



POLISH NATIONAL AGENCY
FOR ACADEMIC EXCHANGE

ACADEMIC COOPERATION
BETWEEN POLAND AND AUSTRALIA



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INTRODUCTION

The aim of this study is to present an overview of academic cooperation between Poland and Australia. Academic cooperation is understood here in a broad context, both individual and institutional.

The study is exploratory and practical in nature and provides answers to the following questions:

- What is the volume of publications written in Polish-Australian co-authorship?
- What are the dominant subject areas in this field?
- How intense has this cooperation been over the years?
- Which higher education institutions in Poland cooperate most intensively with their Australian counterparts?
- Which Polish universities host the most students/researchers from Australia?

The study is addressed to the academic community in the broad sense and the environment of higher education and science institutions, as well as to the creators of national international policy in the field of academic cooperation.

The study uses data from the following databases: SCOPUS¹, OECD, UNESCO, and POLon.

Due to the small number of Australian students and employees studying or working at Polish universities, this study limits the presentation of data to that which is necessary to ensure the anonymity of these individuals.

This study is another in a series of [analyses](#) available on the NAWA website.

¹ Access to the SCOPUS database and SciVal tool under a national license provided by the Ministry of Science and Higher Education

1 POLAND AND AUSTRALIA – BASIC DATA AND INFORMATION

The Australian higher education system is based on three segments: vocational education and training (VET), higher education (HE), and adult education (ACE). The differences between these pillars are related to education programs, teacher qualifications, funding policies, and the market position of universities. In Australia, vocational education and training and higher education programs are regulated by the Australian Qualifications Framework (AQF), which, similar to the Polish Qualifications Framework (PRK), defines the qualifications that can be obtained at each level, as well as the learning outcomes for each level in terms of the skills and knowledge acquired and their practical application.

In Australia, higher education admissions for recent high school graduates typically take into account the Australian Tertiary Admission Rank (ATAR), a system that ranks students in each state or territory based on their results in eligible subjects under the Senior Secondary Certificate of Education (SSCE). Admission criteria may also include a written statement, questionnaire, portfolio of work, interview, or test. Universities also offer pathways other than ATAR for applicants, including those who are disadvantaged academically, housing, socio-economically, or otherwise. Admission criteria may include prior vocational education and training or study, assessment of academic readiness, prior work and life experience, or bridging courses (a combination of formal and informal learning pathways). In addition to the diversity of access pathways, the high number of international students contributes to the relatively high admission rate to higher education in Australia. In Australia, international students account for 26% of students enrolled in higher education institutions. Nevertheless, the level of higher education attainment is high among young adults (see Graph 2). People with higher education enjoy an advantage in terms of wages and employment compared to those with lower levels of education. Given that Australia is among the group of countries where higher education requires high personal financial investment—offset by financial support (see Graph 1)—it is important for state governments that the returns on higher education continue to motivate people to invest in it to meet the social demand for advanced skills. – it is important for public authorities to ensure that the returns on higher education continue to motivate people to invest in it in order to meet the social demand for advanced skills. Hence, ongoing policy efforts are aimed at promoting more equitable participation in higher education and achieving positive outcomes².

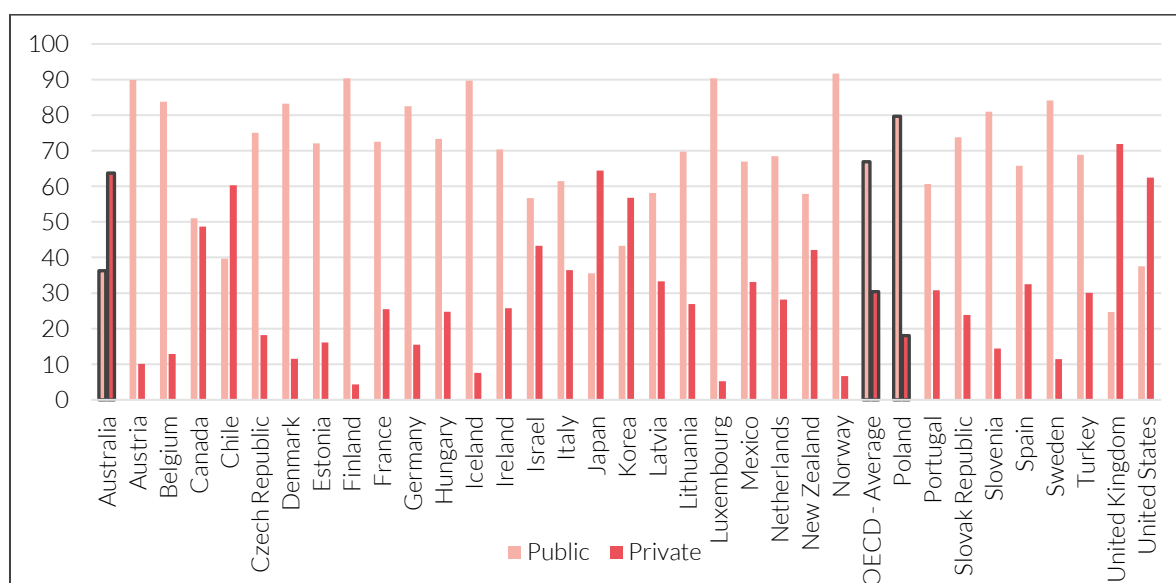
The admission criteria for individual universities are available on the institutions' websites: [Universities Admissions Centre](#). The regulation of higher education is primarily the responsibility of the Australian government. The regulation of higher education and vocational education and training at the Commonwealth level is carried out by separate entities that cooperate with each other but are independent. An important role in the Australian system is played by the equivalent of the Polish Accreditation Committee, [the Tertiary Education Quality and Standards Agency](#)

² Hodge S., Guthrie H., Jones A & Waters M. (2024). Curriculum across the great divide: exploring a key problem of Australian tertiary education, *International Journal of Training Research*, 22:1, 31-45, DOI: 10.1080/14480220.2024.2330453

(TEQSA), which is an independent, central agency established to ensure the quality of education from undergraduate to postgraduate level. It is also responsible for registering universities and ensuring the quality of international education. The Australian Skills Quality Authority ([ASQA](#)) is an independent national quality regulator focusing on vocational education and training. ASQA applies the VET quality framework and standards for accredited VET courses³.

