INFORMATION BROCHURE

National Science Centre
Poland

The National Science Centre

The National Science Centre (NCN) is a government executive agency set up to fund basic research. Thanks to this institution, researchers themselves can now decide how a substantial portion of research funds is allocated from the state budget.

Basic research is original experimental or theoretical research work that strives to expand knowledge of the fundamentals of phenomena and observable facts. It is not intended to have any direct commercial application or use.

The NCN's mission is to foster an ever-larger international impact of the research by Polish scholars, and to improve the quality and effectiveness of research funding, via a system of grants awarded on a competitive basis. The Centre publishes regular calls for research projects, doctoral scholarships and post-doctoral fellowships.

The budget of the NCN for funding basic research in 2018 exceeds EUR 300 million. The NCN coordinates QuantERA, the first ERA-NET initiative to be managed by an agency representing one of the so-called new EU member states, and the prestigious Dioscuri programme, run in collaboration with Germany's Max Planck Society. The Centre is also the operator of the "Research" area under the third edition of the EEA and Norway Grants.

Statistics

Under the domestic calls announced in 2017, 10,023 applications were submitted totalling ca. EUR 1.1 billion. In calls concluded in 2017 2,940 scientists were awarded funding ca. EUR 266.7 million.

Chart: Number of proposals submitted and grants awarded* in calls concluded in 2017 by research domain, including success rate**

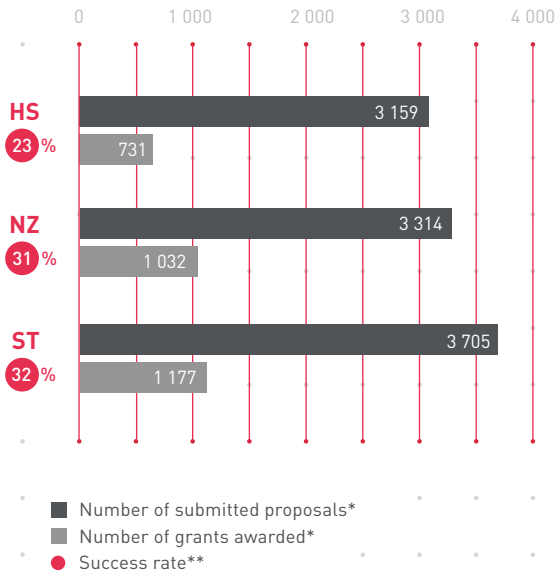
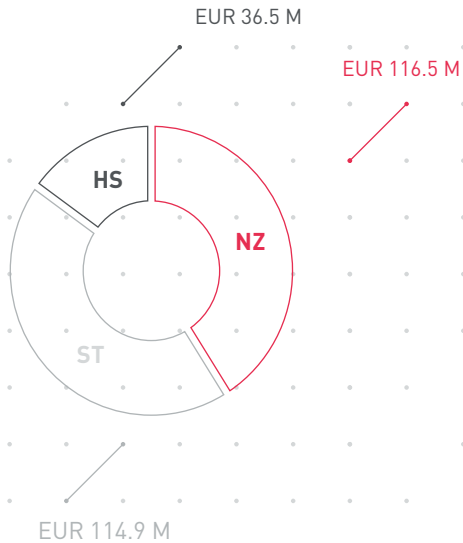


Chart: Resources awarded under domestic funding schemes concluded in 2017, by research area

