

# Nencki Newsletter

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Polish Academy of Sciences

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**nencki** institute  
of experimental biology

*Building a Centre of Neurobiology at the Nencki Institute is a part of a large key project entitled Centre of Preclinical Studies and Technology (CePT).*



## The Nencki Neurobiology Centre

The Neurobiology Centre at the Nencki Institute is executed as part of a key project entitled Centre for Preclinical Research and Technology (CePT).

CePT is the top project on the indicative list for Operational Programme Innovative Economy. It has received confirmation of assistance from the European Commission. The Neurobiology Centre investment is executed under a bilateral agreement with the CePT project coordinator, the Medical University of Warsaw (MUW). The Nencki Institute along with the Medical University of Warsaw is one of the main beneficiaries of the CePT project. The value of the Neurobiology Centre (CN) investment has been estimated at 52 million PLN, which constitutes over 15% of the total value of the CePT project (359 million PLN). About 30 million PLN will be used to purchase research equipment; 15 million will be spent on construction works to extend both wings of the Institute building, while the remaining funds will be allocated to other project-related activities (project management and promotion, personnel costs, training, audit and general costs).

After two years of intense preparatory works and following the settlement of a public tender for the construction design, the works have started in May of 2010 and will continue for 19 months. The CN investment is supervised by a team overseeing implementation of the CePT Project at the Nencki Institute. The team is coordinated by Marcin Szumowski, Nencki Institute director's proxy for the CePT project and consists of Anna Jachner (construction coordinator), Hanna Michalska (financial coordinator) and Prof. Jerzy Duszyński (scientific coordinator). During the preparatory stage the following other people have been actively involved: Leszek Kaczmarek (scientific coordinator for the CePT research programme representing all seven institutes of the Polish Academy of Sciences), Urszula Sławińska (coordinating the analysis of functional requirements of the CN investment).

A number of core facilities will be established at the Institute after the CN investment is completed in 2012. These labs will be furnished with state-of-the-art research equipment and will provide services not only to researchers working at the Nencki Institute and partners of the CePT consortium, but also to scientists from other research centres in Poland and abroad. Execution of the CN investment will enable the Institute to assume a leading role in pan-European initiatives, such as the EuroBioImaging project ([www.eurobioimaging.eu](http://www.eurobioimaging.eu)) listed on the roadmap of the European Strategy Forum for Research Infrastructures (ESFRI).

The cluster of core facilities within the Neurobiology Centre shall, among other, create a supportive environment enhancing professional development of the most talented researchers in the fields of neurobiology, biochemistry and molecular biology in Europe and in the world. We hope that the CN investment, strengthened by an inflow of human capital and execution of ambitious, international research projects shall, within the next ten years, place the Nencki Institute among the best research institutions in the field of biology in Poland as well as among leading European research centres.



## The 2010 Nencki Award

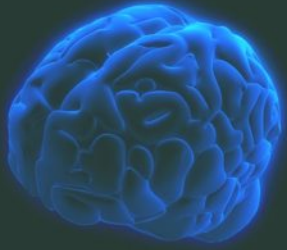
Professor Ernesto Carafoli (Italy/Switzerland) was awarded the 2010 Nencki Prize.

At present Ernesto Carafoli works at the University of Padua. He is a world-renown specialist in the role of calcium as signalling molecule in cell metabolism as well as in  $Ca^{2+}$  - transport across biological membranes. He is also an expert in calcium homeostasis in the cell and the role of  $Ca^{2+}$  in the regulation of cellular metabolism. Carafoli was one of the first to discover energy-dependent accumulation of calcium within mitochondria. He studied the calcium pump of the plasma membrane and contributed to its isolation, purification and characterization as an enzyme (" $Ca^{2+}$  - pumping ATPase"). More recently, Ernesto Carafoli studied various aspects of  $Ca^{2+}$  function as signalling molecule, in particular in the nucleus.

Professor Carafoli served as Chairman of the International Cell Research Organization and on editorial boards of several professional journals. At present he is a member of the Editorial Board of Biochemical and Biophysical Research Communications.

Professor Carafoli's close contacts with Polish scientists date back to the late 1960s when he visited various Polish universities and research institutes under the so-called "twin cities programme" (Modena - Lublin). Ernesto Carafoli's laboratory in Zurich hosted several researchers from the Nencki Institute either as post-docs or short-time visitors. During the times of the martial law in Poland (December 1981) Professor Carafoli supported Polish scientists living in Switzerland.





