



ELECTION OF THE VICE-DEAN FOR SCIENCE AND INTERNATIONAL AFFAIRS



In July Prof. Zbigniew Madeja took the post of Dean of the Faculty of Biochemistry, Biophysics and Biotechnology so the position of Vice-Dean for Science and International Affairs became vacant and therefore

election of a new Vice-Dean was held on 14 November, 2014. Pursuant to the decision of Faculty Council, this position will be held by Prof. Jolanta Jura.

Professor Jura graduated from the Faculty of Biology and Earth Sciences, Nicolaus Copernicus University in Toruń. In 1994 she earned her doctoral degree at the Karol Marcinkowski Medical Academy (at present Karol Marcinkowski University of Medical Sciences) in Poznań. Six years later, Professor Jura obtained habilitation at the Faculty of Biology, Adam Mickiewicz University in Poznań.

During her PhD studies, Professor Jura completed two foreign short-term research internships: at the Institute of Human Genetics, University of Göttingen and at the Institute of Human Genetics, University of Bonn, both in Germany. In 1996 the Foundation for Polish Science awarded Professor Jura a scholarship to pursue her research at the Brigham and Women's Hospital, Harvard Medical School, Boston, USA (1996-1998).

Professor Jura's doctoral and habilitation theses focused on human genetics. Their aim was to characterize gene mutations at the DNA sequence level that cause common genetic disorders. During that period, her publications addressed the following topics: mutations of the dystrophin gene, adenomatous polyposis coli gene (APC) and the TSC1 gene which may

cause tuberous sclerosis 1. She also focused on searching mutations of genes in the human 9q34 region and their molecular genetic analysis. The results were published in prestigious journals including Human Genetics, Genomics, Biochimie, Science, Annals of Human Genetics and New England Journal of Medicine.

In 2001 Professor Jura joined the Jagiellonian University Faculty of Biochemistry, Biophysics and Biotechnology and since 2013 she has been the Head of the Department of General Biochemistry. Currently, her interests lie mainly in regulation of inflammatory processes at the molecular level and aetiology of selected inflammation-mediated conditions (metabolic syndrome, skin diseases, neoplasms). Professor Jura has worked with her team on molecular characterization of genes and proteins, initially identified with the use of microarray techniques and differential expression analysis, which are involved in regulation of inflammatory processes. One of their considerable achievements was identification of the MCPIP1 protein to be an important regulator of the inflammatory response. Professor Jura revealed that the MCPIP1 protein is an RNase targeting transcripts of the proinflammatory cytokines and regulates adipocyte differentiation. Articles concerning these topics were published in *Biochimica et Biophysica Acta – Molecular Basis of Disease*, *FEBS Journal*, *Biochemical Journal*, *Journal of Innate Immunity* and *Journal of Nanomedicine*. The research tasks have been carried out under projects financed by the National Science Centre (NCN) of the Ministry of Science and Higher Education or in the framework of EU-funded grants.

Professor Jura is a member of the Polish Genetical Society, Polish Biochemical Society (since 2011 she has held the position of President of the Kraków branch of the Society) and the European Society for Dermatological Research.

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FACULTY CHRISTMAS GATHERING

Special meetings of the Faculty community, held just before the Christmas break (this year on 18 December), has already become a tradition. The standing agenda included a multigenerational Faculty choir concert of carols beautifully sung under the direction of Damian Ryszawy followed by breaking of the Christmas wafer and wishing each other a Merry Christmas and a Happy New Year. The participants highly appreciated the room décor and enjoyed the food very much.

At the end, students of biophysics, members of the Student Research Club "Nobel", performed a play "Rudolphina the Red-Nosed Reindeer" of their own authorship.

The play was based on the story of the Rudolph the Red-Nosed Reindeer. In the "Nobel" version Rudolph was replaced by Rudolphina, a female PhD student who has been unsuccessful in research. Discouraged with the lack of promising results, Rudolphina decided to seek her fortune elsewhere. She took to philosophy but philosophy students laughed at her understanding of the truth of experimental

science. Rudolphina was fired from a fast-food bar for providing customers with information about unhealthy effects of the offered food on their body. At the end Rudolphina returned to her PhD studies and met a group of students who discussed an extremely difficult problem. She realised that she was able to answer all their questions and easily explain complex issues. Rudolphina's skills were immediately recognized by the Lab Head – Santa Claus. Rudolphina found her own place where she could fully develop her abilities and the students gained a tutor with a strong vocation for teaching. And they lived happily ever after.

