



International Institute of Molecular
and Cell Biology in Warsaw

“Let’s Build a Great Institute”

25 years of IIMCB



Signing the agreement establishing IIMCB between the government of Poland and UNESCO on May 26, 1995, in Paris.



You Have Nothing, I Have Nothing – Let's Build a Great Institute: From Enthusiasm to a Thriving Research Center

Beata Igielska

The positive atmosphere at the International Institute of Molecular and Cell Biology is immediately noticeable. And while the cramped space means you might stumble over refrigerators in the hallways, there is hope for a new building. After all, the scientific successes are already impressive – just consider the publications in *Nature* and the research on next-generation mRNA drugs.

“I walked into an empty building with nothing but a large director’s table,” recalls Prof. Jacek Kuźnicki, the Institute’s first Acting Director, who went on to lead the Institute for the next 20 years.

It was 1999. The newly established International Institute of Molecular and Cell Biology in Warsaw (IIMCB) was granted an empty building at 4 Ks. Trojdena Street by the Polish Academy of Sciences (PAS) and received PLN 1.5 million to start operations. Everything else – except for the large table – would have to be won through grants and competitions.

At first, the Institute operated like a family business driven by enthusiasm and pioneering zeal: when there was a task to be done, everyone pitched in. But in the long run, a “family business” approach was unsustainable. Structures, procedures, and divisions of responsibilities had to be established.

The Team Spirit



Our greatest achievement? The positive atmosphere that I worked to foster from the very beginning. We all contribute to the best possible scientific work. There is no 'us versus them' – the administration is our partner.

Prof. Jacek Kuźnicki,
Head of the Laboratory
of Neurodegeneration,
former Director of IIMCB

Prof. Jacek Kuźnicki: “Our greatest achievement? The positive atmosphere that I worked to foster from the very beginning. We all contribute to the best possible scientific work. There is no ‘us versus them’ – the administration is our partner. There is no unpleasant competition; on the contrary, we support each other. We really want to maintain this, although as the number of employees grows – now over 250 – it becomes more challenging.”

Dr. Krzysztof Skowronek, Head of the Biophysics and Bioanalytics Facility, who has been at the Institute for 22 years, confirms the strong team spirit: “We had annual integration trips, Christmas gatherings. Many aspects of this atmosphere remain, and research teams have inherited it. I know everyone in

the administration, which is closely connected to the Institute’s scientific mission. My trainees have surpassed me, and I find that gratifying.”

Today, Prof. Andrzej Dziembowski is on the board of the RNA Society and has just published a paper in *Nature*. Prof. Janusz Bujnicki is a member of Academia Europaea, and his research has contributed to the structures of viral and bacterial RNAs.

Prof. Matthias Bochtler, a structural biologist who initially worked with X-ray crystallography and now focuses on DNA modifications and epigenetics using cryo-electron microscopy, shares similar memories of the Institute’s early days:

“The Institute made me an offer I couldn’t refuse. As a very young scientist, I led a group with stable funding from the Max Planck Society for nine years – an eternity for someone my age at the time. When I arrived at the newly established institute, I immediately felt the great atmosphere. I really felt welcome!”



Meeting of laboratory leaders in 2005.



When I arrived at the newly established institute, I immediately felt the great atmosphere. I really felt welcome!

Prof. Matthias Bochtler,
Head of the Laboratory of Structural Biology



Research work in IIMCB laboratories in 2024.



Poster Session at IIMCB's Retreat in 2024.

Grilling for Success

“When someone is applying for a grant and has to go through an interview, we conduct a mock panel, or what we call ‘grilling’. Constructive criticism and a barrage of questions from colleagues can be tough, but this approach works – the candidate is well-prepared for the real thing. If we have the opportunity to nominate someone for an award, we discuss who is the best fit. Sometimes, the person we suggest declines, saying, ‘I don’t think I’m the best candidate,’ and points to someone else from the Institute. If there’s a problem, we try to solve it. Recently, we had a ‘Hyde Park’ meeting organized by Prof. Marta Miączyńska, Director of IIMCB. The biggest issue? Space. In fact, our only major problem is lack

of space. We are victims of our own success, winning large grants that require hiring new group leaders and providing them with the conditions to conduct research,” says Prof. Kuźnicki.

