

SELF-ASSESSMENT REPORT ON THE QUALITY OF EDUCATION IN THE DOCTORAL SCHOOL

Szkoła Doktorska Nauk Ścisłych i Przyrodniczych

Uniwersytet Mikołaja Kopernika w Toruniu

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PART A

Director / Head of Doctoral School

First Name

Wiesław

Last Name

NOWAK

Email Address

director-ast@umk.pl

Doctoral School Address

City

Toruń

Voivodeship

04

Zip code

87-100

Street

Władysława Bojarskiego

Building Number

1

Premises No.

C.032

Contact

Website

<https://www.phd.umk.pl/ast/>

Email Address

ast@umk.pl

VISITING CARD

Basic Information about the Doctoral School

Year of Creation

2019

Institution running the doctoral school

Uniwersytet Mikołaja Kopernika w Toruniu

Field of Education	Education Disciplines
Natural sciences	mathematics biological sciences chemical sciences physical sciences earth and related environmental sciences astronomy
Veterinary science	veterinary science

Name/Scope of the Education Program (PL)	Name/Scope of the Education Program (EN)
Ramowy plan kształcenia w szkole Doktorskiej Nauk Ścisłych i Przyrodniczych AST UMK	Framework Education Plan for AST NCU 01.10.2019
Ramowy program kształcenia w Szkole Doktorskiej Nauk Ścisłych i Przyrodniczych	Framework Education Program for AST NCU 01.10.2021
Ramowy program kształcenia w Szkole Doktorskiej Nauk Ścisłych i Przyrodniczych	Framework Education Program for AST NCU 01.10.2023

Characteristics of the Doctoral School

The Nicolaus Copernicus University in Toruń (NCU) in 2025 celebrates its 80th anniversary. It is now operating under the Excellence Initiative - Research University programme, and it enjoys a long tradition of doctoral studies, with 5,995 persons in total having obtained their degrees by the end of 2024 (and 138 persons in 2024). As a result of the educational system reform, five doctoral schools were established at the NCU in May 2019, including the Doctoral School of Exact and Natural Sciences "Academia Scientiarum Thoruniensis", hereinafter referred to as the AST.

In the reporting period 2019-2024, 188 doctoral students are (or were) studying at the AST, including 137 on subsidy scholarships, and 51 on external grants. It is worth noting that 49 of them are foreigners (26%). They carry out projects in 7 disciplines of science: Astronomy, Chemistry, Mathematics, Biological Sciences, Physical Sciences, Earth and Related Environmental Sciences, and Veterinary Science. 30-40 doctoral students study in one year. The highest number of students study Chemical and Physical Sciences. Since its establishment, the school has been headed by Professor Wiesław Nowak (a physicist), the administration is one-person coordinated, and merit-based support is provided by the thirteen-person AST Council, which includes all deans of the faculties of exact and natural sciences at the NCU, chairs of the boards of the above-mentioned disciplines of science and a representative of doctoral students.

The AST mission is to educate young scholars at the highest possible level by including the most active and best research groups in scientific projects, by creating conditions for intellectual development, by preparing for creative research work under international collaboration and global competition. The AST prepares the best qualified academic research staff for the region, country and the world.

Our distinguishing feature is an individualised approach to the training programme, close supervisor monitoring, interdisciplinary nature of many projects, as well as strong support for international collaboration of research groups and doctoral students. We promote and support publishing research output in the best journals with global reach. We want the research and administrative staff to be student-friendly, and bureaucracy having as minor impact as possible. We conduct courses in Open Science and Open Innovations. Our doctoral students can obtain a dual degree within the YUFE consortium or other bilateral programmes. We support conducting research and presentation of research outcomes the AST mini-grants system.

Our greatest asset is the outstanding academic research staff: a group of internationally respected and recognised scholars who are proactive and willing to train doctoral students. Faculties of exact and natural sciences implement a large number of projects financed from NSC, FPS, H2020, EU grants, etc. There are two ERC grants in which doctoral students participate. The equipment and research facilities are very good at such faculties as e.g., the Faculty of Physics or the Faculty of Chemistry; and the AST budget is sufficient. Doctoral students can obtain numerous mobility grants from EI-RU or NAAE (PROM, STER, etc.). The NCU has a perfectly developed international collaboration network in Exact and Natural Sciences. It should be stressed that the NCU is open and inclusive, which contributes to integration and the exchange of ideas. Toruń, despite its intimate character as a city, delights with world-class medieval historical monuments and a truly academic ambience. Doctoral students and academic staff can attend prestigious scientific conferences and numerous cultural events. Toruń is a unique city. Well-developed transport and convenient connections to airports facilitate both domestic and international travel. The sports infrastructure is at a high level. The proximity of the Bydgoszcz campus of the NCU provides access to medical facilities. A mental well-being support centre is also in operation. Another asset of the city is its affordable accommodation, which makes Toruń a friendly place for doctoral students.

The key achievements include:

- over 30 graduates, 17 defended doctoral dissertations, a number of persons continue their academic careers (Baker Scholarships - Dr A. Pryscheba, Dr M. Skorupska)
- diamond grants/Pearls of Science - 4 persons
- a number of NCN Preludium grants.

Strategically, the development of AST should aspire towards:

1. Strengthening recruitment, i.e. acquiring the most talented candidates from Poland and abroad (information campaigns, promotion), building a strong brand and effective selection of candidates.
2. Stimulating senior academic staff members at the NCU to develop interesting, state-of-the-art and innovative doctoral projects.
3. Encouraging AST doctoral students to be more proactive in applying for external grants, e.g. NSC Preludium.
4. Maintaining a high level of internationalisation.
5. Expanding the AST offer through more frequent lectures by the most outstanding scholars.
6. Transitioning to English as the language of instruction in all courses.
7. Maintaining and developing cooperation with local entities that popularise science.
8. Improving information channels – more effective information about the possibilities of acquiring new knowledge and new skills, not only in the major discipline of science.
9. Regular collaboration in joint education and training of doctoral students with more renowned foreign universities and support for international activity of supervisors.
10. Significant increase in the number of doctoral students, relevant to the staff and equipment potential of the NCU. This concerns not only the increase in the number of grant scholarships, but also subsidy scholarships.
11. Increase in the number of implementation PhDs.
12. Obtaining and maintaining the status of the best doctoral school in the region with the population of approx. two million people (the Kujawsko-Pomorskie Voivodeship) in central Poland.
13. Maintaining and developing the awareness of the academic community and the NCU as to the critical and strategic role of educating doctoral students at the NCU due to the fact that the global science does not exist without doctoral students.

Additional Information about the Doctoral School

Educating Staff

Numerical data for the evaluation period

Educating Staff	Instructors	Supervisors	Assistant Supervisors
Number of people	95	117	69

Doctoral Students

Number of doctoral students (total): 188

Recruitment during the evaluation period	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	Total
Number of recruited doctoral students	30	32	15	19	19	22	137
Number of doctoral students who completed the doctoral school	19	11	1	0	0	0	31
Number of doctoral students removed from the doctoral student list	3	3	2	4	1	0	13

Mid-term evaluation results	Positive	Negative
Number of Doctoral Students	97	1

Educational Programs	Number of Doctoral Students
Framework Education Plan for AST NCU 01.10.2019	56
Framework Education Program for AST NCU 01.10.2021	66
Framework Education Program for AST NCU 01.10.2023	67

Additional Numerical Data on Doctoral Students

Number of foreign doctoral students	49
Number of doctoral students with disabilities	4
Number of doctoral students in the Implementation Doctorate program	8
Number of doctoral students in the EU program	2
Number of doctoral students employed by the institution running the doctoral school as academic teachers or research staff	4

Graduates

Numerical data for the evaluation period

Number of graduates who applied for initiation of proceedings for the award of a doctoral degree	31
Number of doctoral students who completed the doctoral school	17

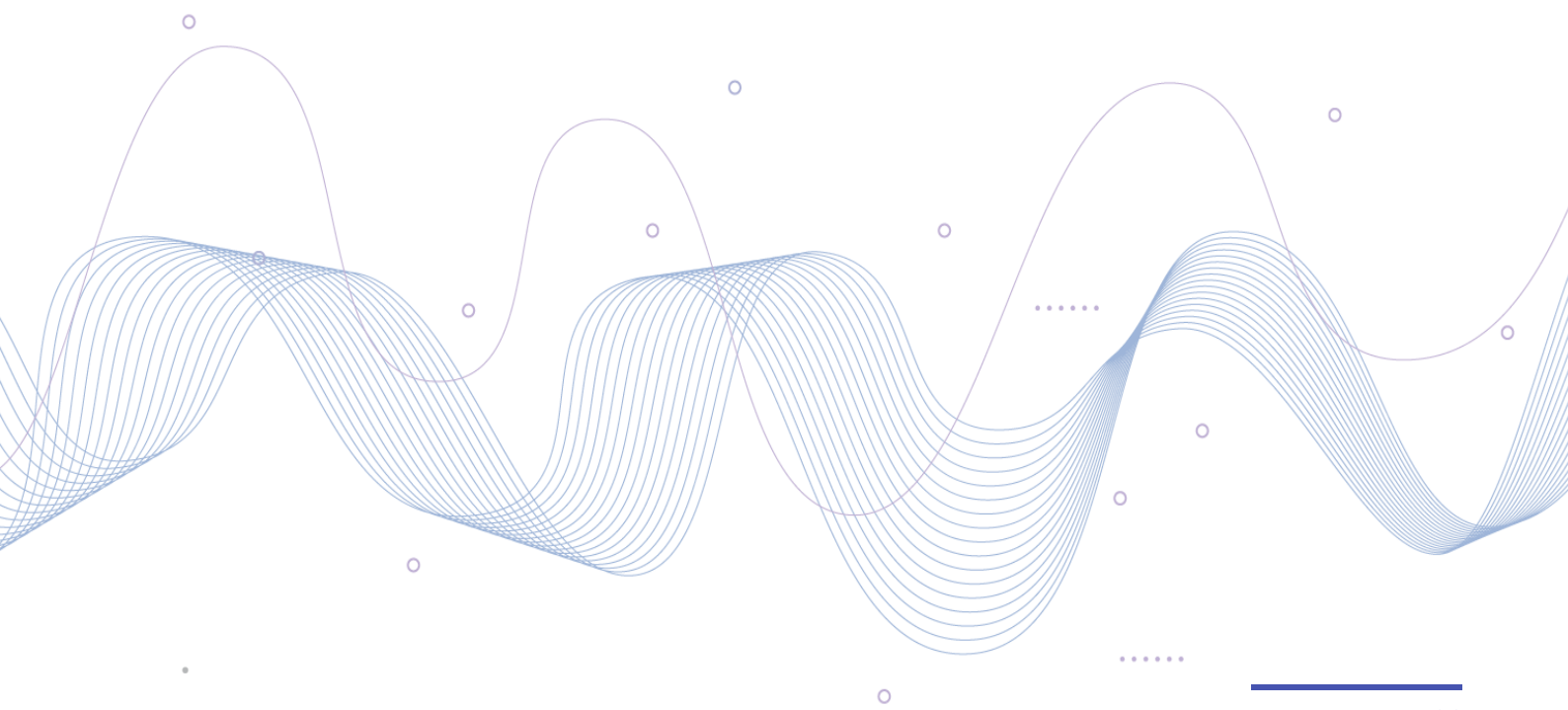
INFORMATION ON THE ENTITY'S COOPERATION WITH THE DOCTORAL STUDENTS' COUNCIL

Cooperation with the NCU's Doctoral Students' Union (DSU) is both permanent and ad hoc. Subsequent versions of the Doctoral School's Regulations (AST) were agreed on with the DSU, and it also gave opinions on such documents as the training programmes or the criteria for periodic academic staff assessment. Doctoral students are members of statutory bodies of the NCU (boards of disciplines of science, the AST Council) and ad hoc committees, e.g. for amending the NCU Statute, AST Regulations or promotion resolution. They are proactive in these bodies, and their voice is heard. Doctoral students are involved in approving course topics and course staffing in individual courses, or giving opinions on new PhD projects submitted as part of consecutive recruitments. Through the DSU, PhD students were informed about financial support, additional trainings, plans for amendments to regulations, etc. The integration event was co-funded from the AST funds and the AST Director took part in it. Prior to the new term of office of the AST Director, the candidates were agreed on with the DSU. All doctoral students could express their views, and the candidate for director in 2024 was interviewed. Ongoing contacts with the DSU were frequent, and they concerned e.g., staffing problems of the AST office or recruitment rules. The AST staff is informed about the DSU activities within the PNADC on an ongoing basis, and supports doctoral students in their activities.

The AST doctoral students are in contact with the Director and other persons responsible for the AST studies. The DSU has been allocated a budget to meet its needs. Cooperation with the DSU is assessed positively.

The analyses carried out demonstrated that the improvement of this already good cooperation with the DSU should take place primarily by including this body in the Rector's Council and transferring its matters to the Vice-Rector for Science, and this would be more relevant to the new model of education.

INFORMATION ON THE DOCTORAL SCHOOL GROUPED BY 8 EVALUATION CRITERIA



1. Adequacy of the education program and individual research plans to the learning outcomes for qualifications at PRK level 8 and their implementation

The education programme at the AST aims at the implementation of 320 class hours, including 60 h of internships, over the 4-year course of education. Education consists of three modules: Module 1 and 2 are compulsory courses, whereas Module 3 are elective courses. Module 1 covers education ensuring the achievement of learning outcomes in knowledge and hard skills. These classes are interdisciplinary in nature. Module 2 concerns knowledge and transversal skills and the skills relevant to research activity, as well as social competences, and includes the following classes:

- information science: tools for searching research and teaching resources,
- creative thinking,
- techniques for presenting results and disseminating scientific knowledge,
- workshops on organising and funding research,
- scientific writing,
- elements of copyright and patent law,
- ethics, open science and open innovation.

Therefore, Module 2 courses provide education in transversal skills and are interdisciplinary in nature, and doctoral students learn elements of knowledge from, e.g., Humanities and Social Sciences.

Module 3 is built on two specialist courses selected in agreement between the Director and the supervisor.

The programme includes internships carried out as conducting classes or taking part in the teaching process for 60 hours in the education cycle.

Supervisor mentoring is an important element of the education programme. Supervisors are responsible for an essential part of the doctoral students' education, because in the exact and natural sciences doctoral dissertations are developed through everyday contacts in teams, in which supervisors play a key role, and young scholars improve their research skills under their direct supervision: they learn, calculate, measure, prepare conference presentations and research publications, or develop grant applications.

This education programme ensures achieving learning outcomes by doctoral students, which are relevant to the learning outcomes at the PQF Level 8. Specific data as to which outcomes are achieved on which classes are specified in the "Level 8 qualifications of the Polish Qualifications Framework structure" attached.

The education programme implementation is evaluated annually by the Doctoral School Council, which is composed of its Director, deans, chairs of the boards of disciplines and a doctoral student. Each September this body selects academic staff members, which ensures improvement of the education programme implementation.

Individual research plans (IRP) are developed on a template prepared by the AST. They are ca. 6-10 pages long, and their integral part is a list of research tasks and a relevant Gantt chart with a schedule. The AST Director willingly analyses them before they are approved by the supervisor, considering the need to achieve learning outcomes for Level 8 qualifications of the PQF, and frequently recommends changes that are taken into account by the doctoral students. Quite frequently, during the course of education, the need for changes in the IRP arises as a result of recommendations expressed during the mid-term evaluation, and these changes are later introduced.

Finally, the AST organises elective courses for doctoral students, also conducted by foreign scholars. They concern other skills as well, e.g. one of these courses covered giving first aid to a person who does not speak Polish, and another one - applying for a postdoc position.

After the end of the COVID-19 pandemic, doctoral students at the AST are taking part in numerous internships abroad in the best research centres (such as Harvard University, or Cambridge University) and at home, on their own initiative, and often with the help of their supervisors, the Director and NCU organisational units. These internships are largely funded by the NCU funds, e.g. from the Excellence Initiative - Research University programme. The AST doctoral students are also eager to obtain external funding, e.g. from the National Science Centre, to finance their additional research and trips that go beyond the education programme implementation scheme and the IRP. Doctoral students make reports from the internships which frequently confirm the achievement of specific learning outcomes.

In our opinion, the implementation of the education programme and IRPs ensures that doctoral students achieve learning outcomes for the PQF Level 8 qualifications. The process of improving the education programme, so far not formalised, and based only on conversations with members of the Doctoral School Council and later discussed at its meetings, should be more efficient. To make this process more reliable, anonymous surveys among all doctoral students were introduced.

2. Method of verifying learning outcomes for qualifications at PRK level 8

Learning outcomes for the PQF Level 8 qualifications are verified by obtaining credits for courses in the education programme, including internships, and by implementing an individual research plan (IRP). Attendance at courses and classes is mandatory and checked. Clear and transparent rules for getting credits for individual courses are available in syllabi developed by the academic staff in compliance with generally accepted standards. The learning outcomes in the syllabi correspond to the PQF Level 8 qualifications and can be accessed by all doctoral students via the USOSweb system. They include not only exams verifying interdisciplinary knowledge and skills (Module 1) but also go beyond the conventional forms of credits and examinations, which allows for the verification of learning outcomes, e.g., in social competences, including tutorials. For example, while attending the course "Ethics, open science and open innovations" doctoral students take part in a business game, and during the course "Workshops on organisation and funding of research" they prepare an application for a Preludium National Science Centre grant in OSF, which then translates into a large number of AST doctoral students applying for various grants. They also deliver lectures, evaluate lectures of other doctoral students as well as they initiate and participate in discussions. The model of "non-graded credit" was adopted, owing to which doctoral students must achieve full learning outcomes and cannot limit themselves to only some of them.

The internships are subject to inspection, and doctoral students also submit reports. Credits are registered in the USOSweb system, to which doctoral students have constant access.

Each September, the Doctoral School Council analyses the recruitment process, the course and manner of conducting courses and classes, including verification of learning outcomes.

The IRP implementation is verified, i.e., the doctoral student submits an annual report, and the supervisor grants credit for the "Supervisor Mentoring" course and prepares – in compliance with the principles specified in the Doctoral School Regulations that is published on the AST website - an opinion on the progress in the IRP implementation. These documents often contain data on papers published or presented by doctoral students as in practice all AST doctoral students are co-authors of at least several scientific publications. Publication output also confirms the achievement of learning outcomes by the doctoral student. A negative opinion (both annual and ad hoc) is the reason for initiating proceedings to remove the doctoral student from doctoral students' register, which also entails determining the objective state of research implementation. When the report indicates this could be necessary, the IRP and the education organisation scheme are modified.

The ultimate achievement of learning outcomes at the PQF Level 8 by the doctoral student is verified upon completing studies at the AST, when the doctoral student submits a doctoral dissertation. Then, credits in all courses, submission of reports and the doctoral dissertation (subject to anti-plagiarism procedures) are verified along with a positive opinion of the supervisor.

In summary, the learning outcomes verification method for the PQF Level 8 qualifications is transparent and reliable, and its principles are publicly available and unambiguous. We are also taking all efforts to effectively improve these methods.

Due to the adoption of the "non-graded credit" system and being open to forms of learning outcomes verification – other than conventional examinations – which are sometimes individualised for individual courses, there is no one document considered as rules for verifying learning outcomes at Level 8 of the PQF. These are to be found in the Doctoral School Regulations (attached in a relevant file) and syllabi.

We do see the possibility of improving the method of verifying learning outcomes, e.g. in reducing the scope of courses, in which examinations are required, and increasing the role of achieving learning outcomes through scientific publications. We are planning to organise internal reporting seminars in the 4th year of the AST in a more formalised form than before. In terms of structure, we are going to establish a committee for the quality of education, which will analyse the rules of verifying learning outcomes that are included in the syllabi and will give improvement recommendations to the academic staff. We are going to organise a periodic 'retreat' for the supervisors and the academic staff, during which they could share their experiences within various disciplines. Finally, in accordance with the DIOSI/YUFE strategy, we are considering the introduction of a mentor to help doctoral students pursue a scientific/professional postdoc career.

3. Qualifications of academic teachers or research staff conducting education at the doctoral school

The NCU has strong scientific traditions, outstanding scholars and researchers teaching at the AST. This potential is evidenced by e.g., (a) the number of senior academic staff members (including full professors, numbers in brackets) - members of boards of disciplines of science (as of 01.2025): Astronomy 12 (4), Biological Sciences 44 (13), Chemical Sciences 43 (12), Physical Sciences 42 (15), Earth and Related Environmental Sciences 20 (4), Mathematics 22 (4), Veterinary Science 19 (9); (b) significant numbers of implemented NSC, NRDC and EU grants, and even 2 ERC grants; (c) holding Category A in most disciplines represented in the AST; (d) strongly developed international collaboration.

The academic staff from the faculties of Exact Sciences and Natural Sciences has largely contributed to the NCU becoming a research university (EI-RU). Members of these disciplines are in all four centres of excellence and numerous teams within Emerging Fields that are additionally funded from the EI-RU budget. The academic staff at the AST can be divided into two overlapping categories: (1) supervisors – approx. 100 persons in total; (2) academic teachers – lectures and workshops (approx. 40 persons). A separate category includes academics from other centres who conduct lectures, seminars or research workshops.

In terms of the first category, every senior academic staff member can submit their research proposals for PhDs (in May) for implementation at the AST. Persons who have just been granted the title of Doctor Habilitatus and are very dynamic in their research, are particularly encouraged to submit proposals. The quality of proposals and profiles of prospective supervisors are assessed by the AST Council in terms of the research policy of faculties, research subjects and competences of the senior academic staff and also assistant supervisors. The majority of proposals submitted by Dr Habil./ Professors are accepted and announced so that candidates could apply (in June) to the AST. Research proposal forms include information that allows to assess scientific activity of the proposal's author, his/her experience in supervising doctoral dissertations, as well as failures and difficulties in providing academic supervision.

