

THE UNIVERSITY OF WARSAW  
THE “EXCELLENCE INITIATIVE – RESEARCH UNIVERSITY”  
PROGRAMME

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D.2. OBJECTIVES FOR IMPROVING QUALITY OF RESEARCH AND  
EDUCATION

- I. Specific objectives for increasing the impact of the university's research activity on the development of world science, especially in priority research areas with high development potential, in which the university plans to intensify its research activity.

Research intensive universities strive to improve research quality in order to increase the chances of breakthroughs and to create solutions to the key modern socio-economic challenges. They also aim to contribute knowledge that supports accelerating technological progress and provides answers to the major questions on the functioning and development of our civilization. The UW follows 4 specific objectives allowing the conducted research to contribute to the global science endeavours:

### **1. Supporting the talented researchers in establishing their position in the global scientific community.**

The SWOT analysis indicates that only a limited number of researchers at the UW conducts studies comprising significant contributions to the European and global knowledge. Therefore, new instruments for support are necessary to allow a larger number of the UW researchers to conduct research of the highest quality – both at the University itself and through participation in projects from prestigious foreign research institutes. It is crucial to assist the researchers in establishing networks with scholars of global renown and to help them create teams capable of conducting research of the highest quality. Such actions need to be supported by strategic programmes of inter-university cooperation as well as mobility programmes that allow for research stays at the best local and foreign research institutes. This pertains especially to researchers at the early stages of their academic careers. Thus, this specific objective is tied to Objectives II (internationalisation) and IV (supporting young scholars) and will be realized through actions that they entail.

### **2. Improving the publishing in top journals capabilities and implementation efforts of the results of research conducted at the University of Warsaw or jointly with University of Warsaw employees.**

The number of journals that publish research studies is continuously growing. At the same time, only a small share of them is indeed recognized and considered prestigious internationally. Research published in these journals resonates and gathers recognition around the world. Thus, it is crucial to support researchers who have authored studies with the potential of being published in top journals and to provide them with incentives to publish in best journals possible. This objective will be fulfilled through several courses of action. These include workshops on topics such as scientific writing, responding to reviews and seeking journal outlets, as well as support at the stage of article publication. Open access policy is one of the key goals in this context which requires, however, the University to commit substantial resources. Support will also be provided to those journals which are published at UW and have proved their potential of carrying impact on the global scientific field.

### **3. Supporting the creation of programmes and research teams that will, in the future, become centers of excellence, i.a. through their internationalisation.**

Much of the research conducted at UW is, despite its innovative character, conducted solely by the University staff and only rarely with participants from other institutes. This poses difficulties in achieving groundbreaking results as the research is limited only to the local environment. Therefore, areas in need of support were identified in each of the Priority Research Areas in order to reach the critical mass for conducting high quality research recognizable around the world. The support will comprise creating new research teams or making those already functioning at UW to join international research networks. These research networks would contribute the necessary assumptions and goals for the studies. Those with the potential of achieving groundbreaking results would be financed through resources of international entities funding research. This would also allow to conduct pilot studies in order to verify the assumptions or prove their plausibility. Moreover, unique resources at UW would be supported in a way to allow for their usage by scholars from other research entities.

### **4. Maintaining a strong infrastructural backbone allowing for continued research activities at the world level.**

Conducting groundbreaking research requires a professional infrastructural backbone. Technological progress and the continuously improving research methods require the infrastructure to be continuously modernized. UW maintains numerous machineries, devices, tools and research laboratories of the highest standard. However, these facilities do age. That is why two courses of action are necessary. First, the current infrastructure needs continuous modernization, e.g. through the purchases of newest software or technical renovation. Second, maintaining a staff of technicians would allow them to supervise the proper usage of the facilities as well as, e.g. work to improve the access for researchers from other research entities (ties in with the realization of objective 5).

