FNP

Foundation for Polish Science

Annual Report 2009

Supporting only the best
so that they can become even better

The programmes Welcome, International PhD Projects (MPD), Team, and Ventures are cofinanced from the European Regional Development Fund within the Innovative Economy Operational Programme.

INNOVATIVE ECONOMY
NATIONAL COHESION STRATEGY

FNP
Foundation for Polish Science

EUROPEAN UNION
EUROPEAN REGIONAL
DEVELOPMENT FUND

The FOUNDATION FOR POLISH SCIENCE (FNP) is a nongovernmental, non-political and financially independent non-profit organization established in 1991 to pursue the mission of supporting science in Poland. The Foundation fulfils its statutory objectives by supporting scientists and research teams as well as initiatives which benefit science in Poland. We also undertake work to ensure transfer of scientific achievements to economic practice.

The Foundation fulfils its statutory goals by awarding individual prizes and grants to scientists, subsidies for the modernization of research facilities, and through other forms of supporting important projects (such as publishing programmes, FNP conferences, etc.). The Foundation also actively supports international scientific cooperation and projects that foster the independence of the younger generation of researchers.

The Foundation is Poland's greatest non-state budget source of funding for research. All grants, prizes and stipends are awarded by way of competitions, in an international peer-review system, in accordance with the Foundation's motto: supporting only the best so that they can become even better. The most important criterion for awarding support is outstanding scientific achievement.

The Foundation's founding capital of 95 million zlotys originated from the Central Fund for the Development of Science and Technology, which was liquidated in 1990. A large part of the means for the Foundation's statutory activity, and for securing the real-term value of its funds, is obtained from operations on the financial market i.e. investments, mainly in bonds, investment fund units, and shares. In this way a sum of approximately 390 million zlotys was raised and assigned to research by the end of 2009.

In 2003–2004 the Foundation received extra funding for supporting science on the basis of the privatization law of 29 March 2000 "On amendments to the law on commercialization of enterprises...". This stated that 2% of the revenue obtained from privatizing State Treasury companies was to be added to the Foundation's assets. The resulting amount of 51.7 million zlotys was used to form a separate fund earmarked solely for financing domestic grants for young scientists (START programme).

In 2007, the Foundation received supplementary funding for its POWROTY/HOMING programme from the European Economic Area Financial Mechanism. In addition, as of 2008 and under Measure 1.2 "Strengthening the human resources potential of science", a part of the Innovative Economy Operational Programme, the Foundation started carrying out four new programmes: TEAM, WELCOME, MPD/IPP, and VENTURES, financed from structural funds.

Since 2005 the Foundation has enjoyed public benefit status, which entitles it to accept donations from private individuals of 1% of their income tax for its statutory activity. These funds are used to supplement grants for young scientists returning from abroad (up to 2009 – researchers returning from abroad, under the HOMING programme, as of 2010 – researchers at the start of their scientific career, under the START programme).

Taking care to ensure that its activities remain transparent, the Foundation publishes extensive information on its activity in the form of Annual Reports, while its financial statements are audited every year by major auditing companies.

Authorities of the Foundation for Polish Science

The Council of the Foundation

(term in office: 1 September 2008
to 31 August 2012)

Chairman
Prof. Andrzej Członkowski, PhD hab.
Deputy Chairman
Prof. Tomasz Jasiński, PhD hab.
Members:
Prof. Maciej W. Grabski, PhD hab. Eng.
Prof. Andrzej Jerzmanowski, PhD hab.
Prof. Henryk Koroniak, PhD hab.
Prof. Irena E. Kotowska, PhD hab.
Prof. Marek Z. Świtoński, PhD hab.

Members of the FNP Council (from left): professors T. Jasiński, I.E. Kotowska, H. Koroniak, A.Członkowski, M.W. Grabski, A. Jerzmanowski, M.Z. Świtoński

Members of the FNP Board (from left): Prof. W. Bolecki, T. Perkowski PhD, Prof. M. Żylicz

The Executive Board of the Foundation

President
Prof. Maciej Żylicz, PhD hab.
Vice-President
Prof. Włodzimierz Bolecki, PhD hab.
Vice-President
Tomasz S. Perkowski, PhD

The Foundation for Polish Science staff

status on 31 December 2009

Jakub Wojnarowski – Programme Division Director

Michał Pietras – Division Implementing Programmes Financed from Structural Funds Director

Domestic Programmes
Krystyna Frąk
Tadeusz Pacholik
Ewa Śliwowska
Małgorzata Świtalska-Bury

International Programmes
Lidia Rachocka
Magdalena Zuberek-Wąsińska
Adam Zieliński

Programme Evaluation
Marta Łazarowicz-Kowalik

Programmes Financed from Structural Funds
Beata Frączak
Paweł Kulesza
Aneta Michałkiewicz
Danuta Pawlak
Justyna Pękala
Dorota Sierak
Irmina Sitnicka
Piotr Siwiecki
Kinga Słomińska
Magdalena Sordyl

Wanda Krzemińska – Financial Director

Accounting
Dorota Komosa
Iwona Pachnowska
Katarzyna Siemieńczuk

Human Resources and Reporting
Małgorzata Pieńkowska

Administrtion
Rafał Flis
Wojciech Janikowski
Piotr Urbaniak

Lawyers
Katarzyna Bojańczyk
Anna Bergiel

Financial Analyses and Audits
Krystyna Akacka
Aneta Antolak

Executive Board's Office
Magdalena Borowska-Wittlin
Katarzyna Demczuk
Agata Szostakiewicz

Public Relations
Magdalena Kołomańska
Elżbieta Marczuk

Letter from the Chairman of the Foundation Council

Last year, 2009, was a difficult year for the Polish economy, and it was equally difficult for the Foundation for Polish Science. Nevertheless, today we can say that we did not suffer major financial losses, and that our programmes were successful in spite of the difficulties.

Details about the implementation of our long-existing programmes, as well as about the launching of new ones (thanks to European Union structural funds) can be found in the Annual Report. In this message, however, I would like to present an important initiative whose effects will have an impact on the Foundation's programme strategy in the nearest future.

Over the past year we held intensive discussions on the kind of programme range we should offer the Polish scientific community once the programmes financed from EU structural funds will have come to an end. The Foundation wants to fulfil its mission by providing support for researchers in the most effective way at any given time. Over the next few years we plan to develop new programme concepts that will be sensitive to Poland's continually changing science sector. We also believe that the decision making process must involve Poland's scientific community, which we will consult extensively.

Over the past year we held intensive discussions on the kind of programme range we should offer the Polish scientific community once the programmes financed from EU structural funds will have come to an end

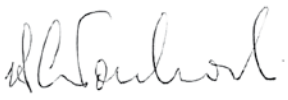
Crucially, all of the Foundation's programmes are subjected to an external review. We asked foreign experts representing leading European institutions to act as reviewers. These experts included: Prof. Frank Ganon (Science Foundation Ireland), Prof. Reinhard Grunwald (DFG), Prof. Josef Syka (Czech Science Foundation), Prof. Gabor Makara (Hungarian Scientific Research Fund/ OTKA), Prof. Eero Vuorio (University of Turku), Prof. Axel Horstmann (Volkswagen Foundation), Dr Kari Kveseth (The Research Council of Norway), Dr Alexis-Michel Mugabushaka (European Research Council Executive Agency), Dr Sven Baszio (Alexander von Humboldt-Stiftung), Dr Rudiger Klein (ALLEA-ALL European Academies), Dr Lain Cameron (Research Councils UK).

Before commencing work these experts were invited to learn about the rules guiding the Foundation's activity; they received materials on the situation of science in Poland, and met with representatives of the Polish scientific community.

The preliminary conclusions from the international experts' evaluation, which was carried out in March and April 2010, were presented at a meeting with members of the Foundation Council. The final report will be completed in the first half of 2010. It is worth underlining that the experts who reviewed the Foundation, as well as the auditors who assessed the financial statements, remarked on the excellent organization and professionalism of the Foundation's staff and on the high quality of documentation presented to the auditors.

In short, 2009 turned out to be a successful year for the Foundation for Polish Science. On behalf of the Foundation Council I am delighted to congratulate the Board, the entire staff, and all our associates – we owe these successes to their joint efforts.

ANDRZEJ CZŁONKOWSKI



Letter from the President of the Board

The year 2009 was a year of intensive work for the Foundation for Polish Science. In a financial sense, this involved spending more than 44.7 million zlotys on support for the best researchers working in Poland. Of this, 26.5 million came from the Foundation's own funds, obtained from operations on the capital market, while the remaining 18.2 million were obtained from structural funds (Measure 1.2. "Strengthening the human resources potential of science" in the Innovative Economy Operational Programme – IE OP).

Following its principle of "supporting only the best so they can become even better", the Foundation has assigned since its creation in 1991, a total of 365 million zlotys (almost U.S.$130 million) for its statutory activities from its own resources. At the same time, the Foundation's own funds grew during this time from 95 million zlotys (the founding capital in 1990) to more than 370 million zlotys at the end of 2009.

After the year of crisis, 2008, the following year brought improvement to financial markets, thanks to which the profitability of the Foundation's assets grew as well. Consequently, in 2009 the Foundation could provide its programmes with a greater amount of funding from its own resources than ever before.

In the coming years (until 2015), we plan to assign almost 400 million zlotys for the implementation of programmes financed from IE OP funds

In the coming years (until 2015), we plan to assign almost 400 million zlotys for the implementation of programmes financed from IE OP funds. This will allow us to give substantial funding to what we consider to be the most important research projects. However, as we never had such funds at our disposal before, this situation will present some serious administrative and financial challenges. Our organization has to cover part of the costs of running new programmes, we must maintain financial liquidity regardless of the schedule of reimbursement of programme spending from EU funds, and we must also guarantee funding for those projects implemented under the new POMOST and HOMING Plus programmes which do not belong to the Bio-Info-Techno areas which are given priority in the IE OP. Meanwhile, the Foundation wishes to continue to support the best researchers irrespective of their particular field of research – after all, our leading criterion is to supply scientific excellence. The opportunity to make use of structural funds should not infringe upon this principle of the FNP's operation.

Besides managing the programmes planned for 2009 (described further on in the Report) we also worked on two new programmes to be launched in 2010. The HOMING Plus programme (grants for young scientists to encourage them to conduct research in Poland) is a continuation of the HOMING/POWROTY programme, but it also targets scientists who are not Polish citizens; our budget for the programme has increased substantially thanks to supplementary funding from EU structural funds. The second new programme, POMOST, is an entirely new initiative within the Foundation. It is available to researchers who wish to return to a scientific career following maternity/paternity leave. The programme also provides support to pregnant women carrying out research projects involving work in conditions hazardous to human health. The FNP is the first institution in Poland to offer this form of support, having noticed the need to enable researchers who are also parents to reconcile a satisfying scientific career with bringing up children.

In 2009, the Foundation was more active than previously in local and international discussions on reforming the system of financing research and higher education. Strategies of change are expected to lead to a qualitative improvement in the every model of organization of research in Poland, which will have major consequences for Poland's development in the coming decades. Since its inception the Foundation has aimed to promote and inspire changes to the way research is organized in Poland by choosing a certain model and style of operation, and by actively taking part in the debate on the reform of research in Poland.

In 2009, we carried out an extensive project – the first one on that scale – to promote internationally the most recent and most significant achievements of Polish scientists. In December 2009, Nature magazine published, for the first time, a special section on Polish science. Financed by the FNP, this section encourages researchers from all over the world to continue their careers in Poland. I am optimistic it will be helpful to teams at Polish universities and institutes who are looking for partners from different parts of the world. If science is to evolve, and if researchers are to be successful in their work, a two-way exchange is needed. We must travel to the best scientific centres, but the best scientists must also come to us.

Beyond the events that are directly connected with our activity, I would also like to look at last year from the perspective of the anniversaries of Poland regaining its sovereignty in 1989, i.e. of the consequent elections of 4 June 1989, and of the appointment of Tadeusz Mazowiecki's government. 2009 was a year for reviewing what we managed to accomplish in our country, what we achieved in the 20 years of free Poland.

If science is to evolve, and if researchers are to be successful in their work, a two-way exchange is needed. We must travel to the best scientific centres, but the best scientists must also come to us

For the academic community, 2009 was also a year of sad farewells. Far from the hustle and bustle of politics, a number of eminent scholars passed away: professors Barbara Skarga, Leszek Kołakowski, and Piotr Słonimski. Professors Kołakowski and Słonimski served the Foundation with their knowledge and experience as reviewers of applications in our competitions. Prof. Skarga was not only a friend of the Foundation, offering her support in various activities, and a recipient of the Foundation's Honoruable Distinction; she was also the "anonymous donor" who gave the Foundation 100,000 zlotys in 2005 for grants for young scientists. At the time, Prof. Skarga asked not to reveal her name. Now, as she is no longer with us, we believe it is right to tell people about her donation.

Writing of these three prominent scholars, I would like to quote the excellent and extremely apt article by Prof. Józef Kozielecki, "Zbyt mało uczonych, za dużo naukowców" ("Too Few Scholars, Too Many Scientists"), published in Nauka magazine (issue 3/2009), in which Kozielecki distinguishes between two notions: the scholar and the scientist. Scholars are those who "profoundly expand the body of knowledge on the material, social, symbolic, and spiritual world". Using the definitions and terminology of this article, Prof. Skarga was a "classic" scholar – her philosophical works expanded knowledge within an established paradigm; they brought more order to existing knowledge. Prof. Kołakowski was definitely a "pioneer" – his essay "Czym jest socjalizm" ("What Is Socialism"), or his work *Główne nurty marksizmu* (*The Main Currents of Marxism*), initiated a completely new approach to what we call "Marxist philosophy". For my generation, who matured intellectually in the time of "realist socialism", it also fostered rebellion against the reality around us. Finally, my friend, molecular biologist Piotr Słonimski, also produced works of a pioneering nature – he developed mitochondrial genetics almost from scratch. Yet he should be counted primarily among the "inspirers". As a man of creative intuition and charisma, he stimulated and directed other researchers, especially young people.

"Scholars", writes Prof. Kozielecki, "have special qualities of mind and personality". Apart from declarative knowledge, they display unusual creativity – they are bold and happy to take risks. They speak out in public not only on matters related to their field of learning. And even though today "rebellious" scholars are no longer severely punished, it is no coincidence that Kołakowski and Słonimski spent so many years as émigrés, or that Skarga was a prisoner of Soviet camps for 10 years. True scholars are not motivated by material advantages in their work, but by a passion for learning.

According to Prof. Kozielecki's definition, "scientists" only minimally expand the body of human knowledge; they contribute little to the development of science. A few types of these scientists can be distinguished: "imitators", "hangers-on", "erudites", and "outsiders". The last group are people with scientific degrees who work in politics, administration, or business. I will not elaborate on "scientists" here, lest I get into deeper trouble. Take my case, for example: as the president of a foundation, am I already an outsider? But I agree with Prof. Kozielecki that we have too few scholars and too many scientists in this country. All the elements of the science and higher education reform which is being discussed so intensively in our community should be checked using a simple test: whether they benefit scholars or scientists. We should also remember that, as the late Father Prof. Stanisław Kamiński from the Catholic University of Lublin used to say, scholars live for science, while scientists live off science.

Scholars, especially pioneers and classics, who discover new truths about nature, culture, and human nature are sometimes appreciated by their contemporaries. They are invited to give lectures and seminars at numerous universities, and they are given awards such as the Nobel Prize, honorary doctorates, or the FNP Prize. Thus, in 2009, the Foundation for Polish Science granted its highest award to four scholars: professors Jerzy Strzelczyk, Andrzej Koliński, Józef Barnaś, and Bogdan Marciniec. I encourage you to read the stories of their great achievements, published in the supplement to our Report.

I would like to thank everyone who supported our Foundation with their donations. In 2009 we raised 47,760.10 zlotys from payments of 1% of personal income tax into our account

The Foundation for Polish Science never forgets about the culture-building role of science.

In 2009, we completed an extremely important stage in our extended efforts to set up a Polish Chair at Columbia University, raising an endowment fund of $3 million for this unit. The FNP is one of the donors of the chair, and was involved both in the fund-raising effort and in promoting this initiative in Poland. Having raised the required funds on time, in December 2009 an international competition could be announced at CU to find a suitable professor. The unit should open in the autumn of 2010.

As usual, I would like to thank everyone who supported our Foundation with their donations. In 2009 we raised 47,760.10 zlotys from payments of 1% of personal income tax into our account. All of this money – together with a part of Prof. Barbara Skarga's donation – was used to increase the grants for young researchers returning to Poland under the HOMING programme. Thanks to these extra funds, 4,000 zlotys were added to the grant for each beneficiary of the programme. Since the HOMING Plus programme in 2010 will be financed from EU structural funds, any donations received by the Foundation will be used to increase the grants among the highest-achieving awardees, i.e among those young scholars (within the START programme) who were given the highest marks from reviewers.

Last year the Foundation saw a lively debate concerning the programmes we intend to prepare for the Polish scientific community in the coming years. As always, we are guided by the overriding motto which defines the main statutory goal of the Foundation for Polish Science: "supporting only the best so they can become even better".