Usually, the number of proposals (except Astronomy, Veterinary Science, Mathematics) significantly (five times) exceeds the number of available scholarships in a given discipline. Proposals' authors are appointed as supervisors of persons admitted to the AST and conduct individual tutorials for 4 years, i.e., supervisor mentoring, which is critically important in achieving most of the learning outcomes. Supervisors are responsible for ongoing monitoring of the doctoral research progress, publications, the education process and course credits. Every year, they provide their opinions in the doctoral students' reports; this is particularly important in the 2nd year, prior to the mid-term evaluation. The AST Director has issued relevant regulations specifying the supervisor's duties. Supervisors can develop their training skills under numerous projects at the NCU, e.g. the MODULE4NCU in 2023/24, or in previous years - trainings on combating mobbing.

The selection of the academic staff (the second category) is made, following discussions and analyses, in agreement with the AST Council and the Vice-Deans for Education at individual faculties in order to make the best possible choice. Courses in Module 1 - the so-called course lectures – are worth paying attention to as they are usually conducted by professors with many years of teaching experience and significant research achievements who are active in scientific research and grants (e.g. Professor B. Buszewski, Professor R. Ciuryło, Professor G. Bobiński, Professor K. Katarzyński). Soft skills are trained due to the commitment of scholars with special experience, e.g. in interdisciplinary projects (interdisciplinary tutorials – Professor W. Duch, Professor W. Kujawski, Professor W. Nowak), extensive experience in speaking at conferences (Professor A. Szydłowska-Czerniak, Professor W. Duch, Professor S. Maćkowski), and expert experience in research funding from the NSC (Professor S. Maćkowski, Professor Wojciechowski, Professor J. Łukaszewicz). Copyright courses are conducted by an expert from the Faculty of Law and Administration (Dr K. Krupa-Lipińska, a patent agent); courses on research ethics – by a collaborator of a well-known expert on plagiarism, Professor Marek Wroński; open innovation courses – by Professor (in Economics) D. Grego-Planer, trained under the EU H2020 DIOSI project. Creative thinking is stimulated by an expert from the Faculty of Humanities (Professor R. Moczko). Workshops on science information mining are held by a long-time leader of research teams and grants, also international ones (Professor W. Nowak). In annual reports, doctoral students can comment on the quality and usefulness of the courses they attended, and their responses are analysed. Starting from 2024/25, an all-university system of anonymous evaluation will be implemented in the AST. Selecting courses from Module 3 is based on trust in supervisors, because these courses are very specialist, and specific to the dissertation's subject, and in Vice-Deans who assign competent persons to conduct monographic lectures or advanced courses. Choosing courses on the English language – which are sometimes selected by doctoral students within Module 3 - is organised in a similar way.

As regards courses conducted at foreign universities under several dual degree procedures implemented at the AST, the analysis of the course quality is based on trust and cooperation with renowned foreign universities.

Internships (60h) are monitored by supervisors. If necessary, other experts inspect classes conducted by the AST doctoral students.

As to the areas of individual competences development of the academic staff teaching at the AST, the following issues should be considered:

- (1) The NCU staff constantly broadens their knowledge by contributing to the international scientific community, publishing in renowned journals, and attending numerous internships, conferences and congresses.
- (2) Some of the junior academic staff attend schools and workshops.
- (3) In practically all disciplines, regular (e.g. weekly) open science seminars are held, and outstanding Polish and foreign experts are invited to give their presentations. These events are attended by supervisors and AST doctoral students who want to self-learn and exchange information.
- (4) At the NCU, opportunities to take part in interdisciplinary events and exchange experiences among supervisors occur regularly.

As for the aspects requiring improvement, it is necessary to mention poor information return provided by doctoral students on the quality and usefulness of the courses they attended. In this respect, actions to improve this tendency are to be implemented.

4. Quality of the recruitment process

The recruitment rules for the AST are specified in Resolution No 13 of the NCU Senate of 30.03.2021 on the recruitment rules for candidates for the Doctoral School of Exact and Natural Sciences of the NCU in Toruń. They are published, e.g. in the University Legal Bulletin, Public Information Bulletin (BIP), Online Recruitment of Candidates (IRK) and on the AST website. The Doctoral School Regulations and the education programme are published in a similar way. Detailed information about the AST operation can also be found on its website.

In April, the academic staff interested in being supervisors prepare a proposal on a relevant form in English, also taking into account their experience in training doctoral students, grants obtained and publications. The Doctoral School Council, consisting of the Director, deans, chairs of boards of disciplines of science and a representative of doctoral students, evaluates the submitted proposals. Their number varies significantly between disciplines - from 50 in Physical or Chemical Sciences to 1 in Astronomy. Descriptions of accepted proposals are made public. Candidates are encouraged to contact potential supervisors before recruitment, which reduces the risk of personality conflicts during education. The recruitment procedure is conducted by the Recruitment Committee appointed for 2 years, which gathers representatives of all disciplines of science studied in the AST. This mechanism ensures an interdisciplinary approach, and recruitment is carried out by experienced persons who do not have to learn this again every year, owing to which, e.g., they know the quality of the candidates. Candidates submit documents as required in the list. The AST verifies the completeness of documents and, if necessary, asks for supplementing them. The next stage are interviews of candidates, which are conducted by five-person committees consisting of the Director or a designated person, 2 members assigned to a given discipline of science, 1 member assigned to another discipline and the author of the proposal. When appointing the Committee, efforts are made to avoid any conflicts of interest. A representative of doctoral students may participate in the interviews as an observer. The interview lasts 1 hour, and usually is held in July. Since 2020, interviews have been held remotely, which increases the chances of foreign doctoral students. The interview format is well-established and published on the AST website: The Chair introduces the members of the Committee, asks about the choice of the interview language (Polish or English) and asks the candidate to describe their latest research project, e.g. a Master's thesis, in a popular science way. The next question is asked by the author of the proposal about the subject of research the candidate would focus on. The Committee members then ask the candidate questions about their knowledge of both the discipline to be studied and other disciplines (a question is asked by a member not allocated to this discipline as this ensures the interdisciplinarity of the recruitment procedure). Finally, the Director asks questions verifying the candidate's motivation to carry out the proposal. Then, without the candidate present and without the author of the proposal present, the Committee evaluates the interview and the candidate's scientific output (publications, grants, internships, awards, academic results) on a scoring scale. Regardless of the ranking list, a prerequisite for admission to the AST is to obtain at least 50% of the points, which is not achieved by approx. 20-30% of candidates. Finally, the Recruitment Committee decides on admission or refusal to admit to the AST, and a reserve list is created. Interviews are held in July, and the Committee makes every effort to ensure that the procedure does not take too long, so that foreign PhD students could apply for a visa and be in Poland in October to start their studies.

Candidates have the right to request a reconsideration of their cases, and then the Committee, composed of different members, is considering them. So far, in one case such a request has been accepted (during the first consideration of the case, one document was overlooked). Decisions issued as a result of reconsideration are credible and duly justified, as evidenced by the fact that no complaint against this decision has been filed with the administrative court during the AST's operation.

The number of candidates whose scholarships are funded from grants has varied from 15 to 32 per year since the AST was established, while 2-3 persons often apply for appealing proposals; once several persons applied for one proposal.

The Doctoral School also recruits a significant number of candidates whose scholarships are funded from external sources. Differences in recruitment procedures include: conducting them at any time of the year, participation of the grant PI in the Committee, and application of procedures required by the funding institution, e.g. the National Science Centre.

In the event that a person with a disability applies for admission to the AST, the Committee in compliance with the recruitment rules and at this person's request, and in agreement with the University entity responsible for issues of doctoral students with disabilities, follows a different procedure that takes into account the candidate's degree of disability.

The recruitment rules have been changed only once so far - the aforementioned resolution of 2021 repealed the resolution of the University Senate of 28.05.2019.

In summary, internal legal regulations regarding the operation of the doctoral school and recruitment rules are made available to the public and are of high-quality. The recruitment rules are unambiguous and transparent, owing to which the competition for proposals is reliable, transparent and fair, thus ensuring equal treatment of candidates for the AST, both from Poland and other countries. It allows for a thorough verification of the candidates' predispositions to conduct scientific research. It also recognises the needs of persons with disabilities. We invest a lot of time and effort into it, and many persons are involved – despite organisational difficulties – because a good candidate usually later becomes a good doctoral student.

Greater attention should be paid to the criterion of timeliness of publishing recruitment rules in the BIP. This will require more diligence in the future. We will also have to be more committed to actions undertaken to improve the recruitment procedure, the rules of which have been changed only once in the 6 years of the AST's operation. We also see the need – considering the growing number of candidates – to change the recruitment rules so that a candidate who receives too low score at the document verification stage is not approved for an interview.

5. Quality of scientific or artistic supervision and support for conducting scientific activities

The AST specificity is the doctoral system based on previously announced research proposals resulting from grants obtained (NSC, EU, others) or proposals under the recruitment system in individual disciplines. Principal Investigators or investigators in research projects are appointed supervisors. The selection of projects is careful and the NCU ensures that senior academic staff members are renowned scholars. Information on the activity/quality of prospective supervisors is submitted with the proposal. This includes: (a) grants obtained in the last 5 years, h-index (GS, Scopus), number of citations, FWCI-SciVal, the list of 4 key publications in the last 4 years, list of doctoral students awarded with doctoral degrees (titles of dissertations, years), list of currently held supervisions and international collaborations.

The supervisor/ assistant supervisor appointment procedure is pursuant to Art. 16 Section 6 in relation with Art. 16 Section 1 of the Doctoral School Regulations (DSR). If the candidate selects one of the research projects to be implemented, then the Director appoints the PI of this project as the supervisor.

The circumstances and ways of changing the supervisor are regulated by Art. 17 of the DSR. If needed, the Director, after seeking the opinion of the chair of the relevant board of disciplines: 1) changes the appointed supervisor or assistant supervisor; 2) dismisses one of the appointed supervisors or assistant supervisor; 3) appoints a second supervisor or assistant supervisor. In the event of: (1) the supervisor's death; (2) factual circumstances that prevent or significantly impede the supervisor from carrying out supervision; (3) the supervisor losing the right to carry out supervision - the Director calls upon the doctoral student to re-submit the application referred to in Art. 16 Section 1 of the DSR within 14 days of the date of the call for re-submission. In the event of failure to submit the application on time, the Director, after seeking the opinion of the chair of the relevant board of disciplines, appoints ex officio a new supervisor. This system ensures the doctoral student has the say in terms of whom they want to supervise their further research. Since 2024, during the mid-term evaluation, an assessment of the supervision has been ongoing as well, and a negative outcome leads to a change of the supervisor, and when it is repeated – to a formal ban on being the supervisor. Even when the outcome is positive, recommendations may be made as to modifications to the supervision methods.

In the AST's opinion, the system based on specific doctoral projects, supported by an analysis of the research staff achievements, facilitates high-quality doctoral dissertations and ensures synergy of doctoral student-to-supervisor interactions. The system was developed out of interdisciplinary discussions held at the NCU, and no objections were raised.

When submitting the IRP, the AST requires a description of the support that the supervisor intends to provide to the doctoral student. Submitting a doctoral proposal is equivalent to the supervisor's declaration on providing appropriate research facilities, access to equipment and reagents. The supervisors' mentoring duties have not been specified in the documents, but a relevant regulation was issued by the AST Director. The key requirements for supervisors are:

1. providing the doctoral student with substantive and organisational support in the IRP implementation,
2. ensuring that research activities specified therein are adequate to the learning outcomes for the PQF Level 8 qualifications,
3. ensuring that supervisor mentoring takes into account the criteria needed to achieve the PQF Level 8 qualifications,
4. providing assistance in developing an individual study plan,
5. ensuring the interdisciplinary nature of the education process
6. ensuring that the IRP considers the internationalisation factor.

The supervisor and the doctoral student start intensive collaboration at the NCU, which is to enable the doctoral student's research development and the best possible development in transversal competences. The supervisor is to support the doctoral student in their functioning within the academic community, and high quality of collaboration should be based on rules of ethics typical of the mentor-trainee relationship. Thus, actions are undertaken to increase the awareness of supervisors and doctoral students.

The AST Director constantly monitors the supervision quality and responds to any (few so far) complaints or information in this respect. The benchmark for the supervisors' work evaluation are (positive) mid-term evaluation results, systematic progress in the number of doctoral students' publications, new projects or initiatives to do internships in foreign centres. Supporting doctoral students with additional periodic scholarships from EI-RU or NSC funds, as well as encouraging participation in mobility programmes, is a value added.

Conflicts can be resolved at the NCU due to academic mediation, and in the AST conflicts are rare. They are resolved through the Director's mediation, and in more serious cases, a relevant procedure is implemented. Doctoral students know about the Academic Ombudsman and also receive periodic messages about the possibility of using the mental well-being support centre.

The fundamental AST-provided support in the training programme implementation is to ensure that the offer is up-to-date and that planning the IRP can be flexible. In order to optimise the time allocated for doctoral students to participate in courses, these are held in blocks or online. The AST set up a special workplace for a disabled PhD student in Chemistry. The NCU makes buildings accessible to persons with disabilities, recently a lift has been installed in the Faculty of Physics' building. Doctoral students who are parents are provided with special care.

Occasionally, the AST organises lectures for doctoral students given by outstanding foreign experts, e.g. Professor B. Lapied (France), Professor A. Roitberg (USA), and Professor K. Kuczera (USA). Activity in this area is moderate due to the fact that

doctoral students regularly attend weekly seminars by outstanding foreign guests, e.g. at the Institute of Physics.

The AST financially supports research through a system of mini-grants (3-5 per year): each doctoral student can apply for funds in the amount of PLN 5,000-6,000 for conferences, internships, trainings, research in another centre, purchasing necessary reagents, etc. Grants are allocated by a five-person committee. During the year, several hundred thousand PLN is spent.

The AST is going to set up a forum for supervisors to exchange experiences and good practices. There are many assistant supervisors in AST, which results from the needs of experimental disciplines, but it is also an element of the policy of introducing junior scholars to such responsible tasks as mentoring doctoral students.

6. Integrity of the mid-term evaluation process

The mid-term evaluation is very important for the AST success. Information about its significance is provided to doctoral students and the academic staff. The mid-term evaluation is carried out in compliance with provisions of the law, and takes place in the mid-training period, which in practice is the last month of the 2nd year for most doctoral students.

The principles of evaluation are specified in Chapter 6 of the Doctoral School Regulations (DSR). Each doctoral student, upon starting their education, submits a declaration that they have read the DSR and will comply with them.

The mid-term evaluation takes place in early September. Doctoral students prepare reports on the IRP implementation in due time, with information on successes in obtaining credits for courses; this information is not taken into account in the evaluation. The list of all data and documents required is specified in Article 31, Section 3, of the DSR, which are available on the AST website. Doctoral students are informed of the upcoming evaluation several months in advance.

The IRP implementation is subject to the mid-term evaluation which is carried out on the basis of documents submitted by the doctoral student confirming the IRP implementation and interviews between the doctoral student and members of the Committee. The mid-term evaluation criteria are qualitative and determined on a case-to-case basis. They depend on the subject area, discipline and nature of the research work conducted. They take into account the degree of advancement of the IRP, e.g., published research papers, conference presentations, patent and grant applications. Reports are verified for completeness and quality of description. The AST strives to ensure that the IRP tasks are "verifiable" and as precise as possible. Doctoral students are encouraged to describe their failures and explain their causes in their reports. Reports are collected in June and July, and in August (as scans) are sent to the members of the mid-term evaluation committee. The three-person committees are appointed by the School Director, in consultation with the chairs of the boards of disciplines. The board chairs can also be members of the committee. In disciplines with lower numbers of doctoral students (e.g. Astronomy, Veterinary Science, Mathematics) one committee is established, and in disciplines such as Chemical Sciences or Physical Sciences several committees are in operation, depending on the number of doctoral students and subject areas of dissertations. Each committee is composed of a professor from a given discipline, with outstanding achievements, and from a centre other than the NCU. Efforts are made to select experts from the most renowned Polish universities such as the University of Warsaw, the Jagiellonian University, the University of Gdańsk, Adam Mickiewicz University, the Polish Academy of Sciences (Institute of Mathematics, Nencki Institute). The committee also includes recognised experts or academic teachers from the NCU. Relevant procedures are implemented to avoid potential conflicts of interest.

The competences of individual experts are verified by the chairs of the boards of disciplines and the AST Director relying on publicly available data from websites and scientometric databases as well as their experience. The assignment of doctoral students to a given committee is based on the subject of the doctoral dissertations, e.g. committees composed of theoreticians evaluate doctoral students implementing projects in theoretical physics. Committee members also receive relevant IRP scans. Committee meetings have been held remotely since COVID-19, and this online procedure is coordinated by the committee chair who is always appointed from among NCU professors for organisational reasons. The committees have internal discussion on each doctoral student (one committee evaluates 3-5 persons), listen to short presentations of doctoral students (10-15 min) and ask questions at their own discretion. Committee members are requested to accomplish two objectives that will help doctoral students: 1. Evaluate the progress and real chances of completing the doctoral dissertation within the time expected; 2. Provide substantive recommendations on how to improve the dissertation. The minutes and a resolution are the result of the meeting. The evaluation is either positive or negative, and this outcome, along with the justification, is public. Doctoral students and supervisors have access to these documents. A doctoral student may appeal against a negative evaluation outcome to the Rector.

All committee meetings organised so far have proceeded as scheduled, without any technical problems. In principle, almost all AST doctoral students who took part in the evaluations received positive outcomes. One doctoral student got a negative outcome, and the committee extensively explained the decision. This student was removed from the doctoral students register and did not appeal against this decision.

Mid-term evaluations may have a stressful, yet a motivating effect on doctoral students. These evaluations are a positive innovation in the doctoral education system. Doctoral students in off-the-record interactions did not raise any objections as to the mode in which evaluations are held. The Director at times received very positive comments from external members of the evaluation committees who were pleased with the quality of some doctoral students.

The evaluation process is an organisational challenge, and the one-month advance period for informing the doctoral student about the date of the meeting could not always be met in practice. However, doctoral students know about the approximate date (a given week in September) months in advance. This aspect of evaluation should be improved. Introducing an evaluation score form, already applied by some universities, is also under consideration. This may provide a slightly more effective feedback for the doctoral student and supervisor.

High evaluation efficiency may give rise to a conclusion that it is too liberal. Sometimes, after the mid-term evaluation, promising doctoral students lose their enthusiasm and do not make any progress. Such situations should be openly reported by supervisors already at the stage of preparing the opinion for the committee. It should also be emphasised that several persons (3-4) resigned from studying at the AST due to the incoming evaluation and poor chances of getting a positive outcome. In the AST evaluation, imposing rigorous quantitative requirements (e.g. minimum 1 first-author publication) or quantitative ones (e.g. minimum 100 points from publications) for such an evaluation would be a mistake. Completing a doctoral dissertation is a high-risk, non-linear process and it is impossible to develop universal measures to evaluate Mathematics, Veterinary Science or Chemical Sciences. Therefore, numerous discussions are held with supervisors and experts making the evaluation.

7. Internationalization

The AST pays special attention to supporting academic teachers and doctoral students in the internationalisation process through developing a system of incentives to participate in international conferences or research internships abroad. Due to the fact that approximately 150 academics teach or supervise courses in the AST, 20 randomly selected persons from various disciplines were approved for the assessment of mobility activity (research trips abroad). Of this group, only 5 persons have not gone anywhere in the last five years, which means that 75% of the staff is mobile and actively contribute to international exchange. Those members of the academic staff who cannot travel abroad conduct effective international collaboration via the Internet. In this group, there are 6 persons who have had 10 or more trips (over 2 per year), and the record holder had 34 in 5 years. Taking this sample as average, it can be said that a person teaching at the AST has approximately 1-2 trips abroad per year.

At the NCU, mobility programmes for the academic staff are regularly available under the EI-RU programme, and some academics at the AST take advantage of this opportunity. Academic staff trips related to research activity in international grants and consortia are relatively numerous, e.g. at the Faculty of Physics, two staff members from the AST are Principal Investigators in prestigious ERC grants. The AST Director is a member of the committee that reviews applications for travel under the EI-RU. Doctoral students at the AST have also used the NAWA-PROM programme many times. The AST was involved in developing the application and implementation of the NAWA STER mobility programme. Under this programme, foreign lecturers were invited to provide short workshops (4), and long-term scholarships (1 semester) were awarded - in a competition - for internships at foreign universities (including 1 person from the AST).

In the AST, foreign supervisors were appointed alongside local ones in several cases. The AST doctoral students have an opportunity to regularly participate in seminars and lectures, with outstanding foreign professors, that are organised at faculties.

Internationalisation is included in the education programme and the individual research plans, in which doctoral students identify key areas of international research activity, including mobility or publications. Approximately 10-15 persons have won travel grants under the EI-RU programme for one-month or longer internships over a period of 4 years. Several persons are working on dual doctoral degrees and spend longer periods at partner universities. A significant number of doctoral students attend foreign and domestic scientific conferences that are funded from the AST mini-grants, and it is possible to go more than once. This amounts to several dozen persons per year from the AST. Almost all persons who completed their studies at the AST also completed research stays abroad (internships or conferences). It is worth noting that one of the doctoral students regularly travelled for research internships to Harvard University (USA), while another to CERN (Geneva), and one of the doctoral students completed a one-month internship at Cambridge (UK). The AST supported a number of doctoral students' trips to Lake Balaton to study mussels or Spitzbergen (climate change).

