



FACULTY CHRISTMAS GATHERING



The 4th annual Faculty of Biochemistry, Biophysics and Biotechnology (FBBB) Christmas party began on December 18th at 3pm. The get-together began with the Faculty choir singing a selection of Poland's most beautiful Christmas carols along with "We wish you a Merry Christmas" in English and the African carol "Amezaliwa". Our excellent choir, which the day before had also sung at the "Jagiellonian University Christmas Tree" event, performed beautifully and, as always, was rewarded with enthusiastic applause.

The numerous staff, professors, graduate and undergraduate students were welcomed by the Dean of the Faculty, Prof. Wojciech Froncisz. After giving a brief review of the year 2012, he offered everyone best wishes for the holidays. Prof. Marta Dziedzicka-Wasylewska, Vice-Dean for Student Affairs, also incited energetic applause with a brief talk in which she highlighted the extraordinary atmosphere of the holiday meeting prepared with great care by the office of student affairs secretaries Janina Mrugalska, Małgorzata Calikowska and Dorota Żołnierczyk together with Wojciech Pilch.

She also expressed the gratitude of the Jagiellonian

University's Vice-Rector for Student Affairs to all those who helped prepare the Quality Education Week events hosted at the Faculty. In particular, Dr. Marta Michalik and Asst. Prof. Joanna Bereta received books as tokens of appreciation.

During the remainder of the party the participants shared in the breaking of the traditional Christmas wafer, exchanged Christmas greetings, partook of the many delicacies prepared for the party and sung Christmas carols.

A completely new and unexpected element of this year's gathering was a performance of traditional Indian dance by Sudipta Das, who is from Calcutta and who, who had defended her doctoral thesis with honours just a few days earlier on December 14th after several years of study at our Faculty. Another attraction was the performance of a play entitled "A Christmas Carol in the Thermal-cycler" which was produced by the members of Nobel and Mygen Students' Associations.

Many thanks go out to all those who once again helped our Faculty's Christmas Gathering become a successful, colourful and memorable event.

CONTENT

Faculty Christmas Gathering

Grants

Conferences

Awards and fellowships

Molecular Biotechnology for Health

Nobel

N.zyme

Our guests

It's past belief!

List of publications

GRANTS

On November 21st, 2012 the National Centre for Science announced the results of the third edition of the OPUS, PRELUDIUM and SONATA project grants and the first SONATA BIS grants.

The following Faculty scientists received OPUS programme awards for research and equipment:

- **Dr. Agnieszka Wolnicka-Głubisz** from the Department of Biophysics ("Role of MCPIP1 in toxicity in vitro induced by UVB and UVA radiation in keratinocytes"; 299,900 PLN)
- **Dr. Maria Rapała-Kozik** from the Department of Analytical Biochemistry ("Roles of *Candida albicans* adhesins and secreted proteases in neutrophil extracellular trap (NET) formation – traitors or allies of host in candidial infection?"; 684,000 PLN)
- **Dr. Sylwia Kędrecka-Krok** from the Department of Physical Biochemistry ("Evaluation of the role of subpopulations of T lymphocytes (Treg: CD4+CD25+, CD4+CD25- and Teff: Th2) in depression using proteomic analysis of blood of patients"; 568,500 PLN)
- **Dr. Tomasz Kantyka** from the Department of Microbiology ("Effect of deimination of essential arginine residues on the function of protease inhibitors and other components of innate immunity system"; 419,998 PLN)
- **Dr. Krzysztof Guzik** from the Department

of Immunology ("Pattern-Specific Inhibitors (PSI) - introduction and basic characteristics of a new class of inhibitors that block recognition of molecular patterns by professional phagocytes"; 999,550 PLN)

Grants from the PRELUDIUM programme were awarded to:

- **Anna Koziońska** from the Department of Biophysics ("Photosensitizing properties and photodynamic efficiency of a new functionalized fullerene in liposomes and cancer cells in vitro"; 99,500 PLN)
- **Aleksandra Pęczak** from the Department of Microbiology ("Development of ssDNA molecules recognizing cellular receptor of hyaluronic acid"; 9940 PLN)

Dr. Anna Pawlak's (Department of Biophysics) project was awarded a SONATA BIS programme grant ("Role of oxidation products of polyunsaturated fatty acids in retinal cells photodamage and contribution of plasmalogen to protection of the retina against oxidative stress"; 863,120 PLN).

It is also noteworthy that according to the information provided by the National Centre for Science, the Jagiellonian University ranked first among all institutions both in number of awarded projects and in total awarded funds.

CONFERENCES

Invitation to the FBBB's XL Winter School

Everyone is cordially invited to attend the Faculty of Biochemistry, Biophysics and Biotechnology XL Anniversary Winter School which will be held in Zakopane on February 16th-21st, 2013.

This year's meeting will be broadly focused



on oncogenesis and tumour therapies. Attendees will hear about the latest research in this field conducted both by our colleagues

from the Faculty as well as by specialists in Poland and from abroad, especially from institutions with which

our Faculty has on-going collaborations. This will be an excellent occasion for all attendees to familiarize themselves with the research being conducted at our Faculty and to learn about networking and collaboration opportunities with partners from other institutions.

A special element in this year's school will be the celebration of the Faculty's 40th Anniversary which will include time to reminisce, hear anecdotes and see photographs of everyone looking younger than they are now. The attractive location and programmed free time will also create an ideal opportunity for a well-deserved rest before the start of the new semester.