Below are graphs showing the percentage distribution of public and private expenditure on higher education, the share of people with higher education by age group, and the international mobility of students in OECD countries. All indicators presented refer to average levels for OECD countries, including Australia and Poland. Unfortunately, the latest available data is for 2020, which is particularly important in the case of financial data, an area in which events related to the COVID-19 pandemic and Russian aggression in Ukraine were of particular significance.

Graph 1 Expenditure on higher education (public and private) as a % of total expenditure for this purpose (2020)



Source: OECD (2024), *Spending on tertiary education (indicator)*. doi: 10.1787/a3523185-en (Accessed on June 10, 2025)

The above chart presents a measure of public and private expenditure on higher education as a percentage. According to the OECD, expenditure on higher education is defined as total expenditure on the highest level of education, including private expenditure on schools, universities, and other private institutions providing or supporting educational services. This expenditure is measured as a percentage of total expenditure on education. At the tertiary level, educational institutions in OECD countries are mainly publicly funded, although there are significant and growing levels of private funding. At this level, contributions to the costs of education by individuals and other private entities are increasingly seen as an effective way to ensure that students have access to funding regardless of their economic status. "Households" refer to students and their families. "Other private entities" include private companies and non-profit organizations such as religious organizations, charities, and business and employee associations. Expenditures by private companies on vocational training for pupils and students are

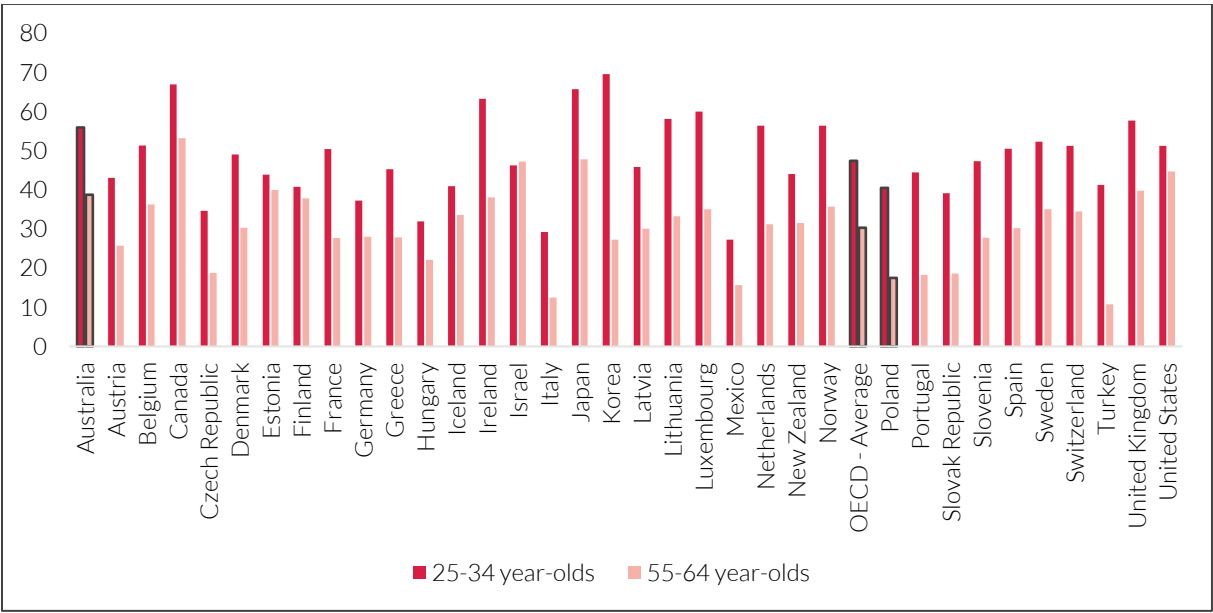
³ OECD (2023), *Education policy outlook in Australia*, OECD Education Policy Perspectives, No. 67, OECD Publishing, Paris, <https://doi.org/10.1787/ce7a0965-en>.

also taken into account, along with expenditures on research and development by educational institutions.

In OECD countries, higher education institutions are mainly funded by public funds, although there is a significant and growing level of funding from households and other private entities (NGOs, unions, associations, foundations, etc.). Low public spending on higher education forces a higher level of private funding. In OECD countries, the average level of public funding is 67%, and private funding is 30%. Against this background, the proportions of funding sources in Norway, where public expenditure is 92%, and Finland, Luxembourg, Austria, and Iceland (90% each) are noteworthy. In Poland, public spending on higher education is 80%. At the other end of the spectrum are Japan and Australia (36% each), the USA (38%) and Chile (40%).

In Australia, the structure of higher education expenditure is as follows: private sources 64%, public sources 36%. Public funding for higher education in Australia comes mainly from the Commonwealth government, which provides 91% of the initial funds. Funds are allocated to institutions through various programs, including the Commonwealth Grant Scheme, which subsidizes places on courses and more targeted programs for key disadvantaged groups (including the Aboriginal minority, people with disabilities, people from low socioeconomic backgrounds) or priority courses⁴.