#### **II. [Specific objectives for enhancing research collaboration with research institutions of high international reputation, especially in priority research areas.](#)**

The UW is a member of the 4EU+ European University Alliance. However, its efforts to internationalize activities go beyond the cooperation within the Alliance. The University also maintains and develops cooperation with other research entities leading groundbreaking research. Further growth in international cooperation will be achieved through the following specific objectives:

#### **1. Improving the research partnership within the strategic partnerships with other research institutes.**

Identifying and supporting the persons with potential and capabilities of conducting research with scholars from other countries is key for international cooperation. This can be achieved by creating a grants system for creation of multi-university research

teams and by providing support to those highly ranked in international grant contests but were not awarded due to insufficient funding budgets. However, these resources cannot act as a replacement for international grants, but rather as a way of ensuring that the research teams do not dissolve and continue to apply for funding from the same or other sources. Such approach will allow for stable research teams creation in collaboration with leading European and other universities. The UW identified several universities from beyond the 4EU+ European University Alliance and initiated intensive collaboration through the conduction of joint projects of research-based education (realizing Objective III) or of promotion of the creation of joint research teams. The UW maintains centers that are jointly led with other universities. Such activities will be further extended in the future.

## **2. Implementing the comprehensive mobility programme.**

Mobility – both inward and outward – constitutes a key component of scientific career at each level of its development, and especially in the first years after reaching the PhD level (realisation of Objective IV). It contributes to the creation of contacts network, prestige and international recognition – which in turn contribute to the impact on world science (Objective I). However, mobility has to be carefully planned for it to yield the aforementioned benefits. It is crucial to facilitate research stays in foreign, reputed research institutes and to invite reputed scholars to the UW in order for them to share their experience and thus to increase the potential of the UW institutes and research teams. It is extremely important for mobility programmes beneficiaries to be able to join research teams both in the roles of members and leaders.

## **3. Increasing the collaboration capabilities by improving the research potential.**

Participation of scholars from renowned research entities is only possible as long the resources and potential of the inviting entity are high enough. Historic data indicates that universities typically cooperate in an efficient manner and are most likely to choose partners with similar potential and strategic objectives. It is thus important to increase the potential of maintained resources so as to incentivize the invited partners to establish strategic collaboration. There are two courses of action to follow. First, to improve the skills and competences of the UW employees connected to international cooperation and to increase research potential by providing unique analytical tools and databases for usage by researchers from other institutions. Second, to improve University workers' competences of organizing research projects and prestigious events like conferences and seminars at the UW.

## **4. Implementing a system for communicating scientific achievements and research results.**

International rankings analysis shows that despite conducting a significant amount of globally recognized research, the UW struggles to build its academic reputation. An advance was recently marked in this respect but additional actions must be taken. Presenting scientific research requires the use of adequate instruments. One of them is publication of research in prestigious journals or with prestigious publishers (Objective

l). Another is to present the results at conferences gathering globally renowned scholars. The UW is a member of numerous international networks regularly organizing international congress meetings. These meetings gather the top scholars and constitute opportunities both to share research results, to create new research teams and tackle new scientific challenges. To further improve UW image and to enhance collaboration between institutes of international renown, a congress gathering the top scholars in the field will be organized for each POB with the help of leading network or research organization. Organizing the congress will also constitute a part of realizing Objective I, through establishing cooperation with the leading journals and the possibility of publishing in the so-called 'special issues'. This will allow to build the UW prestige and reputation, helping in broadening of existing and creation of new international networks.

III. Specific objectives for improving quality of education provision for students and doctoral training, especially in fields of study and disciplines of science related to priority research areas, taking into account the need to include students and doctoral candidates in research activities and the need to compete effectively for the most talented applicants, including foreign ones, to study programmes and to doctoral schools. The objectives should also take into account implementation of a talent management system.

Research-based education constitutes a key element of the educational model in a research University. On the one hand, it relies on creating teaching programmes built around the most recent study results. On the other, it focuses on gradual involvement of students in the research process - starting from getting the students acquainted with the knowledge and tools of the specific discipline and ending with allowing them to supervise their own research projects.

PhD candidates should be provided with the opportunity to participate in research projects of the highest standards as well as to develop their research competences under guidance from top scholars who lead groundbreaking research. Establishing a system for incentivizing talented youth to take up studies at the specialisations and programmes oriented toward research (research-oriented curricula) is just as important. At the same time, it is important to expand the system of individualized support for the best students, which will allow them to improve on their research capabilities at an early stage – thus preparing them to take up teaching in doctoral schools and to supervise projects of the highest standards.

The aforementioned concepts require fulfilling the following objectives, which will be mostly operationalised jointly within the Priority Research Areas (POBs) and using their resources.