J.D. Watson, joint discoverer of the double helix structure of DNA, said during his stay in Poland in 2009: "If you do what others do, it's unlikely you will discover anything new".

He was talking about scientific discoveries, but we think this can also serve as a great motto for foundations like ours – foundations supporting science. What direction should we take, what action? Father Prof. J. Tischner said in a documentary about his life: "There is only one problem that is the most interesting, the most beautiful of all: how to awaken a sense of freedom in someone else" (*Tak toczy się myśl* [My train of thoughts], directed by Ignacy Szczepański, 1990). The Foundation's activity and its programmes should do exactly that – awaken a sense of freedom among scholars. This is a necessary though insufficient condition for genuine scientific discoveries.

MACIEJ ŻYLICZ

FNP

Foundation for Polish Science

Programmes of the Foundation

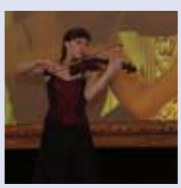














In 2009 the Foundation for Polish Science implemented 22 programmes. Two teams were involved: the team for programme implementation, and the team for EU-funded programmes operating under the Measure 1.2 "Strengthening the human resources potential of science" of the Innovative Economy Operational Programme 2007–2013.

The team for programme implementation handled existing grant programmes as well as one new programme – IDEAS FOR POLAND, targeted at recipients of the European Research Council's Starting Grants, and also EXTERIUS/POZA SZLAKIEM, which supports innovative, unique scientific projects and replaces the previous NOVUM and PARTNERZY programmes. The other team coordinated four programmes inaugurated in 2008: International PhD Projects (MPD), VENTURES, TEAM, and WELCOME.

Detailed information on the competitions and winners in the individual programmes is provided further on in the Report.

Spending on the programmes in 2009 totalled **more than 44.7 million zlotys.**

Prizes and Grants

FNP Prize

2009 was the eighteenth time that the Foundation for Polish Science granted its annual individual prizes for outstanding achievements and discoveries contributing significantly to intellectual life and the progress of civilization in Poland and ensuring Poland a place in the scientific community worldwide.

Upon the Foundation Council's request, 243 eminent scientists nominated their candidates for the FNP Prize. Similarly to the competition's previous edition, the selection procedure involved two stages.

The candidates' scientific achievements were evaluated by 57 mostly international reviewers and experts. They assessed the scientific value and originality of each work or achievement, its importance for the development of a given discipline, and also for enhancing the prestige of Polish science around the world. Each project's expected utility value was considered, and in the technical sciences its usefulness for economic practice.

The winners of the FNP Prize for 2009 are:

- in the field of the humanities and social sciences:
  Prof. Jerzy Strzelczyk from the Institute of History, Adam Mickiewicz University in Poznań, *for the dissertation* A Pen in Slender Hands, *which takes a fresh look at how creative works by women contributed to the development of European civilization from antiquity through to the first millennium AD*
- in the field of life sciences and medicine:
  Prof. Andrzej Koliński from the Faculty of Chemistry, University of Warsaw, *for the development and practical application of unique methods for protein structure prediction*
- in the exact sciences:
  Prof. Józef Barnaś from the Institute of Physics, Adam Mickiewicz University, and the Institute of Molecular Physics, Polish Academy of Sciences, in Poznań, *for developing the theoretical foundations of spintronics, particularly explaining the phenomenon of giant magnetoresistance*
- in the technical sciences:
  Prof. Bogdan Marciniec from the Faculty of Chemistry, Adam Mickiewicz University in Poznań, *for the discovery of new reactions and new catalysts for processes leading to the synthesis of organosilicon materials for industrial applications*

The amount of each individual cash prize was 200,000 zlotys.

1. *2009 FNP Prize Winners (left): professors J. Strzelczyk, A. Koliński, J. Barnaś and B. Marciniec*
2. *Guests of the ceremony gathered in the Great Assembly Hall (Sala Wielka) of the Royal Castle in Warsaw*
3. *The guests included representatives of the government and scientific administration*
4. *Cardinal Józef Glemp congratulates Prof. Strzelczyk*
5. *Katarzyna Janowska who hosted the ceremony*
6. *Prof. Andrzej Rottermund, Sejm Speaker Bronisław Komorowski, and Cardinal Józef Glemp at the ceremony*
7. *Michał Boni during his speech*
8. *Concert by Aleksandra Kuls, recipient of a scholarship from the Polish Children's Fund*

MISTRZ programme

ACADEMIC GRANTS FOR PROFESSORS

The aim of the programme is to support the best Polish researchers at the peak of their careers, by awarding them three-year grants to help them continue ongoing research or develop a completely new area of research.

The programme is addressed to researchers who effectively combine research work with teaching young scholars. The grants are awarded in a closed competition, each year for a different area of study. In 2009, the competition focused on the technical sciences.

The Foundation invited several dozen leading scientists (89 in this edition), recognized authorities in their particular fields, to suggest candidates. They nominated 57 researchers for the competition. The applications were evaluated by 120 reviewers, many of whom were based outside Poland. Based on the recommendations of an interdisciplinary panel of specialists, the FNP Board selected 9 recipients, awarding them three-year grants of 450,000 zlotys each.

The MISTRZ programme laureates

RECIPIENT	PROJECT	ORGANIZATION
Prof. Jan Awrejcewicz PhD hab., Eng.	*Mathematical modelling, simulation and control of nonlinear dynamic (biodynamic) processes and mechatronic experimental investigations*	Technical University of Łódź, Department of Automatics and Biomechanics
Prof. Paweł Kulesza PhD hab.	*Development and characterization of hybrid integrated catalytic materials for oxidation of ethanol*	University of Warsaw, Faculty of Chemistry
Prof. Mirosław Kutyłowski PhD hab.	*Communication and data protection techniques for e-society*	Wrocław University of Technology, Institute of Mathematics and Computer Science
Prof. Jacek Namieśnik PhD hab., Eng.	*New procedures for environmental analytics and studies of functional food*	Gdańsk University of Technology, Faculty of Chemistry
Prof. Maciej Niedźwiecki PhD hab., Eng.	*New approach to active noise and vibration control*	Gdańsk University of Technology, Department of Automatic Control
Prof. Juliusz Pernak PhD hab., Eng.	*Ionic liquids: from knowledge to application*	Poznań University of Technology, Institute of Chemical Technology and Engineering
Prof. Tadeusz Uhl PhD hab., Eng.	*Structural health monitoring – new techniques of structure health assessment*	AGH University of Science and Technology, Department of Robotics and Mechatronics
Prof. Wacław Urbańczyk PhD hab., Eng.	*Photonic crystal fibres for sensing and nonlinear applications*	Wrocław University of Technology, Institute of Physics
Prof. Tomasz Woliński PhD hab., Eng.	*Photonic liquid crystal fibres*	Warsaw University of Technology, Department of Optics and Photonics

International PhD Projects (MPD)

PROJECTS IMPLEMENTED DURING DOCTORAL STUDIES WITHIN THE INTERNATIONAL COOPERATION OF SCIENTIFIC INSTITUTIONS

Financed from structural funds under Measure 1.2. "Strengthening the human resources potential of science" of the Innovative Economy Operational Programme 2007–2013.

The programme provides support to research units working together with foreign partners on PhD studies. The aim is to improve the standard of scientific research conducted in Poland by young scientists as they prepare their doctoral dissertations, and to intensify the international cooperation of Polish research units.

In this programme the Foundation finances the PhD students' research and covers the costs of the consortium's scientific cooperation.

Eligible applicants are scientific consortia composed of at least one Polish institution and at least one foreign institution. The 2009 call attracted 22 applications. Six projects were awarded funding.

Prof. Alina Ciach, the MPD programme laureate with her team

The MPD programme laurates

RECIPIENT	INSTITUTION	PROJECT	AWARDED FUNDING [in PLN]
Prof. Alina Ciach, PhD hab.	Institute of Physical Chemistry, Polish Academy of Sciences	*Fundamental research with applications in bio- and nanotechnology and information processing*	5,534,100
Prof. Piotr Gwiazda, PhD hab.	University of Warsaw	*Mathematical Methods in Natural Sciences*	5,749,000
Prof. Jacek Młynarski, PhD hab.	Jagiellonian University	*New Materials – Modern Technologies – Sustainable Concepts*	6,562,000
Prof. Adam Szewczyk, PhD hab.	Nencki Institute of Experimental Biology, Polish Academy of Sciences	*International PhD Studies in Neurobiology*	5,667,997
Prof. Mirosław Wielgoś, PhD hab.	Medical University of Warsaw	*Molecular Genomics, Transcriptomics and Bioinformatics in Cancer*	3,383,000
Prof. Jacek Wosiek, PhD hab.	Jagiellonian University	*International PhD Studies in Physics of Complex Systems*	4,546,000

START programme

STIPENDS FOR YOUNG RESEARCHERS

These stipends have been available since 1993 to young researchers who are at the start of their careers, however they already have significant achievements in their field. Eligible applicants are employees or PhD students from scientific institutions who are no older than 30 in the year they submit their application (or 32 if they have been on extended maternity leave). The stipends are a form of recognition of the young researchers' achievements so far and aim to encourage further development.

In this programme the main criterion for evaluating applications is the scientific quality and originality of the candidates' published output and their research achievements; the research plans presented in the applications are also evaluated.

The competition for stipends in 2009 resulted in 872 submissions.

Following an in-depth analysis of the applications and based on the opinions of reviewers, 106 stipends of 24,000 zlotys each were awarded.

In 2006 the Foundation for Polish Science signed an agreement with the Council for the Lindau Nobel Laureate Meetings. Now each year the Foundation nominates young scientists – recipients in the START programme – to take part in these meetings which are held in Lindau (Germany). The 2009 meeting, devoted to chemistry, was attended by 5 of the Foundation's stipend recipients.

The awardees of the START programme after receiving their certificates at the Royal Castle in Warsaw

POWROTY/HOMING programme

REINTEGRATION GRANTS FOR POLISH SCIENTISTS

The aim of the POWROTY/HOMING programme, which the FNP has offered since 2006, is to encourage young Polish scholars to return to Poland after extended traineeships abroad. The Foundation substantially supports recipients, improving their work conditions and facilitating the continuation of their collaboration with foreign centres.

The fourth competition attracted 85 applications. Following the two-stage competition procedure in which applications were evaluated by 108 experts (including 65 from foreign institutions), the Foundation Board selected 16 recipients.

The grant, awarded for two years, comprises a personal stipend (36,000 zlotys per year) and funds for a research project and for continued cooperation with the foreign institution. It is possible to apply for an extension of financing for a third year.

The project part of the grant is co-financed by member states of the European Economic Area, namely Iceland, Liechtenstein and Norway, as part of the EEA Financial Mechanism.

The HOMING programme laureates

RECIPIENT	FOREIGN INSTITUTION FROM WHICH THE RECIPIENT IS RETURNING	POLISH UNIT TO WHICH THE RECIPIENT IS RETURNING
Michał Chmielewski	Institut de Science et d'Ingenierie Supramoleculaires, Strasbourg, France	Faculty of Chemistry, University of Warsaw
Łukasz Cywiński	University of Maryland, USA	Institute of Physics, Polish Academy of Science, Warsaw
Piotr Faliszewski	Department of Computer Science, University of Rochester, USA	AGH University of Mining and Metallurgy
Łukasz Gruszczyński	European University Institute, Italy	Institute of Law Studies, Polish Academy of Sciences, Warsaw
Bartosz Karaszewski	Division of Clinical Neurosciences, University of Edinburgh, United Kingdom	Adult Neurology Clinic, Medical University of Gdańsk
Zofia Madeja	Developmental Genetics and Imprinting, The Babraham Institute, Cambridge, United Kingdom	Poznań University of Life Sciences
Michał Malinowski	Geological Survey of Canada	Institute of Geophysics, Polish Academy of Sciences, Warsaw
Adam Mrozowicki	Catholic University of Leuven, Centre for Sociological Research (CeSO), Belgium	Institute of Sociology, University of Wrocław
Marlena Nowaczyk	Mathematics LTH, Lund University, Sweden	Institute of Mathematics, Polish Academy of Sciences, Kraków
Marcin Nyk	Institute for Lasers, Photonics and Biophotonics, University at Buffalo, USA	Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wrocław
Agnieszka Słowikowska	Foundation for Research and Technology – Hellas, Greece	Institute of Astronomy, University of Zielona Góra
Renata Solarska	EMPA – Swiss Federal Laboratories for Materials Testing and Research, Switzerland	Faculty of Chemistry, University of Warsaw
Bartosz Trzaskowski	California Institute of Technology, Pasadena, USA	International Institute of Molecular and Cell Biology in Warsaw
Przemysław Wachulak	Colorado State University, USA	Military University of Technology in Warsaw Faculty of Pharmaceutics with Laboratory
Paweł Wiczling	Department of Pharmaceutical Sciences, University at Buffalo, USA	Medicine Division, Medical University of Gdańsk
Rafał Zwolak	Division of Biological Sciences, University of Montana, USA	Faculty of Biology, Adam Mickiewicz University, Poznań

FOCUS programme

SUBSIDIES FOR ESTABLISHING RESEARCH GROUPS

The aim of the programme is to support young researchers with recognized scientific achievements in a field specified by the Foundation each year as having particular significance for the development of Poland's civilization. The Foundation's support is meant to enable young scientists to take on new, original, and promising research topics as well as providing assistance at the initial stages of creating their own research team.

The programme's 2009 edition addressed scholars in the humanities and social sciences, and the topic was the linguistic categorization of the world. The first stage involved workshops organized by the Foundation in late February 2009; participants included young researchers as well as prominent scholars from Poland, Germany, the United States, Belgium, and Norway, whose research concerned the linguistic categorization of the world.

The competition attracted 43 applications. The recipients will be selected in the first quarter of 2010, at the end of the competition procedure.

The previous year's competition was concluded at the start of the reporting year; the topic was molecular and biochemical research on cancer. Five three-year subsidies of 300,000 zlotys each (100,000 zlotys per year) were awarded.

IDEAS FOR POLAND programme

FELLOWSHIPS FOR ERC STARTING GRANTS WINNERS

Implementation of this programme began in 2009. Eligible applicants are the beneficiaries of the ERC Starting Grants offered by the European Research Council, however only those who plan to carry out research in Poland.

The aim of the programme is to encourage leading young researchers from all over the world to choose Poland as the place where they will carry out the research project they submitted for the ERC competition. In this programme, candidates apply for a grant (for a maximum of 6 years) directly after obtaining their ERC grant or during its implementation. The grant comprises a stipend (a personal grant of up to 10,000 zlotys per month) and a project part of up to 100,000 zlotys in a lump sum paid at the start of the project. Such funding may be received only once and is awarded in a competition.

Two recipients of the Starting Grants responded to the call for applications in 2009. Their applications are being reviewed, and the final decision will be taken in 2010.

TEAM programme

Financed from structural funds under Measure 1.2. "Strengthening the human resources potential of science" of the Innovative Economy Operational Programme 2007–2013.

PROJECTS CARRIED OUT BY STUDENTS, PHD STUDENTS AND POSTDOCS IN THE BEST RESEARCH TEAMS IN POLAND

The aim of the programme is to increase the involvement of young researchers in the best teams and laboratories all over Poland, in the fields described as Bio, Info, Techno.

The programme is targeted at scientists planning to set up their own research teams comprising young researchers (graduate students, PhD students, and young PhDs), and at experienced researchers who want to hire new members for their research teams. The condition is that team members are sought in an open recruitment procedure in Poland and internationally.

The second competition, announced in 2008, ended at the start of 2009. Out of 47 applications, 7 projects were chosen for implementation.

The next call for applications was announced in January 2009. A total of 57 applications were submitted, and 8 projects were selected in the competition procedure.

WELCOME programme

Financed from structural funds under Measure 1.2. "Strengthening the human resources potential of science" of the Innovative Economy Operational Programme 2007–2013.

PROJECTS CARRIED OUT BY OUTSTANDING SCIENTISTS FROM ABROAD ESTABLISHING RESEARCH TEAMS IN POLISH SCIENTIFIC INSTITUTIONS

The aim of the programme is to involve eminent scientists from abroad in setting up research teams in Poland and to intensify the international cooperation of Polish research units. The programme is addressed to Polish scientists returning to Poland from abroad and to scientists from other countries planning to come to Poland and lead a research team.

Applications should be submitted by the candidate in association with the unit where the project will be carried out (in the Bio, Info, Techno research areas). Financing includes a grant for the foreign scientist heading the team (from 200,000 zlotys per year), personal grants for the team members, and a research grant (up to 1 million zlotys per year). Projects may last from 3 to 5 years.

The first edition (in 2008) received 24 applications, from which 3 projects were selected for implementation at the start of 2009.