The team of screenwriters and directors consisted of Alicja Cieślewicz, Katarzyna Liचाńska, Katarzyna Radoń and Anna Sawicka. These people, together with Jacek Buczek, Kamil Deręgowski, Adam Górka, Artur Kowalik, Bohun Mielecki, Zuzanna Pakosz and Małgorzata Wolska, were also involved in featuring and technical support. As it could have been expected, the play evoked a strong positive emotional reactions.

UNIVERSITY OF YOUNG INVENTORS



Uniwersytet
Młodych Wynalazców

In November, the Faculty of Biochemistry, Biophysics and Biotechnology was awarded a 50,000 zł fund from the "University of Young In-

ventors" programme of the Ministry of Science and Higher Education. The aim of this project is to develop cooperation of secondary schools and universities.

The winning project entitled "Cell metabolism and toxic agents" will be implemented in collaboration with the August Witkowski General Education Secondary School No. 5 (V Liceum Ogólnokształcące im. Augusta Witkowskiego) in Kraków, from December 2014 till October 2015. The project is coordinated by Dr Beata Myśliwa-Kurdziel of the Department of Plant Physiology and Biochemistry and Monika Rak of the Department of Cell Biology.

The planned activities aim at stimulating school students' interest in science, covering both theoretical and experimental aspects. This project will start from lectures for all 2nd grade students of the Witkowski Secondary School (1st stage). It will be an excellent op-

portunity to meet the academic staff and get acquainted with the research conducted at the Faculty. The 2nd stage will include searching the digital databases accessible in the Jagiellonian University network and consultations with the scientific staff and PhD students of the Faculty of Biochemistry, Biophysics and Biotechnology in order to gain the basic knowledge in biochemistry, biophysics and biotechnology. In this way, the students will be prepared to start the 3rd stage of the project, i.e. practical workshops.

Only highly motivated students with sufficient manual skills will be qualified to perform more advanced experiments in specialist laboratories of the Faculty (stage 4th). The final stage is to summarise the project outcomes and it will take a form of a conference organized in the Witkowski Secondary School. During this conference, the project participants will have an opportunity to present their achievements to an audience of teachers and colleagues. The results can be incorporated into papers submitted to the Science Olympiads.

The central idea of the project is to show young people how scientific discoveries have changed the world and everyday life.

DOCTORATES IN BIOTECHNOLOGY

By an order of the Central Commission for Academic Degrees and Titles of 28 October 2014, the Faculty of Biochemistry, Biophysics and Biotechnology obtained the right to award the degree of Doctor of Biological Sciences in

Biotechnology. Until now, the Faculty Council could award degrees only in biology, biochemistry and biophysics. Broader powers will help to more precisely match degrees to the investigations performed.

GRANTS AND SCHOLARSHIPS

Grants for the Faculty of Biochemistry, Biophysics and Biotechnology research staff under the OPUS, PRELUDIUM and SONATA programmes

On the 13th of November 2014, the results of the 7th edition of the OPUS, PRELUDIUM and SONATA competitions (National Science Centre) were announced. The following scientists were among the winners:

- Dr Witold Korytowski from the Department of Biophysics (project entitled: "Cholesterol hydroperoxides – impairment of the steroid hormone biosynthesis system under oxidative stress conditions", financing of 846,000 zł, OPUS 7);
- Dr Benedykt Władysław from the Department of Analytical Biochemistry (project entitled: "Toxin-antitoxin systems as the regulators of gene expression in staphylococci", financing of 879,220 zł, OPUS 7);
- Piotr Konieczny, MSc, from the Department of General Biochemistry (project entitled: "Role of the MCPIP1 RNase in proliferation and differentiation of human primary keratinocytes", financing of 148,200 zł, PRELUDIUM 7);
- Maciej Michalik, MSc, from the Department of Plant Physiology and Biochemistry (project entitled: "Reconstitution and modification of the LHCI antenna complex cofactors", financing of 100,000 zł, PRELUDIUM 7).