At the AST, 26% of doctoral students come from other countries, therefore, correspondence has been conducted in English for a long time. Before arriving in Toruń, doctoral students read the approx. 100-page-long guide for doctoral students (in English) developed under the NAWA-STER programme. The guide is updated every year. After arriving in Toruń, they are taken care of by their prospective supervisors and the AST office. Additionally, there are persons at the faculties who, as part of their volunteer work, help foreign doctoral students adapt to life and work in Toruń. Since 2024, the Copernicus Integration Centre has been in operation, which helps foreign doctoral students in various ways, including everyday life. They usually stay in student residence halls and/or teacher residence halls (these are also available for Polish doctoral students). This is a popular, practical and cost-efficient type of accommodation. Mutual support of the doctoral students' community, which results from integration activities, is worth noting. Courses are conducted in English. The University also organises integration events (e.g. cuisines from around the world). An integration trip to the Astronomical Observatory in Piwnice is scheduled soon. The Doctoral Students Union organises integration meetings for doctoral students that are financially supported by the AST. During several workshops organised by the AST, care was taken to ensure that the catering considered specific dietary needs of foreigners (e.g. related to cultural or religious aspects). The AST strongly supports the efforts of foreigners to obtain TRCs – temporary residence cards – on time; at the AST's initiative, a meeting of the NCU authorities with the Vice-Voivode on this matter was held. The AST promotes and supports contacts between doctoral students and foreign supervisors. Three doctoral students are implementing a Dual Degree Programme. The implementation of such projects is still not popular due to formal and legal difficulties.

The key form of increasing the AST's recognition is annual paid advertising in the SEMESTR magazine (in English), which distributes its paper versions in Poland, but has an extensive database of email addresses. Calls for proposals funded from external grants are published in the Euraxess popular database and on the Committee for Scientific Research website, which is effective. Information leaflets about the AST's offer have also been prepared. In addition, the AST authorities encourage the academic staff and doctoral students to put leaflets on noticeboards whenever they attend international conferences.

In summary, the NCU's collaboration with foreign centres in Exact and Natural Sciences is very good. The EI-RU programme provides great opportunities for further development of this collaboration. All mobility funds are effectively used. Doctoral students at the AST are eager to contribute to international exchange. The presence of several dozen doctoral students from other countries (India, Iran, Türkiye, France, Spain, Ukraine, the Philippines, Morocco) creates an atmosphere of working in the global world. This high level of internationalisation results in numerous scientific publications co-authored with foreign authors.

8. Effectiveness of doctoral education

Percentage of individuals who obtained a doctoral degree	Doctoral students who applied for initiation of proceedings for the award of a doctoral degree	Doctoral students who were awarded a doctoral degree	Doctoral students who were denied the award of a doctoral degree
in the number of doctoral students who completed their education at the doctoral school during the evaluation period	100 %	55 %	0 %
in the total number of doctoral students who completed their education at the doctoral school	89 %	49 %	0 %

All AST doctoral students submitted their dissertations within the deadline specified in their IRP, if necessary extended under the Doctoral School Regulations, mainly due to the COVID-19, by 6-12 months (only a few of them later). Many doctoral procedures are ongoing, while the doctoral degree has not been refused in case of any of the completed procedures. The dissertations often are a series of publications in scientific journals, thus there is a very strong connection between the research activity of doctoral students, their achievements and the dissertation quality.

The number of publications of the AST doctoral students is approx. 200 per year, including publications in indexed journals (for 200 points). Doctoral students obtained 7 NSC Preludium grants and developed several patent applications. Doctoral students evaluate the AST studies quality every year by submitting reports on the IRP implementation on the School's in-house forms that provide space for their comments on the course of study. However, students are more willing to express their opinions in informal conversations: they are generally satisfied with their education and training, and critical comments concern the purpose of some courses and minor organisational issues which are promptly improved, whereas the purpose of courses is discussed by the AST Council once a year.

Due to the early period of the School's operation, it has not yet been possible to follow professional careers of our graduates. In summary, the effectiveness of doctoral education at AST is excellent. The need to extend the deadlines for submitting doctoral dissertations mainly resulted from the COVID-19 pandemic, which is now over. To some extent (as to the results of doctoral procedures and following professional careers) the evaluation is not possible due to the early stage of doctoral schools' operation. In order to improve the education process, we are going to survey our doctoral students after they complete their courses.

1. physical sciences

Achievement Description

PhD candidates in PHYSICS are laureates of numerous grants, such as NCN Preludium and "Perły Nauki" (PN, Pearls of Science).

Examples:

2024:

"Cold Collisions in Rb-Hgmixture: effect on ultranarrow optical transitions". Linek Adam.

" Multiphoton absorption in dye centers in diamond", Anarthe Anuradha Arun.

2023:

"Development of ultraprecise molecular spectroscopy for fundamental physics", Stankiewicz Kamil (PN).

"Modeling of nitrogen induced perturbations of fine structure transition shapes in molecular oxygen" Gancewski Maciej (PN).

2022:

„Nonlinear Rabi frequencies in polar systems", Gładysz Piotr.

2020:

„New methods of description of collisional effects in molecular optical resonances and their applications in optical metrology”. Stolarczyk Nikodem (DG).

„Collisional effects in spectroscopy of exotic atoms: ab initio calculations for testing fundamental physics”, Hubert Jóźwiak (DG).

Former AST doctoral candidate Hubert Jóźwiak is co-author of 37 papers (H-GS=13), he was a laureate of START FNP 2023 grant.

Former AST doctoral candidate Nikodem Stolarczyk had long-lasting cooperation with Harvard Univ.(several research visits).

High impact factor papers co-authored by AST PhD students (in bold):

1. “Dispersive heterodyne cavity ring-down spectroscopy exploiting eigenmode frequencies for high-fidelity measurements”; A. Cygan, Sz. Wójtewicz, Hubert Jóźwiak, G. Kowzan, Nikodem Stolarczyk, K. Bielska, P. Wcisło, R. Ciuryło and D. Lisak; *Science Advances* (IF=12), 2025, Vol 11, Issue 5; DOI: 10.1126/sciadv.adp8556;

2. “A critical evaluation of the hybrid KS DFT functionals based on the KS exchange-correlation potentials”; Kumar Vignesh Balaji, Śmiga Sz., Grabowski I., *Journal of Physical Chemistry Letters*, 2024, vol. 15, nr 40, s.10219-10229. DOI:10.1021/acs.jpclett.4c01979 (IF=4.8);

3. Guo, J., Berdychowska, J., Lai, Q., Meng, Y., Cheng, Z., Peplowski, Ł., & Zhou, Z. (2022). „Toolbox” construction of an extremophilic nitrile hydratase from *Streptomyces thermoautotrophicus* for the promising industrial production of various amides. *International Journal of Biological Macromolecules*, 221, 1103–1111. doi.org/10.1016/j.ijbiomac.2022.09.071 (IF=7.7).

2. astronomy

Achievement Description

Astronomy

PhD students in astronomy are particularly active in popular presentation of science. They visit European observatories and participate in international grants.

Selected papers:

(1) “A Keplerian disk with a four-arm spiral birthing an episodically accreting high-mass protostar” R. A. Burns, ..., M. Durjasz, ..., T. R. Hunter & X. Chen ; *Nature Astronomy* vol 7, pages 557–568 (2023)

(2) Kirsten, F., Ould-Boukattine, O. S., Herrmann, W., Gawroński, M., Hessels, J. W. T., Lu, W., Snelders, M. P., Chawla, P., Yang, J., Blaauw, R., Nimmo, K., Puchalska, W., Wolak, P., & van Ruiten, R. (2024). “A link between repeating and non-repeating fast radio bursts through their energy distributions”. *Nature Astronomy*, 1–19. <https://doi.org/10.1038/s41550-023-02153-z>

(3) „Charting the main sequence of star-forming galaxies out to redshifts $z \approx 5.7$ ”, Koprowski Maciej P., Wijesekera Jude, Dunlop James S. [in.], *Astronomy & Astrophysics*, 2024, vol. 691, s.1-12, DOI:10.1051/0004-6361/2024499

3. mathematics

Achievement Description

A number of PhD students in mathematics is small, but they have some achievements:

(1) Bieganowski Bartosz, Konysz Adam, Mederski Jarosław, *Nonlinear Analysis-Theory Methods & Applications*, 2025, vol. 255, s.1-14, No:113756. DOI:10.1016/j.na.2025.113756

(2) Łukasz Kotlewski, złoty medal na międzynarodowych zawodach matematycznych w Katowicach 2024.

(3) Kamil Dunst; PRELUDIUM-22 grant . „Izolowane osobliwości półliniowych równań eliptycznych z operatorami Fellera: podejście probabilistyczne”; Amount: 114 680 PLN. Period: 06.08.2024 – 05.08.2027.

(4) Tomasz Ciborski; Derived equivalences for the derived discrete algebras are standard", Grzegorz Bobiński, Tomasz Ciborski; article submitted to *Journal of Algebra*, arXiv: 2409.05158

(5) Tomasz Ciborski: International Conference on Representations of Algebras (ICRA 21, 2024), 31.07-9.08.2024 r., Szanghaj (Chiny), lecture: "Derived equivalences for derived discrete algebras of infinite global dimension"

4. earth and related environmental sciences

Achievement Description

PhD candidates pursuing their degree in Earth sciences are engaged in KBN grants and international projects, for example, Kamil Czarnecki MSc participated in numerous expeditions in Arctica. They study important aspects of global climate change and history of floods. Mr Babak Ghazi successfully got his PhD in 3 instead of planned 4 years.

(1) Ghazi, B., Przybylak, R., & Pospieszyńska, A. (2023). "Projection of climate change impacts on extreme temperature and precipitation in Central Poland". *Scientific Reports*, 13, 1–13. <https://doi.org/10.1038/s41598-023-46199-5>

(2) "Topography affects the natural forest recovery on inland dunes in Central Europe"
Sewerniak Piotr, Chabowska Natalia, Kunz Mieczysław [i in.], *Annals of Forest Research*, 2024, vol. 67, nr 1, s.3-18.
DOI:10.15287/afr.2024.2875

(3) Dutt Sanjana, Kumar Batar Amit, Sulik Sławomir, Kunz Mieczysław: "Forest ecosystem on the edge : mapping forest fragmentation susceptibility in Tuchola Forest", Poland: *Ecological Indicators*, vol. 161, 2024, Numer: 111980, s. 1-15, DOI:10.1016/j.ecolind.2024.111980, 200 punktów, IF(7)

5. chemical sciences

Achievement Description

PhD Students in chemistry are very active in conferences and international scientific exchange. Quite a few "Implementation Theses" are prepared in chemistry. (i.e.. Boryszew, recently POLMLEK, ORLEN). They are co-authors of several calls for patents. Many PhD students in chemistry are fully funded from grant money, a few got their own research grants.

2023:
„Active packings for food - innovative recycling)". Tymczewska Alicja (Perls of Science);

2022:
„Design of new nanomaterials based on CuN for effective reduction of CO₂". Ścigała Aleksandra, 2020;
„Synthesis of graphene foams with various applications". Skorupska Małgorzata;

Selected papers:

(1) "Theory cracks old data : rovibrational energy levels of ortho H₂-CO derived from experiment"
Stachowiak Marcin, Grabowska Ewelina, Wang Xiao-Gang [i in.], *Science Advances*, 2024, vol. 10, nr 8, s.1-7. DOI:10.1126/sciadv.adj8632

(2) "Hydrazidomethyl starch as a pH-sensitive coating for magnetic core in tailored magnetic nanoparticles with selective doxorubicin release"

Nowak Paweł, Ilnicka Anna, Ziegler-Borowska Marta, *International Journal of Biological Macromolecules*, 2024, vol. 283, s.1-11, Numer artykułu:137716. DOI:10.1016/j.ijbiomac.2024.137716

(3) "Comparative analysis of primers and alternative polypropylene pre-treatment techniques"
Szramowski Henryk, Krzemiński Marek Piotr, *Journal of Adhesion*, 2024, vol. 100, nr 10, s.867-889.
DOI:10.1080/00218464.2023.2276110

6. veterinary science

Achievement Description

PhD projects in veterinary medicine have been active in AST for only two years. The number of PhD students is small. Some of them participate in NCN research projects. Main achievements are scientific papers, for example:

(1) Kordowitzki, P., Krajnik, K., Skowrońska, A., & Skowroński, M. T. (2022). Pleiotropic effects of IGF1 on the oocyte. *Cells*, 11, 1–7. <https://doi.org/10.3390/cells11101610>;

(2) Chładowska, A., Bogucka, J., & Olejnik, M. (2023). Histopathological features in selected organs of turkeys experimentally exposed to low doses of salinomycin : preliminary study. *Journal of Veterinary Pharmacology and*

Therapeutics, 46, 103–104. <https://doi.org/10.1111/jvp.13317>;

(3) Krajnik, K., Miętkiewska, K., Skowrońska, A., Kordowitzki, P., & Skowroński, M. T. (2023). Oogenesis in women : from molecular regulatory pathways and maternal age to stem cells. *International Journal of Molecular Sciences*, 24, 1–14. <https://doi.org/10.3390/ijms24076837>;

7. biological sciences

Achievement Description

In this discipline AST doctoral candidates gave a rofound contribution to research and publications. A grup of students got qualifications in scuba diving and they use such skills to study underwater invasive species. Interesting results appear in interdisciplinary project on microbiological contaminations in old textile art objects or application of physical computer methods in anti-glioma studies.

Selected papers and patents:

(1) Magda Rudzka, Patrycja Wróblewska-Ankiewicz, Karolina Majewska, Malwina Hyjek-Składanowska, Marcin Gołębiowski, Marcin Sikora, Dariusz Jan Smoliński, Agnieszka Kołowerzo-Lubnau, Functional nuclear retention of pre-mRNA involving Cajal bodies during meiotic prophase in European larch (*Larix decidua*), *The Plant Cell*, Volume 34, Issue 6, June 2022, Pages 2404–2423, <https://doi.org/10.1093/plcell/koac091> (200pkt, IF =12);

(2) Dead or alive : the effect of shells and living individuals of *Sinanodonta woodiana* (Lea, 1834) on habitat selection and behaviour of European unionid bivalves
Wiśniewski Kamil, Szarmach Daniel Jan, Kobak Jarosław [i in.],
NeoBiota, 2024, vol. 94, s.243-259. DOI:10.3897/neobiota.94.119622 , Q1;

(3) Szymczak, B., Czarnecka, J., Czach, S., Nowak, W., & Roszek, K. (2023). Purinergic approach to effective glioma treatment with temozolomide reveals enhanced anti-cancer effects mediated by P2X7 receptor. *Cellular Signalling*, 106, 1–12. <https://doi.org/10.1016/j.cellsig.2023.110641> (IF=4.4.);

(4) Richert, A., Turkan, S., & Dąbrowska, G. B. (2021). New biodegradable polylactide material with antimicrobial properties. *Ecological Questions*, 32, 1–19. <https://doi.org/10.12775/EQ.2021.035>, Q1;

(5) Szczep grzyba *Trichoderma harzianum* ZggD-19, sposób biostymulacji wzrostu rzepaku i roślin uprawnych z rodziny Brassicaceae, sposób ochrony rzepaku i roślin uprawnych z rodziny Brassicaceae oraz roztwór do ochrony rzepaku i roślin uprawnych z rodziny Brassicaceae
Dąbrowska G., Garstecka Z., Narbutt O., Konieczna Wiktoria, Dąbrowski H. Wynalazek, Chroniony, Numer zgłoszenia: P.433460, Numer patentu/prawa: Pat.239212, Data zgłoszenia: 06-04-2020, Data udzielenia prawa: 01-10-2021, Publikacja patentu/wzoru: [WUP 15-11-2021].

ATTACHMENTS

Adequacy of the education program and individual research plans to the learning outcomes for qualifications at PRK level 8 and their implementation

No.	File type	Filename
1	Education programmes during the evaluation period	US.64_Resolution_curriculum.pdf
2	Education programmes during the evaluation period	US.18 zm 64_ ENG_ramowy program-zał. 1_AST.pdf
3	Education programmes during the evaluation period	US.31 zm 64_ENG_ramowy program.pdf
4	Education programmes during the evaluation period	US.18 zm 64_ENG_ ramowy program.pdf
5	Education programmes during the evaluation period	US.18 zm 64_ ENG_ramowy program-zał. 1_AST.pdf
6	Education programmes during the evaluation period	ProgramyAST_24_25_ver6final-ten.pdf
7	Education programmes during the evaluation period	Codes_matrix_8PRK_AST.pdf
8	Education programmes during the evaluation period	US.64.2019 _Resolution_annex.pdf

Method of verifying learning outcomes for qualifications at PRK level 8

No.	File type	Filename
1	The method of assessing the learning outcomes for qualifications at level 8 of the PQF	Explanation_Rules_of_verifacton_ASTa.pdf

Qualifications of academic teachers or research staff conducting education at the doctoral school

No.	File type	Filename
1	physical sciences	Sylwetki_kadry_SD_AST_nauki_fizycz
2	astronomy	Sylwetki_kadry_SD_AST_astronomia
3	earth and related environmental sciences	Sylwetki_kadry_SD_AST_nauki_o_Zie
4	biological sciences	Sylwetki_kadry_SD_AST_nauki_biolog
5	chemical sciences	Sylwetki_kadry_SD_AST_nauki_chem
6	veterinary science	Sylwetki_kadry_SD_AST_weterynaria
7	mathematics	Sylwetki_kadry_SD_AST_matematyka

Quality of the recruitment process

No.	File type	Filename
1	The compositions of the admissions committees during the evaluation period and the rationale for their selection with the aim of maintaining high admission standards	Recruitment_comm.pdf
2	The admissions rules of the doctoral school during the evaluation period	Recruitment_2020_nutshell_3.pdf
3	The admissions rules of the doctoral school during the evaluation period	Recruitment_2020_nutshell_3.pdf
4	The regulations of the doctoral school during the evaluation period	159_regulations--Resolution-no.pdf
5	The regulations of the doctoral school during the evaluation period	30_Regulamin_ENG.pdf

Quality of scientific or artistic supervision and support for conducting scientific activities

No.	File type	Filename
1	Internal regulations that pertain to the midterm evaluation and that are in force during the evaluation period, such as evaluation rules and criteria	Ocena-Srodokresowa-EN_2024.pdf

STATEMENTS

- ☒ I hereby declare that the information contained in the self-assessment report is fully consistent with the factual and legal status.
- ☒ I hereby declare that the information contained in the self-assessment report in Polish and English is fully identical in substance.
- ☒ I hereby declare that the documents attached to the self-assessment report in Polish and English are fully identical in substance.

Signature

AUTHORIZATIONS

Added files

246 prof.Nowakpelnomocnictwo.pdf



BIULETYN PRAWNY

UNIwersytetu Mikołaja Kopernika w Toruniu

Rok 2019; poz. 167

RESOLUTION No. 64

of the Senate of the Nicolaus Copernicus University in Toruń

of 28 May 2019

on the introduction of framework curricula in doctoral schools

Pursuant to art. 28.1.12 and art. 201.3 and art. 201.4 of the Act of 20 July 2018 – Law on Higher Education and Science (Dz. U. of 2018, item 1668 as amended) in connection with art. 291 of the Act of 3 July 2018 - Provisions implementing the Act – Law on Higher Education and Science (Dz. U. of 2018, item 1669 as amended)

I t i s r e s o l v e d as follows:

Article 1

Framework curricula for the following doctoral schools shall be established:

- 1) Humanities, Theology and Arts of the Nicolaus Copernicus University in Toruń in the fields of humanities, theology and arts for the disciplines: archeology, philosophy, history, linguistics, literary studies, art sciences, theological sciences, fine art and conservation of works of art; the framework curriculum constitutes Annex 1 to this resolution;
- 2) Exact and Natural Sciences of the Nicolaus Copernicus University in Toruń in the field of exact and natural sciences for the disciplines: astronomy, mathematics, biological sciences, chemical sciences, physical sciences, Earth and environment sciences; the framework curriculum constitutes Annex 2 to this resolution;
- 3) Medical and Health Sciences run in the Ludwik Rydygier Collegium Medicum of the Nicolaus Copernicus University in Toruń in the field of medical and health sciences for the disciplines: pharmaceutical sciences, medical sciences, health sciences; the framework curriculum constitutes Annex 3 to this resolution;
- 4) Social Sciences of the Nicolaus Copernicus University in Toruń in the field of social sciences for the disciplines: economy, finance, social communication and media studies, political science and administration, management and quality studies, legal sciences, sociological sciences, pedagogy; the framework curriculum constitutes Annex 4 to this resolution;
- 5) Academia Copernicana of the Nicolaus Copernicus University in Toruń in the field of humanities, medical and health sciences, exact and natural sciences, social sciences, theological sciences, and the arts; the framework curriculum constitutes Annex 5 to this resolution.

Article 2

The resolution becomes effective as of 28 May 2019.

President of the Senate

Prof. dr hab. Andrzej Tretyn
R e c t o r

Framework Program of Education in the Doctoral School of Science and Natural Sciences

Field:	Field of Natural Sciences, Field of Veterinary Sciences
Disciplines:	Astronomy, Mathematics, Biological Sciences, Chemical Sciences, Physical Sciences, Earth and Environmental Sciences, Veterinary Medicine
Duration of education:	4 years
Number of ECTS credits:	34
Total number of teaching hours:	320 (including 60 hours of work placement)

Module I: Basic courses / 120 hours/ 20 ECTS

1. Course Lecture I /30 hours/ E/ 3 ECTS.
2. Course Lecture II /30 hours/ E/ 3 ECTS.
3. Course Lecture in an additional discipline (other than the doctoral discipline), / 30 hours/ E/ 3 ECTS.
- 4. Interdisciplinary seminar /30 hours, 3 ECTS.**
- 5. Supervisor mentoring / 8 ECTS.**

Module II: Professional development courses / 80+60 =140 hours / 9 ECTS

1. Scientific Information: tools for search and processing of scientific and didactics resources / 10 hours/ 1 ECTS.
2. Creative Thinking / 10 hours/ 1 ECTS
3. Techniques of Scientific and Popular Science Presentations / 10 hours/ 1 ECTS.
4. Organisation and Financing of Research / 15 hours/ 2 ECTS.
5. Scientific Writing / 15 hours/ 2 ECTS.
6. Elements of Copyright and Patent Law / 10 hours / 1 ECTS.
7. Problems of Ethics, Open Science and Open Innovation / 10 hours / 1 ECTS.
8. Work placement / 60 hours / 0 ECTS .