Registration is open at: www.wbbib.uj.edu.pl/zakopane2013

Krystyna Urbańska

Report from the "Role of carotenoids in construction of photosynthetic complexes" Conference



Our colleagues from the FBBB's Department of Plant Physiology and Biochemistry attended the symposium "Role of carotenoids in construction of photosynthetic complexes" which was held at the Hungarian Academy of Science's Biological Research Centre (BRC) in Szeged from September 19th - 20th, 2012. The symposium took place within the framework of an international project financed by the Visegrad Fund (Standard Grant No. 21120109). The aim of the meeting was to present and jointly discuss the results of research on the role of carotenoid pigments in photosynthetic complexes. The research is being carried out as a collaborative effort between four groups from Visegrad Group member countries.

The partner institutions in the project are:

- Institute of Plant Biology, Hungarian Academy of Sciences in Szeged, Hungary (Z. Gombos, M. Kis, I. Domonkos, H. Laczkó-Dobos, B. Ughy, O. Kóbori)
- Faculty of Biochemistry, Biophysics and Biotechnology; Jagiellonian University in Kraków, Poland (K. Strzałka, P. Malec, K. Kłodawska, P. Jedynak)
- Institute of Microbiology, Academy of Science in Trebon, Czech Republic (J. Komenda, J. Knoppová, M. Foldynova, J. Kopečná)
- Institute of Molecular Biology, Slovak Academy of Science in Bratislava, Slovak Republic (L. Urbanicova)

Quality Education Week

Quality Education Week was held at the Jagiellonian University from November 26th-30th, 2012. The overarching goal of this event was to present and discuss the multi-dimensionality of actions to increase the quality of education. The event was aimed at all members of the University community. Quality Education Week was organized at both a faculty and university-wide level.

The Quality Education Week coordinator at our Faculty was Dr. Marta Michalik (acting for the Dean of Education Quality). Asst. Prof. Joanna Bereta and representatives of N.zyme, Nobel and Mygen Students' Associations, the Student Body and the Graduate Students' Association also participated in the organization.

During Quality Education Week a mini-conference dealing with various aspects of improving the quality of education at the FBBB was held on November 26th. The main topics discussed were 1) opportunities for research abroad and academic fellowships and 2) the questionnaire system for evaluating the quality of courses. During the meeting, Prof. Jerzy Dobrucki outlined the status quo of internships abroad in the formation of biochemists, biophysicists and biotechnologists. Speakers also included students who had participated in research opportunities abroad. Next a debate on both topics of the mini-conference was moderated by Asst. Prof. Ewa Zuba-Surma and Dr. Marta Michalik.

During the afternoon an open discussion was held with the participation of researchers and students on the topic "Education at the FBBB: what and how can we improve?" The debate was structured based on student responses to two surveys conducted beforehand.

The surveys were conducted among students from all of the Faculty's majors and participants were entered in a drawing for book awards. The first survey concerned the quality of education at the FBBB. 19% of the Faculty's students participated in this survey. The participants expressed their opinions about changes which could improve the quality of education. Some of the proposed changes included: reducing group size in laboratory exercises, reducing the number of lecture hours in favour of seminar hours, departmental presentations that would provide students with better information when choosing a lab to conduct their thesis research, and coordination of lecture topics with lab exercises in such a way that the lab grade would form a part of the final course grade. The students also underscored the necessity of keeping the information in the USOS system up to date.

In terms of course lectures and lab exerci-



Lottery draw among the survey participants

cont. p. 4 ▶

► **CONFERENCES**
cont. from p. 3

ses, the survey's participants proposed holding lectures in English, improved use of software and maintaining high standards in terms of what is required of students. Among the positive aspects of the current teaching system the students highlighted the programme of studies, the selection of courses, the quality of the professors and the reputation of the University.

The second survey dealt with selecting the best teachers from among the Faculty's staff. 23% of the Faculty's students participated in this survey. The criteria used in selecting the best lecturers were: preparedness for lectures and conduction of lectures, ability to explain concepts clearly, knowledge of the topic, experience, ability to interest students and passion

for the course material, attitude toward students, readiness to help, grading system and expectations placed on the students. The highest rated were professors Joanna Bereta and Zbigniew Madeja.

Quality Education Week concluded with a conference entitled "Quality of Education at the Jagiellonian University. How to measure it and how to improve it?", This was a university-wide conference which took place on November 30th. Representatives from our Faculty were also present at this meeting. The conference's goal was to increase community awareness of and to discuss the various multifaceted actions being undertaken at the university level to increase the quality of education.

Eurobiotech 2013



The International Eurobiotech 2013 Conference will take place in Krakow on October 8th – 11th, 2013. This is already the fifth time that this conference, dedicated to presenting the most recent progress in biotechnology, is being held. The topics to be discussed at the upcoming conference will be focused mainly on "white" and "green" biotechnology as well as the matter of

obtaining patents for innovative ideas in biotechnology.

Eurobiotech 2013 is organized by the University of Agriculture in Krakow, the Jagiellonian University, the Biotechnology Committee of the Polish Academy of Science, the Polish Biotechnology Federation, Tadeusz Kościuszko University of Technology in Kraków, Klaster Life Science Kraków and Targi w Krakowie Ltd.