IUVENTUS PLUS Programme

Dr Anna Grochot-Przęczek from the Department of Medical Biotechnology was a winner of the 4th edition of the "Iuventus Plus" competition organised by the Ministry of Science and Higher Education. This competition is open to young scientists who carry out high-quality research and have considerable scientific achievements.

Dr Anna Grochot-Przęczek will investigate the role of the SDF-1, GDF-15 and Nrf2 in an-

giogenesis. The research will continue over the next two years and will include in vivo experiments on animal models.

This year, 549 competition applications were assessed of which 145 projects were selected to receive funding.

L'Oréal habilitation fellowship

Dr Joanna Kozieł, Assistant Professor at the Department of Microbiology, is one of the three winners of the L'Oréal habilitation fellowship. The winners were announced during the 14th gala event which took place in Warsaw on 28 November, 2014.

As a member of Professor Jan Potempa's team, Doctor Kozieł has worked on interactions between pathogenic bacteria and the host immune system at the molecular level. She is particularly interested in the effect of pathogenic bacteria on the immunological response with special reference to the development and regulation of non-specific defence mechanisms. In her research, Doctor Kozieł focuses mainly on new virulence mechanisms of bacteria in staphylococcal infections and periodontitis. Understanding of bacterial strategies for overcoming host immune responses provides a useful starting point for the development of new drugs to fight the increasing problem of antibiotic-resistant bacterial infections.



Dr Joanna Kozieł

Scholarships of the Ministry of Science and Higher Education

Outstanding doctoral and graduate students were awarded scholarships for the 2014/2015 academic year by the Minister of Science and Higher Education. Four graduate students of our Faculty of Biochemistry, Biophysics and Biotechnology were among the winners: Justyna Godoś and Alicja Karabasz (biochemistry) and Sara Przetocka and Marta Seczyńska (biotechnology).

WORKSHOPS AND TRAININGS

Second Polish-French Scientific LIA Workshop

On 4-6 December 2014, a LIA (Laboratoire International Associé) workshop was held at the Jagiellonian University's Collegium Maius, Kraków. It was second of the series of workshops provided for in the Agreement establishing the International Associated Laboratory. LIA was built upon the Jagiellonian University Department of Medical Biotechnology, Kraków and the Centre for Molecular Biophysics, Cell Recognition and Glycobiology, CNRS, Orléans in 2013. LIA is guided by Prof. Józef Dulak and Prof. Claudine Kieda (see Triplet No. 24). The workshops are intended for both Polish and French teams.



– Collegium Maius) and Mr Yoann Arthaud, Deputy Attaché for Scientific and University Cooperation at the Embassy of France in Poland.

Almost seventy scientists took part in the workshop, among them Prof. Barbara Jarząb (Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology in Gliwice), Prof. Krzysztof Selmaj and Dr Marcin Mycko (Medical University of Łódź); Dr Krystian Jażdżewski (Medical University of Warsaw); Prof. Artur Jarmołowski (Institute of Molecular Biology and Biotechnology, Adam Mickiewicz University in Poznań) from Poland and Dr Eva Jakab-Toth (Director of the Centre for Molecular Biophysics, CNRS, Orléans), Dr Christophe Grosset (CNRS, Orléans), Dr David Israeli (CNRS, Orléans), Prof. Chantal Pichon (CNRS, Orléans), Dr Stefan Petoud and Dr Catherine Grillon (Centre for Molecular Biophysics, CNRS, Orléans) from France. Over thirty lectures on microRNA were given during three days. The detailed programme of the meeting can be accessed at <http://biotka.mol.uj.edu.pl/zbm>.



At the heart of the Kraków edition of the workshops was: *MicroRNAs: mediators of differentiation and biomarkers of diseases*. During the meeting, scientists of both research centres in Poland and France as well as invited speakers presented results of their studies. The Organizing Committee included Prof. Claudine Kieda, Prof. Józef Dulak, Prof. Alicja Józkowicz, Prof. Jean-Claude Michalski, Dr Catherine Grillon, Dr Agnieszka Łoboda and Joanna Uchto, MSc.