### **1. Implementing a system for the transfer of newest research results and trends into educational programmes.**

The POBs comprise issues that are significant to the current societies and that constitute challenges for the modern world. International research teams will conduct research of

the highest standards, with the results subsequently implemented within the academic teaching. This will be achieved through the continuous updating of the pre-existing study programmes, in terms of: the programme content; the methods of working with students (e.g. the enquiry-based teaching); and by incentivizing students (especially those in the Master's programme) to relate their theses to the challenges described as part of the POBs. This requires tying the activities with those described as part of Objective I. Some of the modules realized as part of the unique study tracks –created based on the research within the POBs – will be implemented within the existing programmes. In particular, this will pertain to the courses and modules that prepare the students for launching their own research projects.

## **2. Providing the means of creating unique study programmes and tracks (also within doctoral schools) tied to the research conducted within the POBs.**

New programmes and study tracks, in the English language, will be created around the POBs – largely in the form of individualized learning and research tracks (student-customized curricula). Combining the research with learning will allow the students for direct interaction with renowned scholars – including foreign ones – and will allow for a relatively early inclusion of students in research projects within the POBs. This in turn will motivate them to continue studies within the doctoral school programmes.

There are currently four inter- and multi-disciplinary doctoral schools at the UW. Individualised study tracks will be created within these schools for the PhD projects related to the POBs. Researchers conducting studies within the POBs will provide supervision. The goal is for each candidate to be supported by two supervisors – one from the University and the other from a partnered institute involved in the POBs. A system of double doctoral diplomas is also envisioned as a partnership with foreign institutes as well as the improvement of scientific potential of PhD candidates through their involvement in international summer schools related to the POBs.

## **3. Implementation of a system for enhancing the inflow and development of talented youth.**

One of the crucial challenges for a research university is to be able to appeal to the best study candidates. Past experience of the University shows that laureates of various Olympiads and top graduates of secondary schools often achieve exceptional results at the tertiary stage of education. Because of this, the University envisions a complex system for reaching secondary schools and for strengthening cooperation with school teachers who supervise exceptional students. Among others, these teachers will be invited to academic lectures and will be invited to participate in research seminars – especially those about studies within POBs.

Olympiad laureates and candidates with best recruitment results will receive scholarship within the first year of studies, with the possibility of extension for further years. The University envisions a guidance and advisory programme with the aim of supporting planning of their future research careers. They will also be given the

opportunity to realise individualized learning programmes and will be supervised by experienced researchers acting as mentors and tutors.

IV. Specific objectives for devising and implementing comprehensive solutions for the professional development of the university's staff, especially young scientists, in the meaning of Article 360(2) of the Law of 20 July 2018 on Higher Education and Science.

Shaping an academic career path relies on two pillars: researchers' individual decisions and the offer available to them at their institution. The university should support decisions made by its employees while definitely reducing its direct influence on them. This gives scholars genuine freedom to conduct research. It is equally important that researchers' professional development should take into account subsequent phases of their lives, in which various activities might be favoured. The Excellence Initiative envisages achieving the following objectives:

**1. Creating a model of mentorship and community support for young researchers.**

While doctoral students are preparing their dissertations, they are usually supervised by a single advisor who has a significant influence on their research plans. After receiving a doctoral diploma, they should have the opportunity to confront other prominent scholars, and gain a broader perspective. Therefore, the University of Warsaw will develop a model of mentorship and community support for young researchers who received their PhD within the last two years. They will have the opportunity to consult their plans for the nearest future, including grant applications. Moreover, it will be crucial for them to be advised on creating their first teams with the potential to conduct research whose results could be internationally noticed. This will lead to achieving their research self-reliance.

**2. Mobility programmes for young researchers.**

A longer or shorter period of mobility is a necessary component of an academic career. Due to a relatively small number of long-term commitments, it is probably best incorporated at an early stage of the career. This concerns, among others, potential family responsibilities. Therefore, it is important to create a mobility offer which will take into account the perspective of various life stages, and for relevant offers to be suitably addressed. The Excellence Initiative envisages the mobility programme composed of two stages: going away and return. The mobility grant will be divided into 1) financing research stays in the best academic centres in the world and 2) executing plans after coming back e.g., carrying out preliminary research or preparing research grant applications. Another planned form of support are grants for short trips aiming at establishing research cooperation with leading academic institutions.

