

CALL TO ACTION FOR WOMEN IN SCIENCE

The presence of women in science, methods of supporting them in pursuing careers in science, and the Polish Young Academy's plans are discussed by **Dr. Anna Ajduk** of the University of Warsaw, who is chair of the Polish Young Academy, and its three deputy chairs – **Assoc. Prof. Nicole Dołowy-Rybińska** from the PAS Institute of Slavic Studies, **Assoc. Prof. Monika Kędra** from the PAS Institute of Oceanology, and **Assoc. Prof. Monika Kwoka** of the Silesian University of Technology.

ACADEMIA: For some time now, *Academia* has been publishing articles focusing on the situation of women in Polish science. Do you believe that there is a problem here?

ANNA AJDUK: A career in science, as is the case with every field of professional activity, entails certain consequences and involves moving up the ranks. For women some actions may be a little harder, for example in light of their family roles. These days, a large part of scientific activity requires mobility – scientists are required to spend some time abroad, or at least in another scientific institution in their own country, which typically means relocating for several years. If a female researcher has no children, and her husband works in a similar field, that's not difficult. However, the attitude that the woman should move for the man is more deeply rooted in culture than the reverse.

A career in science also requires a lot of flexibility in terms of time, because experimental work, which is typical for my field, means working irregular hours. The question is, do superiors make it easier or more difficult for their workers to work irregular hours? I've always felt that my superiors supported me, but that needs to be the norm.

NICOLE DOŁOWY-RYBIŃSKA: If we look at the statistics about men and women in Polish science, we can see clearly a widening gender gap in the career path. At the level of master's degrees, there are slightly more women. At the doctorate level, the gender proportions are practically equal. However, starting from the higher doctorate DSc (or *habilitacja*) up to the professorial level, the share of men is much larger than that of women. What are the reasons for this? On the one hand, there are institutional reasons – this is a highly hierarchical profession. Statistics show that most decision-makers at the level of institute directors, heads of research



**Anna Ajduk, PhD**

is a biologist. She works at the Department of Embryology, Faculty of Biology, University of Warsaw. She has worked at Cardiff University and the University of Cambridge in the United Kingdom and at the Institute for Biogenesis Research, University of Hawai'i in the United States. Her scientific interests focus on fertilization and early embryonic development in mammals, also in the context of the optimization of in vitro fertilization. She is currently studying the impact of aging on the quality of egg cells and embryos and the use of optical coherence microscopy (OCM) in reproductive medicine and biology. In 2013, she received the Prof. Stefan Pierkowski Award for outstanding achievements in mathematical and natural sciences. She is a beneficiary of the programs offered by the Foundation for Polish Science, the National Science Center, the National Center for Research and Development, the Ernst Schering Foundation, and the Federation of European Biochemical Societies (FEBS). She is also involved in science popularization and in the activities of the Association of the Foundation for Polish Science Scholars. She has been a member of the Polish Young Academy since 2016.

aaajduk@biol.uw.edu.pl

departments, are men. What poses the most important problem, however, is the social perception of the role of women, of whether it is possible to combine the roles of a mother and a wife, the way women who pursue careers are perceived. Another problem is posed by the absence of support from the state: there are no daycare centers at scientific institutions, no stipends for parents who return to work after maternity or paternity leave.

Attitudes about the promotion of women in science that exist in the academic milieu are likewise very important. When gender equality is mentioned at the meetings of various collective bodies, we can hear jokes along the lines: "Ok, so we need to go find a black woman." That's shocking. After all, gender quotas play a very important role in efforts to change the public's mentality. Another problem is that those invited to scientific panels are usually only men. Why? Because the names of male scientists are more well-known than those of female scientists. And why is that? Because they get invited to events and appear in the media. There's a vicious circle here.

Is that because of the stereotype that women, who are reportedly less focused on scientific careers, are not reliable enough?

N.D.-R.: And that they are more guided by emotions, so they shouldn't be given responsible tasks. Both of these stereotypes exclude women. But there is also the whole of the cultural context. When we look at the history of women in science, there's practically no mention of them. Even when they contributed equally

to specific achievements, they were ignored. They've been pictured as helpers, not necessarily as those making groundbreaking discoveries.

A.A.: But this situation is slowly changing. One good example is the Polish Academy of Sciences, which elected nine women as new members last year.

Are women beginning to stand up for themselves or are the attitudes in academia changing?