Joanna Uchto

Report of the Week of Education Quality

The first week of December at the Jagiellonian University was dedicated to the quality of education. The university-wide meetings and training programme was accompanied by local events organized by departments. As usual, the Faculty of Biochemistry, Biophysics and Biotechnology actively joined the programme with series of separate trainings for students and teachers.



Participating in the official inauguration of the workshops were Prof. Stanisław Kistryn (Vice-Rector for Research and Structural Funds), Prof. Piotr Laidler (Vice-Rector for Medical College), Prof. Zbigniew Madeja (Dean of the Faculty of Biochemistry, Biophysics and Biotechnology), Prof. Karol Musioł (JU Rector in the years 2005–2012), Prof. Krzysztof Stopka (Director of the Jagiellonian University Museum



Two seminars were addressed to the university teachers and PhD students. On 2 December Ms Aleksandra Siódmak (psychologist with clinical expertise, graduated from psychology and philosophy) conducted a meeting about "Interpersonal relationships between teachers and students with special reference to the art of motivating the course participants". Mr Marek Ścibor, a journalist involved in creative restatement of information, presentation techniques and explainer videos, ran a course "Art of presentation" on 3 December 2014.

On 2-5 December the students had an opportunity to attend the following courses:

- Seminar "The art of writing degree dissertations and scientific publications-introduc-

tion to the mysteries of knowledge" (leader: Prof. Halina Gabryś, Faculty of Biochemistry, Biophysics and Biotechnology).

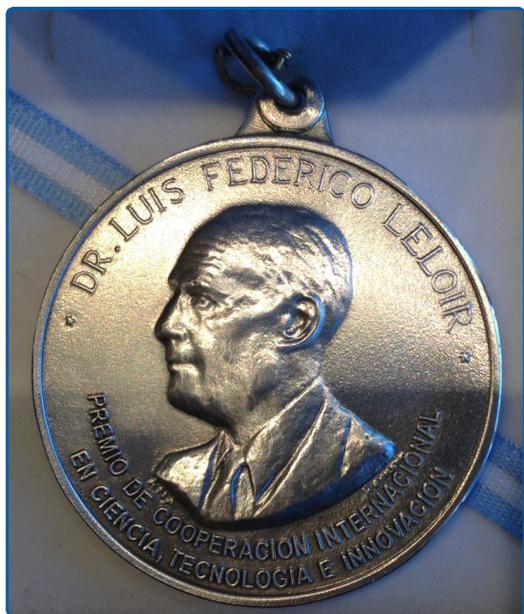
- Workshop "How to prepare a presentation" (leader: Marek Ścibor, journalist).
- Workshop "Working time planning" (leader: Aleksandra Siódmak, psychologist).
- Meeting on research and training trips abroad (with the participation of the Faculty of Biochemistry, Biophysics and Biotechnology Dean's Consultant for the Erasmus Programme, a representative of the Centre for Innovative Development of Society, employers and students who have already took part in internships or international exchange programmes).

PROFESSORSHIPS

This year, the Jagiellonian University Faculty of Biochemistry, Biophysics and Biotechnology has gained two new professors. Dr Jacek Międzobrodzki of the Department of Microbiology was awarded the title of Professor of Biological Sciences on 25 June, 2014 and on 8 October the same title was awarded to Dr Leszek Fiedor of the Department of Plant Physiology and Biochemistry. The ceremony was chaired by the President of the Republic of Poland Bronisław Komorowski.

HONORARY DECORATIONS AND AWARDS

Argentinian Government Award for Professor Józef Dulak



Professor Józef Dulak, Head of the Department of Medical Biotechnology, Faculty of Biochemistry, Biophysics and Biotechnology received Dr Luis Federico Leloir Prize from the Argentinian

Ministry of Science, Technology and Productive Innovation. The award ceremony took place in Buenos Aires on 17 November 2014.

Dr Luis Federico Leloir Prize is awarded to foreign scientists that have been involved in international cooperation and have thus made important contributions to Argentina's scientific and technological progress.