Conference participants will hear presentations from distinguished scientists from Poland and abroad including Neal C. Stewart (USA), Frank van Breusegem (Belgium), Luuk A. M. van der Wielene (Netherlands), Prof. Tomasz Twardowski and Prof. Stanisław Karpiński.

The proceedings of the conference will be split into two sessions:

- A "white" biotechnology module: *Nanotechnologies in industrial processes, Development of renewable energy in biotechnology, Bioeconomy, Bioplastics and biobased polymers, Pharmaceutical biotechnology*
- A "green" biotechnology module: *Plant Molecular Breeding, Environmental Biotechnology, Plant Genetic Engineering, Animal Biotechnology in Biomedicine, Animal Biotechnology in Agriculture.*

The topic of legal implications related to innovation in biotechnology will be dealt with at a separate session entitled "Legislation as seen by biotechnologists". The conference will be preceded by two satellite sessions: "Business session – Life Science Open Space" and "Induced pluripotent stem cells: the future of biomedicine".

All researchers, graduate and undergraduate students are encouraged to attend the Eurobiotech 2013 conference.

For the Eurobiotech 2013 Organizing Committee,
Prof. Henryk Kołoczek

AWARDS AND FELLOWSHIPS



Prof. Tadeusz Sarna receives *Sapientia Sat* medal

Sapientia Sat Medal for Prof. Tadeusz Sarna

Prof. Tadeusz Sarna, head of the FBBB's Department of Biophysics, has been presented with the Jędrzej Śniadecki, Karol Olszewski and Zygmunt Wróblewski Sapientia sat medal. The medal's chapter

decided to award the medal in recognition of Prof. Sarna's research which led to the "identification of reactive oxygen species responsible for the photodynamic activity of next generation photosensitizers in the treatment of cancer and other disease". The medal was awarded on October 26th, 2012 in Poznań during the 1st International "Oxygenalia" Conference.

The *Sapientia Sat* award was established in

2010 by the Jędrzej Śniadecki, Karol Olszewski and Zygmunt Wróblewski Society in Poznań and by the medal chapter which was created for this purpose. It is awarded for noteworthy scientific achievement in the use of oxygen and oxygen compounds in science, medicine, industry and sport.

National and Ministerial Awards

On October 15th, 2012 the University Senate held a special plenary meeting in the Auditorium Maximum conference centre on the occasion of National Education Day. During this session Jagiellonian University researchers were presented with national, ministerial and university awards.

Members of our Faculty were also among those receiving recognitions. Małgorzata Calikowska, Maria Heliasz-Kwak, Dr. Marta Michalik and Waldemar Śnieżyński received the Golden Service Medal. The Silver Service Medal was presented to Jadwiga Gołda. Prof. Adam Dubin received the National Education Commission Medal.

The Service Medals are awarded by the President of Poland for exemplary and diligent fulfilment of one's duties in public service. The National Education Commission Medal is awarded by the Minister of National Education for distinguished educational achievements.

The Ministry of National Education was created from the initiative of King Stanisław Poniatowski by a resolution of the Partition Sejm on October 14th, 1773. It was the first national ministry of public education in Poland, indeed in all of Europe.

Jagiellonian University Rector's Awards

In keeping with custom, exceptional University employees received Jagiellonian University's Rector's Awards at the start of the new academic year. The following members of the Faculty of Biochemistry, Biophysics and Biotechnology were among those recognized:

- Dr. Agnieszka Banaś (3rd degree individual award for scientific research);
- Dr. Benedykt Władyka (3rd degree individual award for scientific achievement);
- a team from the Department of Medical Biotechnology – Prof. Józef Dulak, Prof. Alicja Józkowicz, Dr. Agnieszka Łoboda, Dr. Agnieszka Jaźwa, Dr. Magdalena Kozakow-

ska, Dr. Anna Grochot-Przęczek (1st degree award for scientific achievement);

- a team from the Department of Computational Biophysics and Bioinformatics – Prof. Marta Pasenkiewicz-Gierula, Dr. Michał Markiewicz, Krzysztof Baczyński (2nd degree award for scientific achievement);
- a team from the Department of Analytical Biochemistry – Prof. Andrzej Kozik, Asst. Prof. Maria Rapała-Kozik, Dr. Ibeth Guevara-Lora (3rd degree award for scientific achievement);
- a team from the Department of Cellular Biochemistry – Dr. Aneta Kasza, Dr. Monika Bzowska, Dr. Karolina Wawro (3rd degree award for teaching activity).

A non-researcher 2nd degree team award was presented to administrative employees of the Faculty: Małgorzata Calikowska, Dorota Żołnierczyk, Jadwiga Gołda, Paulina Szaflik and Dominika Giza.

3rd degree team awards were also given to Agnieszka Andrychowicz-Róg, Joanna Uchto and Urszula Krzysztofik from the Department of Medical Biotechnology and to Halina Kacprzyk (Department of Cellular Biochemistry) and Elżbieta Sater (Department of Cell Biology).

National Ministry of Science and Higher Education Fellowship to Krzysztof Pyrc

Dr. Krzysztof Pyrc from the FBBB's Department of Microbiology was one of 171 winners in the 7th edition of the Ministry of Science and Higher Education fellowship for outstanding young scientists. The three-year fellowships are awarded to scientists with an exceptional academic record who have not yet completed their 35th birthday.