Graph2 Percentage of people with tertiary education by age group (2022)



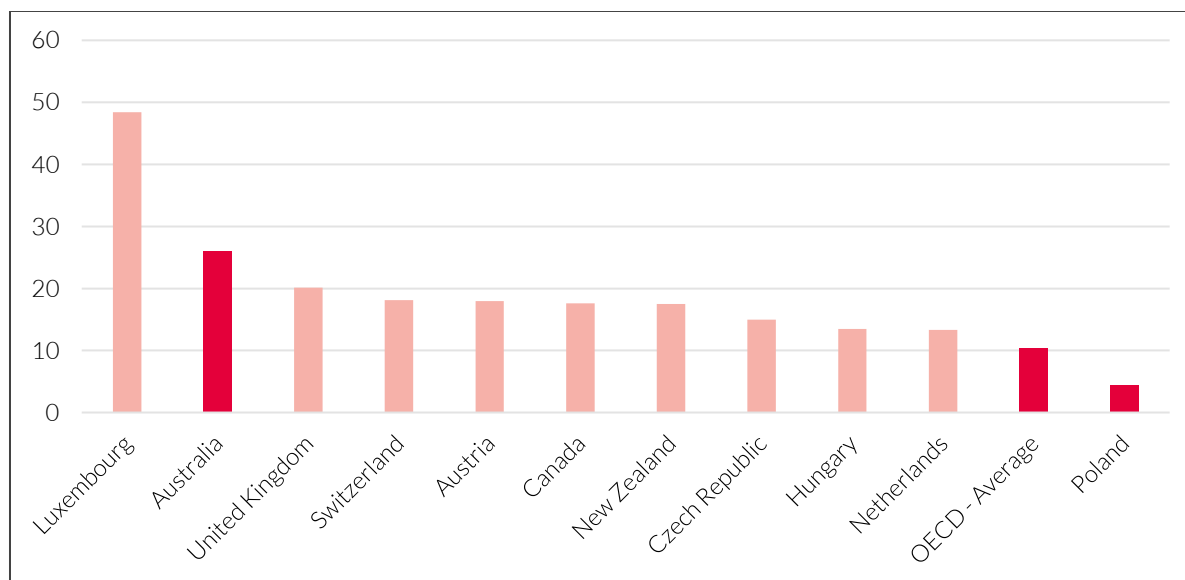
Source: OECD (2024), Population with tertiary education (indicator). doi: 10.1787/0b8f90e9-en (Accessed on June 10, 2025)

The population with tertiary education is defined by the OECD as people who have completed this highest level of education, by age group. This includes both theoretical programs leading to advanced research or highly skilled professions, such as medicine, and more vocational programs leading to the labor market. This is measured by the percentage of the population of the same age who hold a higher education diploma.

⁴ Ibid.

In OECD countries, the average enrollment rate in the younger age group is 47% and in the older age group 30%. In countries such as Korea, Canada, Japan, Ireland, and Luxembourg, the percentage of people with higher education in the 25-34 age group is at least 60%, in Poland 40%, and in Australia 56%. In the older age group, every second Canadian (53%) and Japanese (48%) has completed higher education. In Poland, only 18% of people between 55 and 64 have completed higher education, and in Australia, 39%.

Graph 3 Student mobility indicator (2020)



Source: OECD (2024), "International student mobility" (indicator), <https://www.oecd.org/en/data/indicators/international-student-mobility.html> (Accessed on June 10, 2025)

This indicator shows the number of foreign students enrolled in higher education as a percentage of all students enrolled in the host country. Foreign students are those who have previously received education in another country and are not residents of the country in which they are currently studying. While the average percentage of foreign students in OECD countries is 10%, in Poland it exceeds 4%, and in Australia, one in four students is a foreigner. Among OECD countries, only Luxembourg (48%) has more foreign students than Australia.

In 2021, there were 1.8 million students aged 15 and over in higher education (9.7% of the total population aged 15 and over). Higher education students comprise a group of over 600,000 people (33.6%) who have undertaken vocational education and 1.2 million (66.2%) who are continuing their education at a university or other higher education institution ([Australian Bureau of Statistics](#)).

According to data from the POLon system for the 2023/2024 academic year, foreign students studying in Poland are predominantly citizens of Ukraine (47%), Belarus (11%), and Turkey (5%). Australians constitute a small group of several dozen students (27 people). Foreigners most often study management (16%), computer science (13%), and medicine (6%).

Foreign academic teachers constitute less than 3% of the total number of teachers in Poland. Among foreign employees who conduct scientific research in various fields and are employed as academic teachers, the largest groups are citizens of Ukraine (26%), India, and Italy (8% each). Most of them hold a doctoral degree (64%) and represent the fields of exact and natural sciences (31%), social sciences (23%), and engineering and technical sciences (21%). Few scientists from Australia work in Poland (8 people).