The beneficiaries are:

- **Prof. Stanisław Karpiński, PhD hab.**, from the Warsaw University of Life Sciences, whose biology project, *Functional Analysis of Genetic, Molecular and Quantum Mechanisms that Regulate Plants' Productivity, and Biotechnologies for Cell Wall Degradation and Hydrogen Production*, received 6,641,800 zlotys
- **Sebastian Maćkowski, PhD,** from the Nicolaus Copernicus University in Toruń, whose physics project, *Hybrid Nanostructures as a Stepping-Stone Towards Efficient Artificial Photosynthesis*, received 4,000,000 zlotys
- **Prof. Marek Samoć, PhD hab. Eng.,** from the Wrocław University of Technology, whose materials engineering project, *Organometallics in Nanophotonics*, received 6,311,459 zlotys

The programme's second edition, announced in early 2009, received 33 applications, of which two were chosen:

- **Agnieszka Chacińska, PhD hab.,** from the International Institute of Molecular and Cell Biology, whose biology project, *Biogenesis and Turnover of Mitochondrial Intermembrane Space Proteins*, received 5,940,670 zlotys
- **Tomasz Guzik, PhD hab.,** from the Jagiellonian University, whose medicine project, *Immune Mechanisms of Hypertension and Vascular Dysfunction – the Search for New Anti-Hypertensive Strategies*, received 6,364,000 zlotys

FELLOWSHIPS

KOLUMB programme

POSTDOCTORAL OUTGOING FELLOWSHIPS

These fellowships enable outstanding young researchers who have not been on long-term foreign traineeships or research visits (6–12 months) after obtaining their PhD to go on a postdoctoral traineeship to leading research centres worldwide.

In 2009, candidates could apply for funding for a stay at a centre of their choice or for a fellowship to one of the foreign institutions with which the Foundation signed agreements in 2006–2008. A visit to these particular centres involves extra benefits for the fellows. The institutions with which the FNP has signed such agreements include the College of Clare Hall at the University of Cambridge, the National Science Council of Taiwan, the National Institute for Agricultural Research in France (INRA), and the National Institute for Health and Medical Research (INSERM), also in France.

The fifteenth edition of this programme received 150 applications. They were evaluated by 143 reviewers from Poland and other countries. Following a two-stage competition procedure, 11 fellowships were awarded.

The beneficiaries are:

- **Łukasz Albrecht, PhD,** from the Institute of Organic Chemistry, Technical University of Łódź, for a one-year fellowship at the Department of Chemistry, Aarhus University (Denmark)
- **Adam Bzdak, PhD,** from the Henryk Niewodniczański Institute of Nuclear Physics, Polish Academy of Sciences, for a one-year fellowship at the Lawrence Berkeley National Laboratory (USA)
- **Łukasz Dobrzycki, PhD,** from the Faculty of Chemistry, University of Warsaw, for a one-year fellowship at the Department of Chemistry, University of Duisburg – Essen (Germany)
- **Agnieszka Kaczor, PhD,** from the Department of Synthesis and Chemical Technology of Medicinal Substances, Medical University of Lublin, for a one-year fellowship at the Computer Aided Drug Design Laboratory, Pompeu Fabra University in Barcelona and the Barcelona Biomedical Research Park (Spain)
- **Karol Kamiński, PhD,** from the Faculty of Medicine, Medical University of Białystok, for a one-year fellowship at the Cardiovascular Division, Department of Medicine, Harvard Medical School (USA)
- **Wiesław Laskowski, PhD,** from the Institute of Theoretical Physics and Astrophysics, University of Gdańsk, for a six-month fellowship at the Faculty of Physics Ludwig-Maximilians-University of Munich (Germany)
- **Bartosz Lewandowski, PhD,** from the Institute of Organic Chemistry, Polish Academy of Sciences, for a one-year fellowship at the School of Chemistry, University of Edinburgh (UK)
- **Stanisław Meyer, PhD,** from the Institute of Oriental Philology, Jagiellonian University, for a five-month fellowship at the National Institute of Japanese Studies, White Rose East Asia Centre, University of Sheffield (UK)
- **Piotr Przytycki, PhD,** from the Institute of Mathematics, Polish Academy of Sciences, for a 10-month fellowship at the Department of Mathematics, University of Illinois at Urbana-Champaign (USA)
- **Krzysztof Rębała, PhD,** from the Department of Forensic Medicine, Medical University of Gdańsk, for a six-month fellowship at the Institute of Evolutionary Biology, Spanish National Research Council (CSIC) and Pompeu Fabra University in Barcelona (Spain)
- **Jarosław Źrałka, PhD,** from the Institute of Archaeology, Jagiellonian University, for a seven-month fellowship at the Department of Anthropology, University of Pennsylvania, Museum of Archaeology and Anthropology (USA)

Support grants

FOR FELLOWS RETURNING FROM FOREIGN VISITS

Beneficiaries of the KOLUMB programme returning from foreign visits may apply for a supporting grant of 40,000 zlotys enabling them to make proper use of the knowledge and skills acquired during their fellowships at the world's leading research centres. The grant enables them to set up or modernize research facilities and to continue their collaboration with the foreign research centres. There were 15 applicants in 2009 and all of them received the supporting grants.

Fellows whose visits were financed from the funds the Maria Skłodowska-Curie Joint Fund II may apply for a grant of 60,000 zlotys. Two people received such grants in 2009.

Małgorzata Pilot, PhD, the KOLUMB programme awardee, received a support grant in 2009

KWERENDA programme

GRANTS FOR ARCHIVE SEARCHES ABROAD

Grants for specialist searches at foreign libraries and archives are awarded for searches and studies of source materials from the humanities and social sciences which are unavailable in Poland but necessary to complete research projects.

These grants are offered to scholars who obtained their PhDs no earlier than 9 years before the year in which they submit their application and who are employed at a research institution. The grant may be awarded for a period from 1 to 3 months.

Applications were not accepted in 2009, but the 2008 competition was resumed; out of 96 applications, 18 grants were awarded.

Conference Grants

The aim of the programme is to enable Polish researchers (aged up to 35) to take part in international scientific congresses, symposia, and conferences in Poland or abroad. Eligible applicants are those who plan to present a paper or poster at a conference, and who have documented achievements in the field corresponding to the conference topic. They have to be employees or PhD students of a Polish institution of higher education or other Polish research institution.

Based on an agreement on cooperation, the competition is run by the Warsaw Scientific Society, while the FNP finances the grants and the programme's running costs.

In accordance with the programme regulations, four calls for applications were announced in 2009, bringing in a total of 520 submissions. Following the qualification procedure, 98 applicants received supplementary funding enabling them to take part in foreign scientific congresses and conferences across Europe as well as the United States, Canada, Australia, Brazil, Mexico, Argentina, Chile, Japan, and South Africa.

Support for Technology Transfer

VENTURES programme

SUPPORTING INNOVATIVE PROJECTS REALIZED BY YOUNG RESEARCHERS

Financed from structural funds under Measure 1.2. "Strengthening the human resources potential of science" of the Innovative Economy Operational Programme 2007–2013.

The aim of this programme is to stimulate pro-innovation attitudes among young researchers, to encourage students, graduates, and PhD students to undertake scientific research whose effects can be applied in the economy. Funding in the programme is available for projects from any field. Candidates submit their applications together with the research units where their project is to be carried out.

Funding is provided for a grant for the project's author (from 1,500 to 3,000 zlotys per month) and a research grant (up to 35,000 zlotys per year). Projects may take from 1 to 3 years.

Early 2009 saw the conclusion of the competition from the previous year, for which 28 applications were submitted. Eight projects received funding. The next, third call for applications was announced in 2009. Out of 54 applications, 7 projects were awarded funding.

Magdalena Iwanicka, the VENTURES programme beneficiary

INNOVATOR programme

TRAINING AND ASSISTANCE AT THE IMPLEMENTATION LEVEL

2009 was the final year of this programme. Its objective was to familiarize researchers with market mechanisms and principles of business activity, as well as to provide financial assistance and advice on preparing innovative projects at the early stage of commercialization.

The programme addressed young researchers – PhD students and PhDs from any discipline. To qualify for the programme, they had to present an interesting idea for an innovative project or invention. The programme was implemented in three stages. In stage one the group of applicants with the most interesting ideas took part in a training course on how to run a business involving innovations. During this training the participants prepared business plans which were then evaluated. From among all the business plans, the Foundation Board chose the projects for next stage. In stage two we provided funding to selected projects and financed the support of consultants who assisted the researchers in the early stage of running a business.

The workshops were no longer held in 2009; business plans that will receive funding were chosen from among those submitted in previous years.

Publications

MONOGRAPHS programme

FUNDING FOR THE PUBLICATION OF MONOGRAPHS IN THE HUMANITIES AND SOCIAL SCIENCES

This continuous competition for monographs in the humanities and social sciences, held since 1994, had yielded 139 published titles in the FNP MONOGRAPHS series by the end of 2009. In addition, reissues of 13 monographs were released up to 2003.

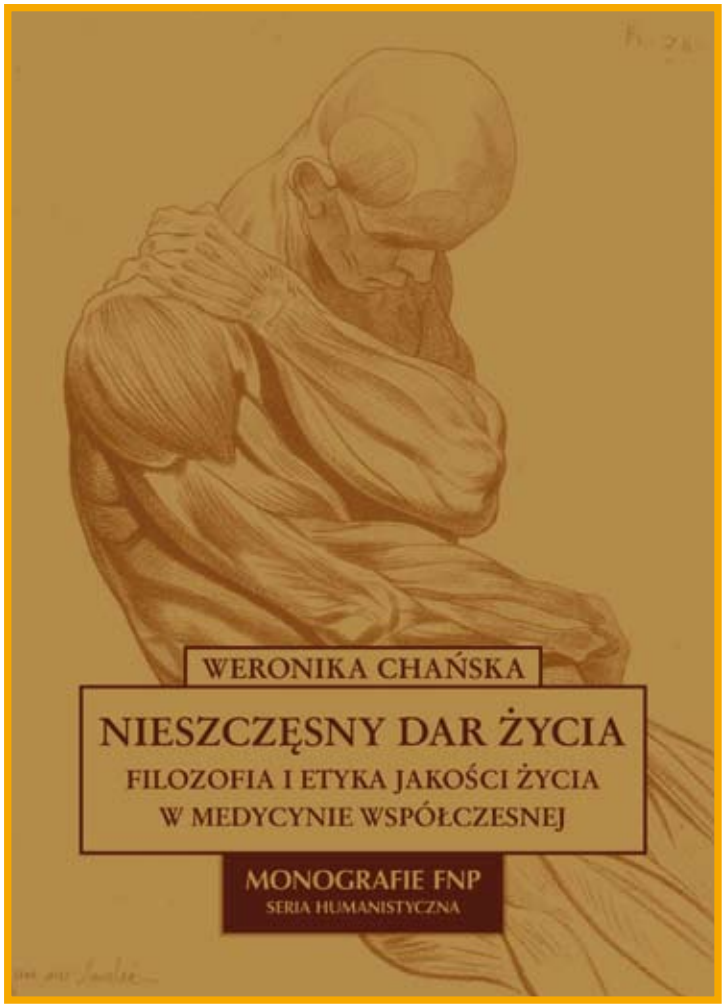
In the reporting year the Publishing Council, which acts as a panel of experts for the programme, evaluated 86 submissions in the peer review system, of which 11 were accepted for publication in the series.

Eleven titles were published in 2009:

- **Weronika Chańska** – *Nieszczęsny dar życia. Filozofia i etyka jakości życia w medycynie współczesnej* [*The wretched Gift of Life: Philosophy and the Ethics of Quality of Life in Contemporary Medicine*]
- **Jacek Gądecki** – *Za murami. Osiedla grodzone w Polsce – analiza dyskursu [Behind the Wall: Fenced Housing Estates in Poland]*
- **Grażyna Jurkowlaniec** – *Epoka nowożytna wobec średniowiecza* [*The Modern Era versus the Middle Ages*]
- **Justyna Kowalska-Leder** – *Doświadczenie Zagłady z perspektywy dziecka w polskiej literaturze dokumentu osobistego* [*The Holocaust from a Child's Viewpoint in Polish Personal Document Literature*]
- **Stanisław Łojek** – *Megalopsychokracja. O cnocie w polityce i polityce cnoty (od Homera do Arendt i Straussa)* [*Megalopsychiocracy: On Virtue in Politics and the Politics of Virtue (from Homer to Arendt and Strauss)*]
- **Grzegorz Myśliwski** – *Wrocław w przestrzeni gospodarczej Europy (XIII–XV w.). Centrum czy peryferie?* [*Wrocław in the Economic Space of Europe (13th–15th Centuries): Centre or Periphery?*]
- **Robert Poczobut** – *Między redukcją a emergencją. Spór o miejsce umysłu w świecie fizycznym [Between Reduction and Emergence: The Dispute over the Place of the Mind in the Physical World]*
- **Artur Przybysławski** – *Buddyjska filozofia pustki* [*Buddhist Philosophy of Emptiness*]
- **Tadeusz Szubka** – *Filozofia analityczna. Koncepcje, metody, ograniczenia* [*Analytical Philosophy: Concepts, Methods, Limitations*]
- **Adam Workowski** – *Ontologiczne podstawy posiadania* [*Ontological Foundations of Ownership*]
- **Paweł Żmudzki** – *Władca i wojownicy. Narracje o wodzach, drużynie i wojnach w najdawniejszej historiografii Polski i Rusi* [*Rulers and Warriors: Narratives on Chieftains, Troops, and Wars in the Earliest Historiography of Poland and Ruthenia*]

The FNP MONOGRAPHS series has a very good reputation among the academic community, editors, and readers, as proved by numerous book awards. In the Klio Award competition for historical books held in Warsaw in 2009, three books published in the series won awards, and two books were nominated for the Wrocław competition for the Fredro's Pen award.

The programme also offers funding for translations into a foreign language of works published in the FNP MONOGRAPHS series or other works from the humanities as long as the subject matter is directly related to Poland. Eligible applicants are those whose works are being considered for publication by a renowned foreign publisher.



Upon the publication of Nieszczęsny dar życia. Filozofia i etyka jakości życia w medycynie współczesnej *by Weronika Chańska, PhD, the Foundation organized a debate at the University of Warsaw Library on the differences between the ethics of quality of life and the ethics of sanctity of life in contemporary medicine. Apart from the writer herself, the participants in the panel discussion included prominent scholars from the fields of ethics, philosophy, medicine, sociology and law: professors Andrzej Górski, Zbigniew Szawarski, and Father Andrzej Szostek.*

1. *The debate was chaired by Krzysztof Michalski*
2. *Weronika Chańska, author of the book* Nieszczęsny dar życia [Wretched Gift of Life]
3. *The debate*
4. *Father prof. Andrzej Szostek*
5. *Discussion involving the audience*

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In 2009, we provided funding for the translation of four works by Polish scholars, which are due to be released by various foreign publishers. They are:

- **Mikołaj Gładysz** – *Forgotten Crusaders: Poland and the Crusading Movement in the Twelfth and Thirteenth Centuries* – publisher: Brill, Leiden (The Netherlands)
- **Jakub Morawiec** – *Wolin w średniowiecznej tradycji skandynawskiej* [*Wolin in Mediaeval Scandinavian Tradition*] – publisher: Verlag Fassbaender, Wien (Austria)
- **Marian Rębkowski** – *Chrystianizacja Pomorza Zachodniego. Studium archeologiczne* [*The Christianization of Western Pomerania: An Archaeological Study*] – publisher: Habelt Verlag, Bonn (Germany)
- **Barbara Szmigielska-Siuta** – *Children's Dreams* – publisher: Science Publishers, N.Y. (USA)

Publishing projects

The aim of this programme is to support serial publications which document Poland's historical heritage and civilization. Funding from the programme is available to research and editing teams working on such academic publications.

Publications that qualified for the programme in 2008 and were financed in 2009: *Archiwum Ringelbluma – konspiracyjne archiwum getta warszawskiego* [*The Ringelblum Archive – the Underground Archive of the Warsaw Ghetto*] by Eleonora Bergman, PhD, from the Jewish Historical Institute (ŻIH), *Słownik polszczyzny XVI wieku* [*Dictionary of 16th-century Polish*] (vol. 33–37) by Patrycja Potoniec, PhD, from the Institute of Literary Research, Polish Academy of Sciences, and *Słownik historyczno-geograficzny ziem polskich w średniowieczu* [*Historical and Geographical Dictionary of Polish Territories in the Middle Ages*] by Prof. Tomasz Jurek, PhD hab., from the Institute of History, Polish Academy of Sciences.

The programme also encompasses publications financed by the FNP for some years, including: *Polski Słownik Biograficzny* [*Polish Biographical Dictionary*] – published by the Institute of History, Polish Academy of Science (issues 184, 185 and 186 were published in the reporting year) and the series Origines Polonorum, a cycle of monographs published as part of the research project "Polish Territories at the Turn of the Millennium".

FNP Conferences

It is now fourteen years since the Foundation started organizing its FNP Debates on Science – meetings of eminent scholars devoted to important problems of the academic community. There was no meeting in this series in 2009. The next meeting is planned for the first quarter of 2010.

International Cooperation

COPERNICUS Award

POLISH-GERMAN SCIENTIFIC AWARD

The COPERNICUS award is a joint project of the Foundation for Polish Science and Deutsche Forschungsgemeinschaft (DFG). The aim is to recognize and honour the most active participants in Polish-German scientific cooperation, those who have outstanding research achievements which are the result of that cooperation as well as major successes in promoting young research workers.