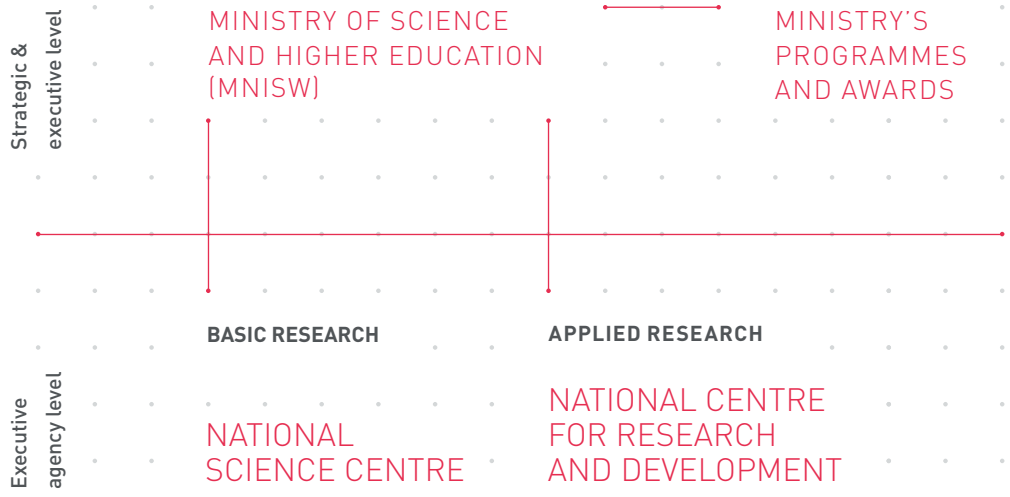


*including all domestic calls concluded in 2017

**success rate is the percentage of proposals that were awarded funding; it is calculated as the ratio of the number of proposals awarded to the number of proposals submitted

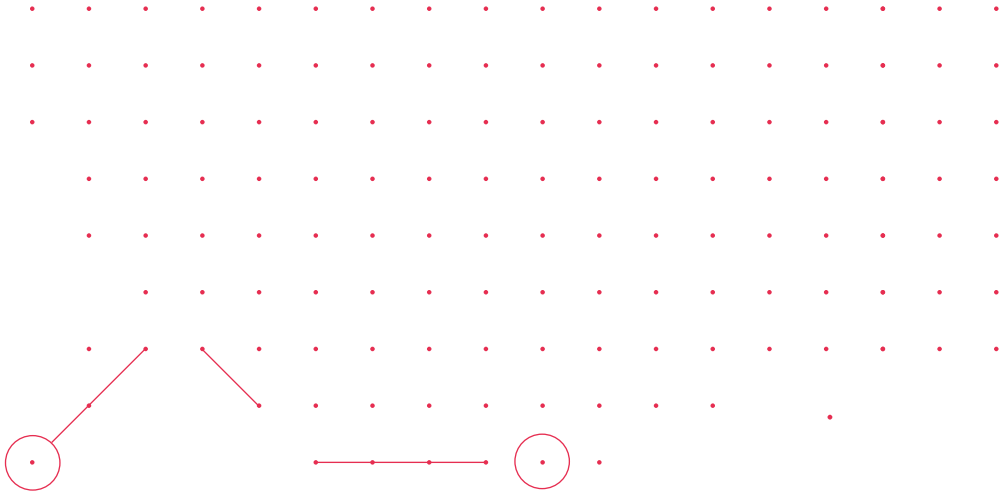
The structure of research funding in Poland

National budget for research 2018:
PLN 7.4 bln (EUR 1.8 B) (including EU structural funds)



Budget 2018:
PLN 1.3 B (EUR 300 M)

Organisation chart



The NCN Director

The National Science Centre is managed by a director selected by the NCN Council in an open competition process. The Director acts as NCN's representative, oversees the completion of NCN tasks and its financial management. The Director is authorised to act as an independent legal representative on behalf of NCN.

The NCN Council

The National Science Centre Council consists of distinguished researchers representing different academic fields. The Council sets out priority basic research areas that match the Polish state development strategy, specifies call regulations, allocates funding, publishes calls for doctoral scholarships and post-doctoral internships. The Council also selects members of the Expert Teams who are responsible for research proposal evaluations.

The NCN Coordinators

NCN Coordinators are scientific officers responsible for launching calls for proposals for research projects and project evaluation process management. Their responsibilities also include evaluation of the impartiality of the peer review process. In particular cases, the Coordinator, following consultation with the opinions of the Expert Teams, may change the order of research proposals on the ranking list.