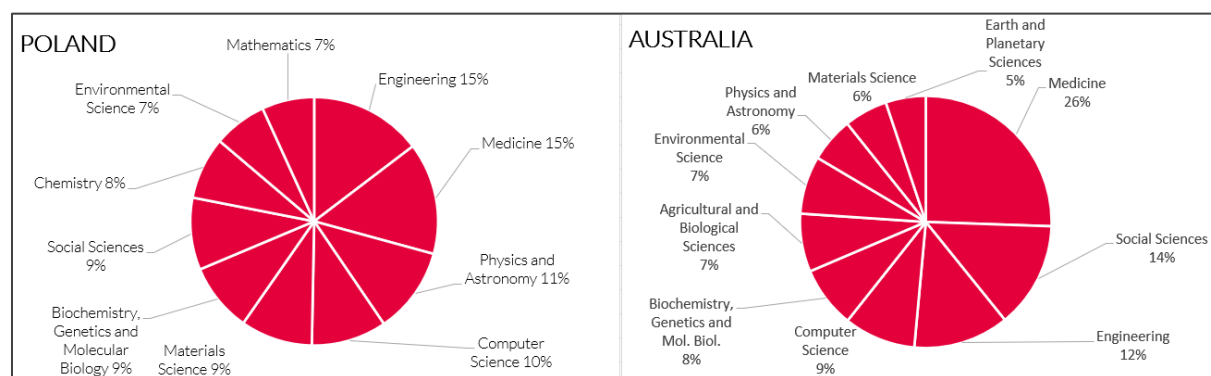
Table 1 Comparison of the number of publications by Polish and Australian scientists (2017-2024⁵)

Year of publication	Number of publications	
	Poland	Australia
2024	63,272	125,405
2023	61,309	122,506
2022	62,101	127,096
2021	65,418	128,272
2020	61,201	122,297
2019	57,430	117,842
2018	53,605	112,921
2017	50,712	109,753
Total	475,048	966,092

Source: SCOPUS-SciVal [accessed on April 16, 2024]

The pool of indexed publications for 2017-2024 by researchers affiliated with Australian institutions is twice as large as that of Polish institutions. In both countries, a negative change in the number of publications was observed in 2022-2023 compared to the previous year.

Graph 4 Publications of Polish and Australian scientists by area of knowledge (%) – comparison

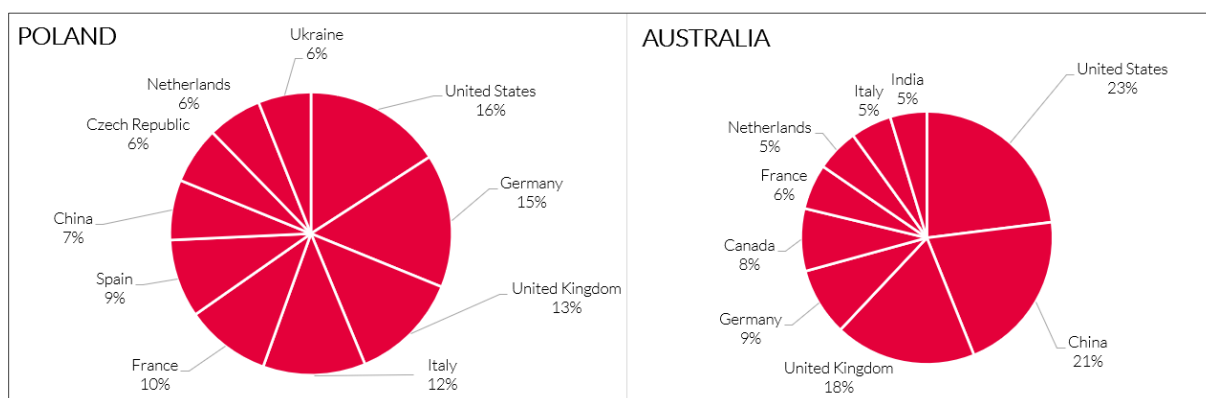


Source: SCOPUS-SciVal [accessed on May 16, 2025]

The above chart shows the subject areas of publications in which at least one author indicated a Polish or Australian affiliation. Publications by Polish scientists are most often in the fields of engineering and medical sciences (15% each), physics and astronomy (11%), and computer science (10%). Australian authors, on the other hand, publish in the fields of medicine (26%), social sciences (14%), and engineering (12%).

⁵ Data for 2024 are updated on an ongoing basis, so it is to be expected that in the second half of 2025 there will be increases in both the number of publications and their citations.

Graph 5 Countries of origin of co-authors of publications by Polish and Australian scientists – comparison (%)



Source: SCOPUS-SciVal [accessed on May 16, 2025]

Polish scientists most often publish with their American, German, and British counterparts. Australians do the same with their American and British colleagues, but also with Chinese ones. However, on the list of countries of origin of scientists with whom Australians publish the most, Poles are in 33rd place (the share of Polish scientists as co-authors is less than 0.1%).

2 POLISH-AUSTRALIAN SCIENTIFIC COOPERATION (2017-2024)

This section analyzes the publication cooperation of scientists affiliated with Polish and Australian scientific institutions. Only those publications were taken into account where at least one author indicated affiliation with both the Polish and Australian academic communities.

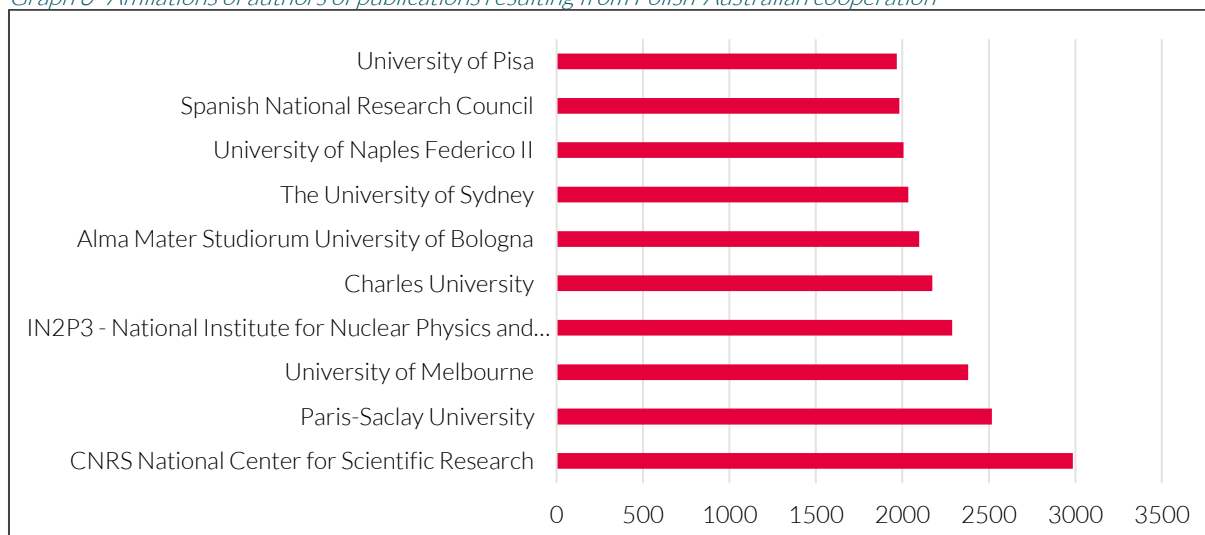
Table 2 Joint Polish-Australian publications in the SCOPUS database