Module III: Specialist courses / 60 hours/ 5 ECTS

1. **Specialist course no. 1 / laboratory / module / lecture / specialist seminar / selected by the supervisor in agreement with the director of the school / 30 hours/ 3 ECTS.**
2. Specialist course no. 2 /laboratory/ module/lecture/specialist seminar / selected by the supervisor in agreement with the director of the school / 30 hours/ 2 ECTS.

OR (option for Course No. 2)

Discussion class in specialist English as a foreign language / 30 hours/ 2 ECTS.

Notes

1. The program of education in the doctoral school, in accordance with the Act of 20 July 2018 - *Law on Higher Education and Science* (Journal of Laws of 30 August 2018, item 1668) is NOT a study program. Therefore, it is based on "modular" courses that are not conducted in a semester system. This means, for example, that workshops on preparing grant applications are held over two days, 1-2 times a year. One part of the workshop may be conducted by invited experts from the National Science Centre (NCN) or the Foundation for Polish Science (FNP). The second part may take place under the supervision of the NCU staff experienced in securing funds from institutions that conduct grant competitions.
2. Classes in Module I may be partially conducted in English by foreign or domestic experts/researchers invited to participate.
3. Work placement (Module II) may primarily take the form of teaching activities. They should consider the individual research plan of the doctoral student, selected in agreement with the school director and the supervisor.
4. Specialised Module. Classes elected by the doctoral student in consultation with the supervisor and the school director based on the needs related to the individual research plan.
5. A mid-term assessment is conducted in the middle of the four-year education period in accordance with the *Act on Higher Education and Science*, the framework of which is defined both in the Act and in the Rules of Doctoral School of Exact and Natural Sciences.
6. The School program of education and the description of learning outcomes are based on the characteristics of the second degree for qualifications at level 8 of the Polish Qualification Framework, specified in the Regulation of the Minister of Science and Higher Education of November 14, 2018 on the characteristics of the second degree of learning outcomes for qualifications at levels 6-8 of the Polish Qualification Framework (Journal of Laws of 2018, item 2218).

**Learning Outcomes in the Field of Natural Sciences
for the disciplines: Astronomy, Mathematics, Biological Sciences,
Chemical Sciences, Physical Sciences, Earth and Environmental Sciences**

Learning Outcomes	Code of the Descriptor Component of the Polish Qualifications Framework – Level 8
KNOWLEDGE (knows and understands)	
advanced knowledge in the field of natural sciences, specific to the chosen discipline and the scope of research conducted	P8S_WG
modern research methodologies relevant to the discipline	P8S_WG
ethical and legal foundations for conducting scientific research involving humans and animals (pertaining to biological sciences))	P8S_WK
principles of disseminating research findings	P8S_WK
principles of knowledge transfer to the socio-economic sphere	P8S_WG P8S_WK
methodology and evaluation methods for the educational process	P8S_WG P8S_WK
a comprehensive grasp of the most important theories and concepts within the discipline of the doctoral study	P8S_WG
the methodology, structure, and historical development of their discipline, as well as the fundamental issues and dilemmas of civilization related to their area of research	P8S_WG P8S_WK
SKILLS (can)	
independently gather literature related to a specific issue and critically analyse it	P8S_UW
present the results of their own work comprehensively and summarise the findings of others in the form of a scientific dissertation, publication, oral conference presentation, seminar paper, or poster	P8S_UK
independently solve scientific problems, formulate tasks aimed at finding solutions, make inferences, and extend the problem	P8S_UW P8S_UO
critically analyze the results of scientific research	P8S_UW
thanks to their strong command of the English language, can express themselves fluently in both speech and writing, present their own	P8S_UK P8S_UO

reports, and understand others' contributions	
transfer the results of scientific research to the economic and social spheres	P8S_UW P8S_UO
disseminate research findings and communicate effectively within the academic community	P8S_UK
apply various teaching methods and forms that facilitate the educational process at the academic level	P8S_UU
utilize tools from their discipline, including advanced mathematics and computer science, to describe processes and solve problems	P8S_WG
plan their own development and inspire and organise the development of others	P8S_UU P8S_UO
SOCIAL COMPETENCES (is ready to)	
uphold and promote the ethos of the scientific community and research in the fields of natural sciences	P8S_KR
advocate for the civilizational and social value of science and scientific research	P8S_KK
maintain a critical attitude towards their own and others' accomplishments in their scientific discipline, as well as towards prejudices and misconceptions related to science	P8S_KK
take responsibility for published content and act in accordance with the principles of scientific integrity and professional ethics	P8S_KO



BIULETYN PRAWNY
UNIwersytetu Mikołaja Kopernika w Toruniu

Rok 2021; poz. 230

RESOLUTION No 31

by the Senate of Nicolaus Copernicus University in Toruń

of 22 June 2021

**amending Resolution No. 64 by the NCU Senate of 28 May 2019
on the introduction of framework educational programs in doctoral schools**

Pursuant to art. 28 section 1 item 12 and art. 201 section 3 and 4 of the legal act of 20 July, Law on Higher Education and Science (Journal of Laws of 2021, item. 478 as amended)

The Senate resolves , as follows:

§ 1

In the Resolution No. 64 by the NCU Senate of 28 May 2019 on the introduction of framework educational programs in doctoral schools (NCU Legal Bulletin of 2019, item 167 as amended), the following amendments are made:

- 1) Annex no. 1 receives a new wording and constitutes Annex no. 1 to this Resolution;
- 2) Annex no. 2 receives a new wording and constitutes Annex no. 2 to this Resolution;
- 3) Annex no. 3 receives a new wording and constitutes Annex no. 3 to this Resolution;
- 4) Annex no. 4 receives a new wording and constitutes Annex no. 4 to this Resolution;
- 5) Annex no. 5 receives a new wording and constitutes Annex no. 5 to this Resolution.

§ 2

The Resolution comes into force on 22 June 2021.

Head of the Senate

Professor Andrzej Sokala, PhD
R e c t o r



LEGAL BULLETIN

NICOLAUS COPERNICUS UNIVERSITY IN TORUŃ

Year 2023; item 146

RESOLUTION No. 18

of the Senate of the Nicolaus Copernicus University in Toruń

of 25 April 2023

**amending Resolution No. 64 of the NCU Senate of 28 May 2019
on the introduction of framework programs of education in doctoral schools**

Pursuant to art. 28.1.12, art. 201.3 and art. 201.4 of the Act of 20 July 2018 – Law on Higher Education and Science (Journal of Laws of 2022, item 574, as amended)

The Senate hereby resolves as follows:

Article 1

Resolution No. 64 of the Senate of the Nicolaus Copernicus University of 28 May 2019 on the introduction of framework programs of education in doctoral schools (NCU Legal Bulletin of 2019, item 167, as amended) is amended as follows:

- 1) Annex No. 2 is reworded and is attached as Annex No. 1 to this Resolution;
- 2) Annex No. 4 is reworded and is attached as Annex No. 2 to this Resolution;
- 3) Annex No. 5 is reworded and is attached as Annex No. 3 to this Resolution.

Article 2

The Resolution becomes effective as of 25 April 2023.

Chair of the Senate

Prof. Dr Hab. Andrzej Sokala
R e c t o r

Framework Program of Education in the Doctoral School of Science and Natural Sciences

Field:	Field of Natural Sciences, Field of Veterinary Sciences
Disciplines:	Astronomy, Mathematics, Biological Sciences, Chemical Sciences, Physical Sciences, Earth and Environmental Sciences, Veterinary Medicine
Duration of education:	4 years
Number of ECTS credits:	34
Total number of teaching hours:	320 (including 60 hours of work placement)

Module I: Basic courses / 120 hours/ 20 ECTS

1. Course Lecture I /30 hours/ E/ 3 ECTS.
2. Course Lecture II /30 hours/ E/ 3 ECTS.
3. Course Lecture in an additional discipline (other than the doctoral discipline), / 30 hours/ E/ 3 ECTS.
- 4. Interdisciplinary seminar /30 hours, 3 ECTS.**
- 5. Supervisor mentoring / 8 ECTS.**

Module II: Professional development courses / 80+60 =140 hours / 9 ECTS

1. Scientific Information: tools for search and processing of scientific and didactics resources / 10 hours/ 1 ECTS.
2. Creative Thinking / 10 hours/ 1 ECTS
3. Techniques of Scientific and Popular Science Presentations / 10 hours/ 1 ECTS.
4. Organisation and Financing of Research / 15 hours/ 2 ECTS.
5. Scientific Writing / 15 hours/ 2 ECTS.
6. Elements of Copyright and Patent Law / 10 hours / 1 ECTS.
7. Problems of Ethics, Open Science and Open Innovation / 10 hours / 1 ECTS.
8. Work placement / 60 hours / 0 ECTS .

Module III: Specialist courses / 60 hours/ 5 ECTS

1. **Specialist course no. 1 / laboratory / module / lecture / specialist seminar / selected by the supervisor in agreement with the director of the school / 30 hours/ 3 ECTS.**
2. Specialist course no. 2 /laboratory/ module/lecture/specialist seminar / selected by the supervisor in agreement with the director of the school / 30 hours/ 2 ECTS.

OR (option for Course No. 2)

Discussion class in specialist English as a foreign language / 30 hours/ 2 ECTS.

Notes

1. The program of education in the doctoral school, in accordance with the Act of 20 July 2018 - *Law on Higher Education and Science* (Journal of Laws of 30 August 2018, item 1668) is NOT a study program. Therefore, it is based on "modular" courses that are not conducted in a semester system. This means, for example, that workshops on preparing grant applications are held over two days, 1-2 times a year. One part of the workshop may be conducted by invited experts from the National Science Centre (NCN) or the Foundation for Polish Science (FNP). The second part may take place under the supervision of the NCU staff experienced in securing funds from institutions that conduct grant competitions.
2. Classes in Module I may be partially conducted in English by foreign or domestic experts/researchers invited to participate.
3. Work placement (Module II) may primarily take the form of teaching activities. They should consider the individual research plan of the doctoral student, selected in agreement with the school director and the supervisor.
4. Specialised Module. Classes elected by the doctoral student in consultation with the supervisor and the school director based on the needs related to the individual research plan.
5. A mid-term assessment is conducted in the middle of the four-year education period in accordance with the *Act on Higher Education and Science*, the framework of which is defined both in the Act and in the Rules of Doctoral School of Exact and Natural Sciences.
6. The School program of education and the description of learning outcomes are based on the characteristics of the second degree for qualifications at level 8 of the Polish Qualification Framework, specified in the Regulation of the Minister of Science and Higher Education of November 14, 2018 on the characteristics of the second degree of learning outcomes for qualifications at levels 6-8 of the Polish Qualification Framework (Journal of Laws of 2018, item 2218).

**Learning Outcomes in the Field of Natural Sciences
for the disciplines: Astronomy, Mathematics, Biological Sciences,
Chemical Sciences, Physical Sciences, Earth and Environmental Sciences**

Learning Outcomes	Code of the Descriptor Component of the Polish Qualifications Framework – Level 8
KNOWLEDGE (knows and understands)	
advanced knowledge in the field of natural sciences, specific to the chosen discipline and the scope of research conducted	P8S_WG
modern research methodologies relevant to the discipline	P8S_WG
ethical and legal foundations for conducting scientific research involving humans and animals (pertaining to biological sciences))	P8S_WK
principles of disseminating research findings	P8S_WK
principles of knowledge transfer to the socio-economic sphere	P8S_WG P8S_WK
methodology and evaluation methods for the educational process	P8S_WG P8S_WK
a comprehensive grasp of the most important theories and concepts within the discipline of the doctoral study	P8S_WG
the methodology, structure, and historical development of their discipline, as well as the fundamental issues and dilemmas of civilization related to their area of research	P8S_WG P8S_WK
SKILLS (can)	
independently gather literature related to a specific issue and critically analyse it	P8S_UW
present the results of their own work comprehensively and summarise the findings of others in the form of a scientific dissertation, publication, oral conference presentation, seminar paper, or poster	P8S_UK
independently solve scientific problems, formulate tasks aimed at finding solutions, make inferences, and extend the problem	P8S_UW P8S_UO
critically analyze the results of scientific research	P8S_UW
thanks to their strong command of the English language, can express themselves fluently in both speech and writing, present their own	P8S_UK P8S_UO

reports, and understand others' contributions	
transfer the results of scientific research to the economic and social spheres	P8S_UW P8S_UO
disseminate research findings and communicate effectively within the academic community	P8S_UK
apply various teaching methods and forms that facilitate the educational process at the academic level	P8S_UU
utilize tools from their discipline, including advanced mathematics and computer science, to describe processes and solve problems	P8S_WG
plan their own development and inspire and organise the development of others	P8S_UU P8S_UO
SOCIAL COMPETENCES (is ready to)	
uphold and promote the ethos of the scientific community and research in the fields of natural sciences	P8S_KR
advocate for the civilizational and social value of science and scientific research	P8S_KK
maintain a critical attitude towards their own and others' accomplishments in their scientific discipline, as well as towards prejudices and misconceptions related to science	P8S_KK
take responsibility for published content and act in accordance with the principles of scientific integrity and professional ethics	P8S_KO

PROGRAM KSZTAŁCENIA DLA DYSCYPLINY ASTRONOMIA - rok akademicki 2024/2025											
Kod USOS	Kod przedmiotu	Nazwa przedmiotu PL	Nazwa przedmiotu EN	Prowadzący	Rodzaj kursu	Język wykładowy	Forma zaliczenia	PRK*	SEMESTR	ECTS	Liczba godzin
7404	7404-MP-ASTRO	Mentoring promotorów (\$\$)	Supervisor mentoring	promotor	Moduł I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		co roku	4x2	nd
7404	7404-ASTROJET	Astrofizyka Jetów II	Tylko po polsku	dr hab. K. Katarzynski, prof. UMK	Moduł I - wykład kursowy	polski	egzamin/exam		zimowy	3	30
7404	7404-PLANETSYS	Układy planetarne	Planetary systems	prof. dr hab. K. Goździewski	Moduł I - wykład kursowy	angielski/polski	egzamin/exam		letni	3	30
7404	7404-WA-DYP	Astrofizyczna dynamika płynów	"Astrophysical Fluid Dynamics"	prof. dr hab. Michał Hanasz	Moduł I - wykład kursowy	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-OFB	Organizacja i finansowanie badań	Organisation and financing of research	prof. dr hab. Sebastian Maćkowski	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	2	15
7404	7404-KIN	Konwersatorium interdyscyplinarne	Interdisciplinary seminar/discussion club	prof. dr hab. Wiesław Nowak / prof. dr hab. Wojciech Kujawski	Moduł I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		letni	3	30
7404	7404-EONOI	Problemy etyki, otwartej nauki i otwartych innowacji	Problems of ethics, open science and open innovation	dr hab. Dorota Grego-Planer, dr Agnieszka Raubo (UAM), dr Jakub Rydzewski	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		z/letni	1	10
7404	7404-EPAP	Elementy prawa autorskiego i patentowego	Elements of copyright and patent law	dr Katarzyna Krupa-Lipińska	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-IN	Informacja naukowa - narzędzia wyszukiwania i opracowywania zasobów naukowych i dydaktycznych	Scientific information: tools for search and processing of scientific and didactics resources	prof. dr hab. Wiesław Nowak	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-TPW	Techniki prezentacji wyników i popularyzacji wiedzy naukowej	Techniques of scientific and popular science presentations	prof. dr hab. Sebastian Maćkowski / prof. dr hab. Aleksandra Szydłowska-Czeriak	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-CT	Myślenie Twórcze	Creative Thinking	dr hab. Rafał Moczko, prof. UMK	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-PPTN	Pisanie tekstów naukowych	Scientific writing	prof. dr hab. Sebastian Mackowski / dr hab. Marcin Koprowski, prof. UMK	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy/letni	2	15
7404		Szkolenia w zakresie bezpieczeństwa i higieny kształcenia (w tym kurs pierwszej pomocy)		do ustalenia	Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia) + grupa dla obcokrajowców - ćwiczenia	angielski/polski	zaliczenie/pass		letni	0	5
7404		Szkolenia BHP w postaci e-learningu - dostępne od 15 października			Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia)	angielski/polski	egzamin/exam		zimowy	0	x

PROGRAM KSZTAŁCENIA DLA DYSCYPLINY NAUKI BIOLOGICZNE - rok akademicki 2024/2025											
Kod USOS	Kod przedmiotu	Nazwa przedmiotu PL	Nazwa przedmiotu EN	Prowadzący	Rodzaj kursu	Język wykładowy	Forma zaliczenia	PRK*	SEMESTR	ECTS	Liczba godzin
7404	7404-MP-BIOL	Mentoring promotorski (\$\$)	Supervisor mentoring	promotor	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		co roku	4x2	nd
7404	7404-SD-BIOL-IB	Inwazje biologiczne	Biological invasions	prof. dr hab. Jarosław Kobak/ dr hab. Tomasz Kakreko, prof. UMK/ dr hab. Małgorzata Poznańska-Kakareko, prof. UMK/ dr Łukasz Jermacz	Modul I - wykład kursowy	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-SD-BIOL-RKRZ	Receptory komórek roślinnych i zwierzęcych	Plant and animal cell receptors	dr hab. Maciej Ostrowski, prof. UMK	Modul I - wykład kursowy	angielski/polski	egzamin/exam		letni	3	30
7404	7404-OFB	Organizacja i finansowanie badań	Organisation and financing of research	dr hab. Michał Wojciechowski, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	2	15
7404	7404-KIN	Konwersatorium interdyscyplinarne	Interdisciplinary seminar/discussion club	Prof. dr hab. Wiesław Nowak/Prof. dr hab. Wojciech Kujawski	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		letni	3	30
7404	7404-EONOI	Problemy etyki, otwartej nauki i otwartych innowacji	Problems of ethics, open science and open innovation	dr Dorota Grego-Planer, dr Agnieszka Raubo, dr Jakub Rydzewski	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-EPAP	Elementy prawa autorskiego i patentowego	Elements of copyright and patent law	dr Katarzyna Krupa-Lipińska	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-IN	Informacja naukowa - narzędzia wyszukiwania i opracowywania zasobów naukowych i dydaktycznych	Scientific information: tools for search and processing of scientific and didactics resources	prof. dr hab. Wiesław Nowak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-TPW	Techniki prezentacji wyników i popularyzacji wiedzy naukowej	Techniques of scientific and popular science presentations	prof. dr hab. Sebastian Maćkowski / prof. dr hab. Aleksandra Szydłowska-Czerniak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass			1	10
7404	7404-CT	Myślenie Twórcze	Creative Thinking	dr hab. Rafał Moczkoan, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404		Szkolenia w zakresie bezpieczeństwa i higieny kształcenia (w tym kurs pierwszej pomocy)		do ustalenia	Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia) + grupa dla obcokrajowców - ćwiczenia	angielski/polski	zaliczenie/pass		letni	0	5
7404		Szkolenia BHP w postaci e-learningu - dostępne od 15 października			Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia)	angielski/polski	egzamin/exam		zimowy	0	x

PROGRAM KSZTAŁCENIA DLA DYSCYPLINY NAUKI CHEMICZNE - rok akademicki 2024/2025

Kod USOS	Kod przedmiotu	Nazwa przedmiotu PL	Nazwa przedmiotu EN	Prowadzący	Rodzaj kursu	Język wykładowy	Forma zaliczenia	PRK*	SEMESTR	ECTS	Liczba godzin
7404	7404-MP-CHEM	Mentoring promotorski (\$\$)	Supervisor mentoring	promotor	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		co roku	4x2	nd
7404	7404-AUTL	Antyutleniacze - postęp w chemii żywności, kosmetycznej i medycznej	Antioxidants - advances in food, cosmetic and medicinal chemistry	prof. dr hab. Aleksandra Szydłowska-Czeriak	Modul III - zajęcia specjalistyczne	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-ReEn	Energia ze źródeł odnawialnych: opcja czy konieczność.	Renewable energy: option or necessity?	dr hab. Anna Ilnicka, prof. UMK	Modul III - zajęcia specjalistyczne	angielski/polski	egzamin/exam		letni	3	30
7404	7404-SD-Ch-ATPNMS	Aspekty teoretyczne i praktyczne nowoczesnych metod separacyjnych	Theoretical and practical aspects in modern separation sciences	zespół / prof. R. Gadzała_Kopciuch - koordynator bez zajęć na tym kursie	Modul I - wykład kursowy	angielski/polski	egzamin/exam		letni	3	30
7404	7404-SD-Ch-CHOSF	Chemia organiczna strukturalna i fizyczna	Structural and Physical Organic Chemistry	dr hab. Marek Krzemiński, prof. UMK	Modul I - wykład kursowy	angielski/polski	egzamin/exam		letni	3	30
7404	7404-OFB	Organizacja i finansowanie badań	Organisation and financing of research	prof. dr hab. Wojciech Kujawski	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	2	15
7404	7404-KIN	Konwersatorium interdyscyplinarne	Interdisciplinary seminar/discussion club	Prof. dr hab. Wiesław Nowak/Prof. dr hab. Wojciech Kujawski	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		letni	3	30
7404	7404-EONOI	Problemy etyki, otwartej nauki i otwartych innowacji	Problems of ethics, open science and open innovation	dr hab. Dorota Grego-Planer, dr Agnieszka Raubo, dr Jakub Rydzewski	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-EPAP	Elementy prawa autorskiego i patentowego	Elements of copyright and patent law	dr Katarzyna Krupa-Lipińska	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-IN	Informacja naukowa - narzędzia wyszukiwania i opracowywania zasobów naukowych i dydaktycznych	Scientific information: tools for search and processing of scientific and didactics resources	prof. dr hab. Wiesław Nowak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-TPW	Techniki prezentacji wyników i popularyzacji wiedzy naukowej	Techniques of scientific and popular science presentations	prof. dr hab. Sebastian Maćkowski / prof. dr hab. Aleksandra Szydłowska-Czeriak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-CT	Myślenie Twórcze	Creative Thinking	dr hab. Rafał Moczko, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-PPTN	Pisanie tekstów naukowych	Scientific writing	prof. dr hab. Sebastian Maćkowski / dr hab. Marcin Koprowski, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy/letni	2	15
7404		Szkolenia w zakresie bezpieczeństwa i higieny kształcenia (w tym kurs pierwszej pomocy)	do ustalenia		Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia) + grupa dla obcokrajowców - ćwiczenia	angielski/polski	zaliczenie/pass		letni	0	5
7404		Szkolenia BHP w postaci e-learningu - dostępne od 15 października			Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia)	angielski/polski	egzamin/exam		zimowy	0	x