The former director proudly notes how the Institute, built practically from nothing, is now well-recognized internationally. More and more young researchers from abroad want to work here. There are outstanding publications, including this year’s *Nature* paper by Prof. Andrzej Dziembowski, the first Polish recipient of an ERC Advanced Grant in life sciences. The first *Nature* paper affiliated with the Institute was authored by Prof. Agnieszka Chacińska, who led her own lab at the IIMCB from 2009–2017 and served as Deputy Director for Development. In 2020, she established the IMol PAS Institute.

During Prof. Kuźnicki’s tenure, researchers published over 900 articles in prestigious journals and participated in 24 projects within the EU Framework Programs.

Foundations of IIMCB Success



International
Advisory Board
(IAB)



Group leaders
selected
in international
contests



Leaders and
groups regularly
evaluated by IAB



Scientists
on temporary
contracts



Research
based mostly
on grant funds



A Homeless but Ambitious Institute

Even at the main entrance, space is tight. On each floor, additional rooms have been carved out at the ends of hallways using glass partitions. Even seminar rooms have been converted into labs. When a larger event takes place, an external venue must be rented.

The vision of a new building is palpable among employees. "We are a homeless institute," they say. They don't just dream – they have concrete plans for a spacious, modern facility. They emphasize that the new headquarters would be a crown jewel of Polish science, a world-class center. A plot of land in Okęcie district has already been purchased, and a building design is ready. All that's left is construction. Unfortunately, funds are scarce.

The estimated cost is PLN 300 million, but so far, only PLN 50 million has been secured. Employees hope that, in light of their numerous scientific achievements, the Polish government will support the project. For now, space is being scavenged wherever possible, even by repurposing bathrooms. At one point, three director parking spaces were replaced with containers to house research equipment. Should an Institute with such remarkable scientific achievements really be working under these conditions? This rhetorical question echoes through the cramped hallways of the IIMCB, in both Polish and English, as nearly one in four Institute members is from abroad. In total, researchers from 21 countries work at the Institute.

Each floor hosts research groups – six floors and 16 labs in total. Space is already tight, yet four new groups are expected to join. The laboratories focus on two pillars: RNA biology (five labs) and cell biology (eight labs), with three labs working at the intersection of both fields. Among the lab heads are eight professors whose names are well-recognized in the scientific community. Others, holding PhDs or habilitations, have an impressive record of scientific achievements and prestigious grants.

Beyond the research labs, the IIMCB also hosts core facilities supporting daily research activities and providing commercial services. Dr. Krzysztof Skowronek, like a seasoned guide, presents the various Core Facilities: Microscopy, Preclinical Drug Development, Genome Engineering, and Rodent Facility, where a distinct scent lingers. “Animal welfare is legally regulated and highly demanding,” he notes.

Other facilities include Bioinformatics, Biophysics and Bioanalytics, and Mass Spectrometry. A Genomics Core Facility and a Cellular and Organoid Models Facility are planned. The Zebrafish Facility, housing 16,000 specimens, is located in the basement, where different genetic lines are bred whose embryos are used for research.



Ten years ago, we had nine research laboratories, and we will soon have twenty. We are running out of space for our specialists and research equipment. Therefore, the need to build a new headquarters is becoming more urgent.

Prof. Marta Miączyńska,
Head of the Laboratory of Cell Biology,
Director of IIMCB



Research work in IIMCB laboratories in 2024.



If Not by Elevator, Then by Window

We have to perform some real gymnastics to modernize our equipment in such a limited space.

Dr. Krzysztof Skowronek,
Head of Biophysics and Bioanalytics Facility

We continue our tour. A mass spectrometer, a research device weighing over a tonne and costing more than PLN 1 million, didn't fit in the elevator or up the staircase. It had to be lifted to the sixth floor using a crane. To get it into the room, the window and its frame had to be removed. "We have to perform some real gymnastics to modernize our equipment in such a limited space," says Dr. Skowronek. Thanks to funding from the National Recovery Plan, two new-generation spectrometers will soon be added. There is hope they will fit in the elevator.