## The 2010 Brain Awareness Week in Warsaw

The 2010 Brain Awareness Week took place in Warsaw between March 13 and 19, 2010 as part of a global educational campaign called the International Brain Awareness Week. This international event has been organised for the 15th time on the initiative of the International Alliance for Brain Initiatives DANA. Each year, in the third week of March, a multitude of events are held in different countries to popularise knowledge about the brain, its function in health and disability. They introduce the newest scientific achievements in the field of brain research and raise social awareness of the significance of conducting scientific research on the nervous system. For the past 13 years the Brain Awareness Week has been organised in Warsaw annually by the Polish branch of the European Dana Alliance for the Brain (EDAB), the Polish Neuroscience Society and the Nencki Institute of Experimental Biology of the Polish Academy of Sciences with support from the Committee on Neurobiology of the Polish Academy of Sciences and the editorial office of Polityka, a Polish weekly magazine. As always, this year's lectures were delivered by invited speakers, distinguished specialists in neurophysiology and psychiatry.

All talks were open to the public and took place in the editorial office of Polityka at Ślupecka 6. They were addressed to those interested in research on the nervous system, from middle and high school students, through university students, teachers, and students of universities of the third age.

This year, for the first time ever, some lectures (Prof. Andrzej Wróbel's and Prof. Irena Namysłowska's) were broadcasted on-line and net users took part in the discussion. Their comments and numerous phone calls showed great interest in this form of attending the lectures and it shall therefore be repeated in the next edition of the Brain Awareness Week. A video recording of the lecture by Prof. Namysłowska will also be available off-line on the web site of the Brain Awareness Week.

Lecture participants were given brochures prepared by the DANA Alliance, popularising knowledge about the brain and ways of keeping it in excellent condition. The brochures also included hints and information on coping with the nervous system diseases. Even though the publications were available only in English, they aroused great interest.

The 2010 International Brain Awareness Week could not have taken place without contests, which aimed to kindle interest in knowledge about the brain among young people. This year we have expanded the scope of the contests and announced them not only in Warsaw and the Mazovia Region but also elsewhere in Poland. Our four contests targeted a wide spectrum of children and youth:

### A LITERARY CONTEST

"People, discoveries, anecdotes - history of Polish neurophysiology"

### AN IT COMPETITION

for a web page design for the 2011 Brain Awareness Week, "Show your good side"

### AN ART CONTEST

for the 2011 Brain Awareness Week poster,

### MUSIC CONTESTS

for a song with "neuronal" themes, "What's playing in the head?".

An independent evaluation committee was appointed for each competition and consisted of experts in the respective areas. Judges for the literary contest were joined by two editors from Polityka: Paweł Walewski and Marcin Rotkiewicz. The scientific accuracy was assured by Prof. Teresa Górska and Doc. Małgorzata Skup (contest chairperson), while the literary value of the entries was judged by Ola Janusz.

## Lectures during the 2010 Brain Awareness Week:

- Prof. Andrzej Wróbel  
(Nencki Institute of Experimental Biology of the Polish Academy of Sciences, Warsaw) *The Awareness of Vision*
- Prof. Małgorzata Kossut  
(Nencki Institute of Experimental Biology of the Polish Academy of Sciences, Warsaw) *Neuroplasticity and Neurorehabilitation*
- Prof. Jolanta Zawilska  
(Medical University of Lodz, Institute for Medical Biology of the Polish Academy of Sciences, Lodz) *Enhancers and shaman's herbs – cogito? ergo sum?*
- Doc. Leonora Bużańska  
(Mossakowski Medical Research Centre, Polish Academy of Sciences, Warsaw) *The Janus face of the neural stem cell*
- Prof. Irena Namysłowska  
(Institute of Psychiatry and Neurology, Warsaw) *Eating disorders – anorexia nervosa and bulimia. Soul ailments infecting the body.*

We were honoured to have Prof. Jan Madey from Faculty of Mathematics, Informatics and Mechanics of the University of Warsaw, President of the Polish Children's Fund, on the web page evaluation committee along with Piotr Marzec, an expert in web sites utility from Google and Piotr Kurdel, IT specialist from Netiology. Organisation of the IT competition was supervised by Gabriela Mochol.

