

**Dr Tomasz Rożek**

A nuclear physicist by training and a science journalist by profession. He earned his doctorate at the University of Silesia and at Forschungszentrum Jülich. Winner of numerous journalism awards, he currently heads the science section of the weekly *Gość Niedzielny*. A populariser of science and new technologies, he gives lectures and workshops and runs the *Nauka. To Lubię* ("Science. I Like It") Foundation, which promotes knowledge and critical thinking. He has worked with many media outlets (among them TVP, TVN, Radio 357, National Geographic, Gazeta Wyborcza and Focus) and has hosted television and radio programmes. He is the author of popular-science books for adults and children, including the award-winning *Nauka – po prostu* ("Science – Simply") and a series unpacking the secrets of space and of the human body.

# Why Don't Poles Win Nobel Prizes?

**P**redicting Nobel laureates is inherently speculative. A precise retrospective analysis is hard to carry out too, because the Nobel Committee does not disclose nominations for fifty years. The criteria are known, though they differ considerably from what Alfred Nobel himself set down in his will. The world has changed, science has changed, and the way it is practised has changed as well. Today you cannot, after all, reward someone for an achievement made in the year before a discovery was made. Some people wait decades to be recognised. It takes a dozen or even several dozen years to establish whether a laureate's scientific work truly translated into "benefits to humankind".

Analysts who sit deep inside the subject of the Nobel Prizes argue that the best objective indicator is the Clarivate Citation Laureates (announced each September). Since 2002, as many as 83 of them have gone on to receive a Nobel (though often with a delay of several years). So it is not the case that appearing on this list means a prize in the next round. Even so, that is a pretty good predictive hit rate. On top of that – as the specialists claim – what counts are awards, the thematic "maturity" of a discovery (not to say the "fashion" for a particular niche), and the absence of "overload" in a given field in recent years. An award in the same field year after year (or even after a longer gap) stands little chance, even if the field happened to contain discoveries that meet the remaining criteria.

How do Poles place against this backdrop, in these rankings? Below I analyse only the prizes in the exact sciences.

Poland has a rich tradition in the exact sciences (Maria Skłodowska-Curie – two Nobels, Andrzej Schally, Tadeusz Reichstein, Józef Rotblat), but since the 1970s there have been no laureates in these fields who were born, or who worked mainly, in Poland. Historical nominations such as Karol Olszewski, Kazimierz Funk, Rudolf Weigl or Ludwik Hirsfeld did not translate into awards. The Nobel Committee prizes long-term, global impact, and Polish science suffers from lower funding, the emigration of talent and weaker international visibility compared with the USA, the UK or Germany. That visibility is not only the weight of the work itself; it is also telling the story of it at international congresses and conferences. It is the building of international collaborations, and it is also support beyond science, including diplomatic (not to say political) support.

In the Clarivate Citation Laureates for 2025 already mentioned, there is not a single Pole. The last time a compatriot of ours appeared there was seven years ago, in 2019, and it was Professor Artur Ekert (who, incidentally, lives abroad). High citation counts (Tomasz Dietl, more than 35,000 citations) help, but do not guarantee

anything – a Nobel requires a "paradigm-changing breakthrough", and that cannot be counted in Excel. And so I must begin my homespun analysis precisely with a quick introduction of Professor Ekert.

**Artur Ekert (born 1961 in Wrocław)**

- Professor at the University of Oxford (UK) and the National University of Singapore.
- Clarivate Citation Laureate 2019 "for contributions to quantum computing and quantum cryptography".
- Discoverer of the entanglement-based quantum cryptography protocol (E91, 1991).
- Awards: Maxwell Medal, Hughes Medal, Micius Prize, the Royal Society's Milner Award.
- Chances: in light of the above, I rate them as the highest among Polish researchers and scientists. After the 2022 Nobel for the experiments on Bell inequalities and the 2025 one for quantum circuits, quantum information theory (Shor/Kitaev/Ekert) is the natural next step.

And are there others on this exchange of names? There are, but they meet fewer of the criteria than Professor Ekert does – which of course in no way means they will not receive a Nobel Prize.

Professor Krzysztof Matyjaszewski (Carnegie Mellon University, USA / Lodz University of Technology). He is the discoverer of ATRP (atom transfer radical polymerization), a revolutionary method of controlled radical polymerization through atom transfer. He has won many awards, among them the prestigious Wolf Prize. He also has very high citation counts and a high rate of commercialisation. The trouble is that it is hard to say of him that he carried out his scientific work in Poland.

Professor Tomasz Dietl (Institute of Physics, Polish Academy of Sciences, Warsaw) – a pioneer of spintronics and ferromagnetic semiconductors. Very high citation counts, national and international awards (including the Tohoku University Award 2025).

Professor Elżbieta Frąckowiak (Poznań University of Technology) – a world-class expert on electrochemistry, supercapacitors and energy storage. One of the most cited Polish researchers in materials chemistry. The field she works in is under particular observation today. The world needs energy, and it needs to store it effectively.