There is a high-throughput microscope worth PLN 3 million. Several cell sorters. In boxes, a mass photometer waits to be assembled and launched. Here and there, signs read "Do not clean," and by the microscopes, "Do not wash the window." Windows cannot be opened, as outside contaminants could compromise the laboratories. Another reason is that access to the windows is blocked by equipment.

There are shakers for bacterial cultures, regular household refrigerators (sufficient for storing certain reagents), freezers at -70°C, and dewars – large, thermos-like tanks with liquid nitrogen (-196°C) used for storing eukaryotic cells. There is also an entire room serving as a giant cold storage facility. Robots pipette micro-quantities of proteins, gel imaging systems are visible, and a crystallization room is in use.

In the basement, two newly acquired electron microscopes, funded by the National Recovery Plan, are at work. One is used for imaging individual protein molecules frozen in amorphous ice. "The sample must be ultrathin, liquid, and frozen within a fraction of a second," explains Dr. Skowronek.

I Am a Biologist – I See the Institute as a Living Organism



The most important element is the people who make up this organism. They matter, no matter what their role is – everyone is needed.

Prof. Marta Miączyńska,
Head of the Laboratory of Cell Biology,
Director of IIMCB

“I have worked at the Institute for 20 years. We have always had a sense of community and of building something unique, defined by a positive attitude and the belief that we will succeed, that we want to take action. Many chose the Institute after long stays abroad, consciously deciding they wanted to work here,” says Prof. Marta Miączyńska, who succeeded Prof. Jacek Kuźnicki as Institute Director at the end of 2018.

When she took office, there were 10 research groups, including her own Laboratory of Cell Biology. Over the past six years, new laboratories have been established, and the Institute has grown so much that cramped space have become all too familiar. New international programs have also emerged, distinguishing the IIMCB within the Polish scientific landscape.

Since 2023, the Institute has been leading the EU-funded RACE project (RNA and Cell Biology – from Fundamental Research to Therapies), aimed at transforming the IIMCB into a world-class center of excellence in RNA and cell biology. Another initiative, RACE-PRIME, focuses on developing new approaches to treat diseases currently lacking effective therapies. Additionally, funding from the National Recovery Plan supports

the purchase of cutting-edge research infrastructure. These three strategic grants, fueled by both national and international funding, are the pillars of the Institute's growth.

"We must modernize the way we manage the Institute to better support scientists administratively, so they can focus on research. As Director, I find this to be an exciting time, full of challenges, dynamic development, and with the vision of a new building on the horizon," says Prof. Miączyska.

When asked about the Institute's success, she, like Prof. Jacek Kuźnicki, responds without hesitation: "People united by a shared goal of advancing science, supported by a highly professional administration that strives to understand researchers' work. When I started my term as Director, I met with all the employees. I told them: I am a biologist, and I see the Institute as a living organism, where every organ and every cell is essential. If any part fails, the whole organization suffers. One might imagine that the Director is the brain, but the brain alone achieves nothing. For the organism to be healthy, everything must function well. The most important element is the people who make up this organism. They matter, no matter what their role is – everyone is needed."

Strategic Projects Driving IIMCB's Growth

**Institutional &
scientific
development**

RACE
€15,000,000

**Scientific
development**

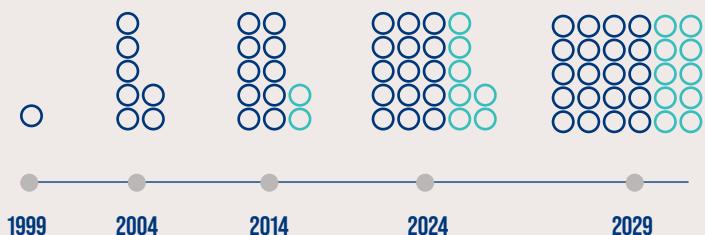
RACE-PRIME
€8,000,000

**Infrastructure
development**

IN-MOL-CELL Infrastructure
€17,000,000

Dynamic growth to reach critical mass by 2029

○ Laboratory
○ Core Facility



25 Years of IIMCB Science in Numbers

1417

publications
& preprints

54

average citations
per article

2/3

publications
in the first
quartile (Q1)
in the JCR
category according
to Web of Science