The award is conferred once every two years, following a competition, to eminent scientists from any field of research. Those eligible for the award are scientists holding at least a doctoral degree, under 65 years of age, who work at a Polish or German scientific institution, and are involved in a Polish-German scientific project at the time of being granted the award.

The winners are chosen from among the nominees by a panel of judges appointed by the DFG and FNP. The prize amount in the first two editions was 50,000 euros, 25,000 euros for each of the two award-winners. In 2008 the DFG and FNP decided jointly that starting with the next edition, the amount would be doubled to 100,000 euros, or 50,000 euros for each of the award-winners.

The competition announced in June 2009 received 12 applications. The winners of the COPERNICUS Award will be announced in April 2010.

Alexander von Humboldt Polish Honorary Research Fellowship

Under an agreement signed in 1995 with the Alexander von Humboldt Foundation, the Foundation for Polish Science awards the Polish Honorary Fellowship to German scholars, irrespective of their field of study, in appreciation of their scientific achievements and contribution to the development of the two countries' scientific cooperation. The fellowship is the equivalent of the Humboldt-Forschungspreise, prestigious awards granted to eminent scholars from other countries by the Humboldt Foundation. The purpose of the fellowship is to recognize the recipients' scientific achievements and to stimulate long-term cooperation between Polish and German researchers.

Candidacies of German scholars for the Polish Honorary Fellowship for a research visit to Poland may be submitted to the Foundation for Polish Science exclusively by Polish scholars. They have to guarantee the German recipient the technical facilities to complete the planned research project.

No candidates were submitted for the programme in 2009.

Prof. Jan Harff (right) is on an A. von Humboldt Polish Honorary Fellowship at the University of Szczecin at the invitation of Prof. Andrzej Witkowski (left)

Research Fellowships for Scholars from CEE Countries

This grant programme, based on an agreement signed between the Foundation for Polish Science and the Józef Mianowski Fund, enables researchers from other countries, chiefly from Central and Eastern Europe as well as Asia, to work at Polish research units. The amount of the grant, awarded for a period from 1 to 12 months, is based on to the average salary in an equivalent job position in Poland. The grant also covers accommodation, insurance, and travel costs.

The competition and the fellowship disbursement is the responsibility of the J. Mianowski Fund, while the FNP finances the programme and participates in the selection process. Grants are also awarded to researchers recommended by the Institute of Interdisciplinary Studies "Artes Liberales" (IBI AL) from the University of Warsaw.

A total of 70 grants were disbursed in 2009, including 53 awarded in 2008 and 17 grants recommended by IBI AL and awarded from the programme in 2009. Furthermore, four grants from 2007 were continued.

The competition for 2010 attracted 168 applications. As in the previous year, applications were accepted from both the natural and exact sciences and the humanities and social sciences. Grants were awarded to 56 scholars, and these will be implemented in 2010.

Other initiatives

EXTERIUS programme

FINANCIAL SUPPORT FOR EXCEPTIONAL INITIATIVES OF SIGNIFICANT IMPORTANCE FOR RESEARCH IN POLAND

This is a new programme by means of which the Foundation provides financial support to unique initiatives of major importance for research in Poland which cannot obtain funding from other sources and are not supported by any other programme of the Foundation. The competition in this programme is a continuous one, and applications are presented for review after a preliinary selection. In 2009 grants were awarded to 4 applicants, in the total amount of almost 125,000 zlotys.

The Zamość region – fragment of a topographical map of Galicia from 1779–1783; its digitalization received support under the Exterius programme (beneficiary: Assoc. Prof. Andrzej Janeczek, PhD hab.)

FUNDS FOR LIBRARIES programme

This programme, started in 2008, aims to help libraries to apply for subsidies from EU structural funds offered to Poland in 2007––2013. The programme is available to libraries and archives whose collections are of significant importance to Poland's research output and historical heritage, but which have insufficient administrational capacities to prepare proper applications. The programme offers libraries the assistance of experts in writing their applications and covers the costs related to preparing the documentation needed to apply for EU funds.

In 2009, the Foundation received more than ten applications from libraries all over Poland, of which one, fulfilling all the formal and merit requirements, has a chance to receive the FNP's support.

At the initiative of the Foundation, the ACADEMICA project involving a digital library of academic publications was prepared by the National Library and NASK. The project received funding in the amount of 34 million zlotys in a competition in the Innovative Economy programme.

Cooperation with international organizations

We continued to establish international cooperation in 2009, with institutions and organizations supporting research outside Poland, mainly in Europe and the United States.

As part of this cooperation, the Foundation organized a meeting of Polish and German organizations which support research, and the ultimate effect will be „Science & Art in Europe" a conference planned for mid-2010 and devoted to research cooperation between Poland and Germany in areas such as climate, energy, and ecology.

Furthermore, the FNP signed an agreement with the Max Planck Society regarding a project in which the two institutions will jointly finance a research team for a period of 10 years.

The Foundation continued to take part in the work of the Steering Group European Forum on Philanthropy & Research Funding, taking an active part in the conference on partnership in research organized by the Wellcome Trust in December 2009.

The Foundation's representatives also took part in numerous conferences and workshops organized by the European Science Foundation, the European Commission, Deutsche Forschungsgemeinschaft, and other European and non-European organizations.

Evaluation of the FNP's programmes

Evaluations of the Foundation's programmes have been conducted for several years but in 2009 they were particularly concerned with the KOLUMB programme. A qualitative study of the careers of its recipients was carried out, in particular regarding their further mobility. Career quality studies were also conducted for grant recipients in the START and POWROTY/HOMING programmes.

Furthermore, we monitored the methods of candidate evaluation in the FNP programmes. The survey encompassed all the programmes implemented last year.

The four programmes financed from EU structural funds were also monitored. This survey focused on the programme goals, expected results, and principles of application selection as well as formal limitations encountered in programme implementation.

The FNP's new headquarters

In April 2009, the Foundation for Polish Science announced a competition for an architectural and construction concept to modernize and expand the building at 20/22 Krasickiego St. in Warsaw, due to become the FNP's new headquarters.

Twelve proposals were submitted. After a formal review of the entries, nine were approved for merit evaluation.

The designs were evaluated by a panel of judges: Prof. Maciej Żylicz – chairman of the panel, Prof. Włodzimierz Bolecki, Dr. Tomasz Perkowski, architect Paweł Majkusiak, engineer Jerzy Wojciech Wróbel. In September 2009, the judges awarded prizes to the three most interesting proposals. The winner of the first prize, the studio Faab Architektura, was invited to carry out the project.

The design chosen by the Foundation involves innovative, pro-environmental solutions that help save electricity and heat (e.g. environment-friendly materials, photovoltaic systems) and reduce water consumption.

Visualization of the winning design

Competition results:

First Prize in the amount of PLN 15,000 and an invitation to negotiate the contract terms: Adam Białobrzeski, Adam Figurski – Faab Architektura

Second Prize in the amount of PLN 8,000: Pracownia Obsługi Inwestorów ProInvest Sp. z o.o.

Third Prize in the amount of PLN 6,000: Zbigniew Fijałkowski, Magdalena Wroniszewska

The Polish Chair at Columbia University

Thanks to the joint effort of the Polish Consulate General in New York and the Foundation for Polish Science, the endowment fund ($3 million) required to found a Polish Studies unit at Columbia University was raised in 2009. The Foundation has been a part of this project since 2005, donating a total of $250,000 to the endowment fund.

To celebrate the successful end of the fund-raising process, a press conference was held by the FNP in Warsaw in March 2009. The participants included the donors as well as the Ministers of Foreign Affairs, the Treasury, Culture and National Heritage, and Science and Higher Education.

In December 2009, Columbia University announced an international competition for the post of professor of the future Polish Chair.


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1. *Prof. W. Bolecki, vice-president of the FNP, who hosted the conference*
2, 3 and 4: *The conference, which was opened by Minister of Foreign Affairs Radosław Sikorski, was attended by representatives of the FNP, the Polish Consulate General in New York, and donors*
5. *Minister Sikorski answering questions from journalists*

The Foundation's Foreign Reviewers and Experts in 2009

The group of several hundred reviewers and experts working with the FNP in 2009 included numerous scholars from foreign scientific institutions:

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Serretti, Seong Han Shin, Piotr Sicinski, Thomas Simpson, Robert Singer, Zuzanna Siwy, Tomasz Skórski, Jordan Smoller, Timothy Snyder, Torsten Soderstrom, Frantisek Spurny, Vasile Staicu, Lucas Stal, Jurgen Stamm, Georgios Stavroulakis, Zenon Stęplewski, George Studziński, Witold Surewicz, Brendan Sweetman, Wojciech Szpankowski, Bolesław Szymański, Krzysztof Śliwa, Atsushi Takahara, Nobuo Takeda, Sigitas Tamulevicius, Piotr Tekely, A.Erman Tekkaya, Nguyen Thanh, Luc Thevevenaz, Annegret Thieken, Jean-Luc Tissot, Wei Tongbo, Geza Toth, Gillian Tozer, Anna Tramontano, Massimo Trucco, Sergei Turitsyn, Elif Derya Ubeyli, Alejandro Urena Fernandez, Jaap Van Dieen, Arent Van Nieukerken, Ferdinand Verhulst, John Villadsen, Anna Tereza Viveiros, Jorg Vogel, Brigitte Voit, Johannes Von Moltke, Andreas Wacke, Philip Wadler, Hermann Wagner, Yang Wang, Bin Wang, Lianzhou Wang, Remi Wattier, Thomas Webster, Andrzej Wieckowski, Richard Wielebinski, Frans Willekens, Ma-Li Wong, Peng Wu, Dongrui Wu, Hans Joachim Wunderlich, Charles Wyman, Ruey Jen Yang, Oliver Yu, Yan Yu, Lotfi Zadeh, Radosław Zagożdżon, Luca Zampieri, Marek Zaremba, Chongli Zhong, Jacek Żurada.

FNP

Foundation for Polish Science

Abridged Version of the Financial Statements and the Independent Auditor's Opinion

The full version of the Foundation's Activity Report for 2009, available in Polish language, drawn up in accordance with the ordinance of the Minister of Justice of 8 May 2001 on the general scope of reports submitted by foundations (Journal of Laws No. 50 of 2001, item 529), has been submitted to the Minister of Science and Higher Education.

A copy of the Activity Report of the Foundation, which was granted the status of a registered public benefit organization on 31 December 2004, has also been submitted to the Minister of Labour and Social Policy.

In compliance with the Law on Foundations of 6 April 1984 (Journal of Laws No. 21 of 1984, item 97 as amended) and the Law on Public Benefit Activities and on Voluntary Service of 24 April 2003 (Journal of Laws No. 96 of 2003, item 873 as amended), the Foundation makes the full version of the Foundation's Activity Report for 2009 available in Polish to anyone interested. The document can be accessed at the Foundation's headquarters in Warsaw, Grażyny street 11.

In accordance with art. 70 of the Law on Accounting, the abridged version of the Foundation's activity report and financial statements for 2009, together with an independent auditor's opinion, has been published on the website http://bopp.pozytek.gov.pl under the number KRS 0000109744.

PRICEWATERHOUSECOOPERS

Warsaw, 18 March 2010.

Independent Registered Auditor's Opinion

on the Abbreviated Financial Report

To the Council of the Foundation for Polish Science

The attached abbreviated financial report of the Foundation for Polish Science (hereinafter called "the Foundation"), Grażyny street 11, Warsaw, was prepared by the Management Board of the Foundation, and is based on the audited financial statements of the Foundation for the year ending on 31 December 2009 ("the financial statements"). The financial statements were prepared in accordance with the Accounting Act of 29 September 1994 (uniform text, Journal of Laws of 2009, No. 152, item 1223 with further amendments).

We have audited the financial statements of the Foundation, from which the abbreviated financial report was derived, in accordance with knowledge and experience acquired from applying the previously effective auditing norms issued by the National Chamber of Registered Auditors. On 18 March 2010 we issued an unqualified audit opinion on these financial statements.

In our opinion, the accompanying abbreviated financial report is consistent, in all material respects, with the Foundation's financial statements from which it was derived.

For a fuller understanding of the Foundation's financial position and the results of its operations for the year ending on 31 December 2009, the abbreviated financial report should be read in conjunction with the financial statements from which it was derived, as well as our opinion and audit report thereon.

Conducting the audit on behalf of
PricewaterhouseCoopers Sp. z o.o.,
Registered Audit Company No. 144:

(–)
Wojciech Maj
Key Registered Auditor
No. 6128

BALANCE SHEET AS AT 31 DECEMBER 2009

ASSETS

		(in PLN)	31 December 2009	31 December 2008 comparable data
A.		**Fixed assets**	11,964,368.01	12 ,164,803.23
I.		**Intangible assets**	35,368.87	24,090.77
1.		Development work	–	–
2.		Goodwill	–	–
3.		Other intangible assets	31,968.87	11,906.77
4.		Prepayments for intangible assets	3,400.00	12,184.00
II.		**Tangible fixed assets**	11,928,999.14	12,140,712.46
1.		Fixed assets	1,055,222.25	1,186,543.79
	a)	Land (incl. perpetual usufructs)	–	–
	b)	Buildings and structures (incl. civil engineering structures)	858,095.83	986,377.58
	c)	Plant and machinery	122,805.74	131,491.03
	d)	Motor vehicles	–	–
	e)	Other tangible fixed assets	74,320.68	68,675.18
2.		Construction in progress	10,873,776.89	10,954,168.67
3.		Prepayments for construction in progress	–	–
III.		**Long-term receivables**	0.00	0.00
1.		from affiliates	–	–
2.		from other entities	0.00	0.00
IV.		**Long-term investments**	–	–
1.		Real estate	–	–
2.		Intangible assets	–	–
3.		Long-term financial assets	–	–
	a)	In affiliates	–	–
		– shares	–	–
	b)	In other entities	–	–
		– shares	–	–
4.		Other long-term investments	–	–
V.		**Long-term prepayments and deferred costs**	–	–
1.		Deferred tax assets	–	–
2.		Other prepayments and deferred costs	–	–
B.		**Current assets**	364,505,445.87	362,933,804.15
I.		**Inventory**	17,853.48	17,853.48
1.		Raw materials	17,853.48	17,853.48
II.		**Short-term receivables**	492,338.90	396,993.54
1.		Receivables from affiliates	–	–
	a)	Trade receivables, due:	–	–
		– in under 12 months	–	–
		– in over 12 months	–	–
	b)	Other	–	–
2.		**Receivables from other entities**	492,338.90	396,993.54
	a)	Trade receivables, due:	5,331.38	51,689.38
		– in under 12 months	5,331.38	51,689.38
		– in over 12 months	–	–
	b)	Taxation, subsidy, customs duty, social security debtors	480,170.21	343,384.35
	c)	Other	6,837.31	1,919.81
	d)	Submitted to court	–	–
III.		**Short-term investments**	363,972,969.02	362,492,375.48
1.		Short-term financial assets	363,972,969.02	362,492,375.48
	a)	In affiliates		–
		– shares	–	–
		– other securities	–	–
		– other short-term financial assets	–	–
	b)	In other entities	350,431,843.49	355,848,120.75
		– shares	43,470,406.76	18,305,487.99
		– other securities	306,961,436.73	337,542,632.76
		– other short-term financial assets	–	–
	c)	Cash and cash equivalents	13,541,125.53	6,644,254.73
		– cash on hand and cash at bank	5,211,968.06	4,235,167.52
		– other cash	8,329,157.47	2,409,087.21
		– other monetary assets	–	–
2.		Other short-term investments	–	–
IV.		**Short-term prepayments and deferred costs**	22,284.47	26,581.65
		TOTAL ASSETS	**376,469,813.88**	**375,098,607.38**

Liabilities and Equity

		(in PLN)	31 December 2009 comparable data	31 December 2008 comparable data
A.		**Equity**	**370,281,077.50**	**372,271,825.95**
I.		**Capital Fund**	**95,000,000.00**	**95,000,000.00**
II.		**Statutory Fund**	**268,225,205.19**	**268,225,205.19**
III.		**Revaluation Fund**	**329.71**	**329.71**
IV.		**Reserve Fund**	**27,614,514.62**	**27,614,514.62**
V.		**Accumulated (losses) from previous years**	**(18,568,223.57)**	**61,634,841.03**
VI.		**Net profit/ (loss) for the year**	**(1,990,748.45)**	**(80,203,064.60)**
VII.		**Deductions from net profit for the year**	**–**	**–**
B.		**Liabilities and provisions for liabilities**	**6,188,736.38**	**2,826,781.43**
I.		**Provisions for liabilities**	**995,174.12**	**910,075.97**
1.		Deferred tax liability	–	–
2.		Provision for retirement benefits and similar obligations	954,914.12	855,175.97
		– long-term	301,861.83	288,657.25
		– short-term	653,052.29	566,518.72
3.		Other provisions	40,260.00	54,900.00
		– long-term	–	–
		– short-term	40,260.00	54,900.00
II.		**Long-term liabilities**	**–**	**–**
1.		To afiiliates	–	–
2.		To other entities	–	–
	a)	Loans	–	–
	b)	Debt securities	–	–
	c)	Other financial liabilities	–	–
	d)	Other	–	–
III.		**Short-term liabilities**	5,193,108.15	**1,712,487.45**
1.		To affiliates	–	–
	a)	Trade liabilities, payable	–	–
		– in under 12 months	–	–
		– in over 12 months	–	–
	b)	Other	–	–
2.		To other entities	5,189,183.92	1,704,637.08
	a)	Loans	–	–
	b)	Debt securities	–	–
	c)	Other financial liabilities		–
	d)	Trade liabilities, payable:	77,148.00	166,632.99
		– in under 12 months	77,148.00	166,632.99
		– in over 12 months	–	–
	e)	Advances received	–	–
	f)	Bills of exchange payable	–	–
	g)	Taxation, customs duty and social security creditors	4,344,074.65	1,229,461.41
	h)	Payroll	71,101.31	62,340.27
	i)	Other	696,859.96	246,202.41
3.		Special Funds	3,924.23	7,850.37
IV.		**Accruals and deferred income**	454.11	**204,218.01**
1.		Negative goodwill	–	–
2.		Other accruals and deferred income	454.11	204,218.01
		– long-term	–	–
		– short-term	454.11	204,218.01
		TOTAL LIABILITIES AND EQUITY	**376,469,813.88**	**375,098,607.38**

