

## EURAXESS COUNTRY IN FOCUS: POLAND

***EURAXESS – Researchers in Motion*** is an initiative of the European Research Area (ERA) that addresses barriers to the mobility of researchers and seeks to enhance their career development. This pan-European effort is currently supported by 40 countries. Here we focus on Poland.

Poland is a country located in central Europe. It has a developed market and it is a regional power. It has the eighth largest and one of the most dynamic economies in the European Union, achieving at the same time a high rank on the Human Development Index. Poland is a developed country, which keeps a high-income economy along with great standards of living, life quality, safety, education and economic freedom.



Source: [www.pixabay.com](http://www.pixabay.com)

**The country provides free university education**, state-funded social security and a universal health care system.

Poland is a cradle of many outstanding Nobel Prize winners, e.g.: Maria Skłodowska-Curie (Physics 1903 and Chemistry 1911 Nobel Prize), Józef Rotblat (Nobel Peace Prize, 1995), Czesław Miłosz (Literature Nobel Prize 1980), Menachem Begin (Nobel Peace Prize, 1978), Leonid Hurwicz (Economics Nobel Prize, 2007) and many more.

## Research and Development in Poland



Polish Academy of Sciences in Warsaw, Source: [www.piaxbay.com](http://www.piaxbay.com)

In Poland there are ca. 400 higher education institutions, 79 Polish Academy of Sciences establishments and around 120 public research institutes and laboratories, which focus their activities on conducting applied research and development activities.

Higher education institutions (HEIs) are one of the most dynamically developing centres of social life in Poland, which plays a major role in the development of national research potential. There are circa 100 public (state-funded) and 300 private universities. They are of different profiles, for example: universities, universities of technology, economics, agriculture, arts, medical universities, university schools of sport, military schools, as well as Higher


Schools of Professional Education. The Minister of Science and Higher Education supervises most of them, but some are governed by other relevant ministries (i.e. the Ministry of Health, Ministry of Culture, Ministry of National Defence).

### ➤ The Polish Academy of Science (PAS)

It is an independent state research institution with units across the country. The mission of the Academy is two-fold. It is a network of research centres comprising of 79 research establishments (institutes and research centres, research stations, botanical gardens and other research units) and auxiliary scientific units (archives, libraries, museums), including foreign PAS stations in Brussels, Paris, Berlin, Rome, Vienna and Moscow. On the other hand, PAS is a corporation of scholars from different institutes, also from abroad. PAS organises, integrates research community and prepares expert opinions for public institutions. Researchers from institutes of Polish Academy of Science got 7 ERC grants: Nicolaus Copernicus Astronomical Center Department of Astrophysics (2 grants); Mathematical Institute (1); Nencki Institute of Experimental Biology (1); Institute of Biochemistry and Biophysics (1); Institute of Physical Chemistry (1), Institute of Physics (1) and ca. 50 participations in MSCA grants in Horizon2020.

### ➤ Polish Universities

Poland has 18 classical universities, mainly in the largest cities. The oldest one is **Jagiellonian University** in Cracow, established in 1364. That University consists of thirteen main departments and three



faculties of Collegium Medicum. As the only university in Poland, the Jagiellonian University is a member of many associations of the most prestigious universities in the world, including Coimbra Group, Europaeum or Utrecht Network.

The highest ranked and the biggest is **University of Warsaw (UW)**. Some of Nobel Prize winners mentioned above are graduates of this University (e.g. Leonid Hurwicz, famous economist). Researchers from UW got half of 28 ERC grants in Poland. From 2016 it has prestigious “HR Excellence in Science” logo, which is a confirmation of keeping rules of European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers. In the Shanghai scientific area ranking in 2018, ten disciplines at the University of Warsaw were included.

The highest places (position between 51st and 75th in the world) were taken by mathematics and physics.

➤ **Development units**

They include about 700 business entities active in the area of R&D. Beside their principal activity, they also conduct experimental development aimed at application of already existing knowledge gained through conducting basic or applied research or through practical experience. The knowledge is applied to produce or significantly improve new materials, devices, products, processes, systems or services. The companies cooperate with national research units, such as universities and research institutes.

➤ **Research institutes**

These are state-funded institutions operating as separate entities in terms of their legal basis, organisational arrangements and funding mechanisms. They are supervised by various sector ministries, which conduct R&D activity in line with the needs of the national economy and social life. Among 115 units, there are research institutes, central laboratories and research and development centres, which focus their activities on conducting applied research and development activities. The Main Council of the Research Institutes is their representative body.

➤ **Patents**

In terms of applications of inventions for protection, Poland is ranked 17<sup>th</sup> in the world, while in terms of granted patents – 15<sup>th</sup> on the list of the World Intellectual Property Organization among all countries in the world. It is worth noting that the highest number of patents is reported by Polish universities and research institutes, not private companies, which is a distinctive feature of other countries<sup>1</sup>. A pinch of examples:

- ✓ Developing solutions for the superfast X3 hybrid helicopter, creating a battlefield robot, an internet browser for people paralyzed - these are some illustrations of the cooperation of the Lodz University of Technology with the industry.