PROGRAM KSZTAŁCENIA DLA DYSCYPLINY NAUKI FIZYCZNE - rok akademicki 2024/2025											
Kod USOS	Kod przedmiotu	Nazwa przedmiotu PL	Nazwa przedmiotu EN	Prowadzący	Rodzaj kursu	Język wykładowy	Forma zaliczenia	PRK*	SEMESTR	ECTS	Liczba godzin
7404	7404-MP-FIZ	Mentoring promotorski (\$\$)	Supervisor mentoring	promotor	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		co roku	4x2	nd
7404	7404-FIZ-KKP	Kurs komputerowy - Python 3	Computer course - Python III for PhD candidates	dr inż. Grzegorz Kowzan	Modul III - wykład specjalistyczny	angielski	zaliczenie/pass		zimowy	3	30
7404	7404-FIZ-WK-EMK	Elementy mechaniki kwantowej	Elements of Quantum Mechanics	prof. dr hab. Roman Ciuryło	Modul I - wykład kursowy	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-WF-MEK	Elementy molekularnej mechaniki kwantowej	Elements of Molecular Quantum Mechanics	prof. dr hab. Wiesław Nowak	Modul I - wykład kursowy	angielski	egzamin/exam		letni	3	30
7404	7404-MOREIN1	MOREIN - Modern Research Instruments	MOREIN - Modern Research Instruments	dr hab. Dawid Piątkowski, prof. UMK/dr hab. I. Gorczyńska, prof. UMK	Modul III - wykład specjalistyczny	angielski	zaliczenie/pass		letni	3	30
7404	7404-WF-NOTEKS	Nowoczesne techniki eksperymentalne	NOTEX- Modern experimental techniques	dr hab. Iwona Gorczyńska, prof. UMK	Modul I - wykład kursowy	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-OFB	Organizacja i finansowanie badań	Organisation and financing of research	prof. Sebastian Maćkowski	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	2	15
7404	7404-KIN	Konwersatorium interdyscyplinarne	Interdisciplinary seminar/discussion club	Prof. dr hab. Wiesław Nowak/Prof. dr hab. Wojciech Kujawski	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		letni	3	30
7404	7404-EONOI	Problemy etyki, otwartej nauki i otwartych innowacji	Problems of ethics, open science and open innovation	dr hab. Dorota Grego-Planer, dr Agnieszka Raubo, dr Jakub Rydzewski	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-EPAP	Elementy prawa autorskiego i patentowego	Elements of copyright and patent law	dr Katarzyna Krupa-Lipińska	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-IN	Informacja naukowa - narzędzia wyszukiwania i opracowywania zasobów naukowych i dydaktycznych	Scientific information: tools for search and processing of scientific and didactics resources	prof. dr hab. Wiesław Nowak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-TPW	Techniki prezentacji wyników i popularyzacji wiedzy naukowej	Techniques of scientific and popular science presentations	prof. dr hab. Sebastian Maćkowski / prof. dr hab. Aleksandra Szydłowska-Czeriak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-CT	Myślenie Twórcze	Creative Thinking	dr hab. Rafał Moczko, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10

7404	7404-PPTN	Pisanie tekstów naukowych	Scientific writing	prof. dr hab. Sebastian Mackowski / dr hab. Marcin Koprowski, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy/letni	2	15
7404		Szkolenia w zakresie bezpieczeństwa i higieny kształcenia (w tym kurs pierwszej pomocy)		do ustalenia	Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia) + grupa dla obcokrajowców - ćwiczenia	angielski/polski	zaliczenie/pass		letni	0	5
7404		Szkolenia BHP w postaci e-learningu - dostępne od 15 października			Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia)	angielski/polski	egzamin/exam		zimowy	0	x

PROGRAM KSZTAŁCENIA DLA DYSCYPLINY MATEMATYKA - rok akademicki 2024/2025

Kod USOS	Kod przedmiotu	Nazwa przedmiotu PL	Nazwa przedmiotu EN	Prowadzący	Rodzaj kursu	Język wykładowy	Forma zaliczenia	PRK*	SEMESTR	ECTS	Liczba godzin
7404	7404-M3ast-sem	Seminarium doktorskie pod opieką promotora (S)	Doctoral seminar	promotor (tylko 4. rok kształcenia)	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		rok	4	30/120
7404	7404-MP-MAT	Mentoring promotorski (SS)	Supervisor mentoring	promotor	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		co roku	4x2	nd
7404	7404-MAT-DYFEO	Dyfeomorfizmy okręgu	Ring's dyfeomorphisms	dr Przemysław Berk	Modul I - wykład kursowy	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-MAT-TEI-INTRO	Wstęp do teorii ergodyczności	Introduction to ergodic theory ,	Prof. dr hab. Mariusz Lemańczyk	Modul I - wykład kursowy	angielski/polski	egzamin/exam		letni	3	30
7404	7404-MAT-WAR	Metody wariacyjne w nieliniowych równaniach różniczkowych cząstkowych	Variational methods in non-linear partial differential eqations	dr Bartosz Bieganski	Modul I - wykład kursowy	angielski/polski	egzamin/exam		letni	3	30
7404	7404-MAT-TOP-INTRO	Wstęp do dynamiki topologicznej	Introduction to topological dynamics	dr Aurelia Dymek	Modul III - wykład specjalistyczny	angielski/polski	egzamin/exam		letni	3	30
7404	7404-MAT-ENANIII	Elementy niezmienniczej analizy nieliniowej III	Elements of invariant nonlinear analysis III	prof. Sławomir Rybicki	Modul I - wykład kursowy	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-MAT-ENANIV	Elementy niezmienniczej analizy nieliniowej IV	Elements of invariant nonlinear analysis IV	prof. Sławomir Rybicki	Modul III - wykład specjalistyczny	angielski/polski	egzamin/exam		letni	3	30
7404	7404-OFB	Organizacja i finansowanie badań	Organisation and financing of research	prof. dr hab.. S. Maćkowski	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	2	15
7404	7404-KIN	Konwersatorium interdyscyplinarne	Interdisciplinary seminar/discussion club	Prof. dr hab. Wiesław Nowak/Prof. dr hab. Wojciech Kujawski	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		letni	3	30
7404	7404-EONOI	Problemy etyki, otwartej nauki i otwartych innowacji	Problems of ethics, open science and open innovation	dr hab. Dorota Grego-Planer, dr Agnieszka Raubo, dr Jakub Rydzewski	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-EPAP	Elementy prawa autorskiego i patentowego	Elements of copyright and patent law	dr Katarzyna Krupa-Lipińska	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-IN	Informacja naukowa - narzędzia wyszukiwania i opracowywania zasobów naukowych i dydaktycznych	Scientific information: tools for search and processing of scientific and didactics resources	prof. dr hab. Wiesław Nowak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-TPW	Techniki prezentacji wyników i popularyzacji wiedzy naukowej	Techniques of scientific and popular science presentations	prof. dr hab. Sebastian Maćkowski / prof. dr hab. Aleksandra Szydłowska-Czeriak	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-CT	Myślenie Twórcze	Creative Thinking	dr hab. Rafał Moczodan, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-PPTN	Pisanie tekstów naukowych	Scientific writing	prof. dr hab.. Sebastian Mackowski / dr hab. Marcin Koprowski, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy/letni	2	15
7404		Szkolenia w zakresie bezpieczeństwa i higieny kształcenia (w tym kurs pierwszej pomocy)		do ustalenia	Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia) + grupa dla obcokrajowców - ćwiczenia	angielski/polski	zaliczenie/pass		letni	0	5
7404		Szkolenia BHP w postaci e-learningu - dostępne od 15 października			Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia)	angielski/polski	egzamin/exam		zimowy	0	x

PROGRAM KSZTAŁCENIA DLA DYSCYPLINY NAUKI O ZIEMI I ŚRODOWISKU - rok akademicki 2024/2025

Kod USOS	Kod przedmiotu	Nazwa przedmiotu PL	Nazwa przedmiotu EN	Prowadzący	Rodzaj kursu	Język wykładowy	Forma zaliczenia	PRK*	SEMESTR	ECTS	Liczba godzin
7404	7404-MP-NoZiŚ	Mentoring promotorski (SS)	Supervisor mentoring	promotor	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		co roku	4x2	nd
7404	7404-PROPL	Paleogeographical reconstruction of past landscapes	Paleogeographical reconstruction of past landscapes	dr hab. Michał Jankowski, prof. UMK	Modul I - wykład kursowy 1	angielski/polski	egzamin/exam		letni	3	30
7404	7404-RMIES	Research methods in Earth Sciences	Forest Ecology and Managment	dr hab. inż. Piotr Sewerniak, prof. UMK	Modul III - wykład specjalistyczny	angielski/polski	egzamin/exam		zimowy	3	30
7404	7404-SD-NoZiS-FCLIM	Podstawy klimatu i jego zmiany	Fundamentals of climate and climate change	dr Aleksandra Pospieszyska / dr hab. Andrzej Arahny, prof. UMK	Modul I - wykład kursowy 2	angielski/polski	egzamin/exam		letni	3	30
7404	7404-OFB	Organizacja i finansowanie badań	Organisation and financing of research	dr hab. Michał Wojciechowski, prof. UMK	Modul II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	2	15
7404	7404-KIN	Konwersatorium interdyscyplinarne	Interdisciplinary seminar/discussion club	Prof. dr hab. Wiesław Nowak/Prof. dr hab. Wojciech Kujawski	Modul I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		letni	3	30

7404	7404-EONOI	Problemy etyki, otwartej nauki i otwartych innowacji	Problems of ethics, open science and open innovation	dr hab. Dorota Grego-Planer, dr Agnieszka Raubo, dr Jakub Rydzewski	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-EPAP	Elementy prawa autorskiego i patentowego	Elements of copyright and patent law	dr Katarzyna Krupa-Lipińska	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-IN	Informacja naukowa - narzędzia wyszukiwania i opracowywania zasobów naukowych i dydaktycznych	Scientific information: tools for search and processing of scientific and didactics resources	prof. dr hab. Wiesław Nowak	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-TPW	Techniki prezentacji wyników i popularyzacji wiedzy naukowej	Techniques of scientific and popular science presentations	prof. dr hab. Sebastian Maćkowski / prof. dr hab. Aleksandra Szydłowska-Czeriak	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-CT	Myślenie Twórcze	Creative Thinking	dr hab. Rafał Moczkoan, prof. UMK	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-PPTN	Pisanie tekstów naukowych	Scientific writing	prof. dr hab. Sebastian Maćkowski / dr hab. Marcin Koprowski, prof. UMK	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy/letni	2	15
7404		Szkolenia w zakresie bezpieczeństwa i higieny kształcenia (w tym kurs pierwszej pomocy)		do ustalenia	Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia) + grupa dla obcokrajowców - ćwiczenia	angielski/polski	zaliczenie/pass		letni	0	5
7404		Szkolenia BHP w postaci e-learningu - dostępne od 15 października			Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia)	angielski/polski	egzamin/exam		zimowy	0	x

PROGRAM KSZTAŁCENIA DLA DYSCYPLINY WETERYNARIA - rok akademicki 2024/2025

Kod USOS	Kod przedmiotu	Nazwa przedmiotu PL	Nazwa przedmiotu EN	Prowadzący	Rodzaj kursu	Język wykładowy	Forma zaliczenia	PRK*	SEMESTR	ECTS	Liczba godzin
7404	7404-MP-WET	Mentoring promotorski (§§)	Supervisor mentoring	promotor	Moduł I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		rok	4x2	
7404	7404-WET-ART	<i>In English only</i>	Assisted reproductive technologies and biotechnologies in veterinary practice and science.	dr hab. Paweł Kordowitzki, prof. UMK	Moduł I - wykład kursowy	angielski	egzamin/exam		zim/letni	3	30
7404	7404-WET-CHRO	Metody chromatograficzne w weterynarii	Chromatographic methods in veterinary science	dr. hab. Małgorzata Olejnik, prof.. UMK	Moduł I - wykład kursowy	angielski	egzamin/exam		letni	3	30
7404	7404-WET-GEN	Genetyka molekularna w weterynarii	Molecular genetics in veterinary science	dr hab. Anna Sławińska	Moduł III - wykład specjalistyczny	angielski	egzamin/exam		zimowy	3	30
7404	7404-OFB	Organizacja i finansowanie badań	Organisation and financing of research	dr hab. Michał Wojciechowski, prof. UMK	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	2	15
7404	7404-KIN	Konwersatorium interdyscyplinarne	Interdisciplinary seminar/discussion club	Prof. dr hab. Wiesław Nowak/Prof. dr hab. Wojciech Kujawski	Moduł I - zajęcia podstawowe	angielski/polski	zaliczenie/pass		letni	3	30
7404	7404-EONOI	Problemy etyki, otwartej nauki i otwartych innowacji	Problems of ethics, open science and open innovation	dr hab. Dorota Grego-Planer, dr Agnieszka Raubo, dr Jakub Rydzewski	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-EPAP	Elementy prawa autorskiego i patentowego	Elements of copyright and patent law	dr Katarzyna Krupa-Lipińska	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-IN	Informacja naukowa - narzędzia wyszukiwania i opracowywania zasobów naukowych i dydaktycznych	Scientific information: tools for search and processing of scientific and didactics resources	prof. dr hab. Wiesław Nowak	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy	1	10
7404	7404-FIZ-TPW	Techniki prezentacji wyników i popularyzacji wiedzy naukowej	Techniques of scientific and popular science presentations	prof. dr hab. Sebastian Maćkowski / prof. dr hab. Aleksandra Szydłowska-Czeriak	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-CT	Myślenie Twórcze	Creative Thinking	dr hab. Rafał Moczkoan, prof. UMK	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		letni	1	10
7404	7404-PPTN	Pisanie tekstów naukowych	Scientific writing	prof. dr hab. Sebastian Maćkowski / dr hab. Marcin Koprowski, prof. UMK	Moduł II - zajęcia doskonalące umiejętności zawodowe	angielski/polski	zaliczenie/pass		zimowy/letni	2	15
7404		Szkolenia w zakresie bezpieczeństwa i higieny kształcenia (w tym kurs pierwszej pomocy)		do ustalenia	Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia) + grupa dla obcokrajowców - ćwiczenia	angielski/polski	zaliczenie/pass		letni	0	5
7404		Szkolenia BHP w postaci e-learningu - dostępne od 15 października			Szkolenia dodatkowe (grupa: fizyka, matematyka i astronomia)	angielski/polski	egzamin/exam		zimowy	0	x

* PRK – Polska Rama Kwalifikacji zgodnie z Rozporządzeniem Ministra Nauki i Szkolnictwa Wyższego w sprawie charakterystyk drugiego stopnia efektów uczenia się dla kwalifikacji na poziomach 6–8 Polskiej Ramy Kwalifikacji
§§ lata I-IV

UWAGA w 24/25 w Module III będą oferowane dwa kursy języka angielskiego po 30 h (I) dla obcokrajowców (II) dla Polaków

% Wybór wykładu kursowego K1 zostanie ustalony w zależności od preferencji doktorantów i roku

			KNOWLEDGE (knows and understands)							SKILLS (is able to)										SOCIAL COMPETENCES (is ready to)								
			the world's achievements including theoretical foundations as well as general issues and selected specific problems relevant to the academic discipline to an extent allowing the revision of existing paradigms	main development trends in the disciplines of science essential to the study programme	methodology of scientific research	rules for disseminating the results of scientific activity, including the open access mode	fundamental dilemmas of contemporary civilisation	economic, legal, ethical and other relevant factors affecting scientific research	basic principles related to the transfer of knowledge to business and social domains as well as the commercialisation of the output of scientific activity and the know-how related to this output	innovatively solve complex problems or perform research activities, and specifically: • to define the aim and subject of the research, formulate a research hypothesis • develop research methods, techniques and tools and apply them creatively • draw conclusions based on the output of scientific research	critically analyse and evaluate the research output, expert activities and other work of a creative nature and their contribution to the development of knowledge	transfer the output of scientific research to business and social domains	communicate on specialist subjects to the extent that will enable active contribution to the international scientific community	disseminate the output of scientific research, including popular forms	initiate debates	take active part in scientific discourse	use a foreign language at B2 level of the Common European Framework of Reference for Languages to the extent that allows active contribution to the international research and professional community	plan and carry out individual and team research or creative projects, also in an international environment	independently plan and act for one's own development and inspire and organise the development of other persons	plan and deliver a class or group of classes using modern methods and tools	critically evaluate achievements within a scientific discipline	critically evaluate one's own contribution to the development of a scientific discipline	recognise the importance of knowledge in solving cognitive and practical problems	fulfill the social obligations of researchers	initiate actions in the public interest	think and act in an entrepreneurial manner	uphold and foster the values represented by the community of researchers and creators, including: - independent pursuit of research, - respecting the principle of public ownership of the research output while demonstrating compliance with the principles of intellectual property protection	
	COURSE CODE	NAME OF THE COURSE																										WG_1
1 chemical sciences	7404-SD-Ch-ATPNMS	Theoretical and practical aspects in modern separation sciences	x	x	x																	x						
1 veterinary medicine	7404-WET-ART	Assisted reproductive technologies and biotechnologies in veterinary practice and science.	x	x	x						x											x						
1 astronomy	7404-WA-DYP	Astrofizyczna dynamika płynów	x	x	x						x											x						
1 astronomy	7404-ASTROJET	Astrophysics of jets	x	x	x						x											x						
1 life sciences	7404-SD-BIOL-IB	Biological Invasions	x	x	x						x											x						
1 mathematics	7404-MAT-DYFEO	Dyfeomorphism of circle	x	x	x						x											x						
1 mathematics	7404-MAT-DKID	Krull and Dedeking domains	x	x	x						x											x						
1 physical sciences	7404-FIZ-WK-EMK	Elements of Molecular Quantum Mechanics	x	x	x						x											x						
1 mathematics	7404-MAT-ENANI	Elements of invariant nonlinear analysis I	x	x	x						x											x						
1 mathematics	7404-MAT-ENANIII	Elements of invariant nonlinear analysis III	x	x	x						x											x						
1 Earth and enviromental scienc	7404-SD-NoZiS-FCLIM	Fundamentals of climate and climate change	x	x	x						x											x						
1 all	7404-KIN	Interdisciplinary conversations and Seminar	x	x		x	x	x		x			x	x	x	x		x				x						x
1 astronomy	7404-MP-ASTRO	Supervisor mentoring	x	x	x					x		x	x	x	x	x		x	x		x	x						
1 life sciences	7404-MP-BIOL	Supervisor mentoring	x	x	x					x		x	x	x	x	x		x	x		x	x						
1 chemical sciences	7404-MP-CHEM	Supervisor mentoring	x	x	x					x		x	x	x	x	x		x	x		x	x						
1 physical sciences	7404-MP-FIZ	Supervisor mentoring	x	x	x					x		x	x	x	x	x		x	x		x	x						
1 mathematics	7404-MP-MAT	Supervisor mentoring	x	x	x					x		x	x	x	x	x		x	x		x	x						
1 Earth and enviromental scienc	7404-MP-NoZiS	Supervisor mentoring	x	x	x					x		x	x	x	x	x		x	x		x	x						
1 veterinary medicine	7404-MP-WET	Supervisor mentoring	x	x	x					x		x	x	x	x	x		x	x		x	x						
1 veterinary medicine	7404-WET-CHRO	Chromatographics Methods in Veterinary medicine	x	x	x						x											x						
1 veterinary medicine	7404-WET-PPK	Scientific approach to clinical practice, pharmaceutical industry,feeding. of animals.	x	x	x						x											x						
1 physical sciences	7404-WF-NOTEKS	Modern experimental techniques	x	x	x						x											x						
1 Earth and enviromental scienc	7404-PROPL	Paleogeographical reconstruction of past landscapes	x	x	x						x											x						
1 life sciences	7404-SD-BIOL-RKRZ	Receptors in plant and animal cells.	x	x	x						x											x						
1 mathematics	7404-MAT-RCRI	Partial integro-differential equations with Levy type operators I	x	x	x						x											x						
1 mathematics	7404-PMPF	Integro-differential equations, Markov processes and backward stochastic differential equat	x	x	x						x											x						
1 chemical sciences	7404-SD-Ch-ChOSF	Structural and Physical Organic Chemistry	x	x	x						x											x						
1 chemical sciences	7404-SaS	Sensors and sensorics	x	x	x						x											x						
1 mathematics	7404-MAT-TEI-INTRO	Ergodic Theory	x	x	x						x											x						
1 mathematics	7404-MAT-TEI	Ergoidic Theory I	x	x	x						x											x						
1 mathematics	7404-MAT-TG	Galois Theory	x	x	x						x											x						
1 mathematics	7404-MAT-TRAI	Theory of representations I	x	x	x						x											x						
1 chemical sciences	7404-SD-ATPNMS	Theoretical and practical aspects in modern separation sciences	x	x	x						x											x						
1 astronomy	7404-PLANETSYS	Planetary Systems	x	x	x						x											x						
2 all	7404-CT	Creative Thinking			x					x			x				x			x							x	
2 all	7404-EPAP	Elements of Author and Patent Law					x	x	x		x	x		x									x			x	x	
2 all	7404-FIZ-IN	Scientific information: tools for search and processing of scientific and didactics resources		x	x	x		x	x	x	x			x								x			x		x	
2 all	7404-OFB	Organisation and financing of research			x	x		x	x	x	x	x					x			x		x			x		x	
2 all	7404-PPTN	Wring and pulishing of scientific papers			x	x		x	x	x	x	x					x	x		x		x						x
2 all	7404-PRAKTYKI	Practical teaching for AST				x	x		x					x	x						x							
2 all	7404-EONOI	Problems of ethics, open science and open innovations			x	x	x	x	x		x	x		x										x		x	x	
2 all	7404-FIZ-TPW	Techniques of scientific and popular science presentations		x	x	x	x		x		x	x	x	x	x	x												
3 chemical sciences	7404-AUTL	Antioxidants - advances in food, cosmetic and medicinal chemistry of the 21st century	x	x	x						x											x						
3 physical sciences	7404-AST-DYNAMO	Molecular Dynamics	x	x	x						x											x						
3 mathematics	7404-MAT-ENANII	Elements of invariant nonlinear analysis I	x	x	x						x											x						
3 mathematics	7404-MAT-ENANIV	Elements of invariant nonlinear analysis IV	x	x	x						x											x						
3 Earth and enviromental scienc	7404-FEM	Forest Ecology and Management	x	x	x						x											x						
3 vetarinary medicine	7404-WET-GEN	Molecular genetics in veterinary medicine	x	x	x						x											x						
3 astronomy	7404-WA-PFG	Gravitational Waves Progenitors	x	x	x						x											x						
3 astronomy	7404-ASTRO-ITE	Introduction to exoplanets	x	x	x						x											x						
3 physical sciences	7404-INSPELIS	Introduction to spectral line shapes theory	x	x	x						x											x						
3 mathematics	7404-MAT-TOP-INTRO	Introduction to topological dynamics	x	x	x						x											x						
3 all	7404-FIZ-KKP	Computer course - Python 3	x	x	x						x											x						
3 mathematics	7404-MAT-WAR	Variational Methods in nonlinear partial differential equations	x	x	x						x											x						
3 physical sciences	7404-MOREIN1	Modern research instruments I	x	x	x						x											x						
3 physical sciences	7404-MOREIN2	Modern research instruments II	x	x	x						x											x						
3 mathematics	7404-MAT-PS	Sobolew Spaces	x	x	x						x											x						
3 mathematics	7404-MAT-RF	Functinal analysis of unbound operators with applications	x	x	x						x											x						
3 chemical sciences	7404-ReEn	Renewable energy: option or necessity?	x	x	x						x											x						
3 Earth and enviromental scienc	7404-RMIES	Research methods in Earth Sciences	x	x	x		</																					