Profit and Loss Account

Comparative Format

	(IN PLN)	YEAR ENDED 31 DECEMBER 2009	YEAR ENDED 31 DECEMBER 2008 COMPARABLE DATA
A.	**Revenue from statutory activities**	**19,666,811.86**	**3,715,371.57**
I.	Gross contributions as per Fund's Statute	–	–
II.	Other contributions	19,666,811.86	3,715,371.57
B.	**Costs of statutory activities**	**44,793,007.18**	**25,305,284.65**
C.	**Profit/ (loss) on statutory activities (A–B)**	**(25,126,195.32)**	**(21,589,913.08)**
D.	**Administrative expenses**	**5,803,017.08**	**5,670,729.03**
I.	Depreciation	279,357.58	276,332.73
II.	Materials and energy	132,639.45	151,614.34
III	External services	1,363,273.76	1,444,158.28
IV.	Taxes and charges, of which:	18,272.95	5,898.25
	– excise tax	–	–
V.	Payroll	3,000,075.69	2,912,445.66
VI.	Social security and other allowances	555,085.43	572,458.10
VII	Other expenses	454,312.22	307,821.67
E.	**Profit/ (loss) on statutory and administrative activities (C–D)**	**(30,929,212.40)**	**(27,260,642.11)**
F.	**Other operating revenue**	**12,368.81**	**9,873.54**
I.	Profit from the sale of non-financial fixed assets	–	141.00
II.	Subsidies	–	–
III.	Other operating revenue	12,368.81	9,732.54
G.	**Other operating expenses**	**205,860.13**	**83,026.21**
I.	Loss on the sale of non-financial fixed assets	225.00	–
II.	Revaluation of non-financial fixed assets	–	–
III.	Other operating expenses	205,635.13	83,026.21
H.	**Operating profit/ (loss) (E+F–G)**	**(31,122,703.72)**	**(27,333,794.78)**
I.	**Financial revenue**	**29,194,305.81**	**20,138,864.41**
I.	Dividends and shares in profits, of which:	574,633.12	666,545.29
	– from affiliates	–	–
II.	Interest, of which:	9,483,294.20	12,409,901.90
	– from affiliates	–	–
III.	Profit on the sale of investments	6,594,428.11	1,694,828.01
IV.	Revaluation of investments	12,541,837.55	5,196,436.07
V.	Other	112.83	171,153.14
J.	**Financial expenses**	**39,288.54**	**73,008,134.23**
I.	Interest, of which:	235.28	128.64
	– to affiliates	–	–
II.	Loss on the sale of investments	–	–
III.	Revaluation of investments		73,008,005.59
IV.	Other	39,053.26	–
K.	**Gross profit/ (loss) on overall activities (H+I–J)**	**(1,967,686.45)**	**(80,203,064.60)**
L.	**Result from extraordinary items (L,I,–L,II,)**	**–**	**–**
I.	Extraordinary gains	–	–
II.	Extraordinary losses	–	–
M.	**Gross profit/ (loss) (K±L)**	**(1,967,686.45)**	**(80,203,064.60)**
N.	**Corporate Tax**	**23,062.00**	**–**
O.	**Other obligatory charges**	**–**	**–**
P.	**Net profit/ (loss) (M–N–O)**	**(1,990,748.45)**	**(80,203,064.60)**

Statement of Changes in Own Funds

		(in PLN)	Year ended 31 December 2009	Year ended 31 December 2008 comparable data
I.		**Equity at the beginning of the period**	**372,271,825.95**	**452,474,890.55**
		– changes to accounting policies	–	–
		– adjustments of fundamental errors	–	–
I.a.		**Equity at the beginning of the period, after adjustments**	**372,271,825.95**	**452,474,890.55**
1.		Capital Fund at the beginning of the period	95,000,000.00	95,000,000.00
1.1.		Changes in Capital Fund	–	–
	a)	Increases (due to)	–	–
	b)	Decreases (due to)	–	–
1.2.		Capital Fund at the end of the period	95,000,000.00	95,000,000.00
2.		Statutory Fund at the beginning of the period	268,225,205.19	268,225,205.19
2.1.		Changes in Statutory Fund	–	–
	a)	Increases (due to)	–	–
		– Profit appropriation	–	–
	b)	Decreases (due to)	–	–
		– Loss absorption	–	–
2.2.		Statutory Fund at the end of the period	268,225,205.19	268,225,205.19
3.		Revaluation Fund at the beginning of the period	329.71	329.71
3.1.		Changes in Revaluation Fund	–	–
	a)	Increases (due to)	–	–
	b)	Decreases (due to)	–	–
		– Sale of fixed assets	–	–
3.2.		Revaluation Fund at the end of the period	329.71	329.71
4.		Other Reserve Fund at the beginning of the period	27,614,514.62	27,614,514.62
4.1.		Changes in Other Reserve Fund at the beginning of the period	–	–
	a)	Increases (due to)	–	–
		– Sale of fixed assets	–	–
	b)	Decreases	–	–
4.2.		Other Reserve Fund at the end of the period	27,614,514.62	27,614,514.62
5.		Accumulated (loss) at the beginning of the period	61,634,841.03	55,012,704.78
5.1.		Accumulated profit at the beginning of the period	61,634,841.03	55,012,704.78
		– adjustment of fundamental errors	–	–
5.2.		Accumulated profit from previous years at the beginning of the period, after adjustments	61,634,841.03	55,012,704.78
	a)	Increases (due to)	–	6,622,136.25
		– Appropriation of profit from previous years	–	6,622,136.25
	b)	Decreases (due to)	80,203,064.60	–
		– Loss cover	80,203,064.60	–
		– Appropriation of profit to statutory activities fund	–	–
5.3.		Accumulated profit from previous years at the end of the period	–	61,634,841.03
5.4.		Accumulated loss from previous years at the beginning of the period	–	–
		– changes to accounting policies	–	–
		– adjustment of fundamental errors	–	–
5.5.		Accumulated loss from previous years at the beginning of the period, after adjustments	–	–
	a)	Increases (due to)	–	–
		– Transfer of prior year losses	–	–
	b)	Decreases (due to)	–	–
		– Loss cover	–	–
5.6.		Accumulated loss from previous years at the end of the period	(18,568,223.57)	–
5.7.		Accumulated (loss) from previous years at the end of the period	–	61,634,841.03
6.		Net result	(1,990,748.45)	(80,203,064.60)
	a)	Net profit	–	–
	b)	Net (loss)	(1,990,748.45)	(80,203,064.60)
	c)	Deductions from profit	–	–
II.		**Equity at the end of the period**	**370,281,077.50**	**372,271,825.95**
III.		**Equity after proposed appropriation of profit (absorption of loss)**	**370,281,077.50**	**372,271,825.95**

Cash Flow Statement (Indirect Method)

		(in PLN)	Year ended 31 December 2009	Year ended 31 December 2008 comparable data
A.		**Cash flow from operating activities**	**(27,795,665.68)**	**(25,810,400.96)**
I.		**Net profit/ (loss)**	**(1,990,748.45)**	**(80,203,064.60)**
II.		**Total adjustments**	**(25,804,917.23)**	**54,392,663.64**
1.		Depreciation	279,357.58	276,332.73
2.		Foreign exchange gains/ (losses)	–	–
3.		Interest and shares in profits (dividends)	(10,055,432.48)	(13,073,559.27)
4.		Profit/ (loss) on investing activities	(19,136,265.66)	66,116,741.51
5.		Change in provisions	85,098.15	235,434.01
6.		Change in inventory	–	2,777.94
7.		Change in receivables	(95,345.36)	(372,102.12)
8.		Change in short-term liabilities, except for loans and credits	3,316,912.26	1,211,752.09
9.		Change in deferred income and accruals	(199,466.72)	(4,713.25)
10.		Other adjustments	225.00	–
III.		**Net cash flow from operating activities (I±II)**	**(27,795,665.68)**	**(25,810,400.96)**
B.		**Cash flow from investing activities**	**34,692,536.48**	**27,713,723.41**
I.		**Inflow**	**250,931,677.28**	**659,205,033.35**
1.		Sale of intangible assets and tangible fixed assets	–	–
2.		Sale of investment in property and intangible assets	–	–
3.		Relating to financial assets, of which:	250,931,677.28	659,205,033.35
	a)	In affiliates	–	–
	b)	In other entities	250,931,677.28	659,205,033.35
		– sale of financial assets	240,876,244.80	646,131,474.08
		– dividends and shares in profits	574,633.12	666,545.29
		– repayment of long-term loans granted	–	–
		– interest	9,480,799.36	12,407,013.98
		– other inflow from financial assets	–	–
4.		Other investing activities inflow	–	–
II.		**Outflow**	**(216,239,140.80)**	**(631,491,309.94)**
1.		Purchase of intangible assets and tangible fixed assets	(79,147.36)	(11,103,496.95)
2.		Investment in property and intangible assets	–	–
3.		Relating to financial assets of which:	(216,159,993.44)	(620,387,812.99)
	a)	In affiliates	–	–
	b)	In other entities	(216,159,993.44)	(620,387,812.99)
		– purchase of financial assets	(216,159,993.44)	(620,387,812.99)
		– long-term loans granted	–	–
4.		Other investment expenditure	–	–
III.		**Net cash flow from investing activities (I–II)**	**34,692,536.48**	**27,713,723.41**
C.		**Cash flow from financing activities**	**–**	**–**
I.		**Inflow**	**–**	**–**
II.		**Outflow**	**–**	**–**
1.		Repayment of loans and credits	–	–
2.		Relating to other financial liabilities	–	–
3.		Interest	–	–
4.		Other financial expenses	–	–
III.		**Net cash flow from financing activities (I–II)**	**–**	**–**
D.		**Total net cash flow (A.III±B,III±C.III)**	**6,896,870.80**	**1,903,322.45**
E.		**Change in cash and cash equivalents**	**6,896,870.80**	**1,903,322.45**
F.		**Cash and cash equivalents at the beginning of the period**	**6,644,254.73**	**4,740,932.28**
G.		**Cash and cash equivalents at the end of the period (F±D), of which:**	**13,541,125.53**	**6,644,254.73**
		– of restricted use	4,314.23	7,850.37

FNP

Foundation for Polish Science

Appendix: about our beneficiaries, initiatives, projects

„GAZETA WYBORCZA", 2 DECEMBER 2009

Polish Nobel Prizes Awarded

Prof. Jerzy Strzelczyk talks to Adam Leszczyński.

The Council of the Foundation for Polish Science has awarded its prizes for outstanding research and discoveries for the 18th time. They were officially presented on 2 December at the Royal Castle in Warsaw. The FNP Prizes are often called the Polish Nobel Prizes. The winners receive PLN 200,000 each.

Adam Leszczyński: Your book, recognized by the Foundation, A Pen in Slender Hands, presents the history of female writing in antiquity and the early Middle Ages. You devote entire chapters to writers like Hugeburc of Heidenheim or Hroswitha of Gandersheim. I was a history student, but I've never heard of them.

Prof. Jerzy Strzelczyk: I'm not at all surprised that you didn't hear these names as a student. It's true they are often only familiar to specialists, quite unjustly. This is part of a broader trend in which history researchers disregard or underappreciate the cultural achievements of women in times past. There is a stereotype that women were oppressed and had no say, so they couldn't have left any noteworthy output. Meanwhile, even in those unfavourable times, enterprising and talented women were able to write interesting works. It's quite another matter that many of these did not survive to our times.

I wanted the silent half of humanity from past centuries to be able to speak with their own voice, and not just the voice of men, who were so often biased

It was especially hard to stimulate an interest in mediaeval female writers in Poland, as women's literary activity emerged very late here, practically not until the 17th–18th centuries. But there were already quite a few female writers in antiquity, especially Hellenic times, and also during the Middle Ages, and their number grew over time.

How did the social role of women hamper their literary activity?

The framework of women's social activity was defined by home and family. Intellectual independence was not expected of them. Both in antiquity and in the Middle Ages, women were not usually independent in the legal sense. They were controlled by men all their lives: first by their father, if they had no father – by their brother, then their husband. Widows were in a better position. The situation of women changed in the course of the Middle Ages, but not enough for them to gain rights comparable to men's rights in the social sphere, not to mention the political. Never mind the Middle Ages – it wasn't until the 20th century that various countries, including Poland, granted voting rights to women. This imposed handicap lasted almost until our times.

What could they write, then?

In the ancient world, some areas of religious life were reserved for women. For example, many rituals involved composing religious songs – but this was largely an oral output, inaccessible to us today.

Later, women in different situations and different periods played an important role in religious life. I would suggest that women sometimes had more of a say in the religious sphere than it might seem from today's perspective. They usually weren't happy with the existing state of affairs, which favoured men. That's why there is a lot to suggest that some religious systems, for instance Christianity in the first decades after Christ, allowed women wider participation in the life of the community. It was similar in various unorthodox, heretical movements, in which they were sometimes even admitted as members of the clergy. The Beguines in the Middle Ages were part of a movement attempting to make women more independent of the Church. Women played an important role in the early stages of the Reformation. Similarly today, whether in the Roman Catholic or other churches, women are at the forefront of reformatory or dissenting movements.

Does this mean they had more religious freedom than today?

There is no question that from the 3rd–4th centuries, a process began of restricting the role of women in the Catholic Church. It became an institution absolutely dominated by men; women fulfilled auxiliary and ancillary roles. There were some exceptions, even significant ones, but they only prove the rule. That trend persists today. Young girls in Poland cannot even become altar servers because many parish priests allege that tradition does not allow it.

Many years ago, you wrote a book about the Germanic tribe of the Vandals, who were famous for seizing and plundering Rome. You claimed that their stereotypical image was untrue...

There's nothing worse than stereotypes.

So you focus on the history of the oppressed and the forgotten?

I try to find and fill in the gaps, or better – the grey areas in our historical awareness. Sometimes a whole people can

disappear in them, like the Germanic Vandals or the Iro-Scots who used to play a major role in the history of Europe. A few years ago I decided that this kind of justice should also be given to the women of times past, who deserve attention for their literary and artistic achievements. I wanted the silent half of humanity from past centuries to be able to speak with their own voice, and not just the voice of men, who were so often biased.

Prof. Jerzy Strzelczyk with the statuette of the FNP Prize

Instead of Catullus and Ovid – great ancient poets, should we be teaching about Myro of Byzantium and Praxilla of Sicyon?

No one and nothing can change the fact that the great majority of achievements of civilization and culture in our world were the work of men. They had a better start, for example access to education. Various kinds of writing – historiography, philosophy – were practically closed to women. However, there was the sphere of feelings and emotions, in which – starting from the poetess Sappho – women willingly spoke out. Education wasn't needed here. The output of female mystics was famous in the Middle Ages.

You also study minor literary output – ancient graffiti, letters, complaints, epitaphs...

This isn't literary output, this is writing on the fringes of literature. In the period my book encompasses – up to the year 1000 – I don't think I have left out any important literary work written by a woman. However, I also wanted to show that women's creativity manifested itself not only in "highbrow" literature. There was also utility writing, inconspicuous but important testimony to the lives of women in those times. I meticulously collected such testimonies from different parts of the world and different circles. For example, some Roman women's epitaphs for their deceased husbands or Ruthenian writings on birch bark, are very touching.

Will there be a continuation?

The whole work will encompass the period until the end of the Middle Ages with a look towards the Renaissance. I have planned it in three parts. Volume two is due to be released soon. It includes a very interesting period, from ca. 1000 to1300, or what we call the peak of the Middle Ages. Many readers may find this book even more interesting than the first one, because national languages, such as Old French or Old English, started being used, whereas volume one contained works written exclusively in Greek and Latin. There were more female writers in the Middle Ages, too, and their output was more diverse.

Interview published (in Polish) in the newspaper "Gazeta Wyborcza", reprinted with the editors' permission

„PRZEKRÓJ", ISSUE 48, 10 DECEMBER 2009

Protein Cutting and Bending

Need an enzyme to decompose unusual waste? Here you are!
A new antiviral drug? No problem!