In an official letter sent to the Jagiellonian University authorities, it was written that Professor Dulak "actively promoted scientific cooperation between Argentina and Poland, he collaborated with the universities of Buenos Aires and encouraged Argentinian researchers to conduct their studies in his laboratory. Professor Dulak gave lectures in Buenos Aires, Córdoba and Bariloche and contributed to raising funds for the 1st and 2nd South American Symposia in Signal Transduction and Molecular Medicine (SISTAM), held in 2010 and 2012.

Joanna Uchto

HABILITATIONS

On 23 September 2014 Council of the Faculty of Biochemistry, Biophysics and Biotechnology awarded **Dr Patrycja Nowak-Śliwińska** of the Swiss Federal Institute of Technology in Lausanne (Ecole Polytechnique Fédérale de Lausanne, EPFL), Switzerland the degree of Doctor Habilitatus. The basis for awarding this degree was a series of works published in the years 2010-2014 under the common title "*Vessel-targeted therapies in neovascular diseases*".



The studies carried out by Dr Patrycja Nowak-Śliwińska addressed the following topics: (i) development of a new tool for image analysis that could quantify antiangiogenesis at the capillary level, (ii) antiangiogenic properties of low molecular weight ruthenium (II) compounds which could be used in anti-cancer therapy, (iii) course of angiogenesis after photodynamic therapy and angiogenesis inhibition in the exudative age-related macular degeneration (AMD) model, (iv) effective combination of photodynamic therapy and inhibitors of kinases to arrest tumour growth, (v) conditions of selective closure of lymphatic vessels using photodynamic therapy and kinetics of the vessel regeneration.

Dr Patrycja Nowak-Śliwińska completed her PhD programme at the Jagiellonian University Faculty of Chemistry. In 2006 she obtained a doctor's degree with the thesis "*Selected porphyrin and cyanine photosensitizers in PDT of melanoma malignum and novel optical sensors for tissular pO₂ measurement*". In the years 2007-2010 Dr Patrycja Nowak-Śliwińska did her research in the Medical Photonics Group of the Swiss Federal Institute of Technology in Lausanne. Next (2010-2011) she completed a one-year research internship at the Angiogenesis Laboratory (Head: Arjan W. Griffioen, PhD) of the VU University Medical Centre in Amsterdam, taking part in investigations on the regulation of tumour angiogenesis. In 2011 Doctor Nowak-

Śliwińska joined Professor Patrice Jichlinski group at the Department of Urology, Lausanne University Hospital, where she carried out a project "*Screening platform for optimal drug combinations*" examining efficacy of antineoplastic combined chemotherapy protocols. From December 2013 Doctor Nowak-Śliwińska has continued research in Professor Paul J. Dyson team at the Laboratory of Organometallic and Medicinal Chemistry, Institute of Chemical Sciences and Engineering, EPFL, where she has been responsible for implementation and coordination of research on antineoplastic and antiangiogenic properties of new ruthenium organometallic compounds. In 2013 she received a prestigious fellowship from the Marie Curie Intra-European Fellowships For Career Development (FP7-PEOPLE-2013-IEF) to carry out her original project "*Refined screening for novel targets in the tumour vasculature*" focused on searching new potential biological targets in the epithelium of the tumour blood vessels. Furthermore, Dr Patrycja Nowak-Śliwińska is a co-author of three international patents.

On 21 October 2014 Council of the Faculty of Biochemistry, Biophysics and Biotechnology awarded Dr Joanna Chwiej the degree of Doctor Habilitatus. Dr Joanna Chwiej graduated from the Faculty of Physics and Nuclear Techniques (the current name: Faculty of Physics and Applied Computer Science), AGH University of Science and Technology, Kraków with a degree in technical physics. She gained a doctorate in 2007 from the Faculty of Physics and Applied Computer Science, AGH UST where she has been employed until now. Dr Joanna Chwiej won the main prize in the 2007 edition of StatSoft Poland competition for the best doctoral dissertation prepared using the STATISTICA software.

