

INVESTMENTS IN EDUCATION DEVELOPMENT

# INTERNATIONAL CLINICAL RESEARCH CENTER AN INTRODUCTION

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# What is ICRC?

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## **A PLATFORM FOR INTERNATIONAL MULTI-SECTORAL COOPERATION**

enabling close integration of medical research, clinical care, education and cooperation between academic and industrial sector

### **RESEARCH**

State-of-the art research center focusing on the prevention and cure of cardiological and neurological diseases

### **EDUCATION**

International education center disseminating latest knowledge and methods to healthcare professionals

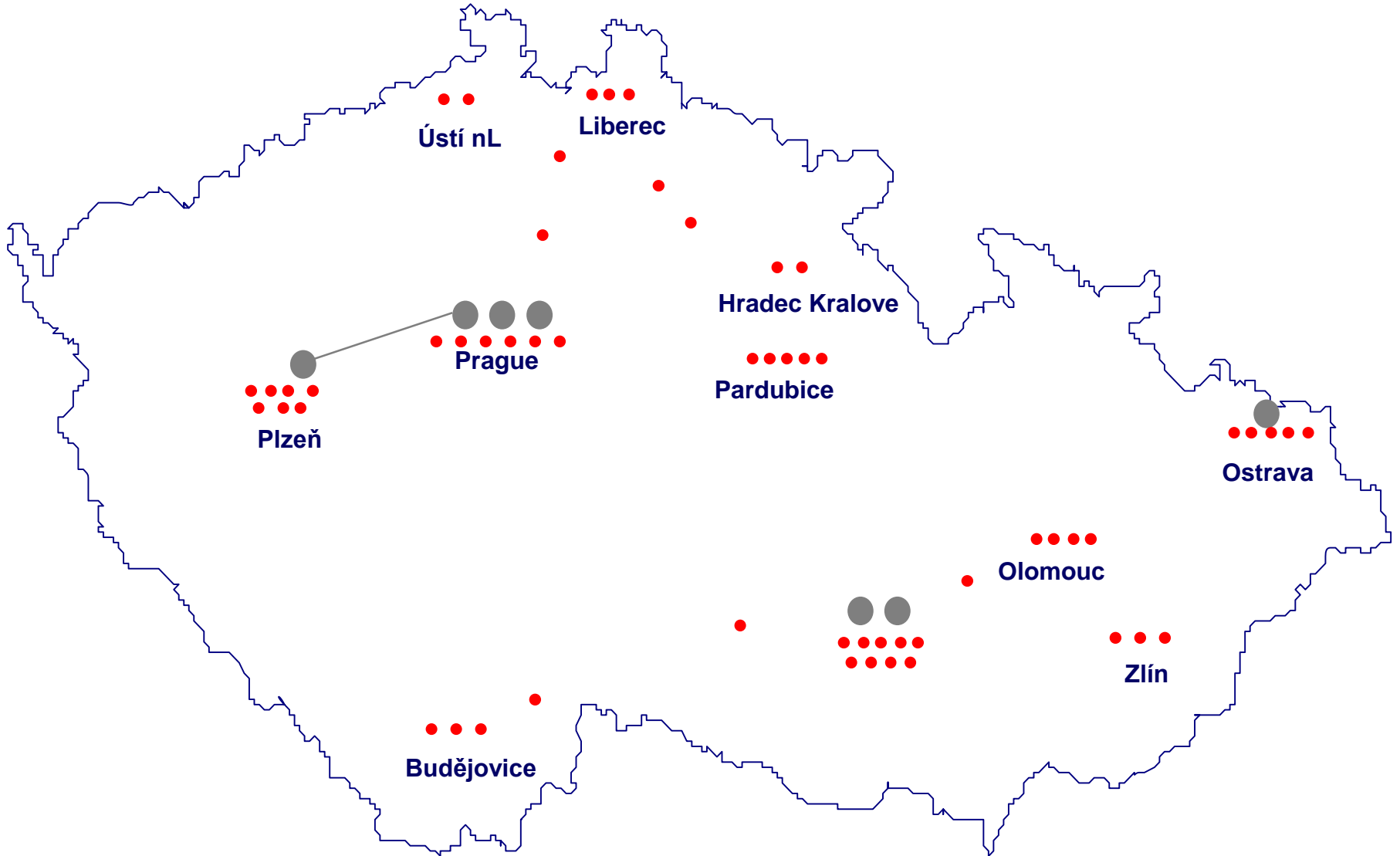
### **TECHNOLOGY TRANSFER**

Technology cluster of academic and industrial organisations

### **CLINICAL CARE**

ICRC is a fully-integrated part of St. Anne's University Hospital Brno

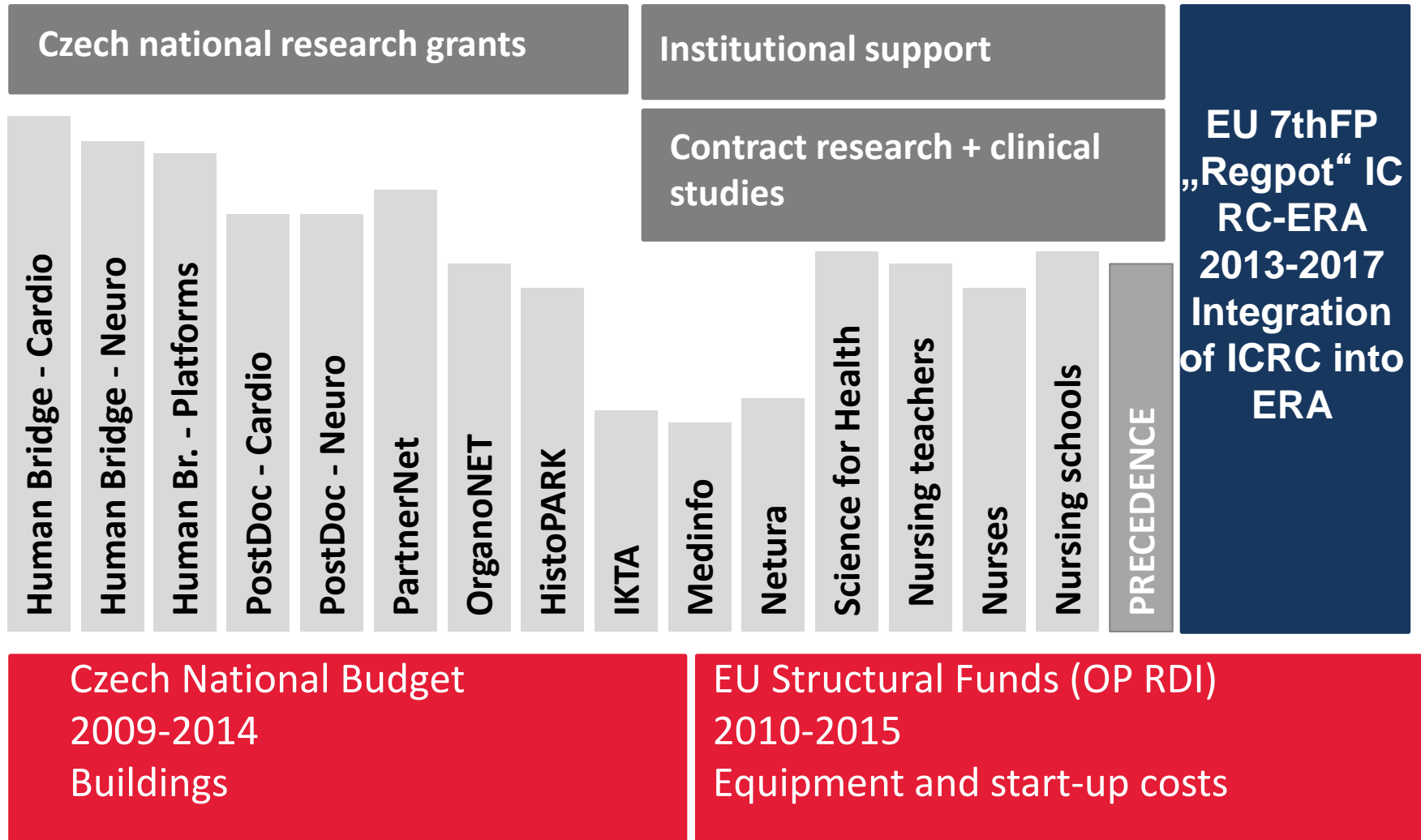
# New EU-funded R&D Centres



- History dating back to the middle ages (monastery)
- Opened in **1786** as royal charitable institution\*
- Re-established in **1863** as regional hospital
- Since **1919** a teaching hospital of Masaryk University
- 30 departments and institutes
- More than **3 000 employees**
- Nearly **28 000 in-patients** annually
- Approximately **1.5 million out-patients** annually