NCN Office

The NCN Office is a structure combining the efforts of a number of the NCN's departments and teams. On a day-to-day basis, the Office is responsible for processing calls for proposals and organising meetings for experts at the peer review evaluation stage. The Office of the NCN is also the first line of support for grant recipients who carry out the projects; it handles the process of signing grant agreements, oversees their implementation, initiates international cooperation with other research-funding entities, and launches calls in the "Research" area under the third edition of the EEA and Norway Grants. The Office operates an information centre for applicants.

Prof. Zbigniew Błocki

is the director of the National Science Centre and the professor at the Faculty of Mathematics and Computer Science of Jagiellonian University in Krakow. His main research areas are complex analyses of several variables and partial differential equations. He has worked in research centres all over the world, for example in the USA (as a recipient of the Fulbright senior grant), Sweden and Germany, also giving invited lectures and conducting courses. In the years 2010-2015 he was a member of the Council of the National Science Centre (NCN). In the years 2011-2012 he held the office of the director of the Institute of Mathematics, Jagiellonian University; he was also a Vice Chair of the Executive Organising Committee of the 6th European Congress of Mathematics in Krakow in 2012. He received the Zaremba Prize of the Polish Mathematical Society in 2007, the Polish Prime Minister Award for exceptional scientific achievements in 2008 and the Jagiellonian Laurel in 2014. From November 2015 he is also a member of the Management Council of Science Europe, an association of European science funding organisations.

Prof. Janusz Janeczek

is the Chair of the NCN Council as well as mineralogist and geologist. He graduated from the University of Wrocław in 1976, where he worked until 1984. Since 1985 he has been a faculty member of the University of Silesia and held the position of Rector for two terms in the years 2002-2005 and 2005-2008. He was the Vice-Rector for research, international cooperation and promotion of the University (1999-2002). During his second term as rector he was elected Vice-President of the Conference of Rectors of Polish Universities. In the years 1993-1999, he acted as the Vice-Dean of the Faculty of Earth Sciences, the University of Silesia, where he currently is the head of the Chair of Geochemistry, Mineralogy and Petrography. Between 1998 and 2002 he was the president of the Mineralogical Society of Poland. In the years 2008-2015 he was a chairman of the Mineralogical Committee of the Polish Academy of Sciences. He is a chairman of the Council for Nuclear Safety and Radiological Protection of the President of National Atomic Energy Agency, a member of the Mineralogical Society of Poland and the Mineralogical Society of America. He has received scholarships from the British Council (University of Manchester), the Fullbright Scholar Program (University of New Mexico) and the Japanese Association for the Promotion of Science at Hiroshima University. Laureate of the Polish Academy of Sciences' Ignacy Domeyko Award (1986).

Grants

The National Science Centre finances basic research carried out in the form of research projects, PhD scholarships, postdoctoral internships and single activities that serve as part of larger basic research. One of the priorities of the Centre is to support and develop the scientific careers of pre-doctoral and doctoral researchers about to embark on a career in research (maximum 7 years since PhD award). The Centre allocates more than 20% of its budget towards grants for this group of researchers.

The NCN offers eleven funding schemes which take into account the varied needs of academia ranging from researchers at the outset of their career to the most prominent academics. Furthermore, the NCN, in cooperation with foreign partners, jointly announces international calls.

The NCN finances some research equipment, however large-scale research infrastructure is financed by the Ministry of Science and Higher Education. The funding programmes are open to a wide range of applicants and the proposals must be written both in Polish and English. Although parties signing contracts with the NCN are required to be Polish institutions, their research teams may include foreign researchers.