**Framework Program of Education
in the Doctoral School of Science and Natural Sciences (AST)**

Field:	Field of Natural Sciences
Disciplines:	Astronomy, Mathematics, Biological Sciences, Chemical Sciences, Physical Sciences, Earth and Environmental Sciences
Duration of education:	4 years
Number of ECTS credits:	31
Total number of teaching hours:	370 (including 60 hours of work placement)

Module I: Basic courses / 210 hours/ 21 ECTS

1. Course Lecture I /30 hours/ E/ 3 ECTS.
2. Course Lecture II /30 hours/ E/ 3 ECTS.
3. Course Lecture in an additional discipline (other than the doctoral discipline), / 30 hours/ E/ 3 ECTS.
4. **Doctoral seminar under the supervision of a supervisor /120 hours/ 12 ECTS.**

**Module II: Professional development courses
/ 70+60 =130 hours / 8 ECTS**

1. Scientific Information: tools for search and processing of scientific and didactics resources / 10 hours/ 1 ECTS.
2. Creative Thinking / 10 hours/ 1 ECTS
3. Techniques of Scientific and Popular Science Presentations / 10 hours/ 1 ECTS.
4. Organisation and Financing of Research including Elements of Law and Ethics / 15 hours/ 2 ECTS.
5. Scientific Writing / 15 hours/ 2 ECTS.
6. Elements of Copyright and Patent Law / 10 hours / 1 ECTS.
7. Work placement / 60 hours / 0 ECTS .

Module III: Specialist courses / 30 hours/ 2 ECTS

1. **Specialist course no. 1 / laboratory / module / lecture / specialist seminar / selected by the supervisor in agreement with the director of the school / 30 hours/ 3 ECTS.**
2. Specialist course no. 2 /laboratory/ module/lecture/specialist seminar / selected by the supervisor in agreement with the director of the school / 30 hours/ 2 ECTS.

OR (option for Course No. 2)

Discussion class in specialist English as a foreign language / 30 hours/ 2 ECTS.

Notes

1. The program of education in the doctoral school, in accordance with the Act of 20 July 2018 - *Law on Higher Education and Science* (Journal of Laws of 30 August 2018, item 1668) is NOT a study program. Therefore, it is based on "modular" courses that are not conducted in a semester system. This means, for example, that workshops on preparing grant applications are held over two days, 1-2 times a year. One part of the workshop may be conducted by invited experts from the National Science Centre (NCN) or the Foundation for Polish Science (FNP). The second part may take place under the supervision of the NCU staff experienced in securing funds from institutions that conduct grant competitions.
2. Classes in Module I may be partially conducted in English by foreign or domestic experts/researchers invited to participate.
3. Work placement (Module II) may primarily take the form of teaching activities. They should consider the individual research plan of the doctoral student, selected in agreement with the school director and the supervisor.
4. Specialised Module. Classes elected by the doctoral student in consultation with the supervisor and the school director based on the needs related to the individual research plan.
5. A mid-term evaluation is conducted in the middle of the four-year education period in accordance with the *Act on Higher Education and Science*, the framework of which is defined both in the Act and in the Rules of Doctoral School of Exact and Natural Sciences.
6. The School program of education and the description of learning outcomes are based on the characteristics of the second degree for qualifications at level 8 of the Polish Qualification Framework, specified in the Regulation of the Minister of Science and Higher Education of November 14, 2018 on the characteristics of the second degree of learning outcomes for qualifications at levels 6-8 of the Polish Qualification Framework (Journal of Laws of 2018, item 2218).

**Learning Outcomes in the Field of Natural Sciences
for the disciplines: Astronomy, Mathematics,
Biological Sciences, Chemical Sciences, Physical Sciences,
Earth and Environmental Sciences**

Learning Outcomes	Code of the Descriptor Component of the Polish Qualifications Framework – Level 8
KNOWLEDGE (knows and understands)	
advanced knowledge in the field of natural sciences, specific to the chosen discipline and the scope of research conducted	P8S_WG
modern research methodologies relevant to the discipline	P8S_WG
ethical and legal foundations for conducting scientific research involving humans and animals (pertaining to biological sciences))	P8S_WK
principles of disseminating research findings	P8S_WK
principles of knowledge transfer to the socio-economic sphere	P8S_WG P8S_WK
methodology and evaluation methods for the educational process	P8S_WG P8S_WK
a comprehensive grasp of the most important theories and concepts within the discipline of the doctoral study	P8S_WG
the methodology, structure, and historical development of their discipline, as well as the fundamental issues and dilemmas of civilization related to their area of research	P8S_WG P8S_WK
SKILLS (can)	
independently gather literature related to a specific issue and critically analyse it	P8S_UW
present the results of their own work comprehensively and summarise the findings of others in the form of a scientific dissertation, publication, oral conference presentation, seminar paper, or poster	P8S_UK
independently solve scientific problems, formulate tasks aimed at finding solutions, make inferences, and extend the problem	P8S_UW P8S_UO
critically analyze the results of scientific research	P8S_UW
thanks to their strong command of the English language, can express	P8S_UK

themselves fluently in both speech and writing, present their own reports, and understand others' contributions	P8S_UO
transfer the results of scientific research to the economic and social spheres	P8S_UW P8S_UO
disseminate research findings and communicate effectively within the academic community	P8S_UK
apply various teaching methods and forms that facilitate the educational process at the academic level	P8S_UU
utilize tools from their discipline, including advanced mathematics and computer science, to describe processes and solve problems	P8S_WG
plan their own development and inspire and organise the development of others	P8S_UU P8S_UO
SOCIAL COMPETENCES (is ready to)	
uphold and promote the ethos of the scientific community and research in the fields of natural sciences	P8S_KR
advocate for the civilizational and social value of science and scientific research	P8S_KK
maintain a critical attitude towards their own and others' accomplishments in their scientific discipline, as well as towards prejudices and misconceptions related to science	P8S_KK
take responsibility for published content and act in accordance with the principles of scientific integrity and professional ethics	P8S_KO

Rules of verification of learning outcomes for qualifications at 8PRK8 PRK

Explanation:

So far AST Doctoral School doesn't have an official document regarding in a formal way rules of verifications of learning outcomes. We plan to prepare and announce such document soon. However we have developed a systems which encompasses:

1. Passing all required classes.
2. Participating in classes as an instructor.
3. Preparation of Individual Research Plan.
4. Passing midterm evaluation.
5. Preparation and publishing of scientific papers.
6. Preparation of a PhD thesis.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Name and surname
Karolina SŁOWIK
Declared disciplines
<i>Physical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2008 – Doctor of Physical Sciences 2022 – Doctor Habilitatus - Natural Sciences/ Physical Sciences/ Physics
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Supervisor of 1 doctoral student – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p><i>Field of science: Natural Sciences discipline: Physical Science</i> <i>h-index (GS)=12</i></p> <p><i>Professor K. Słowik graduated from individual studies in theoretical and computer physics in 2003. She completed research fellowships at leading photonics centres in Germany (Friedrich Schiller University in Jena and Karlsruhe Institute of Technology). Her research interests focus on the interaction of light with matter, which she investigates through theoretical methods using quantum optics, photonics and solid-state methodology. She also discussed the use of photonic nanoantennas to enhance the interactions of light with atomic systems, and going beyond the long-wave approximation. She conducts computations on the optical properties of low-dimensional nanostructures, including molecular chains, 2D materials and their photonic counterparts in the nanoscale. She studies light dispersion in coherent atomic and molecular media.</i></p> <p><i>She has obtained several grants in the NSC, FPS, MSHE, ERA-NET Cofund in Quantum Technologies competitions (see the list below). She is a member of domestic and international physics associations, including the Polish Physical Society, the Foundation for Polish Science Scholars Club, the Optica and SPIE societies, and the European Physical Society (EPS). Since 2022, she has been a member of the Atomic, Molecular and Optical Physics Division (AMOPD Board) of the EPS. She is a member of scientific committees of several prestigious international conferences in the broad field of optics, including ECAMP 2025 (Innsbruck, Austria), EGAS 2026 (Toruń, Poland), Quantum Optics 2025 (Kraków, Poland), as well as organising committees, including N2D (Toruń, Poland, 2025), QSCP 2022 (Toruń, Poland), OEM2D 2024 (San Sebastian, Spain). She supervises the Toruń branch of the SPIE research group.</i></p> <p><i>Publications 140-200 (10 max in recent years)</i></p> <ol style="list-style-type: none"> <i>1. S. Khasminkaya, F. Pyatkov, K. Słowik i in., Fully integrated quantum photonic circuit with an electrically driven light source, Nature Photonics 10 (11), 727-732 (2016)</i> <i>2. E. Rusak, J. Straubel, P. Gładysz, ... K. Słowik, Enhancement of and interference among higher order multipole transitions in molecules near a plasmonic nanoantenna, Nature Communications 10(1), 1-8 (2019)</i> <i>3. P. Gładysz, P. Wcisło, K. Słowik, Propagation of optically tunable coherent radiation in a gas of polar molecules, Scientific Reports 10:17615 (2020)</i> <i>4. G. Scala, F. Pepe, ..., K. Słowik Light interaction with extended quantum systems in dispersive media, New J. Phys., 22 123047 (2020)</i> <i>5. M. M. Muller, M. Kosik, ..., K. Słowik, Energy-Based Plasmonicity Index to Characterize Optical Resonances in Nanostructures, J. Phys. Chem. C, 124, 24331–24343 (2020)</i> <i>6. A. Gajewski, ..., K. Słowik, P. Kolenderski, Waveguide platform for quantum anticentrifugal force,</i>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Optics Letters 45, 3373 (2020)

7. M. Kosik, M. M. Müller, K. Słowik i in., *Revising quantum optical phenomena in adatoms coupled to graphene nanoantennas*, *Nanophotonics* 11.14, 3281-3298 (2022)

8. S. Izadshenas i K. Słowik, *Metasurface for broadband coherent Raman signal enhancement beyond the single-molecule detection threshold*, *APL Mater.* 11, 081120 (2023)

9. S. Izadshenas, P. Gładysz, K. Słowik, *Hybrid graphene - silver nanoantenna to control THz emission from polar quantum systems*, *Optics Express* 31, 29037 (2023)

10. F. Pepe i K. Słowik, *Dressed Atom Revisited: Hamiltonian-Independent Treatment of the Radiative Cascade*, *Physical Review Letters* 133, 083603 (2024)

Research projects (as Principal Investigator or the Polish team leader in an international consortium):

- 2024 – now MAPS: 2D-Material-Inspired Photonic Architectures, Sonata Bis competition, National Science Centre
- 2023 – now E2TPA: Exploiting Entangled Two-Photon Absorption, QuantERA competition, ERA Net co-fund, implemented in an international consortium (Switzerland, Germany, Great Britain), Polish funding body: National Centre for Research and Development
- 2022 – now FLAT: Functionalizing Layered 2D Materials for Tailored Optoelectronics, OPUS 20 + LAP competition, National Science Centre and Deutsche Forschungsgemeinschaft (DFG), Germany
- 2019 – 2023 DAEMoN: Dynamics of Asymmetric Quantum Emitters Controlled by Nanostructures, SONATA 14 competition, National Science Centre
- 2018 - 2022 GRASP: Graphene Surface Plasmons for Controllable Quantum Electrodynamics, a competition under the joint programme of the National Science Centre (Beethoven 2) and Deutsche Forschungsgemeinschaft (DFG), Germany
- 2016 - 2018 HEIMaT: High Enhancement and Interference of Molecular Transitions (Nanoantennas for higher-multipole light-matter coupling), HOMING competition, Foundation for Polish Science
- 2017-2018 Light-matter interactions in nanooptical systems beyond dipole approximation, an executive program of the Deutscher Akademischer Austauschdienst (DAAD) and the Ministry of Science and Higher Education

In addition, a mentor in the Preludium grant of the National Science Centre "NOBEL: NONlinear BEhavior of Rabi frequency in poLar systems" with P. Gładysz, MSc, as the leader.

Awards:

Postdoctoral research achievements cum laude, 2022

Minister of Science and Higher Education Scholarship for outstanding young scientists, 2019

Many times: team awards of the NCU's Rector for research activities

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Physical Sciences, ongoing supervision (October 2024)

Abhishek Ghosh, MSc (3rd year, AST)

Piotr Gładysz, MSc, winner of the PRELUDIUM grant of the NSC (P. Gładysz completed AST, the dissertation *Interaction of light with quantum systems of different degrees of symmetry* was submitted in September 2024 and is to be defended)

Doctoral students awarded with doctoral degrees:

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Dr Miriam Kosik, Institute of Physics, NCU, Physical Sciences; cum laude

Tight-binding framework to study optical properties of graphene nanoantennas with adatoms

Defence : 2022

Dr Saeid Izadshenas, Institute of Physics, NCU, Physical Sciences; cum laude

Plasmonic nanostructures supporting frequency conversion in atomic systems

The dissertation was submitted in 2024 and defended in 2025

Assistant supervision:

Dr Andrzej Gajewski, Institute of Physics, NCU, Physical Sciences

Light guided in tailored environments: from basic aspects to applications

Defence: 2022

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

K. Słowik has 12 years of teaching experience. She has conducted classes, lectures and laboratory classes in e.g. Quantum Physics 1, Quantum Optics 1, Algebra 2, Mathematical Analysis 1 and 2, Fundamentals of Programming, Physics Laboratory 1. She has been teaching Quantum Optics 1 in English since 2021/22 academic year, also online during the COVID-19 pandemic.

She coordinated the implementation of the TAPS summer fellowship programme in physics and astronomy at the NCU in 2018. She acquired funding for these fellowships under the strategic grants of the Visegrad Fund.

She is a co-author of educational materials, i.e., a course book to a the lecture Quantum Optics 1 in English, intended for such fields of study as Physics and Astronomy(second-cycle studies) at the NCU, Physics (second-cycle studies) and doctoral students in Physical Sciences. She is the (co)author of three papers promoting physics, e.g., in "Fizyka w szkole" and "Academia" magazines.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- systematic participation in many scientific conferences in quantum optics, nanophotonics, atomic and molecular physics

- organisation and participation in international conferences

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

She has completed 2 long-term research fellowships at foreign centres

2012-2015 – Friedrich Schiller University in Jena, Germany

2015 – Karlsruhe Institute of Technology, Germany

and several short-term research stays at various centers, for instance:

- Donostia International Physics Center, Spain

- University Malaysia Perlis, Malaysia

- Norwegian University of Science and Technology, Trondheim, Norway

- Max Planck Institute for Quantum Optics, Garching, Germany

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

- Jagiellonian University, Kraków

She has presented the results of her research at over 60 international and domestic scientific conferences (e.g., in Singapore, Chile, the United Kingdom, Denmark, Germany, USA, Spain, France, the Czech Republic, Switzerland, Italy and the Netherlands). She has been, and still is, a research collaborator with foreign centres: Karlsruhe Institute of Technology (Germany), Donostia International Physics Center (Spain), National Institute of Standards and Technology, Maryland (USA), University of Geneva (Switzerland), University College London (Great Britain), University of Paderborn (Germany), University of Bari (Italy), University of Perlis (Malaysia) and with PicoQuant (Germany). She is an editor of an international journal published by Nature-Springer Group (Scientific Reports).

Name and surname
Katharina BOGUSŁAWSKI
Declared disciplines
<i>Physical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2019 – Doctor Habilitatus – Natural Sciences/ Physical Sciences/ Physics/ Faculty of Physics, Astronomy and Informatics, NCU in Toruń
2013 – Doctor [Dr Sc ETH Zurich] – Natural Sciences/ Chemical Sciences/ Chemistry, ETH Zurich
Academic titles (name, title conferral year, classification)
n/a
Courses taught at the Doctoral School
Python 3 - 30 hours Computational Spectroscopy 1, 20 hours Computational Spectroscopy 2, 5 hours Supervisor of 4 doctoral students (A Leszczyk, A Nowak, L Szczuczko, Saman Behjou) – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
Field of science: Natural Sciences discipline: Physical Sciences h-index (GS)=28
Publications:
1. M.H. Kriebel, P. Tecmer, M. Gałyńska, A. Leszczyk, <u>K. Boguslawski</u> , Accelerating Pythonic Coupled-Cluster Implementations: A Comparison Between CPUs and GPUs, <i>J. Chem. Theory Comput.</i> 20 2024 , 4182–4195.
2. R. Chakraborty, M.M.F. de Moraes, <u>K. Boguslawski</u> , A. Nowak, J. Świerczyński, P. Tecmer, Toward Reliable Dipole Moments without Single Excitations: The Role of Orbital Rotations and Dynamical Correlation, <i>J. Chem. Theory Comput.</i> 20 2024 , 4689–4702.
3. M. Gałyńska, <u>K. Boguslawski</u> , Benchmarking ionization potentials from pCCD tailored coupled cluster models, <i>J. Chem. Theory Comput.</i> 20 2024 , 4182–4195.
4. <u>K. Boguslawski</u> , F. Brzęk, R. Chakraborty, K. Cieślak, S. Jahani, A. Leszczyk, A. Nowak, E. Sujkowski, J. Świerczyński, S. Ahmadkhani, D. Kędziera, M.H. Kriebel, P.S. Żuchowski, P. Tecmer, PyBEST: improved functionality and enhanced performance, <i>Comput. Phys. Commun.</i> 297 2024 , 109049.
5. P. Tecmer, M. Gałyńska, L. Szczuczko, <u>K. Boguslawski</u> , Geminal-based strategies for modeling large building blocks of organic electronic materials, <i>J. Phys. Chem. Lett.</i> 14 2023 , 9909–9917.
6. A. Nowak, K. Boguslawski, A configuration interaction correction on top of pair coupled cluster

doubles, *Phys. Chem. Chem. Phys.* 25 **2023**, 7289–7301.

7. A. Leszczyk, M. Máté, O. Legeza, K. Boguslawski, Assessing the accuracy of tailored coupled cluster methods corrected by electronic wave functions of polynomial cost, *J. Chem. Theory Comput.* 18 **2022**, 96–117.
8. A. Nowak, Ö. Legeza, K. Boguslawski, Orbital entanglement and correlation from pCCD-tailored coupled cluster wave functions, *J. Chem. Phys.* 154 **2021**, 084111.
9. K. Boguslawski, Open-shell extensions to closed-shell pCCD, *Chem. Commun.* 57 **2021**, 12277–12280.
10. K. Boguslawski, Targeting Doubly Excited States with Equation of Motion Coupled Cluster Theory Restricted to Double Excitations, *J. Chem. Theory Comput.* 15 **2019**, 18–24.