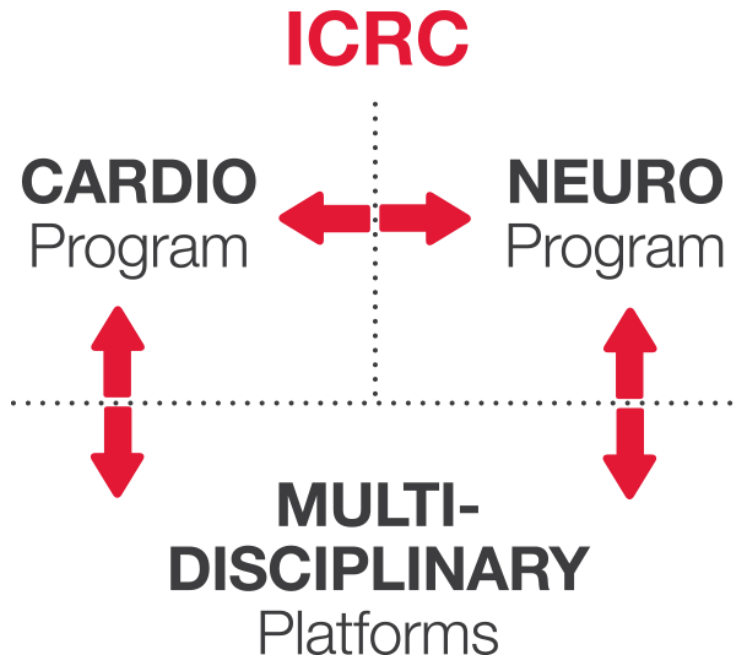


\* surgery, maternity ward, orphanage & lunatic asylum



# Visualisation of the Center





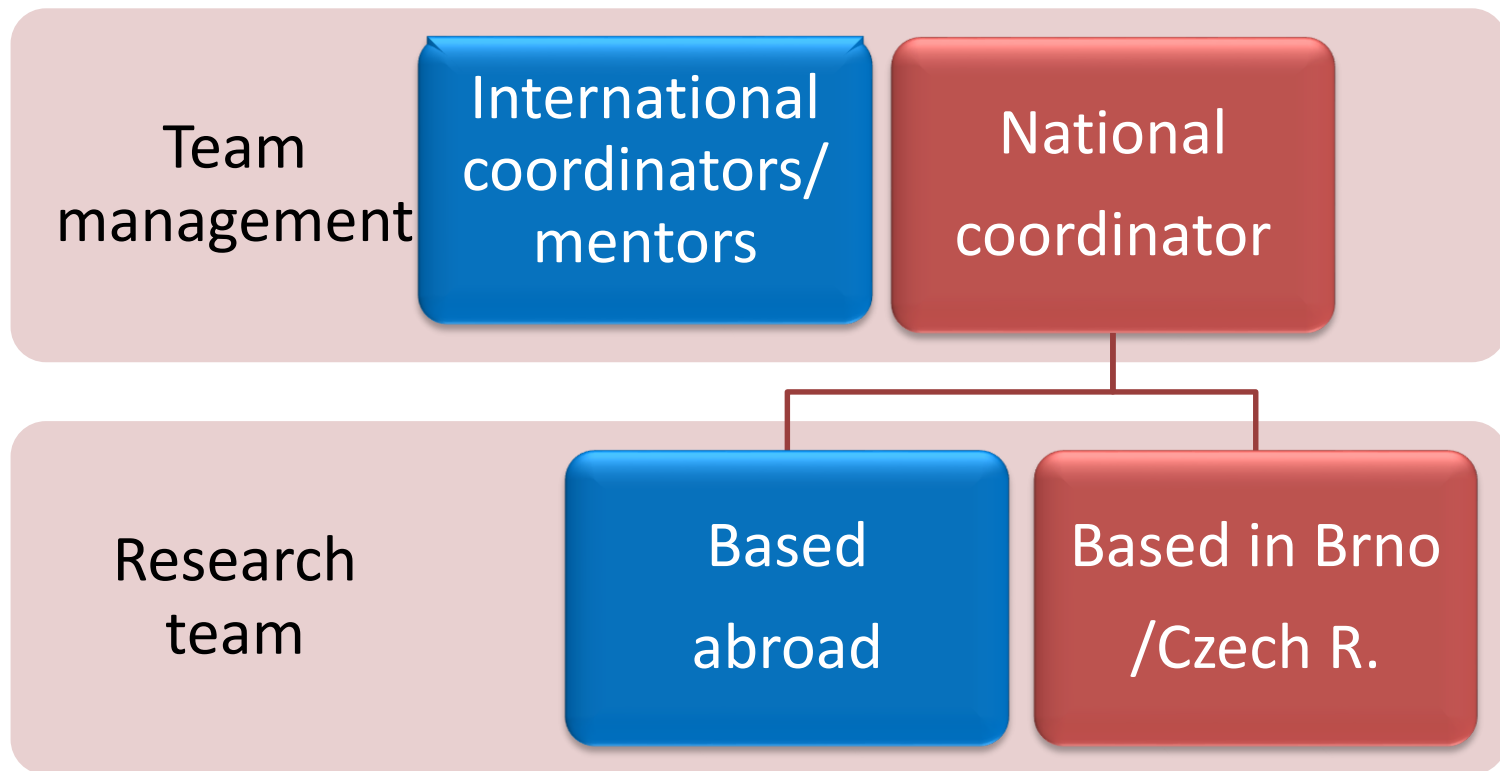
## 3 key directions

- Cardiovascular Program
- Neurological Program
- Multidisciplinary Platforms

## RESULTS

- diagnostic and treatment methods
- technologies
- medical devices
- medications

## ICCR's 17 International Research Teams





## Cardiology program

C1	Mayo Clinic
C2	Mayo Clinic
C3	Mayo Clinic
C4	Mayo Clinic
C5	Univ.of Dundee
C6	Mayo Clinic
C7	University College London

## Neurology program

N1	Mayo Clinic
N2	Mayo Clinic
N3	Mayo Clinic
N4	Mayo Clinic

## Platforms for experimental research

AC	-
CBCE	-
ICCTRM	Stem Cell Institute, Univ.of Minnesota
CBE	Mayo Clinic
CMI	<i>Univ.of Oxford – TBC</i>
CPU	-

- Novel **stem cell technologies** for improving myocardial regeneration
- New generation of **biological heart valves** replacements
- New **coronary stents and artificial vessels** using hi-tech bio- and nanotechnologies
- Research of **sleep apnea**
- Unique project **CardioVision Brno 2030** – marked reduction in cardiovascular mortality and morbidity in economically productive population
- New diagnostic and treatment algorithms for **stroke**
- Experimental **imaging** of the **central nervous system**
- Center for memory disorders within the research of **Alzheimer's disease**

- **CARDIO 1:** Cardiovascular and transplant surgery, heart failure treatment and transplant programs (Brooks S. Edwards, MD, PhD, Petr Nemec, MD, PhD)