119

Hirsch Index
by WoS

364

grants



**Ministry of Science and Higher Education
recognises the work of IIMCB in its evaluation**

category I



category A+

*In 2009 evaluation system was changed

** Evaluation in progress

International in More Than Just Name

At IIMCB, five group leaders – nearly a third – are members of the European Molecular Biology Organization (EMBO). Scientific success is also reflected in publications in prestigious international journals: *Nature*, *Nature Communications*, *Cell*, *RNA Journal*, *Nucleic Acid Research*, *American Journal of Hematology*, and many others. Two-thirds of the Institute's research papers rank in the top quartile of Journal Citation Reports.

Only since 2020, four IIMCB group leaders have received the Prime Minister's Award. Two researchers have been awarded the Foundation for Polish Science Prize (known as the "Polish Nobel"). The Institute also boasts four members of Academia Europaea and the Polish Academy of Sciences.

"We are the only Polish member of EU-LIFE, a consortium of leading biomedical research institutes from 16 countries. This prestigious membership serves two purposes: influencing European science policy and sharing best practices in research institute management. I see our invitation to join, extended by the founding members, as a great honor. It means we are competing at the highest level," emphasizes Prof. Marta Miączyńska, who has been co-chairing this international organization since the beginning of 2024.

The Institute's scientific activities are evaluated by the International Advisory Board, composed of distinguished scientists from top institutions worldwide, all of whom serve pro bono. Among them is Prof. Aaron Ciechanover from Israel, a Nobel Laureate. In 2024, despite the war in his home country, he made a special trip to the IIMCB to meet with young scientists.

"The Board members visit us once a year to advise, assess, and suggest directions for growth and change. This helps us move forward in line with international standards. We actively seek to hire foreign researchers and support them. We have a dedicated HR team member who assists them with settling in Poland," says the Institute Director.

Humble Beginnings

Prof. Kuźnicki began his academic journey at the Nencki Institute of Experimental Biology, where conditions in the early 1990s were difficult. When Prof. Kazimierz Zieliński, the Institute's leader, resigned, no other professor wanted to take on the directorship.

“There was so little money that we had to clean the place ourselves. My friend Prof. Maciej Nałęcz was in Switzerland at the time. We agreed to take on the challenge of leading the Nencki Institute. We were ‘young and promising’ associate professors, post-habilitation. We had international experience and knew which changes were necessary, but implementing them turned out to be very difficult. At one point, Maciej said to me, ‘Maybe we should start a new institute.’ That’s when Polish neurobiologist Prof. Leszek Kaczmarek joined the conversation. We had nothing, but we had an idea. Polish scientists convinced policymakers to sign an

agreement between the Polish government and UNESCO, establishing the International Institute of Molecular and Cell Biology in Warsaw. The Polish Parliament ratified this agreement, passing a dedicated law that defined the Institute's operations, including hiring scientific staff exclusively on contracts (while administrative staff have standard employment agreements). The President of the Polish Academy of Sciences nominates the Director selected by the International Advisory Board and oversees the Institute's finances, thus the Institute has a connection to PAS while maintaining its independence – our greatest strength.”

“We have very flexible operational rules. Instead of a scientific council, we have the International Advisory Board (IAB), which helps us identify top candidates for research group leaders through international competitions. I remember one recommendation from the Board: ‘Unfortunately, no one meets the required standard this year; it’s not worth hiring anyone.’ Every few years, the IAB evaluates the quality of our research groups. Over 20 years, I received several recommendations to close underperforming groups. I followed those recommendations. If a group is not good enough, we part ways but allow time for them to complete ongoing projects. Unlike many Polish institutions, we do not create permanent positions leading to tenure until retirement,” says Prof. Kuźnicki.