NCN subject areas

HS Arts, Humanities and Social Sciences

- **HS1** Fundamental questions of human existance and the nature of reality
- **HS2** Cultures and cultural creativity
- **HS3** The study of the human past
- **HS4** Individuals, institutions and markets
- **HS5** Law, political studies, regional and social policies
- **HS6** Human nature and human society

ST Physical Sciences and Engineering

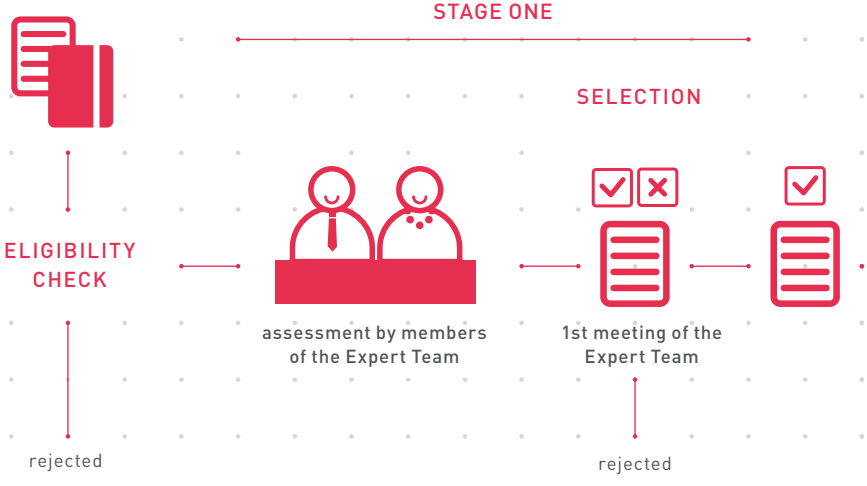
- **ST1** Mathematics
- **ST2** Fundamental constituents of matter
- **ST3** Condensed matter physics
- **ST4** Physical and analytical chemical sciences
- **ST5** Materials and synthesis
- **ST6** Computer science and informatics
- **ST7** Systems and telecommunications engineering
- **ST8** Products and processes engineering
- **ST9** Astronomy and space research
- **ST10** Earth system science

NZ Life Sciences

- **NZ1** Molecular and structural biology and biochemistry
- **NZ2** Genetics, genomics
- **NZ3** Cellular and developmental biology
- **NZ4** Biology of tissues, organs and organisms
- **NZ5** Human and animal noninfectious diseases
- **NZ6** Human and animal immunology and infection
- **NZ7** Diagnostic tools, therapies and public health
- **NZ8** Evolutionary and environmental biology
- **NZ9** Applied life sciences and biotechnology

Proposal evaluation process

In order to select the very best proposals, the NCN employs an evaluation procedure based on a two-stage peer review procedure. The NCN Council adopted a general rule of taking into account, in carefully considered proportion, both the quality of the proposal and the achievements of the researchers. The evaluation procedure starts with an admissibility and eligibility check performed by the NCN Coordinators which covers assessing the proposal for completeness and accuracy of submission. The projects are afterwards peer reviewed by members of the NCN Expert Teams (groups of experts selected by the NCN Council among distinguished academics appointed by the NCN Director for the purpose of proposal evaluation) and consists of two stages.