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<sup>1</sup> Source: [https://www.wnp.pl/tech/polska-na-15-miejscu-na-swiecie-pod-wzglem-liczby-przyznanych-patentow,316297\\_1\\_0\\_0.html](https://www.wnp.pl/tech/polska-na-15-miejscu-na-swiecie-pod-wzglem-liczby-przyznanych-patentow,316297_1_0_0.html)

- ✓ Graphene. The unusual material was invented by the Russians. However, Poles have found a method by which it can be obtained on a mass scale with little money. This is a unique discovery, because it allows you to start production of many items that you need in your life. Among them, there are mostly extremely capacious batteries, exceptionally durable car windows and many, many other useful solutions. For discovering this cost-effective method of production, scientists from the Institute of Electronic Materials Technology in Warsaw are responsible.
- ✓ Polish engineer teams regularly win contests in USA and Europe for Mars rovers. In 2018 students from the Czestochowa University of Technology have won the University Rover Challenge. The third place was taken by a rover constructed by students of the Kielce University of Technology. The fourth was a machine created by the Raptors team from the Lodz University of Technology. Moreover, on 5<sup>th</sup> May 2018 NASA launched the InSight lander and probe that will be used for Mars research. One of the main measuring devices was created with the participation of scientists from the Polish company. It is used to monitor the flow of heat on the surface of the planet.

## Where can you get funding?

**The Polish National Agency For Academic Exchange** (Polish: Narodowa Agencja Wymiany Akademickiej, NAWA) is the new entity in Poland established in 2017. It is set up to coordinate state activities driving the process of internationalization of Polish academic and research institutions. The mission of NAWA is to foster the development of Poland in the area of science and higher education, support international mobility of students, academics and researchers and the process of internationalization of Polish HEIs and research institutions, promote Polish science and higher education as well as popularize teaching of the Polish language.

- **The National Centre for Research and Development** (Polish: Narodowe Centrum Badań i Rozwoju, NCBiR) has already supported 8900 projects, 2039 companies, and 2657 scientific units for general amount of 43 billion zloty (10 billion US\$). Its mission is to support the creation of innovative solutions and technologies that increase the competitiveness and innovation of the Polish economy. The NCRD aims to strengthen the collaboration between business and academia, leading both to a greater engagement of entrepreneurs in research funding, as well as to a more effective commercialization.
- **The National Science Center** (Polish: Narodowe Centrum Nauki, NCN) is a governmental grant-making agency responsible for providing financial support for the conduct of

basic science research in Poland and various programs to assist scientists throughout their careers.

- **The Foundation for Polish Science** (Polish: Fundacja na rzecz Nauki Polskiej, FNP) is a non-governmental, non-political and non-profit institution. Its mission is science support. It is the largest source of science funding in Poland besides the state budget. The Foundation realizes its statutory purposes through: support for great scholars and research teams in all fields of inquiry; assisting innovative ventures and commercialization of scientific discoveries and inventions. Check out their recent [report](#).
  
- **Ministry Grants.** The Ministry of Science and Higher Education has funds allocated to financing scientific research. The most prestigious grants are: Diamond Grant (a researcher may receive up to 59 000US\$ of funding) and National Program for the Development of Humanities (amount of funding is between 80 000US\$ and 135 000US\$). For more information, click → <https://www.granty-na-badania.com/p/granty-ministerstwa.html>
  
- **Marie Skłodowska-Curie Actions (MSCA).** Attractive European grants for researchers wishing to enhance their career based on research & training project in Europe. Supporting all domains of research, providing attractive salary at freely chosen host are only a few of MSCA advantages assured by the European Commission.
  
- **ERC.** Prestigious ERC grants finance frontier research in any scientific area. Researchers of any nationality may apply for funding with European host institutions and do their research that will push the existing frontiers of science further. In the years 2014-2020, the Council has a budget of ca. 13 billion € (being part of the Horizon 2020 Programme) allowing to support nearly 7000 grants of individual researchers and their teams.



- **MSCA IN POLAND.** Experienced researchers willing to move to Poland can apply for an Individual Fellowship (IF) of the Marie Skłodowska-Curie Actions (MSCA), irrespective of their country of origin. Poland is in the list of widening countries. Therefore, from 2018 to 2020, proposals above the quality threshold of 70% but not retained for funding through the MSCA-IF call with a host institution in Poland will be automatically reassigned to the Widening Fellowships call.

## Important information for incoming researchers: EURAXESS Poland

EURAXESS Poland supports researchers coming to Poland by providing practical personalised information related to entry conditions, administrative procedures and life in Poland. Our website [www.EURAXESS.pl](http://www.EURAXESS.pl) is an information point for internationally mobile researchers wishing to come to our country. There are 10 EURAXESS Centres in Poland<sup>2</sup>.

### National Contact Point for Research Programmes of the European Union

(Polish: Krajowy Punkt Kontaktowy Programów Badawczych UE, KPK). This organization has been selected to perform its function in a call by Ministry of Science and Higher Education. KPK is part of the Institute of Fundamental Technological Research Polish Academy of Sciences (IPPT PAN) since 1999. There are experts with many years of experience in the field of R&D projects financed by European authorities. KPK supports Polish research and innovation leaders: scientists, research organizations and enterprises on their way to grants from European programmes, but they also help foreign scientists as a EURAXESS Centre in Warsaw.

*Jan from the Netherlands: After completing my PhD in the Netherlands, I came to Warsaw, Poland, for a postdoc position at the Institute of Mathematics of the Polish Academy of Sciences. Since I am a European citizen, securing a visa for myself was not a problem. However, my fiancée is from the United States and it was much more of a fuss to obtain a residence permit for her, mainly because we are not yet married. We were in the process of going through all the paperwork and trying to figure out how to proceed when someone recommended that we contact **EURAXESS Centre in Warsaw**. I am extremely glad that we did because from the moment we contacted it, they took complete control of the process and helped us with every part of it [...]. I am sure that without the help of EURAXESS it would have been very difficult for us to apply correctly for the residence permit, and perhaps the result wouldn't have been the same (we ended up getting the residence permit).*

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<sup>2</sup> More detailed info: <https://www.euraxess.pl/poland/contact-us>