- **CARDIO 2:** Interventional cardiology and acute coronary syndromes (David R. Holmes, MD, PhD, Ota Hlinomaz, MD, PhD)
- **CARDIO 3:** Cardiac electrophysiology and pacing (Samuel J. Asirvatham, MD, PhD, Miroslav Novak, MD, PhD)
- **CARDIO 4:** Cardiovascular and metabolic disorders (Virend K. Somers, MD, PhD, Tomas Kara, MD, PhD)
- **CARDIO 5:** Non-invasive cardiovascular imaging (Andreas Melzer, MD, PhD, Marek Orban, MD)
- **CARDIO 6:** Development of novel methods and interventions to reduce risk factors and cardiovascular diseases in the general population (Francisco Lopez-Jimenez, MD, MSc., Ondrej Sochor, MD)
- **CARDIO 7:** Tissue engineering in cardiovascular research (Christopher G. A. McGregor, MD, PhD, Pavel Piler, MD)

- **NEURO 1: Cerebrovascular Disease** (Andrei V. Alexandrov, MD, PhD, Robert Mikulik, MD, PhD)
- **NEURO 2: Neuroepidemiology** (Yonas Geda, MD, MSc, Jakub Hort, MD, PhD)
- **NEURO 3: Development of Advanced Neuroimaging** (Bredley J. Erickson, MD, PhD, Daniel Horinek, MD, PhD)
- **NEURO 4: Multiple Sclerosis**

- **AC: Animal Center** (Michal Vlasin, PhD)
- **CBCE: Center of Biomolecular and Cellular Engineering** (Ales Hampl, PhD)
- **ICCT: Integrated Center of Cellular Therapy and Regenerative Medicine** (Dan S. Kaufman, MD, PhD, Martin Klabusay, MD, PhD)
- **BME: Center of Biomedical Engineering** (Holmes David R. III., MD, PhD, Pavel Leinveber, MSc)
- **CMI: Center of Molecular Imaging** (Vladimir Kincl, PhD)
- **CPU: Clinical Pharmacology Unit** (Jiri Skopek, MD, PhD)