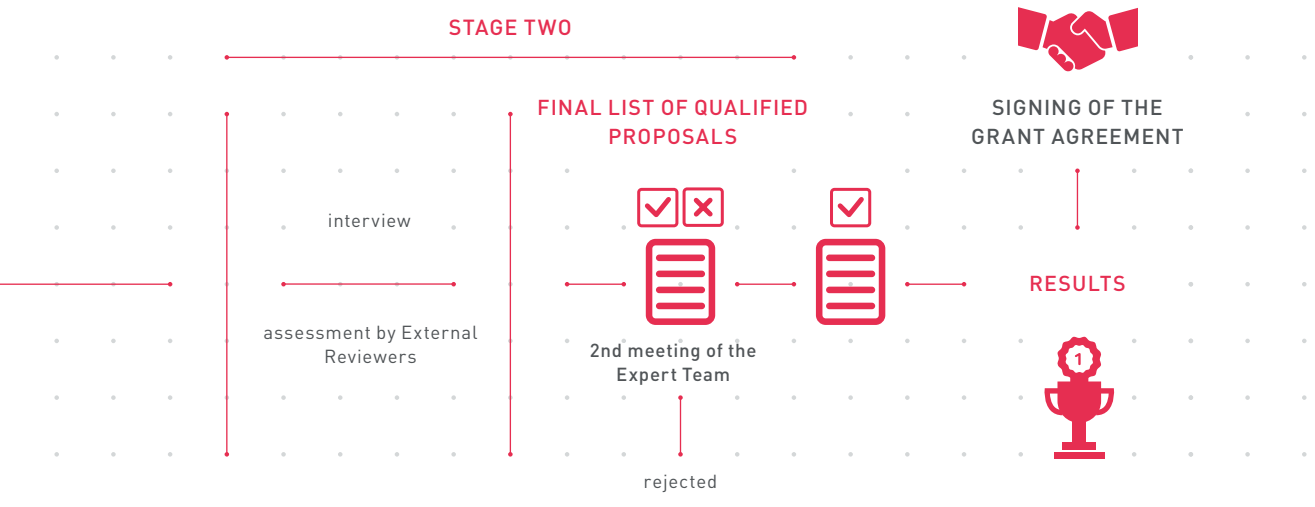


STAGE ONE

The members of the Expert Teams prepare individual assessments of the proposals. Their assessments are a starting point for discussion of the proposals during the first panel session. The decision to reject or approve a proposal for stage two is taken collectively by the team, preceded by a discussion. The Expert Teams prepare a shortlist of proposals to be sent to stage two of the evaluation.

STAGE TWO

Proposals are evaluated by External Reviewers, including foreign-based ones, whose reviews are discussed by the Expert Teams during the second panel session. External Reviewers are selected by coordinators, based on the recommendations of the Expert Teams. The final evaluation score for individual proposals and drawing up a final ranking list of projects approved for funding is in the hands of the Expert Teams. In some calls, an interview is organised at the second stage of evaluation.



Due to the different evaluation procedures, the diagram does not include MINIATURA, TANGO and most of international calls.

Domestic calls

PRELUDIUM

Aimed at pre-doctoral researchers starting their career in research. Projects carried out within the PRELUDIUM scheme last from one to three years and are executed with the assistance of a supervisor. Research financed under this scheme does not have to be related to the applicant's PhD dissertation.

ETIUDA

This funding opportunity is addressed to doctoral candidates. Awardees receive a scholarship covering the time needed to prepare their PhD dissertation, i.e. from six to twelve months. They should also plan a research stay abroad lasting from three to six months which will be funded solely by the NCN. The awardee is obliged to obtain their doctoral degree within twelve months of completing the scholarship, but not earlier than six months since the commencement of the funding.

SONATINA

Call for research projects carried out by researchers with a doctoral degree obtained within the last three years prior to the submission of the proposal. Funding under the programme includes full-time employment in Polish research institutions and a visiting fellowship at an institution abroad for three to six months. The call's awardee receives funding allowing them to carry out their research at the employing institution.

SONATA

Targeted at emerging researchers with a doctoral degree. This funding opportunity hopes to support Principal Investigators to embark on an innovative basic research project using modern research facilities and/or methodology. Researchers within two to seven years of the award of their doctoral degree are eligible to apply.

SONATA BIS

This funding scheme gives researchers the incentive to build a new research team run by academics with a doctoral degree or academic title within five to twelve years since their PhD award. This scheme is primarily addressed to associate professors and professors. SONATA BIS supports the creation of teams which conduct the most innovative research projects.

HARMONIA

Aimed at applicants wanting to carry out international projects which are not co-financed from foreign sources. Research proposals may include projects conducted directly in cooperation with foreign partners as part of international programmes / initiatives or using large-scale international research infrastructure. The purchase of research equipment is not allowed under this scheme.

TANGO

Open to projects that plan to put into economic and social application the results of basic research showing significant innovative potential. Eligible to apply are Principal Investigators or investigators in projects in basic research awarded funding under national or international calls, or researchers who have acted as main researchers / supervisors / scientific tutors upon the consent of the Principal Investigator. TANGO is a joint initiative of the National Science Centre and the National Centre for Research and Development (NCBR), designed to support research institutions and universities in commercialising their research output such as innovative technologies, products and services and foster cooperation between academia and industry.