The best art work from over a hundred entries was selected by a jury consisting of: Doc. Tomasz Werka and Katarzyna Biegańska from the Nencki Institute of Experimental Biology and Olga Wróblówna, an artist and designer from the Sojuz company.

The results were announced during an award ceremony at the Polityka editorial office on Tuesday, March 16 (literary contest), Wednesday, March 17 (IT competition) and Thursday, March 18 (art contest). Marek Matuszak, 3rd year student of Secondary School No 2 in Gubin won an award for his essay on Polish neurophysiologists. Kamil Kufel, a thirteen year old student from Secondary School No 50 in Bydgoszcz won the 1st place in the IT competition, Jakub Foltyn and Kamil Jędrkiewicz, students of the Mechanical and Electric School in Żywiec took second place ex aequo with Patryk Rypień and Marcin Czarniecki from the same school. The best posters were sent by Karolina Posiadała from an elementary school in Skórzec and Magda Rolle-Oszywa from a secondary school in Wierzychucin Królewski.

Winners received diplomas and awards: books (supplied by Prószyński and S-ka Publishing House and the University of Warsaw Publishers), subscription to the journals *Wiedza i Życie* and *Świat Nauki* (funded by Wikom, a company specialising in computer image analysis and an interdisciplinary faculty of Neurocognitive Science of the Warsaw School of Social Sciences and Humanities, combining cognitive psychology with neurobiology) and gifts funded by the Nencki Institute of Experimental Biology and the Sojuz and Google companies. Winning entries in the IT and art contests will be used as the official web site and official poster for the 2011 edition of the Brain Awareness Week.

We would like to thank the following web portals for spreading information about the 2010 Brain Awareness Week and our lectures and contests: Polityka.pl, Polish Press Agency Service – Science in Poland, Gazeta.pl, Naukowy.pl, Biolog.pl, Supermózg.pl, gablotka szkolna web site, the school section of the Wirtualna Polska portal, the Education Committee in Warsaw, nationwide education offices, the following journals and papers: *Świat Nauki*, Polityka, Forum, Stołeczna as well as Program 1 of the Polish Radio and TVP Info television station.



For more information please visit the 2010 Warsaw Brain Awareness Week web site at <http://www.ptbun.org.pl/tm2010>. Please visit our photo gallery and exhibition of works entered in the art contest.

## Second Polish-Norwegian Neuroinformatics Workshop

The Second Polish-Norwegian Neuroinformatics Workshop entitled "How to model neurons and neural systems? Integrating biophysics, morphology, and connectivity" was held at the Nencki Institute on January 14-15, 2010. It was sponsored by the Polish-Norwegian Research Fund and the Nencki Institute. The main goal of the workshop was to discuss different aspects of modelling the nervous system from the cellular to the systems level.

Prof. Rodney Douglas, Director of the Institute of Neuroinformatics in Zurich opened the workshop with a lecture entitled „Can we build a brain?" He addressed the difficulties facing today's attempts to build hardware or software mimicking or simulating higher functions of the nervous system. Over 70 people from about 35 institutions attended the workshop, including 25 foreign participants and 15 people from Nencki.

Details of the workshop are available at <http://www.neuroinf.pl/NIWorkshop2010>



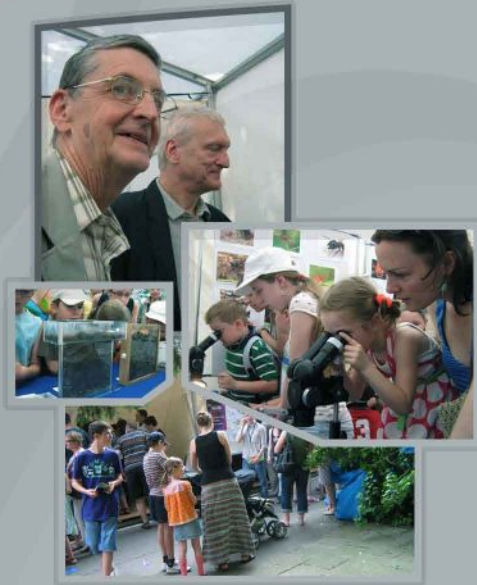
## 14<sup>th</sup> Scientific Picnic of the Polish Radio and the Copernicus Science Centre

On June 12, 2010 the 14th Scientific Picnic was held in Warsaw. This year the picnic's motto was: „The Great MicroWorld" and it brought together more than 200 institutions.

