

# Introduction to the Bridges in Life Sciences

In 2006 Cedars–Sinai Medical Center (CSMC), Los Angeles, CA, USA with eleven CEE universities and academic organizations from six countries (Croatia, Czech Republic, Hungary, Romania, Slovakia, and Ukraine) formed the Regional Cooperation for Health, Science and Technology (RECOOP HST) Consortium.

## **Members:**

Cedars – Sinai Medical Center, Los Angeles, USA

School of Medicine University J. J. Strossmayer Osijek, Croatia

University of Split School of Medicine, Croatia

Faculty of Military Health Sciences, University of Defense, Hradec Kralove, Czech Republic

University of Debrecen, Hungary

University of Pecs, Hungary

University of Szeged, Hungary

Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

Slovak Medical University, Bratislava, Slovakia

Institute of Molecular Biology and Genetics, National Academy of Science of Ukraine, Kyiv, Ukraine

Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Institute of Cell Biology, National Academy of Sciences of Ukraine, Lviv, Ukraine

Danylo Halytsky Lviv National Medical University, Lviv, Ukraine

## **Associate Members**

Amosov National Institute of Cardiovascular Surgery, Academy of Medical Sciences of Ukraine, Kyiv, Ukraine

Comenius University in Bratislava, Slovakia

Faculty of Pharmacy, University of Copenhagen, Denmark

IKEM - Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Institute of Macromolecular Chemistry Academy of Sciences, Czech Republic

Institute of Physics, Wroclaw University of Technology, Wroclaw, Poland

University Hospital in Hradec Kralove, Czech Republic

The founders of RECOOP HST Consortium decided to review the scientific progress in the Consortium therefore organized the Bridges in Life Sciences Meetings.

The first “Bridges in Life Sciences” meeting was before the formation of the RECOOP organized by Cedars–Sinai Medical Center in collaboration with Fogarty International Center, National Institute (NIH) of Health USA, and it was held in Budapest, Hungary in October 2003. That meeting highlighted US – Central and Eastern European research collaborations in eight scientific tracks, providing an excellent networking opportunity for NIH-supported scientists from over ten CEE countries. The eight priority areas were: cancer, reproductive health, cardiovascular health, infectious diseases, neurosciences, functional genomics/proteomics and cell biology, environmental health, and behavioral health studies.

2<sup>nd</sup> Annual Scientific Meeting was on October 5, 2007 in Pecs, Hungary

3<sup>rd</sup> Annual Scientific Meeting in Zagreb, Croatia on October 4, 2008.

The Bridges in Life Sciences 4<sup>th</sup> Annual Scientific Meeting took place in Debrecen, Hungary on April 4 – 5, 2009. In Debrecen the RECOOP Consortium provided opportunities for young scientists to discuss the major public health problems in the region and engage with senior scientists from RECOOP, Visegrad Group (V4) academic organizations and NIH funded PIs from the USA with robust collaborative works in the CEE Countries.

The Bridges in Life Sciences 5<sup>th</sup> Annual Scientific Meeting was organized for the RECOOP HST member organizations and also for Universities and Research Institutes in Lviv, Ukraine on April 9 – 11, 2010

RECOOP HST Consortium was formed to help physicians, researchers and scientists to share new discoveries and develop better patient care. The Consortium enhances the research and development success of the participating organizations via training young scientists, and implementing multinational and multidisciplinary collaborations.

The main activity of the RECOOP HST Consortium is research networking to build multinational and multidisciplinary research teams to be able to investigate complex diseases that are the major public health problems (cardiovascular, cancer, neurodegenerative diseases, and women’s health and human development) in Central and Eastern Europe and worldwide

#### Research Networks:

Women's Health (WH) and Cardiovascular Diseases (CVD) Research Network

Mother and Child Health Research Network

Translational and Nano – Bio – Technology Research for Cancer Treatment

#### Support Networks

Network for Animal Care & Use in Research

Clinical Trial Site Management Network

Intellectual Property Education, Scholarship and Grantsmanship Network

## Dual Use of Biotechnology Training Network

### Innovation Management Network

The Research and Support Networks help **building multinational and multidisciplinary research teams to be able to investigate complex diseases that are the major public health problems like women's health and gender differences in cardiovascular diseases, preterm birth, and cancer.**

The main cause of women's mortality in the Central and Eastern European (CEE) region is cardiovascular disease (CVD) and cancer. Therefore, most health care professionals recognize CVD in women as a critical health problem in this area. One of the problems is insufficient data regarding CVD and its risk factors in women worldwide. The goal of the **WH&CVD Network** is investigating the gender differences in CVD and its management.