Doctor Chwiej was twice a winner of the START programme competition organized by the Foundation for Polish Science. She also received a scholarship for outstanding young scientists from the Ministry of Science and Higher Education. In 2011 Doctor Chwiej became a member of the Council of Young Scientists, a subsidiary body of the Ministry of Science and Higher Education.

On 21 October 2014 Council of the Faculty of Biochemistry, Biophysics and Biotechnology awarded Dr Joanna Chwiej the degree of Doctor Habilitatus. Dr Joanna Chwiej graduated from the Faculty of Physics and Nuclear Techniques (the current name: Faculty of Physics and Applied Computer Science), AGH University of Science and Technology, Kraków with a degree in technical physics. She gained a doctorate in 2007 from the Faculty of Physics and Applied Computer Science, AGH UST where she has been employed until now. Dr Joanna Chwiej won the main prize in the 2007 edition of StatSoft Poland competition for the best doctoral dissertation prepared using the STATISTICA software.

Doctor Chwiej has used synchrotron radiation to explore nervous system pathologies. Her habilitation thesis "Modern spectroscopic methods as a tool to investigate the pathogenesis and progress of epilepsy in the pilocarpine model of seizures" contained five experimental works which addressed the follo-

wing topics: (i) usefulness of the synchrotronic techniques for studying epileptogenesis, (ii) imaging techniques to analyse nervous tissue, (iii) role of metals in the course of epilepsy, (iv) processes responsible for neurodegenerative changes within the hippocampus.

Przemysław Porębski – "Improvement of model building and refinement of macromolecular crystal structures". Supervisors: Prof. Wlodek Minor, Prof. Marta Pasenkiewicz-Gierula. 17 October 2014.

Ewelina Cieluch – "Impulse double beam spectrophotometric technique as a tool to study the mechanism of changes in the dynamic distribution of electrons in the chains of cytochrom bc1 cofactors." Supervisor: Prof. Artur Osyczka. 4 November 2014.

Katarzyna Piwowarczyk – "In vitro metastatic niche models to study invasion mechanisms of the prostate cancer cells." Supervisor: Dr Jarosław Czyż. 12 December 2014.

Monika Rak – "Use of cationic derivatives of polyisoprenoid alcohols as carriers of nucleic acids for lipofection". Supervisor: Prof. Zbigniew Madeja. 18 December 2014.

PHD THESES



On 3 December 2014, the Faculty of Biochemistry, Biophysics and Biotechnology and the Jagiellonian Center of Innovation concluded an agreement on the accounting procedure of the grants awarded by the Leading National Research Centre (KNOW). According to the agreement, the Faculty of Biochemistry, Biophysics and Biotechnology will receive 85 percent of the funds transferred by the Ministry of Science and Higher Education and the Jagiellonian Center of Innovation will obtain the remaining 15 percent. Furthermore, both parties agreed to maintain separate accounting records for the KNOW projects and to keep appropriate documentation to certify the expenditures under these grants in a manner that would allow assessments or external audits.

On 9 December 2014, on the basis of the decision of the Faculty of Biochemistry, Biophysics and Biotechnology Council, four committees were established to implement the objectives contained in the application for KNOW status. The awarded funds will be used to perform these tasks.

- Committee for the Development and Enhancement of Research Capacity and Ap-

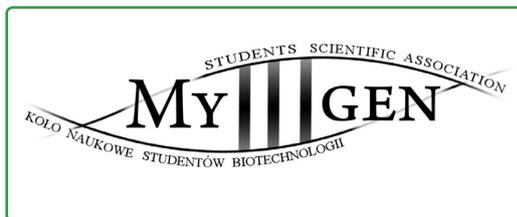
plication Potential of the Faculty of Biochemistry, Biophysics and Biotechnology, composed of: Prof. Jolanta Jura – the Chairwoman and Prof. Artur Osyczka, Prof. Marta Pasenkiewicz-Gierula, Dr Ewa Zuba-Surma;

- Committee for the Junior Academic Staff of the Faculty of Biochemistry, Biophysics and Biotechnology, composed of: Dr Ryszard Gurbiel – the Chairman and Dr Justyna Drukała, Dr Krzysztof Pyrc, Dr Agnieszka Wolnicka-Głubisz;
- Committee for Educational Practice, composed of Prof. Marta Dziejicka-Wasylewska – the Chairwoman and Dr Małgorzata Dutka, Dr Maria Rapała-Kozik, Dr Anna Wiśniewska;
- Committee for Promotion of the Leading National Research Centre (KNOW) and the Faculty of Biochemistry, Biophysics and Biotechnology (Cell-Mol-Tech Consortium), composed of Dr Martyna Elas – the Chairwoman and Dr Dominik Czaplicki, Dr Beata Myśliwa-Kurdziel, Dr Magdalena Tworzydło.