Year of publication	Number of publications
2024	1,852
2023	1,605
2022	1,709
2021	1,538
2020	1,307
2019	1,127
2018	1,072
2017	931
Total	11,141

Source: SCOPUS-SciVal [accessed on May 16, 2025]

Since 2017, over 11,000 joint publications have been recorded in the SCOPUS database. During this period, the average year-on-year growth rate in the number of publications was 11%. The most prolific year in this respect was 2021, when the number of publications increased by 18% compared to 2020. Most joint publications are articles (81%).

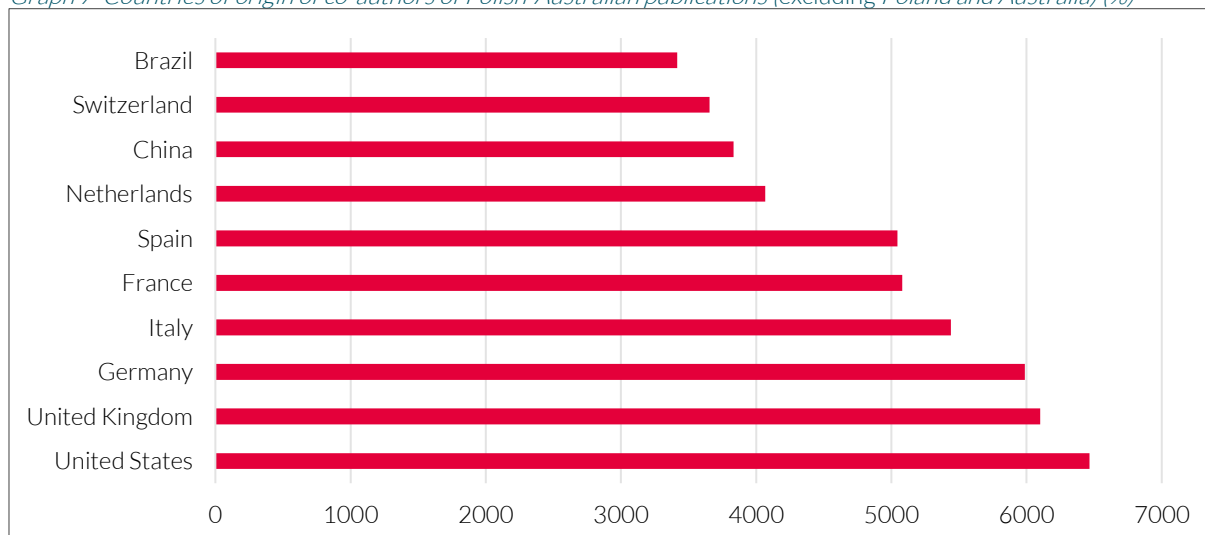
Graph 6 Affiliations of authors of publications resulting from Polish-Australian cooperation



Source: SCOPUS-SciVal [accessed on April 16, 2025]

Among the 10 institutions most frequently affiliated with the authors of Polish-Australian publications, European centers predominate, but Polish universities are missing from this list. Due to its geographical proximity to Poland, Charles University stands out, whose scientists have participated in the creation of over 2,000 publications. However, the Czech Republic is not listed below as one of the main countries of origin of co-authors. It can be assumed that these are individual, but very productive researchers. Among Australian institutions, we find two universities – in Melbourne and Sydney.

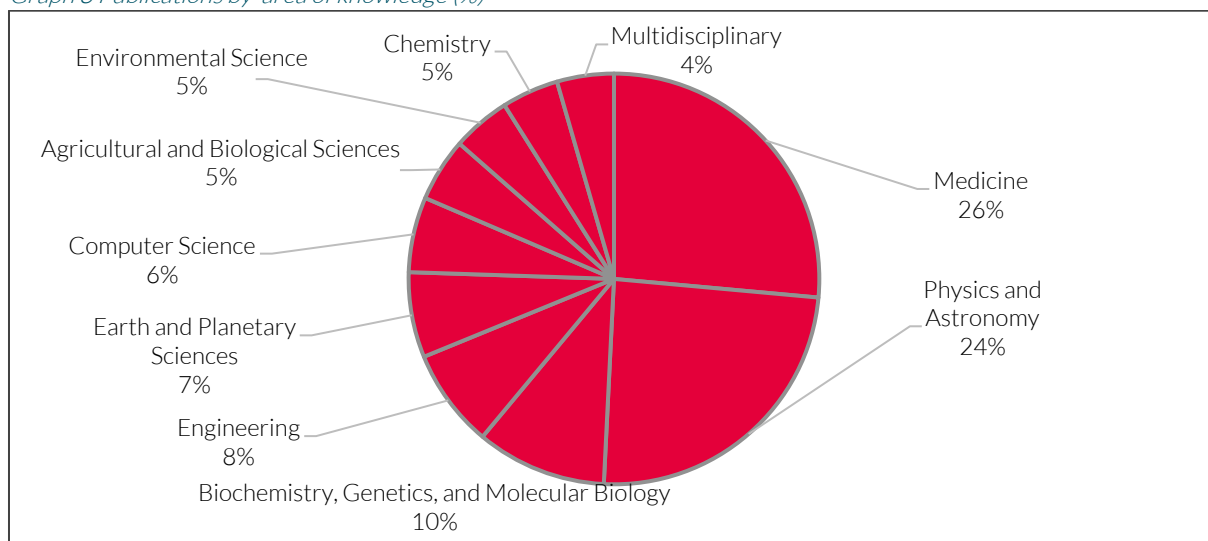
Graph 7 Countries of origin of co-authors of Polish-Australian publications (excluding Poland and Australia) (%)