A.A.: More and more women are standing up for their professional status, promotions. All this despite the fact that there are still differences in the ways boys and girls are raised, as the song goes, "It's a man's thing to be far away, it's a woman's thing waiting faithfully to stay." If women are expected to stand on the shore and wait for men to return from their conquests, they will not stand up for their positions, they will be passive. MONIKA KWOKA: The situation in technical sciences remains bad. Although things are slowly improving, even prominent female professors who can boast outstanding results and are involved in major European projects run into considerable hurdles created by men, especially those who have achieved less. Men sometimes refuse to acknowledge the fact that women do more in a better and faster way, especially in typically male disciplines, and they even try to discourage women from being more active. I think they simply envy us, because what other explanation could there be? When I started working in my current job, I was told that I was too young, I was a woman, and I still had the time for such activity. I'm glad that such views are changing for the better over time. Another thing is that in European projects there's more and more often a great deal of pressure, even the requirement to involve women.

But someone chose you. Did you have support?

M.KW.: Yes, I had the support of several people, including a young and dynamic dean. MONIKA KEJDRA: I'd like to get back to the question from the beginning of our conversation. Is there a problem related to the presence of women in science? Yes, there is. In Poland, attitudes regarding the careers of women in science, or the careers of women in general, are very traditional. The prevailing belief is that women should always put family first. When I had a baby, I was sometimes asked if I'd want to return to science. I don't recall any of my male colleagues ever being asked that question. It seems natural that mothers use the long maternity leave, whereas fathers are less likely to go on paternity leave, though they are doing so more and more often. The presence of women in science is important not only for women but also for the whole of society. When women look after children at the expense of science and their careers, men lose out, too. I know fathers who went on paternity leave, and none of them had any regrets,

although their careers probably slowed down in that period. Everyone benefits from the equal involvement of men and women in family and in science.

There's also the issue of pay. I'd like to cite one example from Norway, a country which seems very equality-oriented. I was told by a female colleague who works there that men who hold the same positions as women are often paid more, even at higher education establishments.

A.A.: I may be perpetuating a stereotype here, but I have the impression that men are more assertive in fighting for their professional position. A man will say, "I'm great at what I do and I deserve a higher salary, if I don't get it, I'll quit." A woman will think three times, "Maybe I'm not so good after all? Maybe I shouldn't complain?" She'll most certainly not threaten to leave. N.D.-R.: That's how we are raised. Equal pay should be a task for the state and employers. It's worth adding that the presence of women in science is important not only for women but also for the whole of society. That's because their ideas and perspectives and what they do causes research to develop. If we exclude the half of the world's population that is made up by women, we reduce our development options in general.

Women account for over 7% of the PAS General Assembly. Is that a lot or a little?

A.A.: A little. Until last year, that percentage was only half that.

But all of you, leaders of the Polish Young Academy, are women. How did that happen?

A.A.: The recent round of elections was untypical: only 15 members (instead of 35) were chosen. And of these 15 members, there are 9 women. In the previous term, there were seven women out of 35 members. It appears that in recent elections there were simply many good female candidates. The question is, did the women decide to put forward their candidacies on their own initiative or did anyone need to encourage them?

M.KW.: Members of the PAS definitely encouraged candidates.

A.A.: In order to have more female members, we must have more candidates to choose from. That's why young women should be encouraged to choose careers in science and then supported in their professional development. Encouraging women to take up jobs in the exact sciences, which are stereotypically dominated by men, is especially important.

As leaders of the Polish Young Academy and as researchers, what do you do to help promote women in science?

M.K.: We participate in scientific events that are also addressed to young girls – so they can see that science is interesting, and there are women who have achieved

Nicole Dołowy-Rybińska, PhD, DSc

an Associate Professor at the PAS Institute of Slavic Studies, is an anthropologist and a sociolinguist. She majored in cultural studies at the University of Warsaw and intercultural communication at Inalco in Paris. In 2010, she defended her doctoral dissertation on the situation of minority languages and cultures in Europe (under the supervision of Prof. Andrzej Mencwel) at the Institute of Polish Culture, University of Warsaw. She won fellowships and grants funded by UNESCO/Keizo Obuchi Research Fellowships Programme, the Foundation for Polish Science, the National Science Center, the Polish Ministry of Science and Higher Education (the scholarship for young researchers), and the Sorbian Institute in Germany. She has participated in research programs as part of collaboration between the Polish Academy of Sciences and Italy's Consiglio Nazionale delle Ricerche. Her main research interests include the identity of European language minorities, methods of preserving and revitalizing minority languages and cultures, linguistic activism, multilingualism and multiculturalism, and the analysis of discourse on threats to languages and the preservation of endangered cultures. She is also interested in the history and situation of national, ethnic, and language minorities in Poland. She is a member of several research associations. She has authored four monographs and several dozen research papers. She has been a member of the Polish Young Academy since 2016.

nicoledolowy@gmail.com



something in science. I was engaged in campaigns addressed to children who come from challenging backgrounds, and I could see that seeing a woman scientist was a big discovery for many girls. I was also co-responsible for the creation of an international research network addressed to young scholars who studied the Arctic. It used to be obvious that polar expeditioners were men. Now, a lot of women decide to work in difficult field conditions. Also, the very fact that a woman has achieved success, for example in the form of important publications, encourages other women to try. We need to boast about such achievements!