In the nearest future the committees will focus on determination of specific tasks, their deadlines and development of the rules for distribution of the funds between the beneficiaries of various programmes under the Leading National Research Centre (KNOW).

KNOW

"MYGEN"



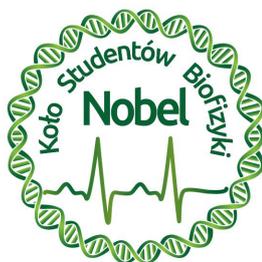
This has been another busy semester for the Student Research Club "Mygen". Many Mygen members took part in the XVI National Academic Seminar of Biotechnology Students (OASSB) held in Łódź, 21-23 November, 2014. Both oral presentations and posters attracted interest from the conference participants. Presentation of our colleague Rajmund Królkowski *Expression and purification of proteins of the cmr complex of CRISPR-Cas Porphyromonas gingivalis* won the second place. During the

conference, another important poster was also presented. It showed the results of a Mygen project on overexpression and purification of thermostable DNA polymerases.

According to the Mygen tradition, we met before the Christmas to share best wishes to each other. All competed to produce the best cakes and muffins.

Together with the student research club dealing with genetics, we organized the 1st Student Conference on Genetics GENOMICA which will take place 24-26 April 2015. Starting from nothing was a great challenge. Extensive promotion of the conference to all the Polish student research clubs highly engaged participants so we can expect high quality oral presentations and posters.

"NOBEL"



The tradition of cooperation between "Nobel" and students of biophysics from Poznań and Lublin has been continued this year. In the beginning of December the Maria Curie-Skłodowska University (UMCS) in Lublin and the Faculty of Physics, Adam Mickiewicz University in Poznań organized three-day student workshops held in the Department of Biophysics, Institute of Physics, Maria Curie-Skłodowska University (UMCS) in Lublin. The theme of the workshops was molecular spectroscopy in biomedical research.

Also in December, a General Meeting of the "Nobel" Student Research Club took place, during which we elected a new mentor, Dr Martyna Elas. Special thanks to the outgoing Mentor Professor Jerzy Dobrucki for his dedication this past eleven years to our club. More-

over, byelections to the Nobel Board were held, resulting in Paulina Nowak, Vice-President and Oskar Szelest, Conference Coordinator.

As a part of our regular activities, we have conducted a next series of "Meetings with Biophysics" (dedicated to high school students). We have also offered a visitors programme "What's going on in a lab?", i.e. annual tours of the departments and laboratories of our Faculty (dedicated to the first-year students of biophysics).

We have got much joy out of preparing a Christmas play in which almost all Nobel members were involved. We were also happy to help in organizing this year's Winter School of Faculty of Biochemistry, Biophysics and Biotechnology.

"N-ZYME"



N.Zyme members started the new academic year actively from election of the new board. In November we could participate in a meeting of the series ScienceCorner during which the N.Zyme members experienced in laboratory work shared their knowledge and presented results of experiments obtained in the previous years. Grzegorz Sieński, PhD student at Institute of Molecular Biotechnology (IMBA), Vienna, Austria was a guest of a ScienceCorner meeting and gave an interesting lecture on his research into RNA.

Apart from strictly scientific initiatives, we took part in the Noble Box Project (Szlachetna Paczka) and collected gifts for a family affected

by poverty, according to specified needs. Strong response from both N.Zyme members and other people let us collect all needed items. Encouraged by this success, we are going to join the Noble Box Project also next year.

Before Christmas we had our annual informal meeting. In friendly atmosphere, with home baked cakes, we wished each other a Merry Christmas.