Source: SCOPUS-SciVal [accessed on April 16, 2025]

Apart from authors affiliated with Polish and Australian institutions, the remaining co-authors come mainly from Western Europe and the Americas. Asia is represented by China, which appears on this list for at least two reasons: it is the second most frequently indicated country of origin of Australian co-authors (see Graph 5), and a Chinese grant-awarding institution is among the most frequent co-funders of these publications (see Graph 9).

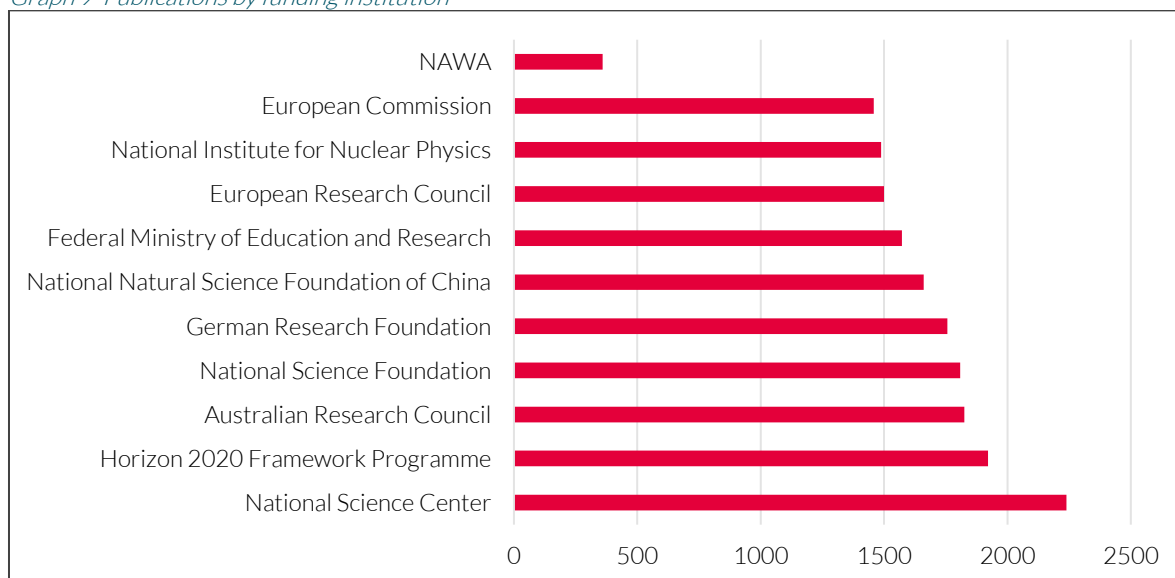
Graph 8 Publications by area of knowledge (%)



Source: SCOPUS-SciVal [accessed on April 22, 2025]

The main areas of scientific cooperation resulting in joint publications are medicine, physics and astronomy, biochemistry, genetics, and molecular biology. These areas are strongly represented by Polish co-authors (see Graph 4).

Graph 9 Publications by funding institution



Source: SCOPUS-SciVal [accessed on April 22, 2024]

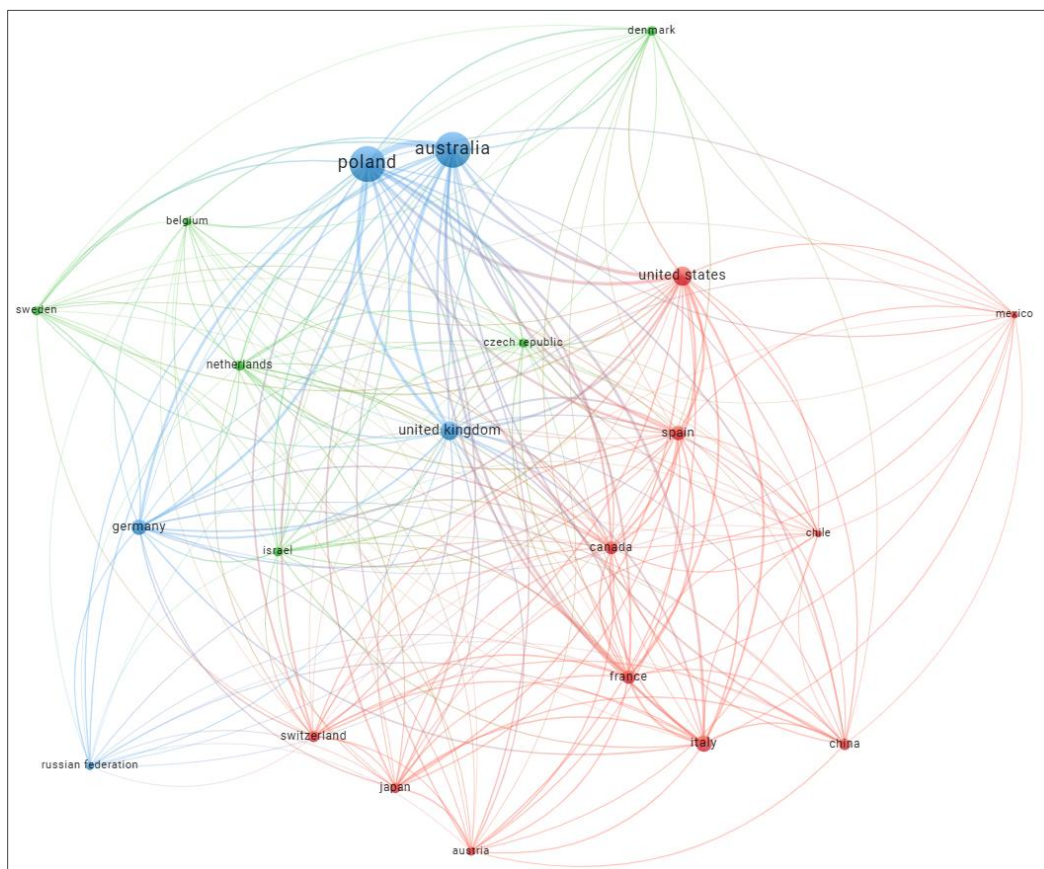
Scientific publications are produced thanks to co-financing by institutions established to finance scientific projects, such as the National Science Centre, which co-financed every fifth Polish-Australian publication. The Polish National Agency for Academic Exchange contributed to 3% of publications.