Research projects (Principal Investigator):

Ongoing projects:

10/2023–to date: ERC-2022-STG, Horyzont Europa, topic: “Devising Reliable Electronic Structure Schemes through Eclectic Design”, DRESSED-pCCD (EUR 1’218’088), project No: 101077420; Principal Investigator

Completed:

04/2022–to date: SMALL GRANT SCHEME Call 2020 (Norway grants) funded from the national Centre for Research and Development, topic: “Engineering a Novel, Diverse, Library-based Electronic Structure Suit for Molecular Design”, ENDLESS- Mol (EUR 160’981.93; PLN 732’500), project No: NOR/SGS/ENDLESS- Mol/0091/2020; Principal Investigator

04/2016–11/2023:

SONATA BIS 5, topic: New Methods for Describing Electronic Correlation for Heavy Atom Chemistry, funded from the National Science Centre, Poland (PLN 1’557’380), project No 2015/18/E/ST4/00584; Principal Investigator

07/2016–09/03/2019: Marie-Skłodowska-Curie Individual Fellowship (European Fellowship) European Commission (call: H2020-MSCA-IF-2015) (EUR 146’462), project No: 702635–PCCDX, “postdoctoral fellow”

04/2015–07/2015: Banting Postdoctoral Fellowship, “Natural Sciences and Engineering Research Council of Canada” (CAD 140’000), ID 201409BAF-344320- 257708, application No BPF-NSERC-01072; Principal Investigator

07/2013–12/2014: Early-Postdoc Mobility Fellowship, “Swiss National Science Foundation” (CHF 70’000), project No P2E2P2 148650; Principal Investigator

National/international awards for scientific achievements:

20/10/2023: Scientist of the Future 2023 - Category: Woman of Science Who Changes the World, Centre for Intelligent Development.

11/10/2023: NSC Award (Natural Sciences and Engineering) - a distinction for young scientists under 40 for significant scientific achievements made in basic research conducted in Poland, documented by publications affiliated with a Polish scientific entity.

02/2022: Dirac Medal of the World Association of Theoretical and Computational Chemists (WATOC) awarded annually to one outstanding theoretical and computational chemist under the age of 40.

20/10/2020: POLITYKA Scientific Award, Exact Sciences

20/10/2020: Award of the Polish Academy of Sciences, the Branch in Gdańsk, for young scientists for the best work published in 2019, Gdańsk, Poland

Professor Boguslawski has developed a multidisciplinary research profile combining mathematical

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

development of new quantum chemistry methods based on electron pairs, computational studies of molecular properties and chemical reactivity using innovative approaches, and the development of interpretative tools for qualitative understanding of chemical compounds and chemical processes using the concepts of quantum information theory. In 2016, she founded her own research group. Her scientific achievements are specified below. In addition, she is actively involved in software development. She is a co-founder and lead developer of PyBEST - an open-source software package for electronic structure calculations (website: <http://fizyka.umk.pl/~pybest>).

PyBEST is managed by her research group and other scientists from the Nicolaus Copernicus University in Toruń.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Supervision- ongoing (Physical Sciences, to date [October 2024])

1. *Lena Szczuczko, MSc (1st year, AST) - supervisor*

2. *Saman Behjou, MSc (1st year, AC) – supervisor*

Doctoral students awarded with doctoral degrees:

1. 09.11.2022: *Aleksandra Leszczyk, title of the doctoral dissertation: "Breaking the curse of dimension in computational many-body physics and chemistry-simplified and inexpensive coupled-cluster-type methods to provide an efficient and robust computational model for the electronic structures of complex molecular systems", Institute of Physics, Faculty of Physics, Astronomy and Informatics, NCU in Toruń, Physical Sciences.*

2. 30/09/2022: *Nowak Artur, title of the doctoral dissertation: "Development of innovative computational methods to study electronic structures of heavy-element compounds", Institute of Physics, Faculty of Physics, Astronomy and Informatics, NCU in Toruń, Physical Sciences*

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

List of chapters in scientific monographs:

1. A. Leszczyk, P. Tecmer, K. Boguslawski, New Strategies in Modeling Electronic Structures and Properties with Applications to Actinides, In: Broclawik E., Borowski T., Radoń M. (eds) Transition Metals in Coordination Environments. Challenges and Advances in Computational Chemistry and Physics, vol 29. Springer, Cham 2019.
2. P. Tecmer, K. Boguslawski, D. Kedziera, Relativistic Methods in Computational Quantum Chemistry, In: Handbook of Computational Chemistry; Eds.: J. Leszczynski, Springer, Dordrecht 2017, pp. 885.
3. K. Boguslawski, M. Reiher, Chemical Bonding in Open-Shell Transition Metal Complexes, In: The Chemical Bond, Chemical Bonding across the Periodic Table (Vol. 2 'The Nature of the Chemical Bond Revisited'); Eds.: G. Frenking, S. Shaik, Wiley-VCH, 2014, pp. 219.

Classes conducted in a foreign language:

1. Computer course "Python 3", winter semester 2022/23, lecture (coordinator; language of instruction: English), *Institute of Physics, Faculty of Physics, Astronomy and Informatics, NCU in Toruń*
2. "State of the art computational electronic spectroscopy" (COMSPEC2), summer semester 2022/23, lecture (language of instruction: English), *Institute of Physics, Faculty of Physics, As-*

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

tronomy and Informatics, NCU in Toruń

3. "An introduction to computational spectroscopy" (COMSPEC1), winter semester 2022/23, lecture (coordinator; language of instruction: English), *Institute of Physics, Faculty of Physics, Astronomy and Informatics, NCU in Toruń*
4. "State of the art computational electronic spectroscopy" (COMSPEC2), summer semester 2019/20, lecture (language of instruction: English), *Institute of Physics, Faculty of Physics, Astronomy and Informatics, NCU in Toruń*
5. "An introduction to computational spectroscopy" (COMSPEC1), winter semester 2019/20, lecture (language of instruction: English), *Institute of Physics, Faculty of Physics, Astronomy and Informatics, NCU in Toruń*
6. "Theory of multi-electron systems" (TUWIEL), winter semester 2018/19, lecture (language of instruction: English), *Institute of Physics, Faculty of Physics, Astronomy and Informatics, NCU in Toruń*

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- *Participation in "Poland Open Hackathon" (22-30/10/2024): The objective of the Open Hackathon was to enable computational scientists to port, accelerate and optimise their scientific applications to novel computer architectures, including CPUs, GPUs and other computing technologies. The event was organised by Cyfronet and the National HPC Competence Centre together with NVIDIA and OpenACC*

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Internships and fellowships abroad:

Professor K. Boguslawski completed one short-term (8 months) and one long-term (2 years) scientific fellowships in foreign centers:

- *11/2012–06/2013: Postdoctoral Fellow, Laboratory of Physical Chemistry, ETH Zurich, Switzerland.*
- *07/2013–07/2015: "Postdoctoral Fellow", Department of Chemistry and Chemical Biology, McMaster University, Canada. Principal Investigator in the Early-Postdoc Mobility Fellowship SNF (Switzerland) and Banting Postdoctoral Fellowship NSERC (Canada). Co-investigator of the NSERC research grant (Canada).*

Several short-term research stays in various centres, e.g., :

- *08/2015–09/2015: Visiting Professor at the Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University in Toruń (2 weeks)*
- *05/2015: Research visit to the PhLAM Institute, University of Lille, Lille, France (2 days)*

Activities in international competitions for funding for research and projects, and involvement in the implementation of international research projects:

- *Switzerland ("Swiss National Science Foundation"): co-investigator (11/2012–06/2013); Principal Investigator Early-Postdoc Mobility Fellowship*
- *Germany ("Fond der Chemischen Industrie"): Principal Investigator for doctoral studies (07/2010–06/2012)*
- *Canada ("Natural Sciences and Engineering Research Council of Canada"): Principal Investigator for Banting Postdoctoral Fellowship (04/2015–07/2015); NSERC research grant co-investigator (01/2015–03/2015)*
- *France (French Ministry of National Education, Higher Education and Research): co-investigator in the France Canada Research Fund's New Collaboration programme (2015-2017)*

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- *European Commission (Horizon 2020 and Horizon Europe): “postdoctoral fellow” in the Marie-Skłodowska-Curie Individual Fellowship (European Fellowship) (call: H2020-MSCA-IF-2015; 7/2016–09/03/2019); ERC-2022-STG Principal Investigator (DRESSED-pCCD, 101077420; 10/2023–to date)*

Guest speaker at international conferences and meetings:

She has delivered 21 guest lectures at international conferences, e.g. in the USA (Pacifichem, EMN Meeting, Sanibel symposium, CCTCC, Telluride workshop), Canada (WATOC), Norway (ISTCP), Spain (EMN Meeting), France (Valence bond workshop, EESM, MMAIQC), Chile (WATOC satellite meetings), Belgium (Canada Days Workshop), Germany (EBAQC) and China (ISTCP).

She has presented 4 papers and 18 poster sessions at international conferences (e.g., in the USA, Canada, Spain, France, Chile, Belgium, China, Japan, Switzerland and Germany).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Name and surname
Piotr WCISŁO
Declared disciplines
<i>Field of science: Natural Sciences</i> <i>Discipline: Physical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2019 – Doctor Habilitatus, NCU 2015 – Doctor, NCU
Academic titles (name, title conferral year, classification)
2024 – Professor
Courses taught at the Doctoral School
<i>Supervisor of 6 doctoral students (N. Stolarczyk, H. Józwiak, M. Gancewski, K. Stankiewicz, B. Bednarski, E. Alhadi) – supervisor mentoring</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Piotr Wcisło conducts theoretical and experimental research in atomic and molecular physics. One of the most interesting results is the development of a new experimental method for searching for dark matter in the form of topological defects using ultra-precise laser spectroscopy based on the technology of optical atomic clocks. Another example is the use of ultra-precise laser spectroscopy of simple, first-principle-calculated molecular systems to test quantum electrodynamics. Professor Piotr Wcisło goes beyond the conventional approaches to testing the standard model and searching for new physics, an example of which is, for example, his recent proposal for a method for controlling the sensitivity of optical cavities to the variability of fundamental constants. Another example is the completely new laser system being constructed in his laboratory, in which he transfers current spectroscopic technologies to the regime of deep cryogenic temperatures, which will enable a radical improvement in the accuracy of measuring the structure of the hydrogen molecule.</p> <p>Selected publications (he is the author of 69 original scientific research):</p> <ol style="list-style-type: none"> 1. P. Wcisło, P. Ablewski, K. Beloy, S. Bilicki, M. Bober, R. Brown, R. Fasano, R. Ciuryło, H. Hachisu, T. Ido, J. Lodewyck, A. Ludlow, W. McGrew, P. Morzyński, D. Nicolodi, M. Schioppo, M. Sekido, R. Le Targat, P. Wolf, X. Zhang, B. Zjawin, M. Zawada, "New bounds on dark matter coupling from a global network of optical atomic clocks", <i>Sci. Adv.</i> 4, eaau4869 (2018) 2. M. Słowiński, F. Thibault, Y. Tan, J. Wang, AW Liu, SM Hu, S. Kass, A. Campargue, M. Konefał, H. Józwiak, K. Patkowski, P. Żuchowski, R. Ciuryło, D. Lisak, P. Wcisło "H₂-He collisions: Ab initio theory meets cavity-enhanced spectra" <i>Physical Review A</i> 101 (5), 052705 (2020) 3. M. Zaborowski, M. Słowiński, K. Stankiewicz, F. Thibault, A. Cygan, H. Józwiak, G. Kowzan, P. Masłowski, A. Nishiyama, N. Stolarczyk, S. Wójtewicz, R. Ciuryło, D. Lisak, P. Wcisło, "Ultra-high finesse cavity-enhanced spectroscopy for accurate tests of quantum electrodynamics for molecules", <i>Opt. Lett.</i> 45, 1603 (2020) 4. H. Józwiak, H. Cybulski, P. Wcisło, "Positions and intensities of hyperfine components of all rovibrational dipole lines in the HD molecule", <i>J. Quant. Spectrosc. Radiat. Transfer</i> 253, 107171 (2020)

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

5. P. Wcisło, F. Thibault, N. Stolarczyk, H. Jóźwiak, M. Słowiński, M. Gancewski, K. Stankiewicz, M. Konefa I, S. Kassi, A. Campargue, Y. Tan, J. Wang, K. Patkowski, R. Ciuryło, D. Lisak, R. Kochanov, L. S. Rothman, I. E. Gordon, "The first comprehensive dataset of beyond-Voigt line-shape parameters from ab initio quantum scattering calculations for the HITRAN database: He-perturbed H₂ case study", J. Quant. Spectrosc. Radiat. Transfer 260, 107477 (2021)

6. M Gancewski, H Jóźwiak, E Quintas-Sánchez, R Dawes, F Thibault, P. Wcisło , "Fully quantum calculations of O₂–N₂ scattering using a new potential energy surface: Collisional perturbations of the oxygen 118 GHz fine structure line", J. Chem. Phys. 155, 124307 (2021)

7. H Jóźwiak, P Wcisło, "Magic wavelength for a rovibrational transition in molecular hydrogen", Scientific Reports 12, 14529 (2022)

8. M Lamperti, L Rutkowski, D Ronchetti, D Gatti, R Gotti, G Cerullo, F Thibault, H Jóźwiak, S Wójtewicz, P Masłowski, P Wcisło, D Polli, M Marangoni, "Stimulated Raman scattering metrology of molecular hydrogen", Communications Physics 6, 67 (2023)

9. H Jóźwiak, N Stolarczyk, K Stankiewicz, M Zaborowski, D Lisak, S Wójtewicz, P Jankowski, K Patkowski, K Szalewicz, F Thibault, IE Gordon, P Wcisło, "Accurate reference spectra of HD in an H₂–He bath for planetary applications", Astronomy & Astrophysics 687, A69 (2024)

10. H Jóźwiak, TV Tscherbul, P Wcisło, "Hyperfine and Zeeman interactions in ultracold collisions of molecular hydrogen with atomic lithium" J. Chem. Phys. 160, 094304 (2024)

Piotr Wcisło was/is the Principal Investigator in international projects (ERC, EURAMET, Fulbright, Mobility Plus, Ministry of Science and Higher Education, National Science Centre).

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Physical Sciences – to date (November 2024):

1. H. Jóźwiak (5th year, AST) – supervisor

Supervision of the winner of the Diamond Grant and the winner of the START Scholarship of the Foundation for Polish Science

2. M. Gancewski (3rd year, AST) – supervisor

Supervision of the winner of the "Pearls of Science" grant

3. K. Stankiewicz (3rd year, AST) – supervisor

Supervision of the winner of the "Pearls of Science" grant

4. B. Bednarski (3rd year, AST) – supervisor

5. E. Alhadi (1st year, AST) – supervisor

Doctoral students who were awarded doctoral degrees:

6. N. Stolarczyk, 2024 – supervisor (doctoral dissertation cum laude)

Supervision of the winner of the PRELUDIUM NSC grant

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

7. M. Słowiński, 2022 – supervisor
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>Teaching in a foreign language: Since 2024 - the course in "Atomic and molecular physics" in English (lecture: 30h + classes: 30h) Activity in promoting and popularising science - interviews and lectures in the media, e.g.: a) Popular science lecture "Testing the limits of quantum theory" for the Copernicus Center as part of the "Science in the Center" series https://www.youtube.com/watch?v=vg9npbRIA30&t=3701s The lecture was viewed over 173,000 times, got over 1,300 likes and 160 comments. b) Popular science report on the channel "This Is IT - Maciej Kawecki" https://www.youtube.com/watch?v=1_Jm9aYK68I The lecture was viewed over 67,000 times, got over 2,000 likes and 331 comments.</p>
<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p>
<p>Participation in numerous specialist workshops and trainings, both online and onsite, most recently:</p> <ul style="list-style-type: none"> - Workshop on Traceability of Spectral Reference Line Data, Braunschweig, Germany (2014) - Virtual Workshop on Precision Spectroscopy of Molecular Hydrogen, Vrije Universiteit Amsterdam / online (2020) - Workshop on ultracold molecules, Warsaw (2023) - Exploring the Terahertz Fundamental Principles & Frontiers (under the Candela Open Lectures, online lecture series) (2024)
<p>International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)</p>
<p>Piotr Wcisło has completed a number of research fellowships in the most prestigious research institutions in the world; e.g. a 6-month fellowship at the Harvard-Smithsonian Center for Astrophysics in Cambridge, USA; a month-long visit to the Vrije Universiteit in Amsterdam, as well as numerous shorter research trips, e.g., to France, the USA, China and Italy. In 2018-2019, he worked in the laboratories of the prestigious JILA (Joint Institute for Laboratory Astrophysics, a joint institute of The University of Colorado Boulder USA and the National Institute of Standards & Technology). Piotr Wcisło has been the Principal Investigator in international projects (ERC, EURAMET, Fulbright, Mobility Plus), and gave numerous lectures at international conferences and in other scientific centres (as a guest speaker and plenary lectures).</p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Name and surname
Roman CIURYŁO
Declared disciplines
<i>Physical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
Academic titles (name, title conferral year, classification)
2018 – Professor of Physical Sciences
Courses taught at the Doctoral School
Elements of Quantum Mechanics, - lecture, Module I, 30h E Mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>1. P. Wcisło, P. Ablewski, K. Beloy, S. Bilicki, M. Bober, R. Brown, R. Fasano, R. Ciuryło, H. Hachisu, T. Ido, J. Lodewyck, A. Ludlow, W. McGrew, P. Morzyński, D. Nicolodi, M. Schioppo, M. Sekido, R. Le Targat, P. Wolf, X. Zhang, B. Zjawin, M. Zawada, "New bounds on dark matter coupling from a global network of optical atomic clocks", <i>Sci. Adv.</i> 4, eaau4869 (2018)</p> <p>2. M. Borkowski, A. A. Buchachenko, R. Ciuryło, P. S. Julienne, H. Yamada, Y. Kikuchi, Y. Takasu, Y. Takahashi, "Weakly bound molecules as sensors of new gravitylike forces", <i>Sci. Rep.</i> 9, 14807 (2019)</p> <p>3. M. Zaborowski, M. Słowiński, K. Stankiewicz, F. Thibault, A. Cygan, H. Jóźwiak, G. Kowzan, P. Masłowski, A. Nishiyama, N. Stolarczyk, S. Wójtewicz, R. Ciuryło, D. Lisak, P. Wcisło, "Ultra-high finesse cavity-enhanced spectroscopy for accurate tests of quantum electrodynamics for molecules", <i>Opt. Lett.</i> 45, 1603 (2020)</p> <p>4. P. Wcisło, F. Thibault, N. Stolarczyk, H. Jóźwiak, M. Słowiński, M. Gancewski, K. Stankiewicz, M. Konefał, S. Kassı, A. Campargue, Y. Tan, J. Wang, K. Patkowski, R. Ciuryło, D. Lisak, R. Kochanov, L. S. Rothman, I. E. Gordon, "The first comprehensive dataset of beyond-Voigt line-shape parameters from ab initio quantum scattering calculations for the HITRAN database: He-perturbed H₂ case study", <i>J. Quant. Spectrosc. Radiat. Transfer</i> 260, 107477 (2021)</p> <p>5. A. Cygan, A. Fleisher, R. Ciuryło, K. Gillis, J. Hodges, and D. Lisak, "Cavity buildup dispersion spectroscopy", <i>Commun. Phys.</i> 4, 14 (2021)</p> <p>6. D. Lisak, D. Charczun, A. Nishiyama, T. Voumard, T. Wildi, G. Kowzan, V. Brasch, T. Herr, A. J. Fleisher, J. T. Hodges, R. Ciuryło, A. Cygan, P. Masłowski, "Dual-comb cavity ring-down spectroscopy", <i>Sci. Rep.</i> 12, 2377 (2022)</p> <p>7. J. Domysławska, S. Wójtewicz, K. Bielska, S. Bilicki, R. Ciuryło, D. Lisak, "Line mixing in the oxygen B-band head", <i>J. Chem. Phys.</i> 156, 084301 (2022)</p> <p>8. K. Bielska, A. A. Kyuberis, Z. D. Reed, G. Li, A. Cygan, R. Ciuryło, E. M. Adkins, L. Lodi, N. F. Zobov, V. Ebert, D. Lisak, J. T. Hodges, J. Tennyson, O. L. Polyansky, "Sub-promille measurements and calculations of CO (3–0) overtone line intensities", <i>Phys. Rev. Lett.</i> 129, 043002 (2022)</p> <p>9. P. Morzyński, S. Bilicki, M. Bober, D. Kovačič, R. Ciuryło, M. Zawada, J. Nawrocki, P. Dunst, T. Kobayashi, K. Hosaka, D. Akamatsu, "Intercontinental frequency ratio measurement of ¹⁷¹Yb and ⁸⁸Sr optical lattice clocks", <i>Metrologia</i> 61, 045009 (2024)</p> <p>10. L. T. Glöggler, N. Gusakova, B. Rienäcker, A. Camper, R. Caravita, S. Huck, M. Volponi, T. Wolz, L. Penasa, V. Krumins, F. P. Gustafsson, D. Comparat, M. Auzins, B. Bergmann, P. Burian, R. S. Brusa, F. Castelli, G. Cerchiari, R. Ciuryło, G. Consolati, M. Doser, Ł. Graczykowski, M. Grosbart, F. Guatieri, S. Haider, M. A. Janik, G. Kasprówicz, G. Khatrı, Ł. Kłosowski, G. Kornakov, L. Lappo, A. Linek, J.</p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