- A non-for-profit foundation, established in Rochester, Minnesota, in 1889
- Activities: research, medical care, education
- Employs over 54,000 people on three locations in the USA
- One of the leading healthcare facilities and medical research centers in the USA / in the world
- 3rd best hospital in the USA in 2013



- Dr. Tomáš Konečný (Cardio 4): **Young Investigator Award – First Prize, American College of Chest Physicians** annual scientific meeting, Honolulu, **2011**
- Dr. Tomáš Konečný (Cardio 4): **Young Investigator Award – 2nd Place, American College of Cardiology** scientific sessions, Chicago, **2012**
- Dr. Anna Svatíková (Cardio 4): 2nd place in the Clinical Medicine Podium competition at the 10th Annual **American Medical Association Research Symposium**, Honolulu, **2012**
- Dr. Tomáš Konečný (Cardio 4): **Cournand and Comroe Young Investigator Award – Finalist, American Heart Association** scientific sessions, Los Angeles, **2012**

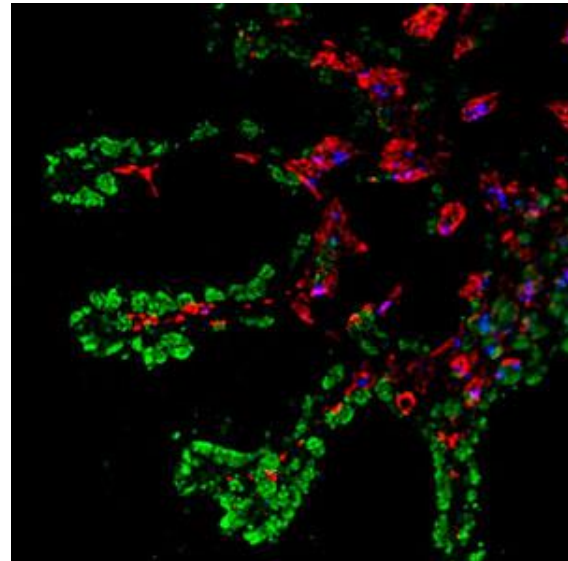
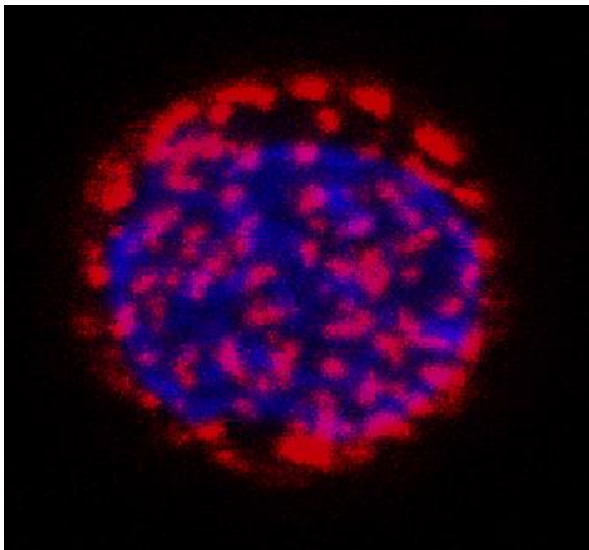
- Dr. Ivan Čundrle (Cardio 4): **2nd place in the Young Investigator Awards of the American College of Cardiology, 2013**
- Dr. Jan Laczó (Neuro 2): **Junior Faculty Award at the 11th International Conference on Alzheimer's and Parkinson's Disease in Florence, Italy, 2013**
- Dr. Zuzana Nedělská (Neuro 2): **Novartis Discovery Award, 2013**
- Dr. Ondřej Sochor (Cardio 6): **Best Poster Award - Annual Meeting of the American College of Cardiology, 2013**
- Dr. Tomáš Konečný (Cardio 4): **Best Innovation Award – 2nd Place, CRT (Cardiovascular Research Technologies) conference, Washington D.C., 2013**