3 NAWA'S CONTRIBUTION TO POLISH-AUSTRALIAN SCIENTIFIC COOPERATION

This part of the analysis aims to show not only the impact of NAWA funding on publications where at least one author is affiliated with an Australian and Polish institution, but also to show NAWA's global contribution to scientific publications.

A bibliometric analysis based on the SCOPUS database shows that the first publications in which NAWA had a financial stake appeared in 2019. A total of 360 such publications were produced. The greatest increase in publication cooperation is visible between 2022 and 2023.

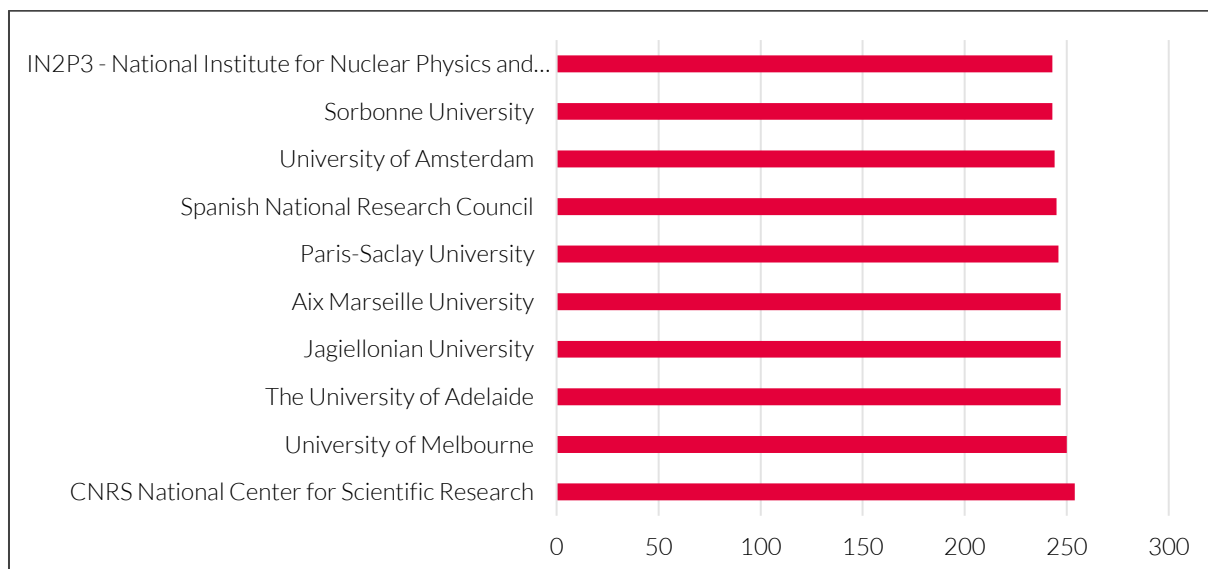
Map 1 Map of connections between the countries of origin of co-authors of Polish-Australian publications co-funded by NAWA



Source: own development based on SCOPUS/SciVal [accessed on April 19, 2025]; visualization using the VOSviewer tool

The above map shows that cooperation between scientists from two countries led to cooperation with another 22, which in turn translated into over 215 links between these countries. The 22 countries visible on the map form three geographical groups of countries, but there are links between each country in the form of joint international publications.