Professor Aleksander Wolszczan (Pennsylvania State University / Nicolaus Copernicus University, Toruń) – co-discoverer of the first extrasolar planets (pulsar planets, 1992). For years he has been named on the Nobel exchange, but the awards for the discovery of extrasolar planets were granted some years ago. Today it is unlikely that the Committee would want to come back to their co-discoverer.

Since I am writing about astronomy, I cannot leave out Professor Andrzej Udalski (Astronomical Observatory of the University of Warsaw). He leads the OGLE project, discovering thousands of extrasolar planets by the method of gravitational microlensing. Laureate of the Dan David Prize and of the Foundation for Polish Science. A contribution to large-scale sky surveys. Trying to grasp the logic of how Nobels are awarded, I would say that today Professor Udalski has a better chance of a Nobel than Professor Wolszczan does.

As a matter of record I want to mention two more names. Professor Andrzej Trautman, a theoretical physicist who devoted his scientific life to gravitation. He died this year, and the Nobel Prize is not awarded posthumously. Professor Trautman was often named as a future candidate. The second name is Professor Victor Ambros, an American molecular biologist and 2024 Nobel laureate for the discovery and understanding of the role of microRNA. He did not conduct research in Poland, but his parents came from Poland. Professor Ambros has now begun the procedure of applying for Polish citizenship.

“Why don’t Poles win Nobel Prizes?” Perhaps the title question ought to read instead: why don’t Poles working in Poland win Nobel Prizes? Of the people listed above, only some work in the country. It is clear that science is practised regardless of borders, but I do not mean here international collaborations, fellowships or grants. I mean that, for many clever people from science’s premier league, Poland does not look like a place where they can develop their scientific careers. Many of them do not lose contact with the country; they lecture at our universities or help Polish doctoral students (by drawing them over to their own labs). Good for them. Only they build their whole scientific life abroad. Last year, in one of the October issues of *The Economist*, an article appeared titled “Which countries breed Nobel laureates, and which import them?”. And in it, in the context of the Nobel Prize, a passage about us: “Poland is the biggest loser from this scientific migration. 19 laureates were born in what is now Poland, including Marie Curie, yet none did their prize-winning work there.” We do not have a single Nobel laureate in the exact sciences who was born and worked (mainly) in Poland. Some of them lived in historically difficult times, but for many decades now intellectual emigration cannot, and must not, be explained away by history. In the piece the newspaper shows – in numbers – that Poland is the world’s biggest “donor” of Nobel talent (brain drain) yet practically a zero “recipient”. It is worth stressing once more: no breakthrough research awarded a Nobel in the exact sciences has been produced on the territory of present-day Poland. Why?

There are several reasons.

#### 1. Underfunding and infrastructure

Poland spends significantly below the EU average on Research and Development. There is a shortage of

large, stable grants for ambitious experimental projects. In January 2026 the head of the Foundation for Polish Science put it bluntly: “Polish science is not only poor, it is also sick.” Without curing the illness, there is no point in counting on awards for Poles working in Poland.

#### 2. Working conditions and pay

A young doctor at a university earns about 4,800 to 6,000 zloty gross to start. A doctoral stipend runs to roughly 3,000 to 4,000 zloty net. For that sum, in the big cities, they may not even find a studio flat. After defending the thesis they are usually buried under teaching hours, and those hours make scientific development and publishing impossible. Publishing that they are nonetheless required to do. The system encourages the production of large quantities of poor-quality work. Many will not go along with it; half of doctorate holders leave science or emigrate. Brain drain – unsurprisingly – hits the most able above all.

#### 3. Bureaucracy and academic culture

The system rewards the sheer number of publications (parametrisation, “points”) at the expense of quality and of risk. Many of those returning from abroad speak of “toxicity”: mobbing, nepotism, a lack of real autonomy. The President of the Polish Academy of Sciences points out that foreigners (mainly from India, Pakistan and Ukraine) increasingly fill the gaps left by Poles, because the Poles “bolt”. This is not “brain circulation” but classic brain drain.

#### 4. Scale effects and international visibility

A Nobel calls not only for genius but also for access to top laboratories, collaborations with the largest centres and a “cultural moment”. The USA, Germany, Switzerland and Singapore deliver that as a package. Poland does not. Even when someone does return (through programmes such as the Foundation for Polish Science’s “Return” scheme), there are often no conditions here to carry on working at the same level.

Some people (Professor Dietl or Professor Frąckowiak, say) reach a world-class level, but my sense is that they do so not because of, but in spite of, the conditions we create for them. Others (such as Professor Ekert or Professor Matyjaszewski) keep strong ties with Poland, draw doctoral students over, give guest lectures. The problem does not lie in any absence of “Polish genius” (we have a good deal of it) but in the fact that the system is not designed for ambitious, breakthrough science. Until we change the funding, the bureaucracy and the culture (and that takes political will measured in decades), the best will build their careers abroad – and there they will gather their laurels. Poland is left with the talent but without the Nobel. This is not fate or bad luck. It is a choice about the model for the development of science. A choice I believe is unconscious, and on many levels at that – not only among many scientists but also among politicians. And not only at the Ministry of Science and Higher Education. ■