In the coming semester we are not going to rest; seminars of the series ScienceCorner will be still held. We invite all who are interested!

Małgorzata Mnich

“Unwords”

Is it possible to employ scientific methods to investigate something that does not exist? Or something whose existence or mode of existence is questionable? Does it make sense to talk about theological science? And first of all, does it belong to science or humanities? If it is a branch of humanities, why theology is not included into religious studies? So maybe it is science?

Pavel Florensky, “stupendous genius”¹, was a Russian Orthodox theologian and a co-founder of the Russian School of Mathematics which produced one of the greatest modern mathematicians, Grigori Perelman. Florensky stressed that “mathematics and religion have very much in common because they both use symbols to define abstract concepts, of which it is not known whether they exist or not.”² Carl Friedrich von Weizsäcker considered theology to be an experimental discipline with strict, clearly defined methodology and precise conceptual system, but when necessary, with the possibility to use the idiographic approach, typical for the humanities. Experimental science but, unlike the natural sciences, verifying its hypotheses for milleniums.³

This mutual affinity of mathematics and theology is really astonishing. Maria Gaetana Agnesi from Bologna, one of the first female university professors of the modern era, balanced her time between differential calculus, writings of the Church Fathers and the eighteen-century mysticism.⁴ Countless other examples could be given but ... Nobody, or almost nobody, in the world can access either the realms of mind of Grigori Perelman or witness the figments of his imagination. What did he find, what did he reveal that he declined to accept the Fields Medal and cut off any communication with the outside world? Only the proofs of the Poincaré and Thurston's conjectures?

Is it possible to investigate something that does not exist? If not what about biologists, molecular geneticists, biotechnologists? Nullomers, in other words “absent sequences”⁵ (?) or “unwords”⁶, are nucleotide sequences that do not exist in any genome while primes are sequences not existing in a given genome.⁵ There are even proteins that do not exist, or more precisely protein fragments, so called “forbidden” pentapeptides, but surprisingly they are not encoded by nullomers.⁷ None of these structures can be found in nucleic acids or proteins but they are being investigated and the studies are even supported by research grants. So do they exist or not? And if they do exist in what way do they exist?

Przemysław M. Płonka

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VISITING LECTURERS

3 October 2014

Prof. Andrzej Słomiński (Department of Pathology and Laboratory Medicine, Health Science Center, University of Tennessee, Knoxville, USA). Lecture entitled: "New pathways of vitamin D activation and their biological role". Guest of the Department of Biophysics.

28 October 2014

Prof. Mary Bisson (State University of New York at Buffalo, USA). Lecture entitled: "Heavy metal uptake by microalgae: the good, the bad, and the surprising". Guest of the Department of Plant Biotechnology, Polish Society for Experimental Plant Biology and Polish Cell Biology Society.

3 November 2014

Prof. Patrick Venables (University of Oxford, UK). Lecture entitled: "The link between periodontitis and rheumatoid arthritis (RA)."

12 December 2014

Prof. Jan Dumanski (Department of Immunology, Genetics and Pathology, Uppsala University, Sweden). Lecture entitled: "46XY minus Y = higher mortality and increased risk of cancer."

Guest of the Department of Medical Biotechnology and Kraków Branch of the Polish Biochemical Society.

12 December 2014

Prof. Luigi Zecca (Institute of Biomedical Technologies, National Research Council, Milan, Italy). Lecture entitled: "Recent advances in neuromelanin studies." Guest of the Department of Biophysics.

Tea meetings at Gronostajowa – lecture series of the Kraków Branch of the Polish Biochemical Society:

29 October 2014

Prof. Maria Jolanta Rędownicz (Nencki Institute of Experimental Biology, Warsaw, Poland). Lecture entitled: "Unconventional myosin VI in skeletal muscle and myogenic cells: involvement in myoblast differentiation and probably in the development of cardiomyopathy."

26 November 2014

Prof. Marek Sanak (JU MC II Chair of Internal Medicine and the University Hospital in Kraków, Poland). Lecture entitled: "Oxylipins – lipid mediators of pathophysiological significance."

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