SET Fellowship Recipients

"Society-Technologies-Environment" Fellowship awards for post-doctoral work were announced in December 2012. This Jagiellonian University project began in 2011 and is financed by the Human Capital Operational Programme. The recipients of the two year post-doctoral



Małgorzata Calikowska



Dr. Marta Michalik



Prof. Adam Dubin

cont. p. 6 ▶

► AWARDS AND FELLOWSHIPS cont. from p. 5

fellowship at the Faculty of Biochemistry, Biophysics and Biotechnology are Dr. Anna Golda and Dr. Justyna Łabuz.

Dr. Anna Golda will be working in the Department of Microbiology in Dr. Krzysztof Pyrc's team where she will investigate the subcellular mechanisms of virus infection. Dr. Justyna Labuz will be employed in the Department of Plant Biotechnology. She will work in Prof. Halina Gabryś's team investigating the pathway of blue light signal transmission which is responsible for the directional translocation of chloroplasts in the leaves of higher plants.



Dr. Dominik Czaplicki

Dominik Czaplicki among the "Top 500 Innovators"

Dr. Dominik Czaplicki from the Department of Cellular Biochemistry is among the 80 reci-

ipients of the "Top 500 Innovators" award organized by the Ministry of Science and Higher Education. He consequently began an internship at the University of California at Berkeley on October 15th, 2012.

The "Top 500 Innovators – Science, Management, Commercialisation" programme is aimed at researchers at Polish universities and specialists in the field of technology transfer. Recipients participate in a two month-long internship/training period where they obtain practical know-how about the interaction between science and business, the administration of scientific research and the commercialisation of scientific results. The programme is fully financed by the Ministry of Science and Higher Education from the Human Capital Operational Programme.

IMPLEMENTATION OF THE MOLECULAR BIOTECHNOLOGY FOR HEALTH PROJECT



Cell line bank

The "Molecular Biotechnology for Health" (MBH) project implemented at the Faculty of Biochemistry, Biophysics and Biotechnology was completed on December 31st, 2012. As a result of the project, modern laboratories were created were research on various aspects

of biotechnology for the prevention, diagnosis and treatment of key diseases is being carried out. A total of 28,197,842 PLN was awarded to the project for the creation of a modern animal breeding facility, a molecular diagnostics virusology laboratory, a transcriptomics and proteomics laboratory, an imaging cytometry laboratory, for the organization of a cell bank, for equipment at the tissue engineering laboratory and for modernization of the plant biotechnology laboratory. The equipment purchased through this project is state-of-the-art apparatus which permits scientists to conduct world-class scientific research.

The project was implemented between 2008-2012, and consequently it was possible

to obtain funds for scientific research through numerous grants financed by the Innovative Economy Operational Programme, the European Union 7th Framework Programme, the Foundation for Polish Science, the National Science Centre, the National Centre for Research and Development and the Ministry for Science and Higher Education. FBBB research groups are currently publishing the results of their work in international journals and the novel techniques and approaches being used along with the objects of study are generating widespread interest from both Polish and international researchers. Thanks to the project, studies on the creation of novel anti-cancer and anti-viral drugs are today being carried out in the newly created laboratories in collaboration with Polish biotechnology firms.

The FBBB's research infrastructure has been significantly improved and now enables researchers to employ cutting edge scientific methods to:

- prepare and apply new animal models to probe disease development and to test experimental therapies,
- develop new methods to analyse cellular

- structure and the interaction of target substances (including drugs) with cells,
- create of a comprehensive system for gene expression analysis on the level of the entire transcriptome and proteome,
- develop skin tissue culture methods for their use in the clinical setting,
- develop methods for the identification and quantitative assessment of human and animal viruses to be used for clinical diagnosis and research,
- prepare methods to probe plant metabolite derivatives and synthetic pigment derivatives as potential anti-cancer drugs.



Animal facility

As the project was being implemented, various workshops were organized during which attendees were able to familiarize themselves with the various scientific methods that employ the equipment purchased through the project. Close to 300 undergraduate and graduate students and researchers from all over Poland and from various fields of biotechnology, biology and medicine participated in the two workshops.

The BMZ project was also presented in the media various times during the last months. In particular, the National Centre for Research and Development published a catalogue of the most interesting structural projects entitled PROJECT: INNOVATORS 2012. The brochure presented eight projects from three operational programmes being conducted by the National Centre for Research and Development. Molecular Biotechnology for Health was the project chosen from the Jagiellonian University. A lengthy article about the project was also published on July 2nd, 2012 in *The Warsaw*

Voice. On August 25th, 2012 TVP INFO ran the ninth episode of the series "Age of Discovery" of which the second half focused on the MBH project. During the almost five years that the project was being implemented, it received frequent coverage in radio, television and newspapers. The project was also promoted during various symposia and international scientific congresses in Poland and abroad.

A final report and more detailed information on "Molecular Biotechnology for Health", including photographs, a description of the equipment and new scientific capabilities, can be found in the catalogue prepared by the project's coordinating team. A digital version of the catalogue is available on the project's website: <http://bmz.wbbib.uj.edu.pl/>. Please contact the project coordinators if you are interested in further information or would be interested in establishing a scientific collaboration.

Molecular Biotechnology for Health Project Team, FBBB, UJ

Acknowledgements

Members of the "Molecular Biotechnology for Health" coordinating team: Prof. Józef Dulak (project leader), Prof. Alicja Józkowicz (coordinator for the animal facility), Dr. Krzysztof Pyrc (scientific coordinator), Piotr Widerski (administrative coordinator), Joanna Uchto (administrative specialist). The coordinating team would like to express heartfelt gratitude to all those who participated in the efficient and successful implementation of the project.