The other major health care problem, the relative neglect of preterm birth (PTB) is linked to data gaps on the global toll of prematurity, including the extent of associated death and disability. Partners of **Mother and Child Health Research Network (MOCHEA)** are making an undertaking to identify the risk factors of preterm birth, and the Network's major goal to assess the risk factors leading to preterm birth in Central and Eastern Europe (CEE).

Cancer metastases are the major contributing factors to the lethality and morbidity of the patients. Thus far the majority of the new-targeted therapies are designed based on the understanding of inter- and intra-cellular signaling pathways of cancer cells and the unique biology of organ-specific expression of molecular targets. Since the mortality of cancer has not been improved significantly, new approaches are needed to reduce the occurrence and the progression of human cancer. The **Translational and Nano-Bio-Technology Research Network** aims to bring together scientists from all research areas of Nano biotechnologies and develop new medical diagnostic and treatment modalities. The Research Network will develop multinational - multidisciplinary strategic research plan and will execute it to improve the quality of life for women diagnosed with breast and ovarian cancer, men with prostate cancer and both genders with lung and brain cancer.

The **RECOOP HST Consortium Support Networks** will provide infrastructural reinforcement for the research networks from preclinical use of research animals to randomized controlled clinical research. The Consortium provides advice and guidance for biosafety and bio-security in addition to training scientists for sound scientific communication in their manuscripts and presentation. It also helps with better understanding of innovation, bridges the innovation gaps in methodologies, procedures and products and steps toward more comprehensive and "state of the art" scientific solutions.

The RECOOP HST Consortium **Animal Care and Use (CAUSE) Network** closes the gaps between basic and clinical sciences and translates complex biological discoveries via preclinical animal research into medical advances. RECOOP HST Consortium CAUSE Network performed Program Status Evaluation (PSE) and SWOT analysis, and as a next step the Network creates guidelines and standard operating procedure (SOP) for the animal facilities. The CAUSE Network outlines biotechnology training programs for young researchers and PhD students for the use of research animals.

The members of RECOOP HST **Clinical Trial Site Management Network** (CTSMN) understood that many treatments are used without sound evidence and would like advocating the use of randomized controlled clinical research to prove efficacy of the diagnosis and the treatments. The CTSMN's goal is helping partner organization to establish clinical research training integrating biochemistry, immunology, genetics, and microbiology, underscoring their interrelationships in understanding the mechanisms of human body.

Members of the **BIOSECURE Network** will work to improve ways to control and manage biosafety and bio-security issues at the academic institutes and universities in the RECOOP HST Consortium. The Network provides advice and guidance for higher education in biological research and technologies, which have potential to be misused and would pose biologic threat to the public health or national security.

The **International Research and Innovation Management Training** (IRIM) Network inspires young scientists and clinical researchers for the creative thinking. It helps to learn how to make decision on “publish and disclose” or “publish and protect” procedure during researchers’ scientific work. The IRIM Network utilizes World Intellectual Property Organization (WIPO) World Wide Academy (WWA) Distance Learning (DL) courses for faculty members, managers, young scientists, clinicians and Ph.D. students as regular credit requirement to complete their qualification and to defend their doctoral thesis. The IRIM Network trains young scientists for proper and scientifically sound communication of their research results in their manuscripts and presentations. The Network provides practical training on the presentation of data in the manuscript from the “Introduction, Methods, Results and Discussion” to the “Conclusion” sections of the manuscript and guides the young scientists organizing data as tables and graphs and presenting results of statistical analysis.

The **Innovation Management Network** explores and enhances the research and development outputs of the member universities and/or academic organizations, creates critical mass of scientifically sound innovative biotechnologies and exploits the outcomes on the global market.

“The RECOOP HST Consortium explores and enhances the LOCAL scientific outputs of the partner organizations, creates critical mass of scientifically sound innovative biotechnologies at the REGIONAL level and exploits the outcomes on the GLOBAL market.”™

*Sandor G. Vari, MD,  
Director, International Research and Innovation Management  
Program Cedars-Sinai Medical Center & General Manager of the  
RECOOP HST Consortium*