Scientists and media are thrilled about the identification of successive genomes. In November alone, scientists deciphered the DNA of pigs, maize, horses, and cucumbers (along that of many bacteria whose names probably mean nothing to us). However, we are often told that the information recorded in DNA is only half of the genetic code. The other half is a recipe for turning a sequence (chain) of amino acids into a three-dimensional protein molecule. Nature is excellent at this. Scientists trying to uncover its secrets are not doing so well. But they are doing their best. Do you remember how proteins are formed? No? Here's how: first, special enzymes in a cell read the information from the DNA chain. The RNA chain is formed on this basis, and reading this chain leads to the formation of a chain of amino acids that make up the protein. However, as soon as it forms, this chain curls up and turns into a complicated 3D structure full of different coils and loops. This 3D structure (shape of the protein) determines the protein's properties and function. Until recently, this

shape could only be ascertained by means of crystallographic research.

"The only problem is, protein crystallization is not a science, it's an art", points out Prof. Andrzej Koliński from the Faculty of Chemistry at the University of Warsaw. "You have to carry out thousands, even tens of thousands of trials before you obtain a given protein in crystalline form. It is only when they have a properly prepared sample that scientists x-ray it and analyze how the protein's atoms change the course of the rays. After collecting these data and analyzing them, you can develop a 3D model", he explains. All this takes time and qualified staff. In effect, the cost of obtaining one protein structure can reach several hundred thousand dollars. For comparison: DNA sequencing has been almost completely automated, and the cost of finding the sequence of a new gene is just a few to less than twenty dollars. That's why we know of several dozen million protein chain sequences, but only about 60,000 3D structures. This means we know the structure of one in every thousand proteins.

Computer modelling caused a revolution in protein structure research. It is fast, cheap, and can help analyse the proteins we cannot crystallize

Money is key

The time and money involved means that compared to DNA sequences, knowledge on the shape of proteins grows at a snail's pace. It is something science and industry cannot afford. "Knowing the spatial structure of proteins enables us to understand how a single cell, or a whole organism, works on the molecular level", Koliński says. "As for practical purposes, we need this knowledge to design new biotechnologies, primarily new drugs". Scientists model the structure of a given protein and try to match a drug to it – a compound that binds to that protein. The better the drug fits the protein, the more effective it will be, rather like a key fitting a lock. A drug like this can, for example, bind to an enzyme in a virus and halt its action, or block cancer cells' ability to cause metastasis.

As for biotechnologies, these are largely based on enzymes, or proteins that accelerate chemical reactions several times. Enzymes in the first washing powders only worked in low temperatures. They packed up in hot water. Knowing their structure, we could modify them (chemically or genetically) in such a way as to make them withstand the heat. Minor changes could also be introduced to increase the reaction time even further, or to cause the enzymes to start processing slightly different chemical substances (if we replace or grind down the ratchets in a lock, other keys will start to fit).

Now you can see the prospects that open up with increased knowledge of protein shapes. No wonder that computers were set to work on identifying them back in the 1970s. Computer modelling caused a revolution in protein structure research. It is fast, cheap, and can help analyze the proteins we cannot crystallize. Accuracy still remains a problem, though.

Contest for modellers

Researchers now know that the molecules of proteins with a similar order of amino acids in their chain usually have a similar structure. If they want to create a computer model of a newly discovered protein, they search the databases for molecules with a similar sequence and a known shape. "Comparing the sequences, we are often able to obtain a model of the structure that is just as accurate as the model obtained using crystallographic methods", explains Koliński, who specializes in computer modelling of proteins. "It is much more difficult when we encounter new types of coils, or when we are unable to find a similarity between sequences in the studied protein and in proteins from the database".

Prof. Andrzej Koliński being presented with his prize

Even then, scientists are not helpless. In such cases, they model the structure on the basis of the order of the amino acids in the protein chain. Knowing the properties of individual amino acids (how they tend to relate to one another, how they react with water), and knowing in which part of the cell a given protein is found, they can reproduce its spatial structure.

"In order to check the methods used in modelling, a CASP [Critical Assessment of protein Structure Prediction] competition is held every two years", Koliński says. When crystallographers expect they will soon decipher the structure of a new protein, they show its sequence to theoreticians, who then try to predict its shape and save the results

on a special server. Later, the accuracy of their modelling is evaluated in comparison with crystallographic data. Polish scientists are absolute world leaders in modelling. During the 2004 CASP, out of 250 groups taking part, three groups from Poland were among the top five. It is like that in every edition of the competition. It isn't a question of available computing power. Polish scientists only had 30 processors during the CASP, while U.S. teams which came behind them had even a few thousand processors at their disposal.

Virtual cells

Koliński has developed a unique method for creating protein models. This year it gained the recognition of the Foundation for Polish Science, which granted Koliński its annual prize, dubbed the Polish Nobel Prize, for outstanding achievements in natural and medical sciences. "The great majority of modelling methods are based on piecing the structure together from fragments of other proteins", Koliński explains. "My method not only predicts the structure, but also reproduces the process in which the amino acid chain coils itself into the 3D shape of the protein. For computing purposes, I replace several to several dozen atoms occurring in every amino acid with a few pseudo-atoms. Next you have to compute how these pseudo-atoms react to one another, and this is quite complicated. There are some phenomena, however, which can only be modelled using my software, for example protein merging processes".

"My long-term goal is to build a functional computed model of a simple cell", Koliński reveals his plans, "enabling us to play around with 'what if...' questions. What if I treat it with chemicals or irritate it in some way? This is rather complicated, because my modelling method has to be expanded to include nucleic acids, cell membranes and transport through them. We have the elements, but we're still a long way from putting them all together. If I stay in good health, have enough money and a few students to help me, we should have a finished model within 10 years".

by Piotr Kossobudzki
Text published (in Polish) in the weekly „Przekrój", reprinted with the editors' permission

Portrait of a Scientist

"I started from Mickiewicz and with Mickiewicz I'll finish", Prof. Józef Barnaś states jokingly. He left his home village of Borowa near Dębica in the Podkarpacie region to attend the Adam Mickiewicz Secondary School in Tarnów. Today he heads the Mesoscopic Physics Division which he set up at the Adam Mickiewicz University (UAM) in Poznań. At secondary school, influenced by an excellent and demanding teacher, he shifted his interests from biology to chemistry, only to choose physics in his final year. As he puts it, chemistry offered more problems for solving than biology, but it was physics that really satisfied his curiosity about why things happen the way they do in nature.

He chose the UAM in Poznań, a long 10 hours from home. Why so far away? He had some relatives there, and in those days of accommodation shortages it was good to have family in an unfamiliar city. He lived in a dorm and was famous for tuning out. "My fellow students would play bridge", he recalls, "I was there next to them, reading, and I didn't hear a thing they were saying". This was useful later, when he lived with his family in a staff dorm; he often wrote papers or prepared for classes with his child on his lap.

What decides about success in science? Barnaś says you have to be persistent like Gruenberg and have imagination like Fert, but you also have to know what you want to do and not give in to pressuring. Intuition and a little bit of luck are also helpful

From the beginning, he wanted to be involved in research, in solving problems, and there was everything to suggest he would stay on at the UAM as a PhD student. Two days before the exams to enrol in the doctoral programme, he was summoned to complete one-year military service. Rumour had it that people with full-time jobs stood a chance of saving themselves from wasting that precious year, so he got a job at the Poznań University of Technology. It didn't help. "During my year in the army, I managed to read one book very thoroughly, Zubarev's Statistical Thermodynamics", he remembers.

After leaving the army, he spent the next 17 years at the Poznań University of Technology. A large number of teaching hours, little focus on theoretical problems, a shortage of research projects because the main role of the Institute of Physics at this school was teaching – all this was not conducive to the development of a theoretical physicist. "For a long time I thought of those years as a waste of time, but I see things differently now", Barnaś says. "I had complete freedom in my scientific interests, whereas who knows whether I wouldn't have been pressured, in some way forced to study problems I was less interested in, if I had joined the UAM or the Institute of Molecular Physics at the Polish Academy of Sciences, where I also applied for jobs at a time when none were available".

In 1984, Barnaś attended his first foreign conference, in Switzerland, but it was a trip to Budapest that brought

a breakthrough. He listened to several papers on the physics of phonons in artificial heterostructures and came up with the idea of studying the same phenomena in magnetic systems, his field of research. After returning home he reviewed the literature. Nobody in Poland was doing such research, and elsewhere around the world he found maybe 10 papers, including Peter Gruenberg's. In 1986, Barnaś published his first paper on the subject.

Prof. Józef Barnaś upon receiving his prize

Work at the University of Technology that didn't bring much satisfaction, a flat allotted on a rotational basis, and finally a shortage of money made him, as he says, "take matters into my own hands". He decided he would have to leave the country. He wrote a few letters. One of the recipients, Prof. Uwe Krey, gave him four addresses to try. He got two positive replies, including one from Juelich. That was how, in 1988, he arrived at the centre where Gruenberg worked.

At the time, Gruenberg was studying interlayer coupling in magnetic heterostructures. He (and, independently, Albert Fert) discovered giant magnetoresistance, for which both scientists received the Nobel Prize in 2007. Gruenberg was looking for someone to work on interpreting the experimental results. "We from the communist bloc couldn't conduct such research at home, so as theoreticians we contributed our intellectual potential to many Western countries", Barnaś says. "My time in Juelich was a year of fantastic acceleration. Scientific life was very intensive there. Everybody was busy. Everyone worked late into the evening".

After 18 months in Juelich, it was time for a very tough decision: stay or go? Most scientists who, like Barnaś, had found a place for themselves in the West, stayed on. He and his wife decided to return, for emotional reasons: they missed Poland and knew that those who decided to stay were also homesick. Upon his return, thanks to a chance meeting with Prof. Zbigniew Jacyna-Onyszkiewicz, Barnaś joined the UAM, where he later initiated the Mesoscopic Physics Division. One of his first PhD students is now close to completing his postdoctoral degree.

In 1997, after a two-year fellowship in Leuven, he spent a year working with Albert Fert, which means he has worked with both Nobel Prize winners. He has good memories of them, and keeps in touch to this day; both have visited him in Poznań. It would be hard to find two more different personalities, Barnaś says. Gruenberg is methodical, careful, persistent; Fert is extraordinarily active, always interested in new trends in science.

When Barnaś heard the news of their Nobel Prize, he called his wife first to tell her that she had had as many as two Nobel Prize winners to dinner. Phone calls to Gruenberg, who had to give innumerable interviews that day, were being taken by his daughter, so he asked her to pass on his congratulations; he managed to reach Fert in the evening. People in Poland began saying that Barnaś should also have received the Nobel Prize, since he had explained giant magnetoresistance in theoretical terms. "I am absolutely happy with what I have achieved", Barnaś himself says. "I'm glad of the success of my 'scientific friends'. I feel honoured to have worked with them. It was Gruenberg and Fert who discovered GMR and it was this experiment that put the problem before the theoreticians".

As we know, GMR is used in reading data from magnetic media. A multilayer magnetic conductor reacts very precisely to very small changes in the magnetic field. This has allowed the recording density to be increased, which means that disks can store several hundred times more data than they used to.

In his "Nobel" biography, Fert mentions his collaboration with Barnaś, with whom he is currently working on spin electronics in very small systems and on spin transfer. Their latest joint paper was published just over a year ago.

Barnaś and his team are working on many problems, including quantum dots, also called artificial atoms. In such a dot, electrons can be trapped and controlled. This knowledge is expected to find application in quantum computers in future.

What is it that brings about success in science? Barnaś says you have to be persistent like Gruenberg and have imagination like Fert, but you also have to know what you want to do and not give in to pressuring. Intuition and a little bit of luck are also helpful. You need to know how to take matters into your own hands when the situation requires that. Scientific research today takes up a lot of time, more than it used to. You have to keep up with new literature, because many good papers are published and competition is strong.

Prof. Józef Barnaś has received the most prestigious Polish scientific awards: the Marian Smoluchowski Medal and the FNP Prize.

BY MARIA NOWAK

Hydrosilylation and Chemical Jewellery

Prof. Bogdan Marciniec from the Faculty of Chemistry at the Adam Mickiewicz University in Poznań, winner of the FNP Prize 2009 for technical sciences, talks to Krzysztof Michalski.

Krzysztof Michalski: Prof. Krzysztof Matyjaszewski, a prominent Polish chemist who has been working at Carnegie Mellon university in Pittsburgh for almost 25 years, was in Poland recently, and speaking of your achievements in catalysis said you had an aptitude for making one molecule control millions or even billions of other molecules, allowing you to create completely new structures.

Talking about your contribution to the development of inorganometallic chemistry and organometallic catalysis, Prof. Matyjaszewski mentioned that your monograph Comprehensive Handbook on Hydrosilylation, the world's first book on processes of hydrosilylation – a reaction in which silicones are formed for example, was dubbed the "Bible" of hydrosilylation. Your new book on the subject, Hydrosilylation: Comprehensive Review on Recent Advances, *is the New Testament of this field, according to Prof. John Harrod who wrote the foreword.*

How do you feel in the role of a prophet and apostle?

Prof. Bogdan Marciniec: I am greatly honoured to hear such opinions from Prof. Matyjaszewski, a very serious contender for the Nobel Prize, and Prof. Harrod from Canada, the greatest authority in the field.

Could you explain this trick in which one molecule controls millions or even billions of others, and what this could be useful for?

Knowledge of the structures of chemical compounds, substrates, or substances that react, and catalysts which accelerate reactions, allows us to predict how those molecules will behave with respect to the one controlling molecule (call it the leader) which significantly increases the speed at which products are obtained, and also does this very selectively. In other words, in a "normal" chemical reaction there are usually several possibilities, several ways of obtaining a product. With the skilful use of a catalyst, you can predict and find a reaction that practically could not take place without that catalyst.

And that's how new structures, new materials can form?

Exactly – new products which can be precursors of all kinds of materials, or compounds with completely new properties. For example, these catalytic reactions are used in the production of nitric or sulphuric acid, and also ammonia.

What is the hydrosilylation that Prof. Matyjaszewski mentioned? You received the FNP Prize "for the discovery of new reactions and new catalysts for processes leading to the synthesis of organosilicon materials for industrial applications". Are these new catalysts involved in the hydrosilylation processes you have been investigating for many years?

Hydrosilylation is one of the two most important reactions for obtaining organosilicon compounds, or compounds containing a silicon-carbon bond. The actual reaction occurs between silicon compounds containing a silicon-hydrogen bond and various unsaturated organic compounds. The products can include modified silanes, or polysiloxanes (silicones) which are composed mainly of silicon and oxygen atoms; these materials have found many applications – from oils, lubricants and hydraulic fluids working in unusually low or high temperatures, through sealants, coatings, adhesives, to elastomers and gels for biomedical uses.

What does "silico-metallics", a term you introduced into the literature, mean? Are these compounds that contain silicon – hence "silico" – and metals?

You could say this is a consequence of expanding the concept of catalysis occurring in organic chemistry. Remember that as much as 90 per cent of reactions in chemical industry are catalytic reactions, and most of them involve organic compounds. The most active catalysts (responsible for catalysis in organic chemistry) are compounds containing an M-C (metal-organic) bond, called organometallics. By analogy, I proposed that we use the term silico-metallics for compounds containing an M-Si (metal-silicon) bond which are responsible for catalysis in silicon chemistry. Silico-metallics are responsible for the reaction selectivity and speed which we are studying. I first used the term during a plenary lecture at the European Conference on Organometallic Chemistry in Spain in 2000, and the chemistry community adopted it.

Of course this concept of the bond between an inorganic element and a metal can be applied also to other inorganic elements, so we can replace silicon with boron, germanium etc., hence the name inorganometallics, or compounds containing a bond between a metal and an element from the p-block.

Thanks to the catalytic reactions discovered and developed from the mid-20th century, organometallic chemistry led to incredible development of the chemistry and technology of organic compounds, but inorganometallic chemistry could be the foundation for synthesis of new materials in the 21st century.

In a „normal" chemical reaction there are usually several possibilities, several ways of obtaining a product. With the skilful use of a catalyst, you can predict and find a reaction that practically could not take place without that catalyst

I know many scientists don't like this question, but where are the results of your research applied, and where else could they find application?

One good example is that of fine chemicals, or what I refer to as chemical jewellery. These are compounds which are needed in minute amounts but which are very expensive. In silicon chemistry, examples include high-purity trichlorosilane – a material used in the production of semiconductor silicon, produced at the chemical plant in Tarnów-Mościce. The best example, however, are pharmaceuticals which are used in small amounts, and a number of other compounds – pesticides, cosmetics, optoelectronic materials, nanostructures applied in many fields of technology.

Prof. Bogdan Marciniec presents the FNP Prize

We can predict the chemical formula and structure of the compound we expect a chemical reaction to produce. Of course sometimes we don't immediately know what the products obtained in a given reaction could be used for, but that's exactly why they should be produced by large, multidisciplinary teams. This is in fact the trend around the world today, an important role being played by corporations, often multinationals, which define the features of products desired by consumers or know how to make use of the features of compounds already produced.

Is this why you are an initiator of the Wielkopolska centre for advanced technologies? What will this centre do?