We thank the Dean of the Faculty, Prof. Wojciech Froncisz, and the Vice-Deans, Prof. Andrzej Kozik and Prof. Ryszard Gurbiel, for their support of the project.

Special thanks to Aneta Pazik and Magdalena Jagła for their extensive work on the project in the years 2009-2011 and 2011-2012 respectively.

We would also like to thank Jagiellonian University's Public Procurement Office and the University Bursar's Office for the efficient organization of the tender procedures and for financial services rendered to the project.

"N.ZYME"

The members of N.zyme focused on integration during the start of the winter semester. The N.zyme integration party was organized on October 11th, 2012 in Café Kalashnikov.

A plenary meeting of the association was held on November 5th. The new members of the executive committee were elected during this meeting. The new officers are: Anna Baranowska (president), Tomasz Wróbel (vice-president), Karolina Najder (secretary) and Joanna Markiewicz (treasurer).

An integration weekend was organized on November 24th-25th in the town of Koninki. The participants enjoyed the beautiful mountain scenery of Gorce National Park and toured the highest located astronomical observatory in Poland at the top of Mt. Suhora. Our tour guide was Dr. Maciej Winiarski, who kindly explained how all the scientific apparatus works and answered all of our questions.

Quality Education Week took place on November 26th - 30th. N.zyme's members participated in organizing the events and also took an active part in the debates and discussions during the mini-conference. We also conducted a survey on the quality of the education imparted at our Faculty. Maria Koźlak and Dominika Berdecka received book awards for their dedicated work in helping organize the events of Quality Education Week.



The members of N.zyme also helped organize the annual Faculty Christmas Gathering. Members of N.zyme in angels/devil's costumes helped make sure that everyone had a Christmas wafer to share during the party.

On the next day, December 19th, we held the first ever N.zyme Christmas party which was held in N.zyme's new headquarters.

Magdalena Demkovicz

NOBEL

The Nobel Biophysics Students' Association continues its mission to promote biophysics. The members are busy organizing scientific meetings. One event was already held this year, while the annual International Biophysics Students' Conference will take place in May. First, the final round of the Students' Science Show, a competition created by Nobel, was held on November 12th. After five monthly meetings, the audience selected the most interesting presentations. The finalists presented 15 minute talks about their scientific areas of interest or the results of their scientific research. The audience consisting of students and Faculty researchers selected three winners. The third place award went to biophysics major Martyna Śniegocka and second place to biotechnology major Mateusz Tomczyk. The first place winner of the Students' Science Show was Maciej Bratek, a biophysics major. Maciej delighted the audience with an original and humorous approach to the field of bioinformatics. The main prize, an e-book reader funded by the Dean of the Faculty, was presented to the victor by the Vice-Dean for General Affairs, Prof. Ryszard Gurbiel. The next edition of the Students' Science Show is planned for the coming year.

A second "Noble" event, the 2nd International Biophysics Students' Conference, will take place on May 24th-26th, 2013. Conference talks will be divided into four thematic sessions:



spectroscopy, molecular modelling and bioinformatics, microscopy and medical biophysics. During the conference, a contest for the best poster presentation will also be held. The conference is also open to non-biophysicists. Representatives of related fields such as biotechnology, physics and medical physics are also welcome to attend. Invitations have already been sent out to students all over Europe and to researchers from the most important scientific institutions in Poland and abroad. A total of about 100 attendees is expected and registration opens at the beginning of April. More information can be found at: www.ksb-nobel.heliohost.org/icbs2/.

Members of Nobel are also busy promoting the field of biophysics to high school students and organizing meetings for biophysics alumni. Up-to-date information on Nobel's activities can be found at the web page. All are invited to participate in upcoming events.

Paulina Nowak

Prof. Marek Kimmel (Rice University, Houston, Texas, USA) "*Bernoulli mixture models in application to the evaluation of algorithms estimating functionality of missense mutations*", Oct 12, guest of Laboratory of Cell Biophysics.

Prof. Ulrich Lüttge (Department of Biology, Technical University of Darmstadt, Germany) "*Whole Plant Physiology Integrative Emergence Rather than Modularity*", Oct 16, guest of Plant Biotechnology Department.

Prof. Artur Schmidtchen (Department of Clinical Sciences, Lund University, Sweden), "*Innate immunity – from basic concepts to therapeutic opportunities!*"; Oct 30th, guest of Dept of Microbiology.

Prof. Jan Kitajewski (Herbert Irving Comprehensive Cancer Center, Columbia University Medical Center, New York, USA), "*Notch as a therapeutic target in tumor angiogenesis*", Nov 5th, guest of Dept Medical Biotechnology.

Dr Ryszard Międzybrodzki (Institute of Immunology and Experimental Therapy PAS, Wrocław, Poland), "*Phage therapy: application and perspectives*" (in Polish), Nov 27th, guest of Dept Microbiology.



Dr. Ryszard Międzybrodzki

Visiting professors:

Prof. Toru Shimizu (Tohoku University, Sendai, Japan).
02.10.2012-29.10.2012 – "*Heme proteins*",

09.10.2012-15.11.2012 – "*Gas sensors*".

Prof. Howard Halpern (University of Chicago, Chicago, USA) 22.10; "*Cancer: A Clinical, Physiologic, and Molecular Definition In Light of the Role of EPR Imaging*"; 22-25.10.2012 – "*Cancer*"; 12-16.11.2012 – "*Making the Images*" - 10-15.12.2012 – "*EPR oxygen imaging*".