N.D.-R.: Next year, we are planning to participate in science cafés, where both women and men will deliver lectures. It appears that politicians are very slowly becoming aware of the need to ensure gender equality in science. For example, one interesting experience was the National Congress of Science in Kraków. The Polish Ministry of Science and Education probably received an order from above to promote women, because there was at least one woman on each panel. However, we are still far away from gender equality, although a certain step has been taken.

A.A.: Let's get back to the promotion of scientific careers among women. Since 2016, 11 February has been the International Day of Women and Girls in Science. On this occasion, the Polish Young Academy intends to organize a meeting that shows the careers of women in science. For logistic reasons, this is unfortunately being planned for 2019.

M.KW.: Together with a person from the companies that support us, I have decided to follow in the

**Monika Kędra, PhD, DSc**

is an Associate Professor at the PAS Institute of Oceanology. She is an oceanographer and a marine ecologist. In 2011–2013, she completed a two-year postdoctoral fellowship at the Chesapeake Biological Laboratory, University of Maryland Center for Environmental Sciences in the United States. Her scientific achievements earned her the Polish Ministry of Science and Higher Education's scholarship for outstanding young scientists. Her scientific interests include the functioning of marine benthic communities with a particular focus on the impact of climate change and seasonality on benthic population dynamics, food webs, and the carbon cycle. She conducts her studies mainly in the Arctic Ocean, both in shelf seas and in deep basins. She has authored or coauthored over 40 scientific publications in peer-reviewed journals on the JCR list. She has participated in numerous domestic and foreign scientific projects. She is currently involved in a project funded by the National Science Center (OPUS). She has participated in numerous international research expeditions, including cruises in the Barents Sea, the Greenland Sea, the Bering Sea, the Chukchi Sea, the fjords of Spitsbergen, and the Nansen Basin. She is very active in the international arena: she cofounded and then served as a co-chair of the pan-Arctic scientific network Arctic in Rapid Transition (ART), which comprises early-career scientists who study the Arctic. She is currently a Polish delegate to the Marine Working Group at the International Arctic Science Committee (IASC) and the Benthos Expert Network of the Conservation of Arctic Flora and Fauna (CAFF), at the Arctic Council. She is a member of the PAS Committee on Maritime Research and the PAS Committee on Polar Research. She has been a member of the Polish Young Academy since 2016.

kedra@iopan.gda.pl

footsteps of the British and the Americans and set up a Science Women in Engineering association in Poland. I also hope that the project will soon result in a major success. It needs to be stressed that Women in Science is a very important and well-known association. Several prominent individuals in Poland are active in the association and participate in the meetings of female researchers from the whole of the world in various places. There is also "The Cosmos for Girls," a wonderful foundation where I would like to be more active in the future by conducting various support campaigns.

N.D.-R.: There's a certain hitch, so to speak, or probably a lot more than just one – namely, in order for women to work in science, especially in the exact sciences, we need good education starting from primary school, or even earlier. Yet it needs to be openly admitted that the Polish educational curriculum is now being wrecked, not only in terms of what is being taught and how but also in terms of the division of social roles that is being promoted.

M.KW.: Most of the members of my research group are women. I don't know why. Theoretically, men should apply, but what I see are applications from women – gifted, ambitious, and hardworking women. Maybe because they're not afraid to work with a woman in such a discipline as electronics.

N.D.-R.: Or maybe they believe that you're the only person who will appreciate them. A male lecturer will tell them...

M.KW.: "...you can't understand what electric current is."

N.D.-R.: Just like during the first lesson of physics in my high school in a class chiefly made up of girls, when the teacher said, "Well, you won't understand anything anyway, so these lessons will be just chats, not real physics."

What should be done to popularize science in Poland? Is the Internet important here?

N.D.-R.: I don't think there's any real tradition of science popularization in Poland. There's science, and there are measures initiated by individuals, but there is no thinking that scientists who are of course mainly busy doing science, yet their duties include not only publishing their findings in journals but also reaching out with these findings to the public. Fortunately, the situation has changed in recent years thanks to such events as science picnics and the Science Festival. Nevertheless, we need institutional solutions in which popularization activity really counts for something. We are greatly burdened not only by our research but also by all the activities around it, for example administration, so the popularization perspective often eludes us.

M.KW.: In higher education institutions, everyone is slowly starting to see that promotion campaigns, the positive aspects of the Internet and social media in today's world open the path to having more students, winning grants, and being seen and noticed by corporations and research institutions at home and abroad. A.A.: But universities and institutions must understand that running science promotion campaigns is a full-time job, not something done *ad hoc*. Someone needs to write press statements, stay in touch with reporters. That's the work of a press office, and many heads of scientific institutions still don't understand that.