It is absolutely necessary to establish a centre in Poland that would take advantage of Europe's experience in cooperation between science and business. We have many excellent research teams in Poznań, we have talented young people who often have to travel to the West to continue their research and to fulfil their ambitions. That's why I proposed that we set up a consortium comprising 13 institutions based in Poznań: five universities, four institutes of the Polish Academy of Sciences, two ministry-run institutes, the Poznań Science and Technology Park, and the Poznań City Office. The coordinator is the Adam Mickiewicz University in Poznań. We will finance the centre's infrastructure from EU funds under the Innovative Economy Operational Programme. The project entitled "WCZT Poznań – Materials and Biomaterials" will be located within the Morasko campus, and construction will cost an estimated 70 million euros.

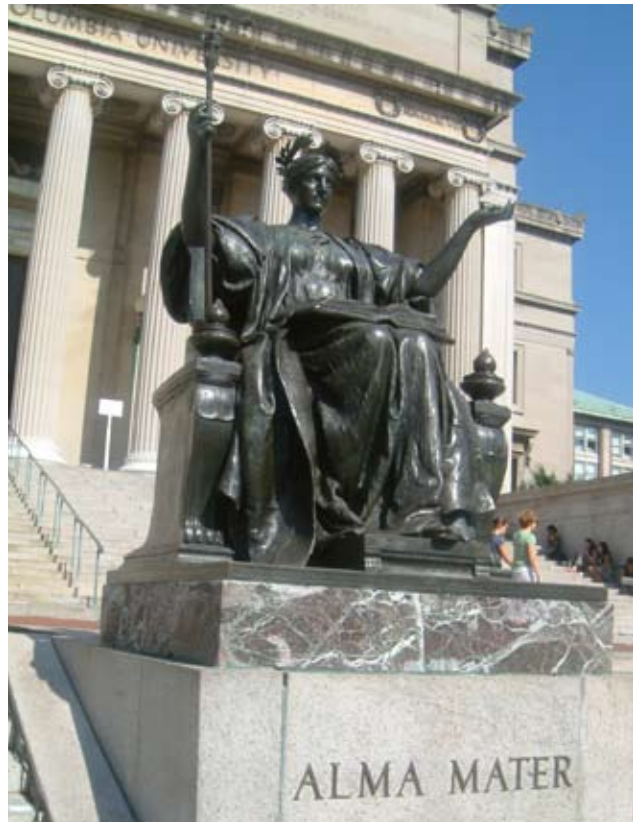
What kind of work will be done there, in what particular fields?

With the help of Poznań's best specialists in exact, natural and technical sciences, we want to concentrate on new materials and biomaterials offering diverse applications. I hope that such multidisciplinary activity will result in the development of original syntheses of chemicals, biochemicals, and agrochemicals (the aforementioned chemical jewellery), and also a new generation of bio- and nanomaterials and their precursors ("material jewellery"), and later in the development of advanced technologies and biotechnologies for producing these chemicals for application in optoelectronics, ceramics, medicine, pharmaceutics, agriculture, and many other fields of industry and technology. The research will also aim to create the technological foundation for a number of applications of bioorganic chemistry, molecular biology and biotechnology in healthcare in a broad sense (i.e. molecular and cellular therapy and medical diagnostics), and also for agricultural science and food processing applications (DNA tests in plant cultivation and animal husbandry, food and fodder additives, biodegradable packaging, etc.).

I hope this integration of the entire Poznań community will allow us to establish a research and technology centre of high international standing, offering Poznań the opportunity to set up a branch of the European Institute of Innovation and Technology, and ultimately to keep the most outstanding representatives of the young generation of scientists in Poland, to fulfil their great ambitions here – both in science and in high-tech business.

Polish Chair at Columbia University

If all the proper procedures are completed, the chair in Polish Studies at Columbia University in New York could open in the second half of this year. Today this is a priority project in the plans to establish Polish Studies centres around the world, carried out with the significant contribution of the Foundation for Polish Science.



In front of the Columbia University's main administration building

The story behind the effort to open a Polish Studies chair at CU is primarily a story about persuading Polish companies large and small to make generous donations for the development of international research in Polish Studies serving the long-term promotion of Poland, also in a business aspect. It is also a story of cooperation among several organizations on both sides of the Atlantic, interested in creating an "academic Polish bridgehead" at a leading U.S. university.

More than a year ago, on 25 March 2009, a special press conference was held at Warsaw's Bristol Hotel to inform the public that the $3 million endowment fund required to create a chair in Polish Studies at CU had been raised. According to the rules followed by U.S. universities, this fund will now be safely invested with the university's other funds, and the profit will be used as the chair's budget, about $150,000 annually.

"It is one of the happiest days in a foreign minister's life when he can celebrate a Polish success on the international scene", said Radosław Sikorski, Poland's Minister of Foreign Affairs, adding that the Polish Studies chair at Columbia University would be "a key instrument for promoting" Polish scholarly thought in the world.

The Polish Chair will teach classes and conduct research in social sciences. Her or his focus will be on Poland in the context of the Central and Eastern European region.

Columbia University already has units for Czech, Serbian, Slovak, Ukrainian, and Hungarian studies. These chairs were established during the wave of interest in the culture and history of Central and Eastern European countries after the "Autumn of the Peoples" and the collapse of communism in Europe in the late 1980s and early 1990s. The governments of the above-mentioned countries committed themselves to these projects, recognizing their role in promoting knowledge about their countries and the region among the students of this leading university, and thus among the potential elite of the coming decades.

Polish history and literature were taught at Columbia University after World War II, but the government of People's Poland stopped financing the programme and it was closed in 1953. The idea to revive Polish Studies by founding a Polish Chair was born as early as the 1990s at the initiative of the Kościuszko Foundation, one of the most important expatriate Polish organizations which has long been supporting Polish Studies centres at several U.S. universities. However, these units cannot offer PhD studies, which makes it impossible for them to serve as a source of expert researchers in Polish Studies.

The Kościuszko Foundation turned to the Foundation for Polish Science (FNP) with a proposal of cooperation; the first joint project was to be a chair of Polish Studies at Columbia University's School of International and Public Affairs. In 2005, the FNP signed an agreement with CU under which it was to provide the sum of $250,000 to the endowment fund within a couple of years. Fund-raising also began among Polish-Americans.

Initially, money from individual donors and Polish--American organizations came in a slow trickle, and less than $1 million of the required $3 million had been raised after more than two years. At the time, in the autumn of 2007, the FNP organized the conference Polish Studies Abroad under

the patronage of the Speaker of the Polish Sejm; the aim was to get media and Poland's business community interested in the project. Soon afterwards, a number of Polish companies, economic institutions, and business organizations got involved. Success came after another two years: Columbia University received a sum in excess of the required $3 million at the start of 2009.

The leading donors of the Polish Chair include the Warsaw Stock Exchange (WSE), which worked on the project through the Capital Market Education Foundation, not only contributing to the endowment fund but also offering guarantees to other donors in case the project failed (the rules stated that if the whole sum were not found by the deadline, any money raised would have fallen to Columbia University).

Columbia University's main administration building

"We need to appreciate the importance of Poland's image for its economic life", said Ludwik Sobolewski, president of the WSE, pointing out that a good climate for investors in Poland was created not only by investor-friendly regulations and good economic conditions, but also by promoting knowledge about the region, its history and culture. Sobolewski also made it clear he hoped that a Polish Chair at one of the leading U.S. universities, a member of the Ivy League bringing together the most prestigious schools, would promote exactly this sort of knowledge about Poland among the elite, including future business and finance leaders, people who will soon be deciding about their companies' operations beyond the United States or other home countries. Thanks to their leaders' knowledge, these companies could also turn their attention to Poland, creating new jobs here and contributing to economic growth, civilization development, and prosperity.

Apart from the WSE, the other main donors of the endowment fund are Enea S.A., Polska Grupa Energetyczna S.A., Bogdan Fiszer Silesia Capital Fund, Krajowy Depozyt Papierów Wartościowych S.A., Małopolska Agencja Rozwoju Regionalnego S.A., and Poland's special economic zones in Katowice, Kostrzyn-Słubice, Pomerania, and Warmia-Mazuria. On the other side of the Atlantic, the project received financial support from the Polish & Slavic Federal Credit Union in New York and the Polish Army Veterans Association of America).

The final stage of the fund-raising was coordinated – in association with the Foundation for Polish Science – by the Polish consulate in New York, represented by consul Ewa Ger (PhD), to whom great credit is due for the ultimate success of the fund-raising effort both in Poland and in the United States. "This was a unique project in our consulate's 90 years of existence", said Krzysztof Kasprzyk, Polish consul general in New York. He believes that the successful raising of the endowment fund is best proof that the tradition of philanthropy addressed to academic institutions, which characterized American society for centuries, has effectively reached Poland as well.

"I have to emphasize that we raised the required endowment amount almost two years before the deadline, and this made a very good impression on our American friends, said Prof. Włodzimierz Bolecki, vice-president of the Foundation for Polish Science, coordinator of the project on behalf of the FNP.

Once the money was transferred, the FNP's authorities had a meeting with the authorities of Columbia University in early September 2009. "We presented the Foundation's activities promoting Polish scholarship abroad, spoke about the standards we followed and about the role of the Polish Chair in our strategy for supporting research, and outlined our expectations of how CU would set up the Polish Chair", says Prof. Bolecki. This was crucial, since the agreement of 2003 had left some questions open – they required more precise definition, and the Polish side needed to know the views of the U.S. partner.

The parties agreed that CU would immediately open the procedure to appoint a head of the unit, by announcing an international competition for the position. The competition would last until a positive result was achieved. If a candidate meeting all the extremely high criteria for taking over the Polish Chair could not be found in the first stage, the competition would continue.

Success came after another two years: Columbia University received a sum in excess of the required $3 million at the start of 2009

A four-person external Advisory Board of professors was also appointed, with the task to assist the Search Committee appointed by Columbia University and comprising professors from the departments where the Polish Chair might ultimately be placed. Among other things, the Advisory Board recommends candidates entering the competition.

The competition was announced officially on 1 December 2009. The deadline for submitting applications was 31 January 2010. According to the competition criteria, the future head of the Polish Studies unit should have substantial achievements in social sciences, including elements of history and anthropology. Parallel to the competition, an extensive promotion campaign was launched, with advertisements appearing in The Financial Times and academic internet networks. The Foundation for Polish Science placed ads in Gazeta Wyborcza and Tygodnik Powszechny, as well as more than 20 websites, and directly sent news of this opportunity to over 100 academics all over the world, specialists in Polish Studies who could be interested in taking on the challenge.

Once the Polish Chair at CU is successfully established, the Foundation for Polish Science plans to initiate the formation of similar units at European universities, starting with Germany and the United Kingdom

The procedure for selecting the head of Polish Studies by the university is closely tied to another key decision – where the Polish Chair will be set up officially. The choice will probably be among the departments of sociology, anthropology, political sciences, international affairs, and economics. The Polish Chair's curriculum will thus equally depend on the specialist field of the unit's head and the professors of Columbia University.

"If a successful candidate is chosen, there is a chance that the Polish Chair can begin working this autumn", says Prof. Bolecki. Issues of logistics could slow things down, though – the new head would have to move to New York, maybe even from another continent. It is possible that the successful applicant will receive a bonus from the university in the form of accommodation.

As part of our continued support for the Polish Chair, scholarships for American graduate or postgraduate students might be available in the first years. These could be financed – as a form of promotion – by Polish companies or institutions. Apart from the Polish Chair's regular curriculum, annual guest lectures, popular at U.S. universities, could also be financed. The lecturers would be the world's most outstanding specialists. Finally, the FNP does not rule out activities aimed at increasing the endowment fund.

Whether the right choice is made about the Polish Chair will become clear from how effectively she or he will draw graduate and postgraduate students to the new unit. Prof. Bolecki estimates we should know within a year whether the Polish Chair at Columbia University lives up to expectations. A comprehensive evaluation will be feasible after about five years, i.e. once a full academic cycle is completed. However, due to the differences between the U.S. and Polish university education systems, not only students completing the entire course at the Polish Chair will count, but also those who take classes for a semester or two and then return to their primary course. Such students will also gain knowledge of Polish affairs which they can use in their academic or professional lives.

Once the Polish Chair at CU is successfully established, the Foundation for Polish Science plans to initiate the formation of similar units at European universities, starting with Germany and the United Kingdom.

BY WITOLD ŻYGULSKI

A Worthwhile Passion For Science

Young researchers taking part in the Foundation for Polish Science's programmes know that science is worthwhile. Grants and fellowships enable them to complete research projects of a very high standard.

It is tough to be a scientist with no money for research. A shortage of funding causes many interesting research projects to be suspended for years, others are abandoned altogether. Financial problems make some young scientists give up research.

For many years, the Foundation for Polish Science (FNP) has been trying to ensure suitable working conditions to Poland's best scientists. A number of grant and stipend programmes have been set up to this aim. Some are targeted at young scientists at the beginning of their careers. They can apply for scientific grants and stipends under programmes such as VENTURES, TEAM, and IPP. The money comes from structural funds under Measure 1.2 "Strengthening the human resources potential of science" of the Innovative Economy Operational Programme.

The beneficiaries are selected in competitions. For the FNP, the primary consideration is the merit value of the proposed projects, but also their importance for practical applications. Thus, the money we spend not only serves the development of science but also supports Poland's economy.

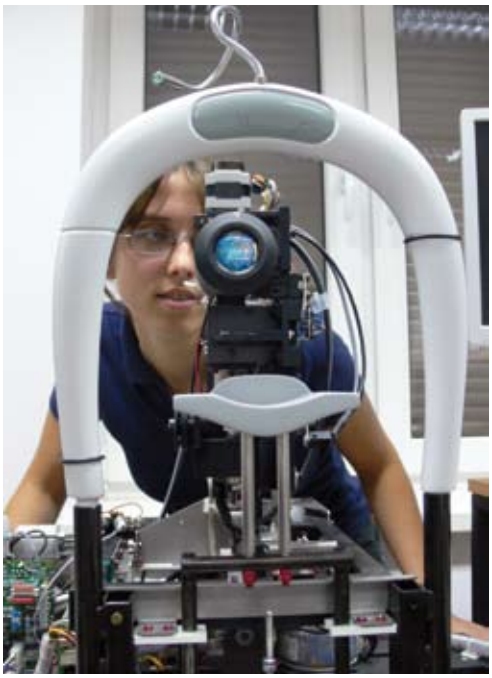
Companies find it worthwhile to work with scientists because this allows them to expand their range of products.

Below we present a few selected beneficiaries of last year's VENTURES, TEAM, and IPP programmes.

VENTURES

— FOR THE AMBITIOUS

The aim of this programme is to encourage the most talented young researchers to continue a scientific career. Research grants and monthly stipends are available to students, graduates, and PhD students. There are no preferred topics in the VENTURES programme; funding is available in all research fields, but the prerequisite for a project to qualify is its usefulness for the economy.



Anna Szkulmowska, the VENTURES programme beneficiary

In 2009, the FNP assigned more than PLN 1 million to the VENTURES programme. The first effects are already visible. "Without this funding, my project had no chance of being implemented. The grant from the VENTURES programme allowed me to develop that aspect of the research without which its industrial application would have been impossible. The money allowed us to purchase the necessary equipment", says Anna Szkulmowska, PhD, from the Medical Physics Group of the Nicolaus Copernicus University in Toruń. The FNP awarded her a grant of PLN 77,000.

Szkulmowska says that even though they have innovative ideas and are committed to their work, young scientists in Poland are often unable to find practical applications for their projects. "It's a long road from confirming something in a laboratory to using it in practice, preferably in mass production. Universities are interested in science, in publications, and don't want to finance extra research which focuses on technical aspects, on engineering", she explains.

Her project involves analysing blood circulation in tissue using spectral optical tomography – an advanced diagnostic technique. Among other things, it allows eye diseases to be detected at an early stage. It is also much more accurate than the currently most popular phase-based OCT.

Szkulmowska's research so far has shown that the sensitivity of spectral optical tomography in the case of velocities close to the measurement range is a thousand times more accurate than that achieved with the classic phase-based method.

"Introducing the new method into clinical practice requires a series of tests and optimizations. The result is the development of a reliable and easy-to-use tomograph for measuring the blood flow velocity in ocular tissue. This work was completed under the VENTURES programme", Szkulmowska explains.

Her method has attracted the interest of a company called OPTOPOL Technology SA. "Seeing the results of my work, they commissioned an upgrade of their tomographs to include more advanced solutions", she explains.

Jolanta Polak from the Biochemistry Department of the Maria Curie-Skłodowska University (UMCS) is another recipient under last year's VENTURES programme. A grant of more than PLN 106,000 allowed her to complete a project in which fungi were used in the production of textile dyes. Traditional methods of chemical synthesis of dyes are toxic for the environment – a drawback that the use of fungal biocatalysts does not have. Using fungal cultures to synthesize dyes has the added benefit of being much faster and cheaper than the conventional isolation of enzymes.

"This additional funding allowed me to speed up the research substantially. I have enough money to buy the reagents I need", says Polak.

Jolanta Polak, the VENTURES programme beneficiary

The UMCS Biochemistry Department will present the results of the work at the Bioforum in Łódź in May. "We hope this will help us establish cooperation with companies interested in applying the method on an industrial scale", adds Polak.

