



**CREATING THE FUTURE
OF MEDICINE**

**FNUSA
ICRC**



NEWSLETTER 2018 | 1

**OF THE INTERNATIONAL CLINICAL RESEARCH CENTER
ST. ANNE'S UNIVERSITY HOSPITAL IN BRNO**

PROFESSOR **JIŘÍ DAMBORSKÝ** WON THE PRESTIGIOUS CZECH BRAIN AWARD



ČESKÁ HLAVA



Photo: Archiv Česká hlava

Prof. Jiri Damborsky, Principal Investigator of FNUSA-ICRC research group Protein Engineering received the most prestigious Czech Award for Science, Research and Innovation, the Czech Brain Award, in December 2017. The prize is awarded annually since 2002 in 5 categories under the auspices of the Czech government. Jiří Damborský, who works at the Faculty of Science of Masaryk University and in FNUSA-ICRC as the leader of Protein Engineering research group, received the Kapsch Invention Award for a significant discovery with a high commercialisation potential. Jiří Damborský has gained world renown by developing new concepts and software tools for protein engineering and the systematic study of dehalogenas enzymes.

FNUSA-ICRC ACTIVITIES AND RESULTS IN 2017

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RESEARCH RESULTS

4 international awards to FNUSA-ICRC researches

- **Dr. Valentina Lacovich:** NPS 2017 New Investigator Award, Alzheimer's Association
- **Dr. Ondřej Volný:** Danubius Young Scientist Award 2017 (Austria)
- **Dr. Mikulík:** Spirit of Excellence Award, European Stroke Organisation
- **Dr. Ximena Maria Muresam:** Nicolo Copernico Award for Biomedical Science (Italy)

2 national awards for FNUSA-ICRC researches

- **Dr. Ota Hlinomaz:** The Best of Czech Cardiology, 1st place
- **Dr. Zdeněk Stárek:** The Best of Czech Cardiology, 3rd place

Both in the competition for the best article at the annual congress of the Czech Cardiology Society.

150 research publications, mostly published in renowned international scientific journals such as Angewandte Chemie, EMBO Journal, International Journal of Cardiology or Biotechnology Advances.

35 Publications in TOP 10% of the best magazines

Considered by Average Journal Impact Factor (JIF) Percentile, 18 publications affiliated with FNUSA-ICRC has been placed in top 5% of science magazines and 17 publications in top 10% in 2017.

1 registered utility model for device for measuring, recording and analysis of electrical potential caused by cardiac activity. Its authors are FNUSA-ICRC Biomedical Engineering team and their partners from Institute of Scientific Instruments of the Czech Academy of Sciences.

COLLABORATION WITH ACADEMIA

4 new collaboration agreements signed in 2017

- American University of Armenia
- Tokyo Women's Medical University / Institute of Advanced Biomedical Engineering and Science, Japan
- University of Catania, Italy
- Shimadzu Corporation, Japan

10 new Horizon 2020 grant projects started in 2017

- Adaptive Bio-electronics for Chronic Cardiorespiratory Disease
- CETOCOEN Excellence
- Directed Protein Evolution for Synthetic Biology and Biocatalysis
- European Human Biomonitoring Initiative
- Models to Engage Migrants, Refugees and Ethnic Minorities in their Health
- Penumbra Rescue by Normobaric O₂ Administration in Patients With Ischaemic Stroke and Target Mismatch ProFile: A Phase II Proof-of-Concept Trial

FNUSA-ICRC ACTIVITIES AND RESULTS IN 2017

2 new grants from the Agency for Healthcare Research of the Ministry of Health of the Czech Republic

1 new membership in an European Research Infrastructure Network
FNUSA-ICRC joined the European Research Network for translational medicine EATRIS in the spring of 2017.

1 new membership in the H2020 Teaming project

FNUSA-ICRC became a member of consortium of 5 Czech and foreign research institutions aiming at development of top research platform which deals with important scientific and social European challenges in the area of health and environment.

1 new grant to participate in a Central European consortium to improve the quality of research – Alliance4Life (the project officially started in January 2018)

COLLABORATION WITH INDUSTRY

16 project of contract research

25 clinical trials carried out by FNUSA-ICRC investigators, 6 new trials started

169 clinical trials carried out by non-FNUSA-ICRC investigators, 51 new trials started

17,9 million CZK of total income from industry in 2017

3 joint grants with industry

- Production of stable fibroblast growth factors for research, therapeutic and cosmetic applications with company Enantis
- Ultrahigh frequency ECG system for early diagnosis of heart diseases with M&I and Cardion companies and ISI ASCR
- Development of regenerative and advanced therapy medicinal products

based on cultured mesenchymal stem cells from umbilical cord with Czech company PrimeCell Advanced Therapy and Korean company HansBiomed

OPERATIONS

52 new pieces of equipment for research purchased, such as:

- Flow cytometer SA3800CA
- Technical upgrade - workstation for Magnetic Resonance
- Electroforetic 2100 Bioanalyzer for the analysis of DNA, RNA and proteins

10 mil. CZK spent on new equipment

94 grant applications submitted
28 grants awarded to FNUSA-ICRC

52 running grants

86 million CZK of grants awarded to FNUSA-ICRC during 2017

(will be spent over multiple years)

105 legal contracts processed

FNUSA-ICRC 2017 STAFF AWARDS

During its annual staff meeting held in mid-December, FNUSA-ICRC awarded its best employees for their achievements in 2017. The winners of research category were:

The best Principal Investigator of 2017

Metrics: annual evaluation of FNUSA-ICRC research groups

• **Jiří Damborský (Protein Engineering)**

The highest score in the annual evaluation.

The most-cited researcher in 2017

Metrics: Postdoctoral researcher; cumulative impact factor of publications affiliated to ICRC published in 2017

• **Jiří Damborský (Protein Engineering)**

515 citations

Researcher with the highest IF publication

Metrics: Postdoctoral researcher; cumulative impact factor of publications affiliated to ICRC issued in 2017.

• **Ota Hlinomaz (Acute Coronary**

Syndromes) - for article in Circulation, IF 19.309.

Researcher with the best 2017 publication

Metrics: Last authorship + Best impact factor:

• **Manlio Vinciguerra (Epigenetics, Metabolism and Aging)**

- for article in Hepatology, IF 13.246.

The best young researcher in 2017 (1)

Metrics: Postdoctoral researcher under 35;

Best impact:

• **Veronika Altmannová (Genome Integrity)**

For article in Molecular Cell, IF 14.714.

The best young researcher in 2017 (2)

Metrics: Postdoctoral researcher under 35; First and last authorship + Best impact:

• **Kamila Bendičková (Cellular and Molecular Immunoregulation)** - for article in EMBO Molecular Medicine, IF 9.249.

The best PhD student in 2017

Metrics: Ph.D. student; cumulative impact factor of publications affiliated to ICRC issued in 2017

• **Oriana Lo Re (Epigenetics, Metabolism and Aging)** - IF 13.246.

NEW RESEARCH GROUPS IN FNUSA-ICRC

On January 1st, the FNUSA-ICRC research group portfolio expanded significantly. Former team of prof. Petr Dvořák Stem Cells and Cell Signaling has been transformed into 2 independent teams – **Cell Signalling (CS)**, led by Dr. Pavel Krejčí, and **Stem Cells and Disease Modeling** under the leadership of Dr. Vladimír Rotrekl (SCDM). These teams focus in the basic research pillar on researching the little-known Receptor tyrosine kinases (CS) and human stem cells, their differentiation to heart cells and possibility to use them for modeling heart

diseases on cellular level (SCDM).

There are also new teams in the area of cardiology research: **Cardiovascular Magnetic Resonance (CMR)** led by Dr. Roman Panovský, **Nuclear Cardiology and Cardiac CT (NCT)** by Dr. Vladimír Kincl and **Intensive Care Research (INC)** by Dr. Martin Helán. CMR team will be focused on timely non-invasive diagnostics of heart diseases by using the newest imaging technologies. NCT research group will concentrate on researching potential new imaging methods in cardiology linked particularly with

ischemic heart disease and heart failure. INC team will aim at researching the mechanism of creation, development and prognoses of critical illnesses.

New teams were selected in open international competition organised in the autumn of 2017. Proposals from potential new Principal Investigators were evaluated by a panel consisting of the members of FNUSA-ICRC International Scientific Advisory Board and external advisors.

FNUSA-ICRC HOSTED DELEGATION FROM UNIVERSITY OF LJUBLJANA

FNUSA-ICRC hosted distinguished guests from the Faculty of Medicine, University of Ljubljana, the oldest university in Slovenia and one of the largest universities in Europe.

The program for the Slovenian delegation covered

lab tours in the Bioengineering Lab, Acute Coronary Syndromes Lab, Cardiovascular System-Mechanobiology Lab and Mass Spectrometry Lab.

Presentation of FNUSA-ICRC research portfolio was

followed by a discussion on clinical trials and grant opportunities.

University of Ljubljana



THE ARTICLE OF CANCER PLASTICITY RESEARCH GROUP IN EMBO PRESS JOURNALS

FNUSA-ICRC research group Cancer Plasticity, led by Mgr. Karel Souček, Ph.D., achieved significant success. A study by Amandine Verlande, Ph.D., Mgr. Stjepan

Uldrijan, CSC., and collaborators entitled „Metabolic stress regulates ERK activity by controlling KSR-RAF heterodimerization“, recently published in EMBO Reports, has

been selected by the editors of the EMBO Press journals into this year's World Cancer Day collection of research articles.