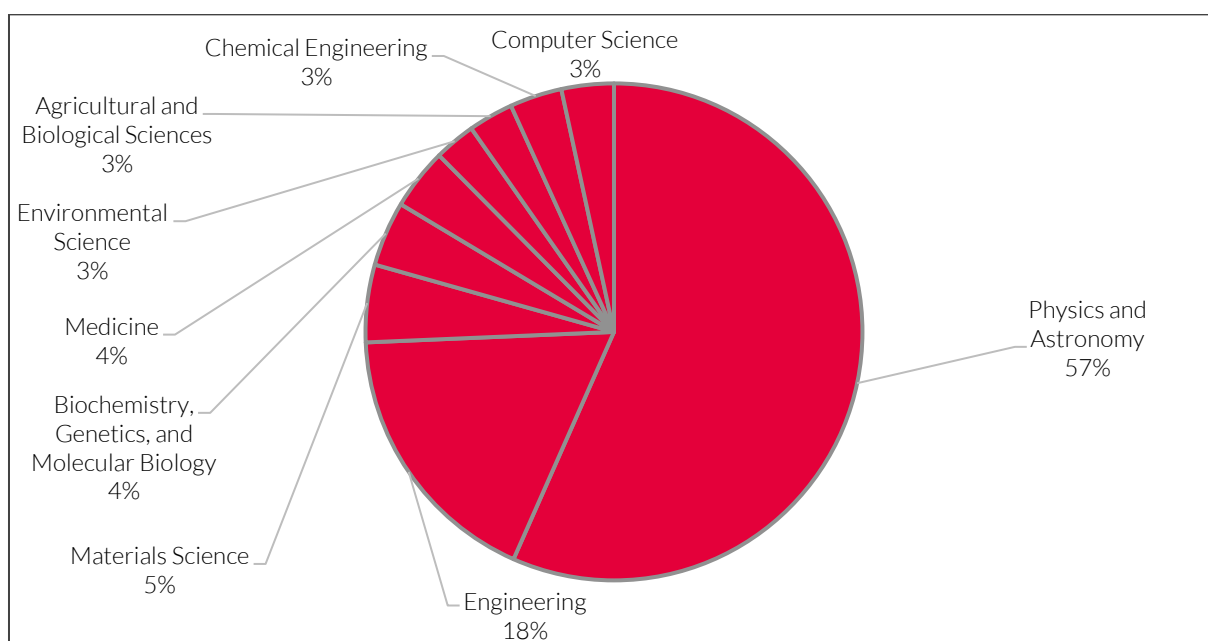
Graph 10 Affiliations of authors of publications co-funded by NAWA



Source: SCOPUS-SciVal [accessed on April 16, 2025]

The four institutions shown above (see Map 2) are obviously not the only ones to which the co-authors of publications co-funded by NAWA are affiliated.

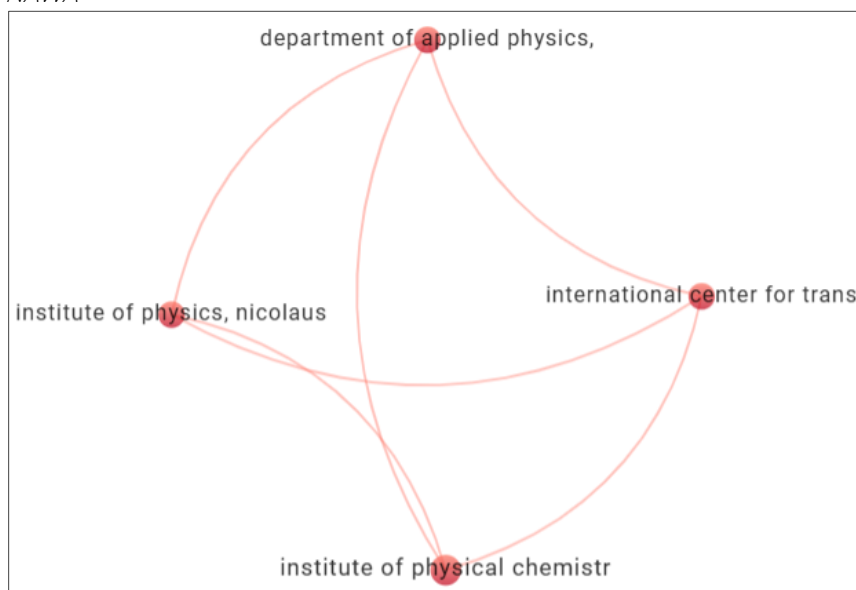
Graph 11 Publications co-funded by NAWA by subject area



Source: SCOPUS-SciVal [accessed on: 22.04.2025]

Every second publication co-funded by NAWA concerned the field of physics and astronomy.

Map 2 Map of connections between institutions affiliated with co-authors of Polish-Australian publications co-funded by NAWA



Source: own work based on SCOPUS/SciVal [accessed on April 19, 2025]; visualization using the VOSviewer tool

If we reduce the aforementioned 360 publications, at least one author of which received funding from NAWA, to the number of institutions to which the co-authors are affiliated, four stand out: the University of Zaragoza (Faculty of Applied Physics), the Institute of Physical Chemistry of the Polish Academy of Sciences, Nicolaus Copernicus University in Toruń (Institute of Physics), and the Institute of Physical Chemistry of the Polish Academy of Sciences. The scientists affiliated with these institutions and their publications form a single thematic area related to applied physics (see Graph 8, which shows that every fourth Polish-Australian publication was thematically located in the area of physics and astronomy, and Graph 11, which shows that every second publication co-financed by NAWA concerned this area).

CONCLUSIONS

The above analysis leads to the following conclusions:

- 1) the Australian higher education system stands out in three areas:
 - a) the independence of universities from public funding (see Graph 1),
 - b) the massification of higher education (see Graph 2),
 - c) increased publishing activity by researchers (see Table 1).
- 2) The strongest area of Polish-Australian scientific cooperation seems to be physics and astronomy.
- 3) Australian scientists most often publish with European co-authors (Western Europe and the Czech Republic), North American co-authors (the US and Brazil), and Chinese co-authors (the only Asian country in the top 10 most frequently indicated by Australian co-authors).
- 4) The example of Charles University in the Czech Republic shows that individual but productive scientists, focused on cooperation with a center in a given country, can contribute to strengthening ties between the two countries.
- 5) The example of China shows how a focus on cooperation with a given country, supported by funding for this cooperation, brings another country (in this case Poland) into the orbit of cooperation.