a visit of our researchers to GE Healthcare Research Center and other meetings.



VISIT OF PHILIPS DIRECTOR FOR CENTRAL AND EASTERN EUROPE

At the end of June, Philips' Central and Eastern European CEO Reinier Schlatmann and several colleagues from the company's regional headquarters and the Prague office for the Czech Republic visited our center.

FNUSA-ICRC have been using Philips technology in the areas of sleep medicine, magnetic resonance imaging for cardiology, heart failure, and circulatory diseases. The main topic of the visit was cooperation on the development of new technologies of the company. For several years our center has been involved in testing new technologies of the company in the field of sleep medicine.