Opening Ceremony of IIMCB.



Marta Miączyńska's laboratory, awaiting setup after she was appointed lab leader in 2005.



Research work in IIMCB laboratories in 2024.



I'm already looking forward to having more peers here. Sure, the senior lab leaders are highly knowledgeable and supportive, but it's also great to have younger colleagues to share experiences with – even just to vent about the same challenges.

Dr. Ewelina Małecka,
Head of the Laboratory
of Single-Molecule Biophysics



Here, I find it easier to secure funding and recruit PhD students of the right caliber to conduct high-quality research. Science is teamwork – I wouldn't achieve much on my own.

Dr. Aleksandra Kołodziejczyk,
Head of the Laboratory
of Cellular Genomics

A Laboratory of Talent

They are young, talented, and ambitious. In 2024, both received EMBO grants of €50,000 per year to develop their newly established laboratories. They are among an elite group of just ten scientists across Europe recognized by EMBO.

They could have pursued careers in top Western institutions, yet they chose to work at IIMCB. They knew it operated like institutes in the West. And importantly – there is strong administrative support to handle paperwork. And then, of course, there's the welcoming atmosphere.

“When I have questions, help is readily available, without jealousy or resentment. I would definitely recommend this place to young scientists as a great environment for development. There are many initiatives supporting early-career researchers, such as training programs and encouragement to gain international experience. Here at the Institute, I’m a ‘big fish in a small pond.’ It wouldn’t be as easy in the UK or Germany, where competition on well-equipped labs is much fiercer. Here, I find it easier to secure funding and recruit PhD students of the right caliber to conduct high-quality research. Science is teamwork – I wouldn’t achieve much on my own,” says Dr. Aleksandra Kołodziejczyk, Head of the Laboratory of Cellular Genomics, who has been in Warsaw for almost two years. Having lived in Israel

for a long time, she wanted to return to Europe, and in her view, Poland is now a truly good place to live.

Dr. Ewelina Małecka, Head of the Laboratory of Single-Molecule Biophysics, recalls: “When I first visited the Institute, I immediately saw that it was full of passionate scientists dedicated to their work. What convinced me to join was also the fact that evaluation here is conducted by the International Advisory Board. This means we are all motivated to maintain the highest scientific standards. It’s one of the best institutes in Poland, and it’s very well organized.”

She admits she was captivated by the Institute’s atmosphere. She receives administrative support, which is a great relief for a scientist, and she doesn’t feel overwhelmed by paperwork. She is excited about the RACE and RACE-PRIME programs, which confirm that the Institute operates at a world-class level. These grants will fund additional research groups led by young laboratory heads.

“I’m already looking forward to having more peers here. Sure, the senior lab leaders are highly knowledgeable and supportive, but it’s also great to have younger colleagues to share experiences with – even just to vent about the same challenges,” says Dr. Ewelina Małecka.

The number of employees at the International Institute of Molecular and Cell Biology continues to grow – by the end of the decade, it may exceed 300 people. Where will they all fit? “I believe that we will celebrate our 30th anniversary in our own spacious, modern building,” declares Prof. Marta Miączyńska, Director of IIMCB. ■

Reminiscences

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In September 1990, the Director-General of UNESCO, Federico Mayor Zaragoza, asked me for help in finding a country in Eastern Europe where a biological institute could be set up with United Nations Development Program (UNDP) funds. I rushed down the stairs of the UNESCO building in Paris and called from a public telephone booth Dr. Maciej Nałęcz, then a postdoc in my lab in Switzerland, and asked him if he could find any interest in this project in Poland. This call was the seed that triggered a series of reactions involving his father Maciej Nałęcz, Senior, Leszek Kuźnicki, both important scientists holding leading positions in the Polish Academy of Sciences, and politicians up to Lech Wałęsa, with whom I had a conversation during his state visit to Bern. It was in my office in Bern that I drafted the basic principles, which still exist in the statutes of the present institute. The seed of that September phone call has grown into a beautiful plant that continues to bear extraordinary fruits.