"*Tea at Gronostajowa St*", a series sponsored by Krakow branch of Polish Biochemical Society:

Prof. Andrzej Jajszczyk (National Science Centre, Kraków), Oct 31st, "*National Science Centre – second year*" (in Polish).



From the left: Prof. Wojciech Froncisz, Prof. Andrzej Jajszczyk

Prof. Krzysztof Wędzony (Pharmacology Institute, PAS, Kraków), "*Anxiety*" (in Polish), Nov 27th.

Before the lecture awards were granted to Prof. Ryszard Gryglewski, Prof. Zdzisław Żak.



Prof. Zdzisław Żak

Prof. Bożena Romanowska-Dixon (Ophthalmology Clinic, Collegium Medicum JU, Kraków) "*Patomechanism of diabetic complications in the eye*", (in Polish), Dec 19th.

Publications, 1st quarter 2012 – addendum

Lasota M, Klein A, Balwierz W. Cytostatic and cytotoxic effects of tyrphostin AG1296 on RMS cells. *Wspolczesna Onkologia-Contemporary Oncology*. Feb 2012;16(1):1-5.

Publications, 2nd quarter 2012 – addendum

Bojko A, Reichert K, Adamczyk A, Ligeza J, Ligeza J, Klein A. The effect of tyrphostins AG494 and AG1478 on the autocrine growth regulation of A549 and DU145 cells. *Folia Histochemica Et Cytobiologica*. 2012;50(2):186-195.

LIST OF PUBLICATIONS

Bulwan M, Wojcik K, Zapotoczny S, Nowakowska M. Chitosan-based ultrathin films as antifouling, anticoagulant and antibacterial protective coatings. *Journal of Biomaterials Science-Polymer Edition*. 2012;23(15):1963-1980.

Publications, 3rd quarter 2012 – addendum
Adamowicz K, Wang H, Jotwani R, Zeller I, Potempa J, Scott DA. Inhibition of GSK3 abolishes

cont. p. 11 ▶

IT'S PAST BELIEF!

Practice your kanji!

At the beginning of the 20th century, a young doctor from Krakow, Tadeusz Żeleński, left for Paris to dedicate himself to scientific research and gather materials for his habilitation thesis. As it turned out, the young doctor became enraptured by the culture of the new country and, having been gifted with a keen humanistic mind (for, as would have wanted Prof. Andrzej Szczeklik, medicine is a fully humanistic discipline) and exceptional literary talent, Żeleński found himself pulled away from his original medical plans. Consequently, our nation perhaps lost an outstanding professor of medicine, but only to the benefit of our culture... Arguably, French literature, more than that of any other country, is most akin to the Polish reader. Our culture is imbued with the spirit of Villon, of Proust, Moliere and Racine. It is said that Żeleński didn't translate but that he actually rewrote the whole of French literature in Polish. As for his own works, written under the lapidary pseudonym "Boy", they too added colour to the culture of the newly reborn Poland of the inter-war era.

Of course, Tadeusz Żeleński never gave up being a doctor. He was the member of a ground-breaking team of paediatricians in Krakow's St. Ludwig's Hospital on Strzelecka St., the second (after Vienna) children's hospital in all of Europe. It is hard to believe that less than a hundred years ago children were either not treated medically at all or, if they were treated, it was as adults! Żeleński was also active as a doctor in Warsaw, though perhaps less famous for that than for his accomplishments in literature and translation. He was killed in 1941 by the Nazis in Lviv, more likely for his literary and linguistic activity than for his medical accomplishments.

Another example is that of the originally German and later polonised Ingarden family. This family decided to reside permanently in Poland and thus enriched our culture with exceptional personalities from the fields of science, law, architecture and medicine. The most famous of them is certainly Prof. Roman Witold Ingarden, a philosopher, a phenomenologist. Nevertheless, we should also not forget his son, Roman Stanisław Ingarden. The recently late professor of physics was best known for his activity at the Mikołaj Kopernik University in Toruń. However, he spent the Nazi occupation with the rest of his family in Lviv. Later, during the 1970's, while working in Japan, he developed an addiction quite like that of Żeleński. Fortunately for physics and biophysics, he did not abandon his scientific career and ended up becoming a renowned theoretical physicist. Among his fields of interest was non-equilibrium thermodynamics applied, among others, to biological systems. The ideas he brought from Japan and published during the 1980's encompass a bold vision which is still today, or perhaps even only today^{1,2}, becoming relevant. As for his fascination with Japan, he imparted it not only to his children but also gave expression to it by creating a vibrant centre of Japanese study in Toruń.

It is interesting to compare these two figures and to ask ourselves: were they more humanists or more scientists? And does it matter? Maybe it matters because after a period of work abroad in Japan, we too make a conscientious effort to ensure that our children practice their kanji just as much as that they learn mathematics.

Can we really blame our colleagues who become enthralled with the exotic civilizations of foreign countries in which they work; who develop lifelong fascinations with the cultures and languages of Japan, Denmark or Portugal; and who, if they take their children along with them, also condemn whole posterior generations to this same fascination? No, we can't blame them, but not only because it is unavoidable. Let's not forget that it is exactly in this way that a convergence of the "scientific" and the "humanistic" that bountifully enriches our human patrimony is achieved. Let us not hold it against them who travel the road of science and end up choosing their own path.