Right now she is preparing a patent application for one of the dyes obtained in the new method.

TEAM – GROUP DISCOVERIES

This programme, which also targets young scientists, enables them to set up a research team. The FNP stipulates that the team members must be recruited in an open procedure in Poland and internationally.

Projects of the TEAM programme may last from two to four years. Funding is provided for stipends for the team members and for the research itself. In 2009, the FNP awarded TEAM beneficiaries a total of more than PLN 29 million.

One of the recipients of last year's programme is Barbara Klajnert, PhD hab., a professor at the University of Łódź. The FNP provided just over PLN 2.4 million to her project. Klajnert studies the biological properties of dendrimers. Dendrimers are a group of polymers with a special structure – they are regular, spherical molecules with reactive groups on the surface and free space inside. Klajnert's team is looking for practical applications for dendrimers in medicine. For example, they could be used as drug carriers, transporting pharmaceuticals only to selected cells. This would allow lower drug dosages to be used, which would benefit patients (fewer side effects) and drug manufacturers (lower production costs).

Barbara Klajnert, PhD hab., the TEAM programme awardee

"The project which received supplementary funding under the TEAM programme is a continuation of my research conducted before my PhD and during my work on my postdoctoral degree", says Klajnert. "The only thing is, I worked alone then, and now I employ 10 people, several of them from other cities, including Rzeszów and Warsaw. This would have been impossible without the Foundation's grant. Thanks to my team, I can test dendrimers in the treatment of many different diseases. I would not have been able to perform so many tests by myself".

Among other things, her team is studying the use of dendrimers in gene therapy against HIV, cancer therapy, and treatment of Alzheimer's disease.

"We have determined during our research that dendrimers are good carriers of cancer drugs. In optimum conditions, a single polymer molecule is able to attach to a dozen or so molecules of a drug. Moreover, the dendrimer structure, namely the space inside the polymer and the sugar shell on the surface, protects the pharmaceutical from unfavourable external factors. This is important because drugs administered conventionally degrade rather quickly in the body. Right now we are studying the influence of pharmaceuticals complexed with dendrimers on human cells cultivated in vitro", Klajnert explains.

Her team conducts much of the research in cooperation with scientific centres abroad. "We are on the lookout for companies who would be interested to work with us and to apply our solutions in the production of drugs," she adds.

Marian Paluch, a professor of the University of Silesia, is another beneficiary of the TEAM programme involved in drug research. His project received PLN 1.78 million of supplementary funding. His team's research aims to improve the pharmacological parameters of drugs, including painkillers and heart medications. "We want to improve drug solubility and release rate", Paluch explains. His team also aims to improve the methods for producing amorphous therapeutic substances; they study the mechanism of crystallization of thermodynamically metastable amorphous systems, and they analyze the influence of isomerization processes on the action of pharmaceuticals.

"In the United States, research teams headed by one person are the norm. This model works very well; I spent two years working in the United States and got a good look at it. Thanks to the TEAM programme, I could set up this kind of team in Poland. I am responsible for it, but the decision on what we will work on is also mine", explains Paluch.

The project already had its first successes. For instance, the solubility of many drugs has been improved, which allows the dose of a given substance in medication to be reduced. This means economic benefits for drug manufacturers, and for patients – less risk of side effects. "We publish our research results in international journals; they are accessible to anyone who's interested. But at the same time, we have a very fruitful collaboration with Polpharma. Thanks to them, we can learn more about production technology, while our research shows them the possibilities for improving drug efficacy", Paluch adds.

Wojciech Grochala, PhD hab., from the Interdisciplinary Centre for Mathematical and Computer Modelling and the Faculty of Chemistry at the University of Warsaw, is also a recipient under last year's TEAM programme. His project received over PLN 1.6 million.

The international team headed by Grochala has obtained silver(II) sulphate, a new chemical compound with unique

physicochemical properties totally unlike those of silver(I) sulphate. “These are two completely different chemical substances”, Grochala emphasizes.

Silver(II) sulphate is a semiconductor with very low energy. It is also strongly magnetic. “It shows very strong antiferromagnetic coupling which occurs even at a temperature of 100°C. No other sulphate behaves in this way”, explains Grochala. Silver(II) sulphate is a very strong oxidant. This property can be used in pharmaceutics, for example, or in environmental protection. The project has already attracted some interest.

“One company and one spin-off centre from Cracow have called us. In the meantime, we continue to study the compound’s application possibilities, and when we finish, we will think about getting a patent”, Grochala says.

IPP – EXPERIENCING OTHER COUNTRIES

The International PhD Projects (IPP) programme is the FNP’s proposal for universities and scientific institutions. The aim is for PhD students to obtain their doctoral degrees in the course of research at universities in Poland and abroad. A project has to involve at least 10 PhD students, each of whom should spend between six months and two years on a research fellowship at a unit abroad. Projects under the IPP programme last up to 5 years. The FNP covers the costs of monthly stipends for the PhD students, their Social Insurance Institution (ZUS) pension and disability premiums, and research costs (up to PLN 35,000 per year per person). Last year, a total of almost PLN 31.5 million was spent within this programme.

Marian Paluch, PhD hab., the TEAM programme awardee

Wojciech Grochala, PhD hab., the TEAM programme awardee with his team

One of the beneficiaries of last year’s IPP programme is Bartłomiej Szafran, PhD hab., from the AGH University of Science and Technology in Kraków. The project that received IPP funding from the FNP involves twelve PhD students, seven of them from the AGH. The remaining five PhD candidates are based at the Institute of Catalysis and Surface Physicochemistry of the Polish Academy of Sciences in Cracow. These young researchers focus on topics from the fields of physics, physicochemistry, biochemistry, materials engineering, and electronics. They have planned their traineeships at 14 foreign units, including Bielefeld University, the University of Leeds, and the University of Technology in Helsinki. “My home university commissioned me to prepare this project. Trips and traineeships at units abroad allow PhD students to familiarize themselves with a research base which is far beyond anything that universities in Poland can afford. Some of the research could never be carried out in Poland because the equipment is not available anywhere in the country”, says Szafran.

“The grants that the FNP provides in this programme are sufficient to live fairly comfortably in Poland and abroad and to concentrate on research. Worthwhile results are impossible without complete commitment to research. Science cannot be practiced at half capacity”, Szafran observes.

Scientists will be able to apply for funding for their research projects in 2010 as well. The details and deadlines are available from the website http://www.fnp.org.pl

BY DANIEL LENART

„NATURE", ISSUE 7273, 3 DECEMBER 2009

Innovative Science Pays off for Scientists in Poland

Transparent, competitive funding is making Polish science more flexible and attracting expatriate and foreign scientists alike.

Joanna Kufel's laboratory at the University of Warsaw has outgrown its original confines. Equipment colonizes closets, neighbouring offices, and all available nooks and crannies on her floor. The molecular biologist quickly apologizes for her crowded office. "We just don't have enough space," she says, "but we make do."

Until recently, that was the story of Polish science research. Domestic research funding punched below its weight by European standards, and many world-class scientists emigrated to find work in better-funded countries. "But it's in the nature of Polish scientists to emphasize how little they get by on," says computer scientist Mikołaj Bojańczyk. "But nowadays it is getting trickier to repeat that, because we're better funded than ever."

Prof. Joanna Kufel, the TEAM programme awardee

Bojańczyk, who works at the Institute of Informatics at the University of Warsaw, is one of the first Poles to win an European Research Council (ERC) starting grant, and is setting up his own research group with the grant, worth nearly €800,000, as well as a supplementary stipend from the Foundation for Polish Science (FNP) – the largest source of science funding in Poland outside the state budget. Just as a growing number of Polish researchers, Bojańczyk is tapping into the international community, bringing collaborators and funding to Poland. Bojańczyk won his ERC grant in the programme's second year, but the previous year no young researcher chose to conduct an ERC project in Poland. This set off media discussions on the condition of research in Poland. The government decided to increase research funding to reward the most competitive, scientist-initiated ideas, including those from foreign scientists, and to establish independent grant agencies. One of these, the National Center for Research and Development (NCBiR), is already operational, and the second, the National Center for Science (NCN), should be launched in 2010.

So Kufel may be revealing more about her ambitious expectations than her lab's drawbacks when she notes that new arrivals "have to have good legs" to keep up with the experiments scattered throughout her sprawling laboratory. New arrivals on the Polish science scene, whether from Poland or abroad, will need to work hard to earn their place, says biologist Maciej Żylicz, president of the FNP's board.

The Old Days

Despite a jump in the number of PhD students, the Polish higher education and research infrastructure has few places for new postdoctoral researchers, and such jobs are not always open to competition. Young PhDs must pursue a 'habilitation' under supervision before starting their own independent research, a system that Żylicz says is "left over from the communist days when control was more centralized. We have to forget about habilitation and introduce international competition for all positions from assistant to full professor." (M. Żylicz, Nature 427, 677; 2004.) And until recently, the Ministry of Science and Higher Education did not permit individual scientists to apply for more than one grant at a time, notes Kufel, who had to find funding from the FNP and Wellcome Trust to fund her growing research team, since few Ministry grants funded more than a couple of assistants.

Laboratory researchers who got their start under the old regime still recall getting by with limited infrastructure. Pulmonary specialist Andrzej Szczeklik, now working in Cracow at the Jagiellonian University, likes to tell the story of an experiment with prostacycline that he and a colleague performed on each other in the 1970s. "I came home feverish after passing out on the operating table," Szczeklik chuckles, "and my wife knew I'd been up to something. She had our son in her arms and told me she was leaving me if I ever experimented on myself again." Decades later, Szczeklik won the FNP Prize, the most prestigious scientific award in Poland, for discovering

the bloodthinning properties of aspirin and for studies on the pathogenesis and treatment of aspirin-induced bronchial asthma.

Transitions

Relics from the communist years are still present in the Polish system, but changes are implemented constantly, and young Polish researchers appreciate them very much.

With a stipend and a grant from the FNP (Homing Programme), awarded after her return to Warsaw from the University of Oxford in the United Kingdom where she had done her PhD and postdoc, sociologist and political scientist Natalia Letki was able to run a pilot study of how the transition from communism to democracy changed public attitudes towards social cooperation.

Preparing that grant application, she says, helped to give her the data, confidence and skills to apply successfully for an ERC starting grant of €1.73 million in the programme's second year. "These grants allowed talented researchers to jump the queue," she says. This autumn, she began concentrating full-time on her research instead of trying to teach at multiple institutions and juggling childcare with research at home.

Natalia Letki, PhD, the HOMING and IDEAS FOR POLAND programmes awardee

Letki's funding will also allow her to hire assistant researchers and pay them salaries competitive with other European institutions. "There is great potential in junior people in Poland which we're notusing," she says, since so many of them are tied down with teaching duties, or leave Poland to pursue better-paying research positions elsewhere. Kufel agrees. Discussing Poland's glut of talented masters students, she speaks with the urgency of a scientist sitting on lots of good data and no time to analyze it. A shortage of good supervisors creates a bottleneck at the PhD level. "We still don't have very high output of students."

Cosmopolitan Collaborations

International experience is a hallmark of many top Polish scientists. Bojańczyk, for instance, learned his English attending school in Kuwait and Mexico, cut his scholarly teeth by spending parts of his graduate and postdoctoral studies in Bordeaux and Paris, and visits the United States to work with colleagues. These days, though, his colleagues also come to him, and send their students. "Foreign postdocs are very valuable, because they bring diversity and different approach to team work to our laboratories." says Bojańczyk.

Physicist Tomasz Dietl, a recent recipient of an ERC advanced research grant, has also spent years abroad, first as a postdoc at the Ecole Polytechnique in Paris and the Munich Technical University, and later as a visiting professor at Linz, Grenoble and Sendai. Dietl adds that although Polish scientists could travel in the past, their collaborations today are much richer: "If you read articles, you knew what had happened two years before, and if you went to conferences, you knew what had happened the year before, but if you are involved in consortia you know what people are working on right now and what they'll be doing in the next few years." That cutting-edge work has paid off for Dietl, who developed a theory – later confirmed by experiments – predicting how certain ferromagnetic materials could be converted into semiconductors, for which he has earned awards including the Agilent Technologies Europhysics Prize and the 2006 FNP Prize.

On a grander scale, forests share traits across the globe, and comparing them in different countries can also reveal global ecological processes. Dendrologist Jacek Oleksyn won the 2008 FNP Prize for his contribution to the discovery of the universal, biogeographic relationship between plant traits, that are fundamental for understanding global ecological processes. Oleksyn, who works at the Institute of Dendrology of the Polish Academy of Sciences in Kórnik and intensively cooperates with the University of Minnesota, thinks that scientists like him can serve as bridges between foreign and Polish scientists. "We have lots of good scientists in Poland," says Oleksyn. "I can match people here with the right colleagues [abroad] and help them build international research teams."

Like Oleksyn, materials scientist Marek Samoć has returned to Poland after an extended stay abroad. Samoć did research at the Australian National University for 17 years, until he learned about the FNP's Welcome Programme, designed to attract highly qualified researchers to establish labs in Poland. He won €1.5 million from the FNP last year for his research using organic metals in nanophotonics at the Wroclaw University of Technology. "At first, I considered the possibility of coming for a semester at a time," he says, but he realized that it would

take a full-time commitment to build his new team from scratch and get them started on new research directions. He reports, "a year in Poland has shown me that, as I expected, there have been quite a few challenges but I am happy to say that I have never regretted my decision."

Institutionalizing Innovation

The modernization of Polish science extends to more than scientist-driven scientific collaborations. Today it includes new government-driven efforts foreseen in the prepared reform, but also earlier initiatives such as the International Institute of Molecular and Cell Biology (IIMCB), founded by the Polish government in conjunction with UNESCO and with generous help of the Max Planck Society in the late 1990s. The IIMCB shares a campus with buildings of the Polish Academy of Science and University of Warsaw. The institute gives independent researchers unprecedented freedom of action in the early stages of their careers, but demands that they justify their places with performance reviews every two years, in order to keep track of innovation and productivity. "You can build a group at age 30," says Żylicz, who is a senior group leader at the IIMCB. "This is still unusual in Europe."

IIMCB group leader Marta Miączyńska, a cell biologist who did her PhD in Austria and post-doctoral work in Germany, says, "I didn't think I'd get such independence elsewhere. I realized during my studies that I could learn so much more abroad, but I felt I could make a bigger difference in my home country." There are challenges, Miączyńska says, but her funding from the Wellcome Trust and the Howard Hughes Medical Institute covers travel so that she and her collaborators can visit one another, and she can pay her team a more competitive wage. To help welcome international scientists, "all our lab meetings and seminars are in English," she notes.

Prof. Marek Samoć, the WELCOME programme awardee

Startup Culture

Anna Szkulmowska, a physics PhD student at Nicolas Copernicus University in Torun, can testify to the transformation in her short career. "When I started working in the optical physics group, we only had three of this kind of lens," she says, pointing at lenses in black metal frames in a tool drawer. Five years ago she visited a lab in Vienna for a month, where she was mortified when she accidentally spoilt one of that lab's lenses. "I agonized over how to tell my supervisor, but when I did he just laughed and opened a whole closet full of them," she recalls. Then she opens a dozen drawers one by one, revealing all the new lenses that the Torun lab has acquired since then. Szkulmowska works under the supervision of Maciej Wojtkowski (winner of the European Science Foundation Young Investigator award) and Andrzej Kowalczyk, both professors at the Nicolas Copernicus University, where they manage a medical physics group that commercializes optical tomography scanners used for ophthalmology. The group has adopted a 'big science' approach still unusual in Poland, in which senior members tackle distinct duties in pursuit of common scientific goals. Wojtkowski practised the big science approach during his postdoctoral work at MIT before winning an FNP Homing grant to support his return to Poland.

Szkulmowska, who designed the instrumentation for a prototype tomographer, says that the group's integrated approach makes PhD projects like hers part of a coherent whole. The FNP has provided Szkulmowska with supplementary funding and technology-transfer training in the form of a Ventures grant.

The lab works closely with an industrial partner, Optopol, which sells optical tomography machines worldwide. "We do basic research, applied research and tech transfer all under one roof," says Wojtkowski, and unlike in many theory labs, he adds, "your idea can be translated into action."

Poland gets the largest share of EU structural funds and has emerged from the financial crisis ahead of most European countries, but doing good science is not just about the amount of funding available, says Żylicz; "it's also necessary to reform the system." He points out that this is happening under the new government plan to reserve new funding strictly for competitive projects. With their innovative strategies, scientists such as Kowalczyk and Wojtkowski create a fertile environment for other ambitious scientists. And it's starting to show: "Even at international conferences with 6,000 postdocs, we are invited to give talks and we get attention," Szkulmowska says. "It's a real payoff for our hard work."

Research institutions all over Poland have been changing their work culture to attract the best researchers from all around the world. There's still a lot to do, according to Żylicz, but the best Polish institutes and laboratories already do scientific work at the highest level. The return of top-flight Polish researchers and the growing number of scientists from abroad who choose Poland as career stepping stone or destination are his best evidence. Twenty years after the fall of communism, science in Poland is more attractive and more flexible than ever.

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