**3. The grant system for supporting career paths of employees.**

Since 2017, the UW runs a system of internal grants that finance selected activities of researchers, including funding their participation in prestigious conferences where they present papers, inviting eminent scholars to consult on grant applications, or proof-

reading services. The system received a positive evaluation in 2018. Based on the conclusions of this evaluation, an expanded catalogue of actions financed by internal grants will be introduced. A maximum amount of a single grant will be increased as well. It will benefit mostly, but not exclusively, researchers at the initial stages of their careers who need a small boost to gain the necessary experience that will be used in applying for external funding.

#### **4. The model of support in developing ground-breaking programmes and research projects.**

Most employees of research universities acquire research grants of some kind. At the same time, only a small percentage of them is capable of securing the most prestigious grants, like those awarded by the ERC. The University of Warsaw will create a comprehensive model for supporting its employees and researchers from other institutions who want to apply for such a grant. It will encompass all stages of the application process: from the selection of the research area to shaping an optimal career path and preparing the application itself, to mock interviews in preparation for the stage II of the selection process. It will increase the success rate of acquiring ERC and other prestigious international grants.

#### **5. The system for providing equal opportunities in academic careers, supporting young researchers in their professional reintegration and including development needs and deficits of employees.**

From the perspective of an academic career, reconciling professional activity with family life is very important. In this context, the crucial issue is supporting researchers who return to academic work after a break caused by e.g. maternal or paternal leave, or caring for a dependant, as well as various public activities. Such support includes their academic and teaching activity, as well as reintegration into the university reality. The offer will be also addressed to people who spent significant time away from the university due to health issues. It is equally important to provide equal opportunities for employees. A friendly university must provide support matching the existing needs – from day-care facilities to accessibility for people with disabilities.

#### **V. Specific objectives for improving quality of university governance and management, including quality enhancing organisational changes.**

A research university must provide its staff with high quality support in research, education, and all other aspects of scientific activity; it must provide them with good infrastructure and working facilities, and create conditions for flexible team building. This requires adequate resources, well-designed organisational structure, reliable and easily accessible management information, and effective communication. A SWOT analysis reveals that the UW has large deficits in this realm, mainly due to its silo-like organisational structure, the variety of operating models and standards, the dispersion of resources, and ineffective channels of networking for scientists. The Excellence Initiative – with its accompanying management tools will become the driving force of change (improvement) in management by achieving the following objectives:



**1. The implementation of a knowledge management platform, integrated with the IT systems used at the university, and an intranet application for internal communication and cooperation.**

The main functionality should be the registration of projects in a single standard; projects should be labelled by their most important dimensions (value, partners, achievements in the form of publications, the promotion of young staff, mobility, etc.). The database should be integrated with a financial module – but also with the Polska Bibliografia Naukowa – and a human resources module, which will make it possible to create a database of researchers and scientists (and will help, e.g., to find collaborators on the basis of their portfolio of projects); as a result, this will enable an ongoing monitoring of the state of a discipline by conducting strategic analyses for the needs of shaping scientific policy. The main functionality of the intranet is the efficiency of information, communication, and cooperation (e.g., virtual shared work rooms). The intranet will enable teamwork despite the diversity of disciplines represented in POBs located at different campuses and buildings.

**2. The enhancement of the accessibility and quality of the services of science support staff (research managers, technical, legal, and administrative services).**

The effective support of research requires professional, diversified competence resources, adequate to the needs at different stages of the research. At the initial stage of generating ideas and concepts, one requires mentors (e.g., heads of research teams, supervisors) who help identify the strengths of a given researcher and support the consolidation of the research concept. Moreover, the initial stage requires professional managerial staff, which means specialists who can support the selection of the most appropriate competition and project preparation strategy. In turn, project implementation needs (1) efficient and professional legal and administrative services; including purchases (public procurement), finance and human resources (employment and mobility), access to substantive staff necessary to conduct research – laboratory technicians and experiment assistants – and, frequently, also specialists from other fields of science; e.g., digital humanists need the support of statisticians and programmers. POBs require the creation of the “science manager” function who will ensure the adequate level of support, not to mention the establishment of the high-quality professional services model, trainings for science support staff, and the transfer of knowledge and best practices.