MAESTRO

Designed for advanced researchers wanting to conduct pioneering research, including interdisciplinary research important for the development of science. Projects within this funding scheme should surpass the current state of knowledge, lead to the creation of new paradigms, or forge pathways to new frontiers in the field. Researchers with at least a doctoral degree, at least five publications in renowned academic journals in the past ten years and those who have conducted at least two research projects selected through a call for proposals procedure are eligible to apply.

OPUS

This funding scheme is intended for a wide range of applicants, irrespective of their research experience. Research proposals may include the purchase or construction of necessary research equipment. Projects are carried out individually by a Principal Investigator or a research team composed of a Principal Investigator and any number of researchers.

UWERTURA

Funding opportunity for fellowships in international research teams conducting ERC grants. Addressed to researchers with a doctorate, planning to apply for an ERC grant. The programme seeks to support researchers working in Polish host institutions to successfully apply for European resources, and to increase their share among laureates of ERC grants.

MINIATURA

A funding opportunity financing single activities that serve as parts of larger basic research. Intended to help researchers in applying for future funding projects under other NCN programmes. It is addressed to individuals who have obtained their doctorate degree within 12 years of submitting their application, and who have not been principal investigators to any research projects, nor have been NCN grantees. Additionally, a prospective MINIATURA candidate is expected to hold a contract of employment with the host institution acting as the applicant.

International cooperation

As one of its priorities, the NCN offers support to research carried out in collaboration with partners from abroad.

Since 2014 the NCN has enjoyed a dynamic cooperation with Deutsche Forschungsgemeinschaft (DFG), Germany's research funding organisation, jointly launching two BEETHOVEN calls for projects carried out by Polish-German teams. As a continuation, scheduled for 2018 is BEETHOVEN LIFE. Since 2016, the NCN has coordinated the QuantERA programme, a collaborative initiative in quantum technology, co-funded by the European Commission. In 2017, the Centre initiated the prestigious Dioscuri programme in cooperation with the German Max Planck Society. In the same year, it published the first bilateral call for a Polish-Lithuanian research project, as a joint initiative with the Research Council of Lithuania (RCL). The year 2018 will see the launch of a call organised jointly with the Austrian Science Fund (FWF).

The NCN cooperates with the European Research Council (ERC), an institution funding ground-breaking research in Europe; the Centre is also member of Science Europe (SE), an association of research-funding agencies and research institutions across Europe.

The NCN enters into research cooperation beyond the region of the European Union, under multilateral cooperation programmes as well as in the form of direct agreements: in 2016, an agreement was signed with the federal American agency, the National Science Foundation; the most recent is the agreement signed with the National Natural Science Foundation of China (NSFC) in 2018.

Bilateral cooperation programmes

BEETHOVEN

Funding opportunity for joint Polish-German teams carrying out research in Arts, Sciences and Humanities and select disciplines in Physical Sciences and Engineering, launched in cooperation with Deutsche Forschungsgemeinschaft (DFG).

BEETHOVEN LIFE

Funding opportunity for joint Polish-German teams carrying out research in Life Sciences, launched in cooperation with Deutsche Forschungsgemeinschaft (DFG).

SHENG

Funding opportunity for joint Polish-Chinese teams in Life Sciences, Physical Sciences and Engineering, and selected disciplines in Social Sciences, launched in cooperation with the National Natural Science Foundation of China (NSFC).

CALL FOR POLISH-AUSTRIAN JOINT RESEARCH PROJECTS

Call organised jointly with the Austrian Science Fund (FWF).

DIOSCURI

Call for funding the establishment of Centres of Scientific Excellence in Central and Eastern Europe, organised in cooperation with Germany's Max Planck Society (MPG).

DAINA

Call for Polish-Lithuanian research projects, organised as a joint initiative in cooperation with the Research Council of Lithuania (RCL).

PIRE

Call for Polish-American research projects in selected disciplines of Physical Sciences and Engineering, Arts, Humanities and Social Sciences, and Life Sciences (with the exception of medical science), launched jointly with the National Science Foundation (NSF).