Przemysław M. Płonka

1. R.S. Ingarden. "Geometryczne sformułowanie statystycznej teorii procesów termodynamicznych i perspektywy jego zastosowania w biologii." [Translation: Geometrical formulation of statistical theory of thermodynamical processes and its applications in biology] *Zagadnienia Biofizyki Współczesnej*, 1982, 7:5-32, (Polish version available on-line at <http://ctbo.pl>)
2. R.S. Ingarden. "Podstawy pojęciowe fizyki systemów a biofizyka." [Translation: Basic ideas of system physics in relation to biophysics] , 1985, 10:11-35, (Polish version available on-line at <http://ctbo.pl>)

LIST OF PUBLICATIONS: 3rd QUARTER 2012 cont. from p. 9 ▶

- bacterial-induced periodontal bone loss in mice. *Molecular Medicine*. Aug 2012;18(8):1190-1196.
- Dijkman R, Jebbink MF, Deijs M, Milewska A, Pycr K, Buelow E, van der Bijl A, van der Hoek L. Replication-dependent downregulation of cellular angiotensin-converting enzyme 2 protein expression by human coronavirus NL63. *Journal of General Virology*. Sep 2012;93:1924-1929.
- Burchacka E, Walczak M, Sienczyk M, Dubin G, Zdzalik M, Potempa J, Oleksyszyn J. The development of first Staphylococcus aureus SplB protease inhibitors: Phosphonic analogues of glutamine. *Bioorganic & Medicinal Chemistry Letters*. Sep 1 2012;22(17):5574-5578.
- Fiedor L, Fiedor J, Pilch M, Susz A, Tworzydło J, Michalik M. Controlling Structural and Functional Features of Photosynthetic Antenna. *Acta Physica Polonica A*. Aug 2012;122(2):255-258.
- Guzik TJ, Dulak J. Vessel wall - where coagulation meets cell biology and immunology. *Thrombosis and Haemostasis*. Sep 2012;108(3):416-418.
- Kozinska A, Oles T, Sarna T. Photoactivation and detection of photoexcited molecules and photochemical products. *Israel Journal of Chemistry*. Sep 2012;52(8-9):745-756.
- Michalik M, Wojcik KA, Jakiela B, et al. Lithium attenuates TGF-beta(1)-induced fibroblasts to myofibroblasts transition in bronchial fibroblasts derived from asthmatic patients. *Journal of allergy*. 2012;2012:206109-206109.
- Schaller S, Wilhelm C, Strzalka K, Goss R. Investigating the interaction between the violaxanthin cycle enzyme zeaxanthin epoxidase and the thylakoid membrane. *Journal of Photochemistry and Photobiology B-Biology*. Sep 3 2012;114:119-125.
- Slesak I, Slesak H, Kruk J. Oxygen and hydrogen peroxide in the early evolution of life on Earth: In silico comparative analysis of biochemical pathways. *Astrobiology*. Aug 2012;12(8):775-784.
- Wojakowski W, Tendera M, Cybulski W, et al. Effects of intracoronary delivery of allogenic bone marrow-derived stem cells expressing heme oxygenase-1 on myocardial reperfusion injury. *Thrombosis and Haemostasis*. Sep 2012;108(3):464-475.
- Wojcik KA, Koczurkiewicz P, Michalik M, Sanak M. Transforming growth factor-beta(1)-induced expression of connective tissue growth factor is enhanced in bronchial fibroblasts derived from asthmatic patients. *Polskie Archiwum Medycyny Wewnętrznej-Polish Archives of Internal Medicine*. 2012;122(7-8):326-331.
- Publications, 4th quarter 2012**
- Aksenova NA, Oles T, Sarna T, Glagolev NN, Chernjak AV, Volkov VI, Kotova S L, Melik-Nubarov NS, Solovieva AB. Development of novel formulations for photodynamic therapy on the basis of amphiphilic polymers and porphyrin photosensitizers. Porphyrin-polymer complexes in model photosensitized processes. *Laser Physics*. Oct 2012;22(10):1642-1649.
- Bielska K, Seliga J, Wieczorek E, Kedracka-Krok S, Niedenthal R, Ozyhar A. Alternative sumoylation sites in the Drosophila nuclear receptor Usp. *Journal of Steroid Biochemistry and Molecular Biology*. Nov 2012;132(3-5):227-238.
- Czapla M, Sarewicz M, Osyczka A. Fusing proteins as an approach to study bioenergetic enzymes and processes. *Biochimica Et Biophysica Acta-Bioenergetics*. Oct 2012;1817(10):1847-1851.
- Das S, Czarnek M, Bzowska M, Mezyk-Kopec R, Stalinska K, Wyroba, B, Sroka J, Jucha J, Denska D, Stoklosa P, Ogonek J, Swartz MA, Madeja Z, Bereta J. ADAM17 silencing in mouse colon carcinoma cells: The effect on tumoricidal cytokines and angiogenesis. *Plos One*. Dec 10 2012;7(12).
- Derecka M, Gornicka A, Koralov, SB, Szczepanek K, Morgan M, Raje V, Sisler J, Zhang Q, Otero D, Cichy J, Rajewsky K, Shimoda K, Poli V, Strobl B, Pellegrini S, Harris TE, Seale P, Russell AP, McAninch AJ, O'Brien PE, Keller SR, Croniger CM, Kordula T, Larner AC. Tyk2 and Stat3 regulate brown adipose tissue differentiation and obesity. *Cell Metabolism*. Dec 5 2012;16(6):814-824.
- Dulak J, Guzik TJ. Angiogenesis, stem cells,

cont. p. 12 ▶

LIST OF PUBLICATIONS: 4th QUARTER 2012 cont. from p. 11 ▶

eNOS and inflammation - the many faces of vascular biology. *Thrombosis and Haemostasis*. Nov 2012;108(5):801-803.