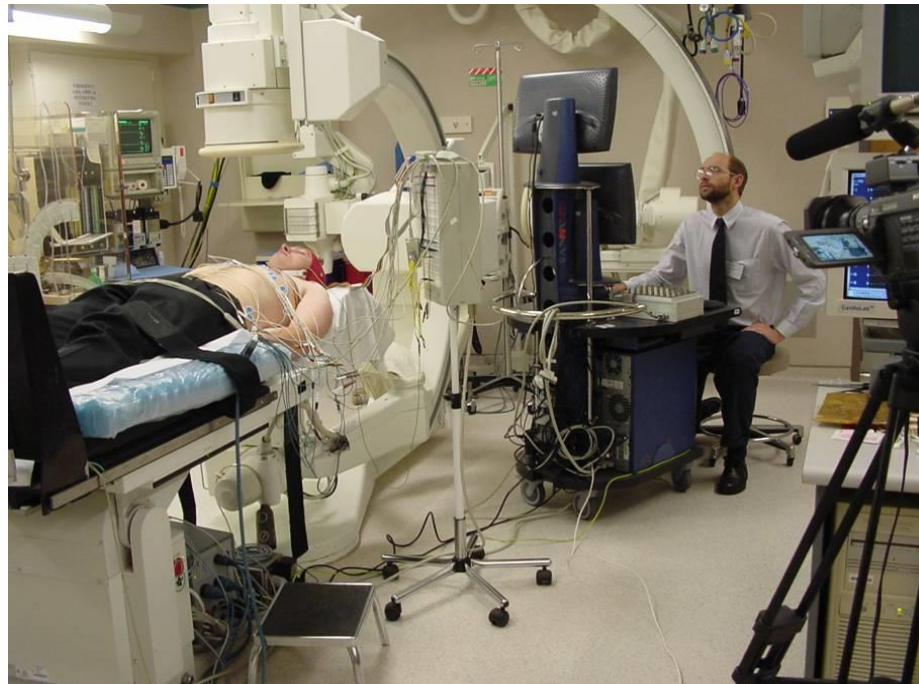
- University College London – part of the University of London
- 4th among the top-10 universities in the world in 2013 (QS World University Ranking)
- Collaboration concerns development of a new type of a biological heart valve



- One of the largest universities in the USA – 65,000 students in 2013/14
- Oldest stem cell institute in the USA, established in 1999
- Collaboration concerns the use of stem cells in the treatment of serious diseases and the regeneration of damaged body organs and tissues



- Largest medical school in northern Poland – 6,700 students 2013/4
- History dating back to 1935
- Collaboration concerns research in cardicascular medicine, particularly in sleep apnoea



- Large public research university: 47,000 students (2012/13)
- 5th fastest-growing research university in the USA
- Among top-10 universities worldwide in US patent applications
- Most modern Alheimers' Disease centre in the USA



- Università degli Studi di Milano
- University degli Studi di Brescia
- Universite Libre de Brussels
- University of Szeged
- University of Dundee
- Malmö Hogskola/University
- Dartmouth University
- Queensland Brain Institute
- Karolinska Institutet
- Mount Sinai School of Medicine
- German Heart Centre
- Veterinary University in Vienna
- University of Calgary
- University of Montreal
- Bulgarian Cardiac Institute
- Copenhagen University
- University of Franché-Comte
- Hopital Cardiologique du Haut-Leveque, University of Bordeaux
- Ins. de Génomique Fonctionnelle de Lyon

# The REGPOT Project

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- **Full name:** Human Bridge for Strengthening Integration of ICRC into the European Research Area
- **Acronym:** ICRC-ERA-HumanBridge - a.k.a. „REGPOT“
- **Duration:** 1. 9. 2013 – 31. 8. 2016
- **Funding:** EU 7th Framework Programme – REGPOT initiative (Research Potential of Convergence Regions)
- **Budget:** 4 .5 mil. EUR / 5.6 mil. USD / 100% EU funding
  
- 31 EU partner institutions for twinning
- 200 twinning visits + 100 conference visits
- 19 new researchers funded by the project to join ICRC
- Purchase of equipment, software and compound libraries
- 10 international conferences and workshops + 15 Mendel Lectures

Funded by  
the European Union



## What can FNUSA-ICRC offer

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- Unique combination of research and clinical practice
- Cooperation in all phases of development of new medical technologies and pharmaceuticals
- Openness to joint research projects
- Modern equipment, leading technologies
- Experienced and motivated research teams
- Collaboration with world leaders in medical research

- Joint research / development of new technologies
- Cooperation in clinical trials
- Joint applications for EU grants
- Education of medical / biotechnology students
- Continuing education of medical staff
- Joint cooperation with industry



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**Thank you for your attention!**

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