Multilateral cooperation programmes in Arts, Humanities and Social Sciences

EQUIP EU-India Platform for Social Sciences and Humanities. The network's objectives include providing an overview of the current scope of collaborative activity between Europe and India in humanities as well as inspiring new research areas in this field.

This project has received funding from European Union's Seventh Framework Programme for research, technological development and demonsration under grant agreement No 613236.

HERA Humanities in the European Research Area. The network promotes research in the field of humanities. The programme seeks to accentuate modern Europe's social, cultural and political challenges.

This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 649307.

NORFACE New Opportunities for Research Funding Agency Co-operation in Europe. The network promotes research into the behaviour of individuals and groups as well as the dynamics of institutions and societies in Europe; it addresses social issues: from challenges related to migration to preparing for the impact of an aging society.

NARFACE DIAL has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 724363.

Multilateral cooperation programmes in Physical Sciences and Engineering

CHIST-ERA European Coordinated Research on Long-term Challenges in Information and Communication Sciences & Technologies. The programme supports research cooperation in ICST (Information and Communication Sciences & Technologies), including potentially ground-breaking high-risk, high impact projects.

CHIST-ERA III has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 768977.

M-ERA.NET ERA-NET for Materials Research and Innovation. The network supports research in the areas of material science and engineering, with a view to developing innovative solutions in low-emission technologies, improved energy efficiency and conservation of natural resources.

M-ERA.NET 2 has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 685451.

QuantERA ERA-NET COFUND on Quantum Technologies finances projects in the field of quantum technologies. The network also addresses the issues of responsible research and cooperation with industry; it monitors public policies in European countries with regard to quantum technologies.

QuantERA has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731473.

Multilateral cooperation programmes in Life Sciences

ERA-CAPS ERA-NET for Coordinating Action in Plant Sciences provides funding for research on plant molecular sciences, supporting such priority areas as: healthy, safe and sufficient food, plant-based products – chemicals and energy, and sustainable agriculture, forestry and landscape.

This project has received funding from European Union's Seventh Framework Programme for research, technological development and demonsration under grant agreement No 613236.

JPI-AMR Joint Programming Initiative on Antimicrobial Resistance supports basic and experimental research on new antibiotics as well as on antimicrobial resistance and its spread within animal and human populations and in the natural environment.

JPI AMR has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 681055.

JPND Joint Programming on Neurodegenerative Diseases. The network pursues research into neurodegenerative diseases, such as Alzheimer's disease or Parkinson's disease, which afflict Europe's ageing societies with increasing intensity.

Multilateral cooperation programmes for interdisciplinary research efforts

BiodivERsA The network promotes pan-European research into conservation and biodiversity sustainability.

This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreements No 642420 and 776617.

ForestValue The objective of the programme is to promote increased innovation and competitiveness of the forest-based sector in Europe and to support its transformation into a sector exploiting forest resources in ways that are in line with the most advanced scientific concepts.

This projectl has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 773324.

URBAN EUROPE The network promotes research responding to the challenges of modern cities and urban areas, engaging researchers and civil society actors, NGOs, local authorities and public utility providers.

This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreements No 693443 and 730254.

2017 NCN Award

The National Science Centre Award is given to young researchers for considerable achievements in basic research. Laureates are selected from amongst principal investigators of research projects carried out in Polish host institutions, documented with publications. The award was established by the Council of the National Science Centre in February 2013. The distinction in three research domains (Arts, Humanities and Social Sciences; Life Sciences; Physical Sciences and Engineering) is conferred by a committee comprising the Director and Council of the Centre as well as representatives of the award's sponsors.

It was the fifth edition of the award for young researchers. The award gala took place on 10th October 2017 at the Gallery of 19th-century Polish Art at the Cloth Hall in Krakow. The 2017 NCN Award was funded by Grupa Adamed, PKN Orlen, Jastrzębska Spółka Węglowa and Grupa Azoty.