Nencki Institute's contribution to the 2010 edition of the scientific picnic was a series of presentations entitled: "Huge societies of tiny citizens" prepared by the staff of the Laboratory of Ethology headed by Prof. A. Godzińska.

Presentations on the Polish ants' colonies were a huge success. Visitors to our booth got to know how ants are reared under laboratory conditions, learned about the demography of an ant colony and the mechanisms of efficient organization and functioning of great societies consisting, for some species, of millions of individuals. Our posters showed huge societies of some ant species and their fantastic and diverse shapes under large magnification.

We were delighted to organise a special competition for children who drew pictures of ants. We awarded the best works and put them on display.



## Laureate of the "Homing Plus" programme of the Foundation for Polish Science



Sixteen young researchers working abroad and foreign post-docs training in Poland were granted scholarships under the "Homing Plus" programme.

One of them was Dr. Krishendu Ganguly, from the Nencki Institute, Laboratory of Molecular Neurobiology, headed by Prof. Leszek Kaczmarek. He was awarded nearly 300 thousand PLN.

The purpose of the "Homing Plus" programme is to encourage young Polish researchers working abroad to return and foreign PhDs to start their training in Poland. Laureates receive scholarships of up to 5 thousand PLN monthly with a yearly research subsidy of 80 thousand PLN. The programme is executed by the Foundation for Polish Science and financed from European funds under the Operational Programme Innovation Economy 2007-2013.

More information at [http://www.fnp.org.pl/programy/aktualne\\_programy\\_fnp/stypendia\\_i\\_subsydia/program\\_homing\\_plus](http://www.fnp.org.pl/programy/aktualne_programy_fnp/stypendia_i_subsydia/program_homing_plus)



## TEAM Project for Agnieszka Dobrzyn

We are pleased to inform that Dr. Agnieszka Dobrzyn, Head of the Laboratory of Cell Signaling and Metabolic Disorders is a winner of the TEAM Programme competition. The program is executed by the Foundation for Polish Science through EU Structural Funds under the Innovative Economy Operational Programme.

The main objective of Dr. Dobrzyn's project is to elucidate molecular and cellular mechanisms of insulin resistance and of pancreatic beta-cell dysfunction and apoptosis, associated with obesity. The study will be focused on the signalling pathways involved in lipid metabolism regulation, transcription factors, and functional analysis of the insulin pathway. Viral gene therapy, functional genomics and biochemical approaches will be used to uncover the molecular mechanisms of lipid-induced muscle and pancreatic beta-cell dysfunctions. This will broaden the molecular understanding of obesity related diabetes and may help define new therapeutic targets in the treatment of type 2 diabetes.

We are seeking motivated graduate students, PhDs and post-doctoral researchers to work on the TEAM project. Candidates from all countries are welcome to apply.

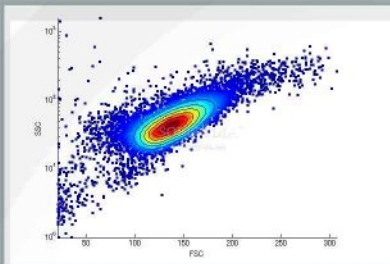


Application deadline:  
September 10, 2010 (PhD and MSc students)  
October 15, 2010 (post-docs)  
Start date: December 1, 2010  
For more details see: <http://team.nencki.gov.pl/>

## New lab of Cytometry

The Nencki Institute of Experimental Biology in Warsaw established a new Laboratory of Cytometry. It will be headed by Dr. Katarzyna Piwocka.

The lab will provide core-facility services, high quality expertise and training in flow cytometry for in-house and outside investigators. It will be involved in research and innovative projects, based on high-tech flow cytometry applications. Lab members will provide training; organize courses and workshops in advanced flow cytometry techniques. Currently the lab is equipped with the BD FACSCalibur flow cytometer, FACS Aria cell sorter and iCys scanning cytometer. In the near future the 4-laser LSR Fortessa cytometer will be added, currently the best analyser on the market, providing high-quality multiparameter cytometric analysis. All researchers are invited for collaboration.



<http://innovation.nencki.gov.pl>

## Inventions from the Nencki Institute

Two patent applications have already been submitted by Nencki scientists under the Nencki Institute Innovation Platform established in January of 2010.