FNUSA-ICRC AND YALE FELLOWSHIP OPPORTUNITY

APPLY FOR A POSTDOCTORAL FELLOWSHIP IN CENTRAL NERVOUS SYSTEM IMMUNOLOGY

The International Clinical Research Center of St. Anne's University Hospital in Brno, the Czech Republic (FNUSA – ICRC) is offering a postdoctoral fellowship for a 2-4 year assignment at FNUSA-ICRC and Yale University in the United States as part of a joint program between the two institutions.

DESCRIPTION AND GOALS
During the first half of the program, the Fellow shall participate in neuro-immunological research at the Yale University Dept. of Neurology in New Haven, CT, USA. Under the direction of Chairman David Hafler MD, the Yale Dept. of Neuro-immunology is considered the world's eminent research department in immunology.
This Fellowship represents a unique and prestigious opportunity. The Fellowship aims to develop integrated research between Yale and ICRC. Following integration with the Department at Yale, the Fellow shall be expected to continue in jointly established projects and advance collaboration between ICRC and Yale at ICRC after returning to the Czech Republic.
Expenses and support for the Fellowship shall be covered fully by FNUSA-ICRC and Yale University. During the Fellowship, The Fellow shall be employed by FNUSA-ICRC and supervised by Yale Dept. of Neurology staff.

SELECTION PROCESS
Candidates shall be selected on the basis of their past academic record along with present and future research potential. All candidates must have either MD or PhD status, be fluent in English and have demonstrated familiarity with international research, including grant solicitation. Candidates must demonstrate leadership skills as well as the ability to work in multidisciplinary teams.

HOW TO APPLY
Applications should be sent in English to iva.sasinkova@fnusa.cz and comprise the following:
1. CV and list of publications.
2. Letter of motivation/intent/area of research.
3. Three letters of recommendation.

The deadline for receipt of applications: **March 31, 2018.**
All applications shall be assessed by an international committee consisting of Yale and FNUSA-ICRC representatives. Candidates shall be informed regarding interview acceptance by Apr 30, 2018. Interviews shall be concluded by end of May 2018.

FNUSA-ICRC establishes cooperation in neurological research with prestigious Yale University via newly built postgraduate education program. This program, which is funded by FNUSA-ICRC and academically led by Yale University,

will be launched in new academic year, i.e. from July 1, 2018. Chosen fellowship holder from the Czech Republic will participate directly in neuro-immunology research of the Department of Neurology at Yale University, which is currently world-

wide considered the best department in this field. Candidates will be selected by an expert committee based on their background of academic experience with regard to their present and future research potential.



Photo: Yale Medical School

FNUSA-ICRC HOSTED COURSE OF SLEEP MEDICINE AND 5TH COURSE FOR SLEEP TECHNOLOGISTS

January 15th-19th, FNUSA-ICRC hosted the theoretical course of sleep medicine by Czech Sleep Research and Sleep Medicine Society, organized by Doc. MUDr. Ondřej Ludka, operatively with members of Sleep Medicine Research Group (SMED). The course, which was attended by 45 physicians from the Czech Republic and Slovakia, consisted of 37 lectures given by leading experts in sleep medicine from all over the Czech Republic, including prof. Šonka, prof. Nevšimalová, doc. Ludka, doc. Příhodová and others.

In the third week of January, Doc. MUDr. Ondřej Ludka, Ph.D. and his research team SMED also led the 5th course for sleep technologists of Czech Sleep Research and Sleep Medicine Society. The course was attended by 10 sleep technologists from the Czech Republic.

Our Sleep Medicine research team established one of the first sleep labs capable of monitoring the frequency and appropriate use of technologies for the treatment of sleep apnoea.



KICK-OFF MEETING OF ALLIANCE4LIFE

The kick-off meeting of Alliance4Life, the strategic project of ten leading life science institutions from Central and Eastern Europe, took place from 15th - 17th January in Brno.

Alliance4Life aims at addressing the existing gap in health research and innovation performance between EU15 and EU13. This new initiative has been supported by the European Commission in the frame of Horizon 2020 Health Working Programme as it is expected that outcomes and recommendations of the Alliance4Life could bring useful suggestions for science policy at both European and Member States level. Member institutions of the Alliance4Life intend to work together towards improvement in key areas of science policy and management, and will address these issues at institutional, national, and European levels.

Apart from FNUSA-ICRC, other members of Alliance4Life are CEITEC Masaryk University, Biomedical Research Center Slovak Academy of Science; Medical University of Lodz (Poland); School of Medicine, University of Zagreb (Croatia); University of Tartu (Estonia); Vilnius University (Lithuania); Latvian Institute of Organic Synthesis; University of Ljubljana (Slovenia) and Semmelweis University (Hungary).



Photos: CEITEC MU