Prof. Angelo Azzi, first Director and Co-founder of IIMCB

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From the perspective of years, I believe that the establishment of the UNESCO/PAS International Institute of Molecular and Cell Biology in Warsaw was possible only thanks to a stroke of luck and incredible coincidences that will probably never happen again. (...) In 1999, the Institute became unique in terms of structure and ways of operation since it was extracted from existing structures of Polish science. (...) And all this would not matter if not the overall success of the IIMCB. The Institute attracted excellent researchers, creates top science and is one of the best scientific centers in Poland. It is the biggest award, and honor, to those who were involved in its establishment.

Prof. Maciej J. Nałęcz,
Co-founder of IIMCB

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Taking part in its creation and serving at the International Advisory Board at its beginning, it is my great satisfaction to see how the IIMCB has grown over the last 25 years to become the leading research institution in Poland. Especially important has been to introduce the best, internationally recognized, practices in hiring the group leaders and all the staff and then organizing the administration to provide excellent support for the research effort. Congratulations!

Prof. Leszek Kaczmarek,
Co-founder of IIMCB



Institute's founders and supporters in 1998.



IIMCB Retreat – Celebrating 25 Years of the Institute, 2024.

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UNESCO/IIMCB Archive (2).

From Past to Future – RACE Sets the Course

In 2023, the IIMCB initiated the “RNA and Cell Biology – from Fundamental Research to Therapies” project (acronym RACE). Our goal with this grant is to become a world-class Centre of Excellence in RNA and Cell Biology, combining scientific excellence with a strong emphasis on commercialization activities to effectively translate our research into market-ready therapies.

By 2029 we aim to reach a critical mass of 20 scientific groups with a complementary expertise in RNA and cell biology; train the next generation of world-class entrepreneurial researchers; develop sustainable core facilities tailored to industry needs; establish a professional technology transfer

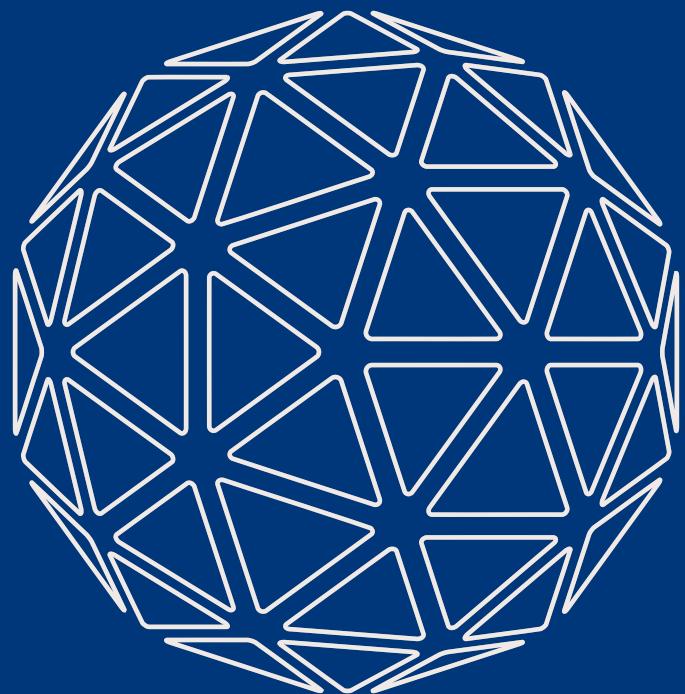
incubator; and, finally, digitalize our administrative processes. All activities to fulfill these objectives are on course and are implemented with the support of our project partners: The Medical Research Council Human Genetics Unit (MRC-HGU) at the University of Edinburgh, UK, and the Flanders Institute for Biotechnology (VIB), Belgium.

RACE is funded by a grant of nearly €15,000,000 from the Horizon Europe Teaming for Excellence program (GA No. 101059801) and was ranked first in the 2022 call. The project implementation period is from September 1, 2023, to August 30, 2029.



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