Andrzej Kubalski, PhD and Piotr Koprowski, PhD invented a novel tool for identification of potential antibacterial compounds. It is based on a high throughput screening method for substances that can activate or inhibit bacterial membrane channels. Ordinary screening methods detect inhibition of bacteria growth, while the new tool identifies compounds that enhance growth of special varieties of E.coli.

The authors of the second invention, Prof. Elżbieta Szelaż and Dr. Aneta Szymaszek have developed a special device and method to stimulate the mind of adults and children. It has possible therapeutic applications in aphasia after stroke, delayed development of speech, dyslexia, age-related dementia, as well as non-therapeutic uses for learning of foreign languages, reading or writing, enhancing memory, concentration, awareness and multitasking abilities.

Scientists interested in patenting their results are encouraged to visit the Nencki Institute Innovation Platform.

Companies and institutions interested in implementation of the inventions are asked to contact the Office of International Cooperation and Project Management.



## 16<sup>th</sup> European Bioenergetics Conference (EBEC)



The 16th European Bioenergetics Conference (EBEC) was held in Warsaw on July 17-22, 2010 [www.ebec2010.pl](http://www.ebec2010.pl). The Conference was organized by the Nencki Institute of Experimental Biology, the Polish Mitochondrial Network and the Bioenergetic Section of the Polish Biochemical Society and it brought together over 530 researchers from all over the world.

Two Nobel Prize winners, Sir John Walker and Professor Hartmut Michel, inaugurated the Conference. The EBEC2010 programme included the "Peter Mitchell Medal Lecture", three special lectures, 19 plenary talks and 90 symposia lectures. Two hot topic discussions and two methodology workshops were also held and over 250 posters were shown. During the lecture of Professor Ernesto Carafoli, he was presented with the 2010 Nencki Award.

Nencki scientists actively participated in the Conference: Professor Jerzy Duszynski delivered a plenary lecture, while Dr. Agnieszka Dobrzyn and Dr. Mariusz Wieckowski gave symposia lectures. Researchers from Nencki chaired a number of the Conference lecture sessions.

Conference materials were published in the *Biochimica et Biophysica Acta – Bioenergetics* and *FEBS Letters*. Special editions of *Mitochondrion* and *Molecular Membrane Biology* journals will also be printed.

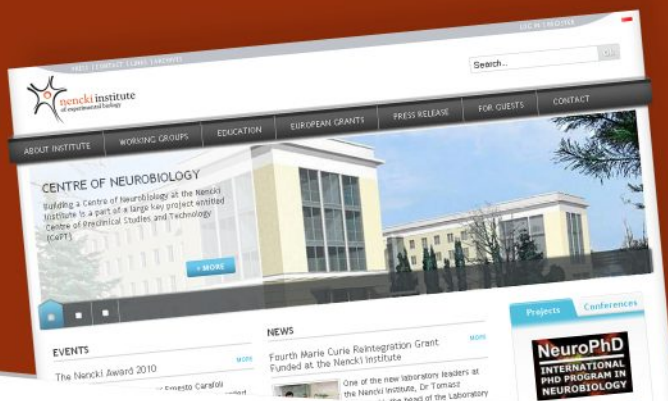


## Fourth Marie Curie Reintegration Grant Funded at the Nencki Institute



One of the new laboratory leaders at the Nencki Institute, Dr Tomasz Wilanowski, head of the Laboratory of Signal Transduction has been awarded a 7th Framework Programme Marie Curie Reintegration Grant. The project entitled The Role of the Grl1 gene in skin cancer will last four years and is funded by the European Commission at the level of 100 000 Euro. The aims of this project are to further characterize PI3K/Akt signaling in skin and tumors of the Grl1-null mice, to establish the direct role of Grl1 in influencing this pathway and to determine whether the Grl1 gene also functions as a tumor suppressor in the context of human SCC. To achieve these goals, Dr Wilanowski's group will use a multidisciplinary approach, utilizing their established molecular, genetic, biochemical and bioinformatic resources. Their findings will improve the understanding of the biology of SCC, and may provide strategies for both its treatment and prevention.

Dr Wilanowski joins three other recipients of Marie Curie reintegration grant awards in FP7: Dr. Katarzyna Kalita, Dr. Małgorzata Zawadzka and Dr. Katarzyna Radwańska. This brings the number of successful applications to four talented young researchers who have returned from abroad to pursue their scientific careers at the Nencki Institute.



## New Nencki Institute Web page launched in August 2010

Please visit us at: <http://www.nencki.gov.pl>