Arts, humanities and social sciences

Life sciences

Physical sciences and engineering

Prof. Anna Brożek

Institute of Philosophy, University of Warsaw

Special achievement: Devising original theories on the function of interrogative and imperative sentences and a vital contribution to the studies on the history of the Lvov-Warsaw school of logic, preceded by meticulous archival research.

The research carried out by Prof. Anna Brożek deals primarily with three areas: logical semiotics and methodology as well as music theory. In her semiotic and methodological research, the scholar focuses on the non-declarative sentences that all too often tend to be neglected by logicians: the interrogative and imperative sentences. Interrogative sentences are expressions that communicate having gaps in one's view of the world and a willingness to fill them in. Cognitive experiences expressed in interrogative sentences are the drive in knowledge acquisition. Imperatives, for a change, are expressions with which we influence others' behaviour: either by expressing our wishes or by bringing others to the realisation that certain actions on their part will bring them closer to achieving a goal. In her writings on the theory of interrogatives and imperatives, the researcher has described the types and functions of these expressions, and she has demonstrated the ways in which understanding those functions translates into the realia of science and everyday life. The historical background for the investigations is the methodological tradition of the Lvov-Warsaw school, the most influential philosophical school to have emerged from Poland. Methodological hallmarks of the School initiated by Kazimierz Twardowski are exactitude in formulating thoughts, accurateness in justifying ideas and prudent use of the tools offered by logic.

Dr. Szymon Świeżewski

Institute of Biochemistry and Biophysics, Polish Academy of Sciences

Special achievement: identifying the functions of long non-coding RNA (LncRNA) in regulating the key stages of plant growth: sprouting and flowering.

Seeds' ability to contain germination despite favourable conditions is the foundation of agriculture: we can harvest and store them. Under natural conditions this phenomenon, known as seeds' dormancy time, enables plants to ignore brief spells of favourable weather suitable for germination, thus contributing to the seeds' survival into the proper growing season. The research carried out under the supervision of Dr. Szymon Świeżewski addresses a key regulator of the process. In their study of the dormancy gene, the researchers sought to use the merits of the system for describing universal gene expression mechanisms which they had devised. Their efforts to date have revealed, among other things, the role of the non-coding RNA reversely transcribed particles (so-called antisense strands) in the regulation of the dormancy time in seeds and the mechanism of controlling the rate of RNA production (transcription) through its efficiency (splicing).

Dr Szymon Świeżewski was nominated for the 2017 NCN Award by two different persons.

Dr hab. Adam Rycerz

Institute of Physics, Jagiellonian University

Special achievement: theoretical analysis of quantum charge transport in grapheme nanoparticle systems, specifically the description of a mechanism of valley polarisation control through electrostatic fields.

A popular toy, Newton's cradle is a fair illustration of what physicists mean when discussing the phenomena in graphene superlattices. The first ball hits a solid block of the remaining balls at a low speed, and its energy and momentum are transferred to a mechanical wave, which moves at an enormous speed of ca 20,000 km/h, nearly the speed of a geostationary artificial satellite. Similar transformations are what physicists mean when they speak of quasiparticles in condensed matter. The electrons trapped inside a graphene plane are arguably the most amazing example of transforming particles into active quasiparticles, because they act like electrons with a zero mass, while retaining their electrical charge. The combination of these characteristics, a zero mass and non-zero charge, is the source of graphene's many surprising qualities, like high electrical and thermal conductivity and nearly perfect transparency. The electrons in graphene also have an additional feature, which free electrons do not have. Apart from the electrical charge and spin, which may be described as the spatial orientation of a tiny magnet attached to an electron, there is also the valley pseudospin.

The research carried out by dr hab. Rycerz addressed the consequences of the existence of said pseudospins, in particular the prospect of using them for performing logic operations. The thus-described "valleytronics" was conceived as the graphene version of spinotronics, a concept several years its senior. Modified versions of this idea are the subject of research by numerous theoretical and experimental teams of scholars in a number of countries around the world.

www.ncn.gov.pl

PERFORMING FOR POLISH RESEARCH

2018