**3. The improvement of organizational capacity to obtain and conduct research (especially in POBs), including analyses and data (among others, bibliometrical) that help create strategies for the development of disciplines and support researchers’ careers.**

A research university must maintain optimal scientific productivity of its research (high-quality publications, the promotion of young staff, etc.). Research projects – especially the prestigious ones – can be a vehicle for accomplishing both scientific goals and those that strengthen cooperation, attract talents, involve (doctoral) students in research, and build the reputation and image of the UW. This requires proper analytical and advisory

background. Research sometimes needs own contributions and funding in the periods between successive grants (if the researcher was employed on a fixed-term contract in a completed project). Therefore, POBs must have a budget to finance own contributions along with guidelines for their allocation.

#### **4. The creation of a model Excellence Initiative management structure with the use of the most current IT tools.**

POBs will be a mechanism of change in the functioning of the UW. They are expected to develop a model structure of research management both in terms of administrative procedures and project management culture. One cannot manage such a complex project as the Excellence Initiative without tools like MS Project, which enable continuous monitoring of the implementation of tasks and risk management.

#### **VI. Other specific objectives to raise the international significance of the university's activities.**

##### **Federalization with the Medical University of Warsaw.**

Strengthening the cooperation of the University of Warsaw (UW) and the Medical University of Warsaw (MUW) will be another milestone on the way to achieving the position of a university well-known in Europe. Closer cooperation between MUW and UW will allow better use of the potential of both universities. Universities will be able to jointly conduct more comprehensive scientific projects on the most important challenges of the present day, requiring the knowledge and experience of specialists from both universities, as well as the infrastructure that both universities. In result they will be able to compete more effectively with other versatile universities in Europe and the world. Students and doctoral students will be able to participate in didactic activities of the partner university and in the activity of scientific circles as well as university business incubators. Universities will join forces in applying for grants for the implementation of joint scientific projects.

Strengthening and developing the potential of the University of Warsaw in the field of medical and related sciences, and thus the choice of a MUW for a partner university are well thought-out decisions rooted in a shared history. Until the 1950s, medicine and pharmacy were lectured at the University of Warsaw. By the decision of the state authorities in 1950, the Faculty of Medicine and Pharmacy was separated from the University. Their merger resulted in the foundation of Medical Academy – today's Medical University of Warsaw.

For many years, the UW and MUW have been cooperating in the field of research, e.g. within the consortium of the Center for Preclinical Research and Technology as well as within the framework of projects concerning the social context of vaccination. They also carry out didactic projects together, such as courses of study in both general and clinical speech therapy as well as forensic science and forensic science conducted by both universities.

Meetings of scientists from the UW and MUW showed that the research we are conducting is often complementary, our specialties complement each other. We are already conducting many activities together to develop cooperation between both universities. In their course, over 100 scientists from both universities had the opportunity to talk about research conducted by their teams. They focused primarily on issues that could be developed jointly by both universities. The researchers noticed the possibility of conducting joint research in the fields of chemistry, biochemistry, biology, physics in biology and medicine, mathematics in medicine, genetics, neuropsychology, immunology, physiology, regenerative medicine and pharmacy, but not only. The representatives of social sciences and humanities, dealing with, for example, public health, bioethics and psychology, also count for cooperation with the MUW.

Potential cooperation is also interested in specialists representing the humanities and social sciences, because many research leading to the development of technology or medicine brings with it various challenges, for example ethical. Humanists and representatives of social sciences can therefore make an extremely important element of "humanism" for research collaboration between both universities.

From October 2018, employees and doctoral students of the University of Warsaw and the Medical University of Warsaw can apply for subsidies - up to 10,000. PLN – for conducting joint research financed from external funds, including National Science Centre, Centre for Research and Development, Ministry of Science and Higher Education and EU Research and Innovation programmes including Horizon 2020. Microgrants can be used, among others for short stays in foreign scientific centers, to carry out preliminary research necessary to submit an application for an external grant and covering the costs of participation in conferences or seminars. And from the academic year 2017/2018, the UW Incubator addresses its offer to the MUW community. Students, PhD students and employees of this university participate in meetings, workshops and programs organized by the University of Warsaw Incubator. In August 2018 cooperation between the “Open University” of the University of Warsaw and MUW began. For the first time in recruitment, courses offered by employees of a medical university were offered.

Strengthening and developing such a well-started cooperation would not be possible without a well-prepared long-term strategy for inter-university cooperation in the field of the knowledge triangle – R + E + I (Research- Education-Innovation), including cooperation with partners from foreign research centers, and a solid organizational base. Therefore, the University of Warsaw will undertake activities supporting these goals as part of the strategy of excellence.