M.KW.: Such a unit should employ around 20 people, each responsible for something else. I agree that this may mean additional costs, but the university will have measurable benefits from that.

N.D.-R.: From the perspective of some of the PAS institutes, the matter is more complicated – there's no possibility of establishing a press office, because there's practically no money for anything. At my institute, one person has been delegated to write the monthly newsletter of the Institute's achievements, another woman is responsible for the website. In addition to doing their own research work. On the one hand, we want to promote our achievements and popularize science. On the other one, this means that we have even more work to do.

As young leaders of the Polish Young Academy, how do you think a model institute should operate?

M.K.: I believe that transparent rules that apply to everyone are the most important thing. Many places lack such rules, especially with respect to young scholars. For example, promotion criteria are unclear.

In addition, such an institute should rely on diversity, for example be guided by the principle that if we have two equally excellent applications, we should choose the person from the group that is not yet represented.

I would expect more administrative support. As a scientist, I'd like to focus on science and possibly on science promotion. If the financial department stops paying attention to the fulfillment of the criteria listed in specific provision, understands why scientists want to buy a specific device, and provides adequate support, everyone's work will be a lot easier.

That is related to communication. When I was in the United States, our lab organized outreach meetings from time to time. Not just scientists but all members of the staff, including the administrative and maintenance staff, and also members of the local community were invited to such meetings. Consequently, all of them were a lot more aware of what the scientists were doing.

A.A.: I fully agree. I would also stress well-thought-out motivation systems, the promotion of people who publish in top journals, not those who publish a lot but in journals that are not significant.

N.D.-R.: For us humanities scholars, it is extremely important to have the time not only for research but also for reflecting on what we study. In the existing system of grants, we have three years to carry out research, but there's no time to write a book that presents the findings, because we earn so little that we can't support ourselves without more grants. The truth is that only those people have no mortgage can afford to work in the humanities. When doing one research project, we must constantly think about applying for another one, because if we lose our financial liquidity, we will not only write no book but even have no breakfast. When I say in public how much I earn, people can't believe that one can earn so little, working at the Polish Academy of Sciences.

Another issue is the freedom of research. Today, state institutions decide if certain research projects are acceptable at an ideological level or not. There is a lot of talk about the National Program for the Development of Humanities, but if we look at what competitions have been announced over the past two years and what projects have received funding, we can easily see whose research will certainly receive no funding.

M.KW.: In fact, when it comes to being in charge of a research unit, I have had real experience for a year. I work at a large department that has 250 staff and 3,000 students. I personally believe in encouraging young people to be active by offering different scholarship programs. I must admit that those are excellent

Assoc. Prof. Monika Kwoka, PhD, DSc

is an Associate Professor of the Silesian University of Technology. She specializes in the nanotechnology of semiconductor materials in the context of their applications in microelectronics with a particular focus on photovoltaics and sensors of toxic gases, which means fields that have an enormous impact on the conservation of the natural environment. She has recently been involved in the development of an "electronic nose," a device of great importance for medicine – in the future, it could ensure the non-invasive diagnosis of dangerous cancers based on the analysis of the chemical composition of exhaled breath, among other applications. She has completed a number of foreign research fellowships, including at the University of L'Aquila in Italy and a three-year postdoctoral training at the University of Tübingen in Germany. She has been involved in domestic and international scientific collaboration through the implementation of scientific projects, including projects funded by the EU. Since 2016, she has served as the vice-dean for science and international cooperation at the Faculty of Automatic Control, Electronics, and Computer Science, Silesian University of Technology in Gliwice. Since 2015, she has sat on the Board of the Polish Vacuum Society (PTP), where she has served as chair of the section "Surface Science." She has received numerous awards granted by the rector. In 2016, she received the individual prize for outstanding scientific achievements granted by the Polish Ministry of Science and Higher Education. She has been a member of the Polish Young Academy since 2016.

Monika.Kwoka@polsl.pl



incentives. It should be also stressed that the companies that work with us offer really good stipends for those who want to do something interesting and ambitious.

Another good idea involves promoting people who publish in very good journals by offering additional remuneration. That pays off and encourages people to pursue top-level science. In addition, it means positive competition, because if someone publishes in good journals, this translates into the excellence of the whole of the unit. It seems to me that these are the fundamental directions of further development. Of course, there's no point hiding that the situation is easier in the technical sciences, because there are companies that are willing to finance such activities. What is more, companies want good students, so if they invest from the outset, they will have good workers who will work, write projects, and apply for patents and inventions. Probably the other fields represented by my colleagues here are a lot more difficult, and I realize that it's not easy to convince companies to finance certain studies in biology or humanities. Nevertheless, the interests of science are the shared interests of us all.

INTERVIEW BY ANNA ZAWADZKA
AND KATARZYNA CZARNECKA
PHOTOGRAPHY BY JAKUB OSTAŁOWSKI