Halas A, Orzechowska A, Derrien V, Chumakov AI, Sebban P, Fiedor J, Lipinska M, Zajac M, Slezak T, Strzalka K, Matlak K, Korecki J, Fiedor L, Burda K. The dynamics of the non-heme iron in bacterial reaction centers from *Rhodobacter sphaeroides*. *Biochimica Et Biophysica Acta-Bioenergetics*. Dec 2012;1817(12):2095-2102.

Huang L, St Denis TG, Xuan Y, Huang Y, Tanaka M, Zadlo A, Sarna T, Hamblin MR. Paradoxical potentiation of methylene blue-mediated antimicrobial photodynamic inactivation by sodium azide: Role of ambient oxygen and azide radicals. *Free Radical Biology and Medicine*. Dec 1 2012;53(11):2062-2071.

Jensen D, Steplewski A, Gawron K, Fertala A. Consequences of Suppressing Expression of the R789C and R992C Collagen II Mutants in Cell-Based Models. *Glycobiology*. Nov 2012;22(11):1598-1598.

Jura J, Skalniak L, Koj A. Monocyte chemotactic protein-1-induced protein-1 (MCP1) is a novel multifunctional modulator of inflammatory reactions. *Biochimica Et Biophysica Acta-Molecular Cell Research*. Oct 2012;1823(10):1905-1913.

Kaczara P, Zareba M, Herrnreiter A, Skumatz CMB, Zadlo A, Sarna T, Burke JM. Melanosome-iron interactions within retinal pigment epithelium-derived cells. *Pigment Cell & Melanoma Research*. Nov 2012;25(6):804-814.

Kawalec P, Paszulewicz A, Holko P, Pilc A. Sipuleucel-T immunotherapy for castration-resistant prostate cancer. A systematic review and meta-analysis. *Archives of Medical Science*. Oct 2012;8(5):767-775.

Nowak WN, Mika P, Nowobilski R, Kusinska K, Bukowska-Strakova K, Nizankowski R, Jozkowicz A, Szczeklik A, Dulak J. Exercise training in intermittent claudication: Effects on antioxidant genes, inflammatory mediators and pro-angiogenic progenitor cells. *Thrombosis and Haemostasis*. Nov 2012;108(5):824-831.

Paszek E, Czyz J, Woznicka O, Jakubiak D, Woj-

narowicz J, Lojkowski W, Stepien E. Zinc oxide nanoparticles impair the integrity of human umbilical vein endothelial cell monolayer in vitro. *Journal of Biomedical Nanotechnology*. Dec 2012;8(6):957-967.

Polakowska K, Lis MW, Helbin WM, Dubin G, Dubin A, Niedziolka JW, Miedzobrodzki J, Wladyka B. The virulence of *Staphylococcus aureus* correlates with strain genotype in a chicken embryo model but not a nematode model. *Microbes and Infection*. Nov 2012;14(14):1352-1362.

Skottrup PD, Sorensen G, Ksiazek M, Potempa J, Riise E. A Phage Display Selected 7-mer Peptide Inhibitor of the Tannerella forsythia Metalloprotease-Like Enzyme Karilysin Can Be Truncated to Ser-Trp-Phe-Pro. *Plos One*. Oct 31 2012;7(10).

Solarczyk KJ, Zarebski M, Dobrucki JW. Inducing local DNA damage by visible light to study chromatin repair. *DNA Repair*. Dec 1 2012;11(12):996-1002.

Wlodarczyk LM, Moldaenke C, Fiedor L. Fluorescence as a probe for physiological integrity of freshwater cyanobacteria. *Hydrobiologia*. Oct 2012;695(1):73-81.

Zdybicka-Barabas A, Mak P, Klys A, et al. Synergistic action of *Galleria mellonella* anionic peptide 2 and lysozyme against Gram-negative bacteria. *Biochimica Et Biophysica Acta-Biomembranes*. Nov 2012;1818(11):2623-2635.

Zdzalik M, Karim AY, Wolski K, Buda P, Wojcik K, Brueggemann S, Wojciechowski P, Eick S, Callander A, Jonsson I, Kubica M, Polakowska K, Miedzobrodzki J, Wladyka B, Potempa J, Dubin G. Prevalence of genes encoding extracellular proteases in *Staphylococcus aureus* - important targets triggering immune response in vivo. *Fems Immunology and Medical Microbiology*. Nov 2012;66(2):220-229.

Editorial board:

Martyna Elas
Monika Rak
Magdalena
Tworzydło

Contact:

martyna.elas@uj.edu.pl

The editors reserve the right to adjust the material. Texts not signed are from the editors.

Logo:

Sebastian Szytuła

Design:

Klemens Napkowski

DTP:

Tomasz Krawiec

Translation:

Paweł Janowski

Faculty of Biochemistry,
Biophysics
and Biotechnology,
Jagiellonian University
Gronostajowa 7
30-387 Krakow