<p><i>Malamant, S. Mariuzzi, V. Petracek, M. Piwiński, S. Pospíšil, L. Povolo, F. Prelz, S. A. Rangwala, T. Rauschendorfer, B. S. Rawat, V. Rodin, O. M. Røhne, H. Sandaker, P. Smolyanskiy, T. Sowiński, D. Tefelski, T. Vafeiadis, C. P. Welsch, M. Zawada, J. Zielinski, N. Zurlo, "Positronium laser cooling via the $1^3S - 2^3P$ transition with a broadband laser pulse", Phys. Rev. Lett. 132, 083402 (2024).</i></p>
<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<p><i>I supervised:</i> - 2 Bachelor's theses: <i>Sławomir Bylicki, licencjat (2011);</i> <i>Dariusz Świerad, licencjat (2012);</i> - 4 Master's theses: <i>Jerzy Jabłoński, magister (2003);</i> <i>Mateusz Borkowski, magister (2010), the Polish Physical Society's Award for a Master's thesis (2011);</i> <i>Szymon Wójtewicz, magister (2010), Adam Smoliński Award for a Master's thesis in optoelectronics (2010);</i> <i>Piotr Ablewski, magister (2015);</i> 3 doctoral dissertations: <i>Mateusz Borkowski, doktor (2015);</i> <i>Piotr Wcisło, doktor (2015); the Author received BOLOGNA2014 Josef Pliva Prize and Stefan Pieńkowski Award 2015; the Prime Minister's Award in 2016;</i> <i>Piotr Morzyński, doktor (2016) – assistant supervisor: dr hab. Michał Zawada.</i></p>
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p><i>Professor Roman Ciuryło completed a number of research fellowships at: Dipartimento di Scienze Fisiche, Università di Napoli Federico II and INFN, Naples, Italy; Department of Physics, University of Toronto, Toronto, Canada; Atomic Physics Division, National Institute of Standards and Technology, Gaithersburg, MD, USA; ITAMP, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, USA; Space-Time standards Group, NICT, Tokyo, Japan; LISA, and Université Paris Est Créteil, Paris, France. In the years 2011-2018 he was the head of the FAMO National Laboratory in Toruń, in the years 2015-2019 he was a member of the Physics Science Working Group of the European Space Agency, and since 2019 he has been the head of the Department of Atomic, Molecular and Optical Physics at the Institute of Physics of the Nicolaus Copernicus University and in 2020 he has been an elected member of the Physics Committee of the Polish Academy of Sciences.</i> <i>In his work he combines theory with experiment, and his interests include broadly understood atomic, molecular and optical physics. In particular: high-resolution spectroscopy of atoms and molecules; theory of spectral line shapes and its application in basic research during the accurate determination of molecular transition frequencies in order to test fundamental properties of interactions and search for phenomena going beyond the Standard Model; tests of quantum electrodynamics in molecular systems; spectroscopic metrology of gas temperature and pressure; description of spectral lines for the needs of spectroscopic databases used in satellite studies of the Earth's atmosphere and other planets, including those outside the Solar system; study of the spectroscopic properties of greenhouse gases, optical atomic clocks and their applications in laboratory search for dark matter; theory of ultracold collisions and photoassociations in degenerate and non-degenerate atomic gases; optical Feshbach resonances and their application to the control of interactions in ultracold quantum systems; application of precise one- and two-colour photoassociation in studies of fundamental variations of physical constants and gravitational interactions at</i></p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

<i>small distances; studies of the properties of antimatter in cooperation with CERN.</i>
Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students
<i>Active implementation of numerous research grants; active work in the Physics Committee of the Polish Academy of Sciences</i>
International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)
<i>Professor Roman Ciuryło has held a number of research fellowships at: Dipartimento di Scienze Fisiche, Università di Napoli Federico II and INFN, Naples, Italy; Department of Physics, University of Toronto, Toronto, Canada; Atomic Physics Division, National Institute of Standards and Technology, Gaithersburg, MD, USA; ITAMP, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, USA; Space-Time standards Group, NICT, Tokyo, Japan; LISA, Université Paris Est Créteil, Paris, France. He has participated in dozens of international scientific conferences, has been active in ESA, and collaborates with CERN</i>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Name and surname
Sebastian Maćkowski
Declared disciplines
<i>Physical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2008 – Doctor Habilitatus – Natural Sciences/ Physical Sciences/ Physics 2002 – Doctor of Physical Sciences
Academic titles (name, title conferral year, classification)
2016 – Professor – Natural Sciences/ Physical Sciences/ Physics
Courses taught at the Doctoral School
Organisation and funding of research - 30 hours Writing and publishing scientific texts - 15 hours Techniques of presenting results and promoting scientific knowledge - 30 hours PhD seminar – supervision Supervisor of doctoral student (Martyna Jankowska) - supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
Sebastian Maćkowski is and has been involved in research on optical properties of hybrid nanostructures composed of metallic nanoparticles, photosynthetic complexes, semiconductor nanocrystals, graphene and other allotropic forms of carbon, upconverting crystals, molecular systems, organic materials, etc. He is a co-author of over 250 publications in nanotechnology, nano-optics, biophysics and materials chemistry (h-index= 40). He is a beneficiary of several grants, including: Opus, Beethoven and Sonata Bis, Applied Research Program, Polish-Turkish Program, and Welcome. Currently, he heads the Department of Nanophotonics at the Faculty of Physics, Astronomy and Informatics, the Nicolaus Copernicus University and is the head of the University Center of Excellence "From Fundamental Optics to Biophotonic Applications" within the EI-RU programme.
Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)
Supervisor of 11 doctoral dissertations in physics, biophysics and chemistry. Currently, supervision of the doctoral dissertation of Martyna Jankowska and co-supervision of three doctoral dissertations carried out jointly with the Institute of Physical Chemistry of the Polish Academy of Sciences in Warsaw.
Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).
Classes for the AST Doctoral School are taught in English. The list of classes is provided above.
Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

doctoral students
N/A
International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)
N/A

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Name and surname
Wiesław NOWAK
Declared disciplines
<i>Physical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2000 – Doctor Habilitatus – Natural Sciences/ Physical Sciences/ Physics (Computer Physics, Atomic and Molecular Physics, Biophysics) 1989 – Doctor of Physical Sciences
Academic titles (name, title conferral year, classification)
2009 – Professor – Natural Sciences/ Physical Sciences/ Physics
Courses taught at the Doctoral School
<i>Interdisciplinary tutorial - 15 hours Information - tools for searching and developing scientific and teaching resources - 10 hour Aspects of Molecular Quantum Mechanics, 30 hours Supervisor of 3 doctoral students (J. Berdychowska, S. Czach, Tugce Gokdemir) - supervisor mentoring</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<i>h-index(GS)=24 Professor W. Nowak graduated from individual interdisciplinary studies in chemistry and physics in 1979. Initially, he was focusing on theoretical physics (molecular quantum mechanics) and quantum-chemical calculations for fluorescent probes and CT systems. After completing fellowships in the USA (UI Chicago), France (Ecole Polytechnique, Paris) and Japan (Kyoto University), he started working on computer modelling of protein dynamics and ultrafast spectroscopy of heme proteins, as well as developing non-standard molecular dynamics methods. He investigates medically significant biological systems, neuronal proteins associated with autism and memory mechanisms, ion channels and biotechnological enzymes. He conducts calculations leading to the interpretation of single-molecule measurements using atomic force microscopy and drug modelling. He is developing lateral AFM spectroscopy, new methods of modelling molecular dynamics with the participation of electronic excited states, simulations of the dynamics of bionanosystems, including ion channels and receptors, and ligand transport phenomena. He developed applications of Petri nets in bioinformatics and AI methods in modelling. He obtained at least several grants in NSC competitions. In 2018-22 he was the Principal Investigator in the NSC OPUS project on modelling drugs useful in the fight against diabetes. He was a member of the CK. In 2021-2023 he was the Principal Investigator (at NCU) of the EU H2020 DIOSI project on the development of a new European model of doctoral education. In 2021-2023 he implemented the NAWA STER project. For six years he had been the head of the Interdisciplinary Physics and Informatics Team of ICNT NCU. He is the head of the Priority Research Team "MEMOBIT" and a member of EF "Nanobiophysics" within EI-RU. For 24 years he has been organising international scientific conferences "Bioinformatics in Torun" (BIT). He is the chair of the Toruń Branch of the Polish Physical Society. He is an honorary member of the Polish Bioinformatics Society and an editor at J.Mol. Modeling (Springer-Nature). He is the head of the Department of Biophysics at the NCU's Institute of Physics. He supervised over 10 doctoral students and reviewed several doctoral dissertations (Jagiellonian University, Warsaw University, Adam Mickiewicz University, Wrocław University of Technology, Institute of Physics of the Polish Academy of Sciences, and others). Since 2019, he has been the head of the AST Doctoral School of Natural and Physical Sciences.</i>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Field of science: Natural Sciences; discipline: Physical Sciences (including specialisation in Computer Physics, Computational Molecular Biophysics, Bionanotechnology, Bioinformatics)

Publications – usually 140 pts::

(1) J. Rydzewski, W. Nowak, *Ligand diffusion in proteins via enhanced sampling in molecular dynamics*, *Phys. Life Rev.*, 22-23(2017)58 - a critical review of some biophysical algorithms.

(2) J. Rydzewski, W. Nowak, *Thermodynamics of camphor migration in cytochrome P450cam by atomistic simulations*, *Sci. Rep.*, 7 (2017) 7736.- numerical study of camphor diffusion in protein

(3) J. Rydzewski, R. Jakubowski, G. Nicosia, W. Nowak, *Conformational sampling of a biomolecular rugged energy landscape*, *IEEE/ACM Trans. Comput. Biol.*, (2017) 10.1109/TCBB.2016.2634008 - analysis of the process of optimising the energy function of proteins

(4) J. Rydzewski, W. Nowak, *Machine learning based dimensionality reduction facilitates ligand diffusion paths assessment: a case of cytochrome P450cam*, *J. Chem. Theory Comput.*, 2016, 12 (4), pp 2110–2120.

An original use of machine learning to classify classical reaction pathways

(5) J. Rydzewski, W. Nowak, *Memetic algorithms for ligand expulsion from protein cavities*, *J. Chem. Phys.*, 143(12), (2015) 124101,- use of genetic algorithms in new algorithms for finding diffusion paths

(6) Juan Francisco Carraschoza Mayén, J. Rydzewski, Natalia Szostak, Jacek Blazewicz, W. Nowak, *Prebiotic Soup Components Trapped in Montmorillonite Nanoclay Form New Molecules: Car-Parrinello Ab Initio Simulations*, *Life*, 9, 2019, 46, 54 – the world's first large-scale quantum computer modelling of the formation of biomolecule components in a mineral nanocavity

(7) Juan Francisco Carraschoza Mayén, Piotr Łukasiak , W. Nowak, Jacek Blazewicz *Ab Initio Study of Glycine Formation in the Condensed Phase: Carbon Monoxide, Formaldimine, and Water Are Enough*, *Astrophys. J* 956 (2) (2023) 140. – the use of the PCSS supercomputer to study the important process of amino acid formation (the beginnings of life) using Carr-Parinello quantum dynamics methods..

(8) Katarzyna Walczewska-Szewc, Wiesław Nowak ,“*Structural Insights into ATP-Sensitive Potassium Channel Mechanics: A Role of Intrinsically Disordered Regions*”, *Journal of Chemical Information and Modeling* 63 (2023) 1806-1818. – the use of computational modelling methods (including metadynamics) to study the behaviour of disordered systems.

(9) Thiliban Manivarma,.. , W. Nowak,... Ivet Bahar, Valerian E Kagan, Karolina Mikulska-Ruminska, „*Membrane regulation of 15LOX-1/PEBP1 complex prompts the generation of ferroptotic signals, oxygenated PEs*”, *Free Radical Biology and Medicine* 208 (2023) 458-467 (Pergamon). - - explanation through computer modelling of the role of the cell membrane in regulating ferroptosis.

(10) A. Gogolińska, W. Nowak, *Bipartite Graphs—Petri Nets in Biology Modeling, Graph-Based Modelling in Science, Technology and Art*, Springer, 2022, pp 175-200. – an innovative approach through Petri nets to the problems of modelling the dynamics of biomolecules and systems (e.g. immunological).

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Physical Science – to date (October 2024):

Tugce Gokdemir, MSc (3rd year, AST) – supervisor

Thiliban Manivarma, MSc (4th + year, AST) – assistant supervisor

Julia Berdychowska, MSc (4th ++ year, AST) – supervisor

Sylvia Czach, MSc (4th + year, AST) – supervisor

And

12. Dr Beata Niklas, Institute of Physics, NCU, Physical Sciences, cum laude

Neurotoxic ligands interactions with insects membrane proteins

Date: 20/09/2023

11. Dr Andrzej Kulik, Institute of Physics, NCU, Physical Sciences

Development of Atomic Force Microscopy Based Methods of Fast Localization and Molecular Recognition Measurements

Date: 10/01/2020

10. Dr Jakub Rydzewski, Institute of Physics, NCU, biophysics, cum laude (postdoctoral research achievements submitted for assessment)

Rare-event sampling of ligand transport in proteins

Date: 27/06/2018

9. Dr Adrian Jasiński, Institute of Physics, NCU, biophysics

Modeling of non-standard amino acids important in biotechnology and medicine

Date: 09/12/2016

8. Dr Rafał Jakubowski, Institute of Physics, NCU, biophysics

Computational modeling of medically relevant proteins using non-standard molecular dynamics

Date: 26/10/2016; assistant supervisor: Dr Ł. Pełowski

7. Dr Anna Gogolińska

Algorithms Inspired by Petri Nets in Modeling of Complex Biological Systems

Date: 3/03/2016,

Faculty of Mathematics, Informatics and Mechanics of the University of Warsaw; Mathematical Sciences – Computer and Information Science

6. Dr Marcin Dąbrowski, Institute of Physics, NCU, biophysics

Influence of neuroactive substances on selected membrane proteins

Date: 17/11/2015; second supervisor: Professor. M. Stankiewicz

5. Dr Karolina Mikulska-Rumińska, physics, cum laude, at present: Doctor Habilitatus

Nanomechanics of neuronal cell adhesion molecules - studies with steered molecular dynamics and single molecule force spectroscopy

Date: 17/09/2014, Institute of Physics, NCU

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

4. Dr Przemysław Miszta

Molecular dynamics studies of fluorescent probes and ligands in proteins

Ddate: 16/09/2009; Institute of Physics, NCU, physics

3. Dr Sławomir Orłowski

Theoretical studies of transport and signalling processes in heme proteins

Date: 11/02/2009; Institute of Physics, NCU, physics

2. Dr Łukasz Peplowski, currently Doctor Habilitatus

Application of molecular dynamics and bioinformatics methods to study the mechanisms of enzymatic reactions, with particular focus on nitrile hydratase

Date: 14/01/2009; Institute of Physics, NCU, physics

1. Dr Karina Kubiak-Ossowska, cum laude

Dynamic effects of electromagnetic radiation interaction with proteins - theoretical modelling

Date: 21/06/2006; Institute of Physics, NCU, physics

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor W. Nowak has 40 years of teaching experience, and regularly has been receiving very good results in the Faculty's student surveys of academic teachers' assessment. He has conducted classes, laboratory classes and lectures e.g., UNIX operating system, applications of computer science, engineering proseminar for applied computer science, theoretical biophysics lab, molecular dynamics methods, nanostructure modelling methods, physical projects lab (Physics Lab 2), physical fundamentals of information processing, molecular modelling with elements of biophysics, biophysics, biophysics – an interdisciplinary approach, fundamentals of physics, physics lab I, science and technology in society, elements of molecular quantum mechanics (for doctoral students), seminar in theoretical biophysics (doctoral students). For many years he has been the co-founder, deputy head and head of the Inter-Faculty Studies in Mathematics and Natural Sciences (education of "two-subject" lower secondary school teachers at the Bachelor's level, approx. 400 students in 3 years. He was the leader of the EU Grundtvig "ForEva" project on modern education at NCU. He developed a series of educational materials in the form of PDF course books. He received the Medal of the National Education Commission for his contribution to teacher education. Since 2019, he has been the head of the Doctoral School of Exact and Natural Sciences at NCU. In 2021-22 he was the Principal Investigator of the EU H2020 DIOSI project aimed at increasing the quality of doctoral education. He was a member of the steering committee of the NAWA STER project (2022-23) increasing the mobility of doctoral students. He conducts most of his classes in English. In 2020 (together with Professor W. Duch) prepared a new lecture: Selected topics in neurocognitive science and biomodelling (30 h, in English).

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- Participation in monthly online nationwide conferences on running doctoral schools (mainly the management and administrative staff)
- Participation in the MODULE4NCN project on improving the competences of the teaching staff (3 modules).
- Training on mobbing (certificate obtained)

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

- Participation in a seminar at the Maria Curie-Skłodowska University in Lublin on the internationalisation of doctoral schools (October 2024, Lublin)
- Participation in many international conferences of the DIOSI project, organisation of international workshops on a new model of doctoral education at the EU in 2023.
- Participation in the conference on Artificial Intelligence (as a panelist) at the Warsaw University of Technology (2024)
- regular participation in many scientific conferences in biophysics, physics, chemistry, bioinformatics.
- organisation and participation in annual BIT conferences (24 editions)

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Professor W. Nowak completed 3 long-term (1-2 years) research fellowships at foreign centres
1989-1991 – University of Illinois at Chicago, USA (NIH grant)

1993 – Ecole Polytechnique, Paris (INSERM grant)

2000 - Kyoto University, Japan (JSPS grant)

As well as several short-term research stays at various centres, including:

- Kings College London
- Duke University (USA) – lectures
- University of Minnesota (Duluth)
- EPFL, Lausanne (Switzerland)
- University of Sapporo (Japan)
- Freie Universitaat, (Berlin), ...

He attended approx. 80 international scientific conferences (e.g., in Germany, the USA, Canada, Spain, France, Japan, Australia, the Czech Republic, Switzerland, Italy and Hungary). He has conducted research cooperation with foreign centres: Kyoto University, EPFL Lausanne, University of Minnesota (USA), Duke University (USA), University of Angers (France), University of Catania (Italy), UIC (Chicago). He is the editor of an international journal published by Nature-Springer Group (*J. Mol. Model*). He was the Principal Investigator of the EU H2020 DIOSI project (2021-2023) – as a result of a competition. He cooperated with the YUFE consortium, and implemented a grant funded by the Swiss grant (in a team). He implemented a in cooperation with Kansas University (USA). He supervised a PhD at AC together with Professor B. Lapid from France (Dr B. Niklas 2023). He collaborates with a group of biologists from WUXI (China).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Name and surname
Włodzisław DUCH
Declared disciplines
<i>Computer Engineering, Cognitive Science</i> <i>In 'Nauka Polska': Applied Computer Science, Artificial Intelligence, Cognitive Science</i> <i>Classification of the Committee for Scientific Research – Physics, Computer Science, Cognition and Social Communication Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
1987 - Postdoctoral research achievements in Many-body Physics. Postdoctoral research achievements title: Graphical representation of model spaces, published by Springer Verlag, Berlin (1986); award of the Minister of Education.
1980 - Doctoral dissertation in Quantum Chemistry.
Master's thesis title: Direct configuration interaction method (award of the Minister of National Education in 1981). Supervisor: Professor Jacek Karwowski. 1977-1980 Master's studies in Quantum Chemistry at Nicolaus Copernicus University. 1977 - Master's degree in Engineering (summa cum laude).
Academic titles (name, title conferral year, classification)
1997 – Professor of Theoretical Physics and Computer Science
Courses taught at the Doctoral School
Selected topics in cognitive science and biomodelling (30 h, lecture with Professor W. Nowak). The art of communication and popularization of science, Artificial Intelligence and the future of scientific thinking, Interdisciplinary tutorial
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
Full list of publications: https://www.is.umk.pl/~duch/cv/papall.html h-index (GS)=49
Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)
1. Jarosław Meller, 6/1996, New computational algorithms based on the Configuration Interaction Method, NCU 2. Norbert Jankowski, 3/2000, Ontogenic neural networks with applications to medical data analysis. [Ontogeniczne sieci neuronowe w zastosowaniu do klasyfikacji danych medycznych,] Institute of Biocybernetics and Biomedical Engineering 3. Rafał Adamczak, 27.06.2001, Application of neural networks to classification of experimental data. [Zastosowanie sieci neuronowych do klasyfikacji danych doświadczalnych,] NCU. 4. Antoine Naud 14.09.2001, Neural and statistical algorithms in visualization of multidimensional data. Algorytmy neuronowe i statystyczne w wizualizacji danych wielowymiarowych, AGH University of Technology 5. Karol Grudziński 11/2002, Similarity based methods in application to analysis of scientific and

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

medical data, NCU

6. Krzysztof Grąbczewski 23.6.2003, Separability criterion for classification rules. [Zastosowanie kryterium separowalności do generowania reguł klasyfikacji na podstawie baz danych], Systems Research Institute
7. Mirosław Kordos 28.6.2005, Search-based Algorithms for Multilayer Perceptrons, Technical University of Silesia
8. Marcin Blachnik, 8.7.2007, Prototype-based rule systems and their relations with fuzzy systems. Technical University of Silesia
9. Julian Szymański, 28.04.2009, Context search using semantic memory models, Faculty of Electronics, Telecommunication and Informatics of the Gdańsk University of Technology
10. Marek Grochowski, Artificial neural networks based on projection pursuit, Institute of Computer Science of the Polish Academy of Sciences, 15.03.2013
11. Tomasz Maszczyk, Universal learning machines, Institute of Computer Science of the Polish Academy of Sciences, 28.02.2014
12. Paweł Matykiewicz, Neurocognitive inspirations in medical text analysis, Institute of Computer Science of the Polish Academy of Sciences, 28.09.2015.
13. Darek Mikołajewski, Simulation of brain stem functions. Institute of Biocybernetics and Biomedical Engineering, 23.10.2015
14. Alexander Gravier, Neural Network Modelling of the Influence of Channelopathies on Reflex Visual Attention, 2015. Co-advisors: Abdul Wahab, Quek Hiok Chai
15. Karolina Finc, Dynamics and plasticity of human brain functional network during working memory task performance. Institute of Physics, Astronomy and Informatics, NCU, 16.10.19
16. Kamil Bonna, Neural correlates of prediction errors during reward and punishment learning. Faculty of Physics, Astronomy and Informatics, NCU, 9/2022, cum laude (Karolina Finc, co-sup).
17. Michał Komorowski, Locally specific human brain dynamics automatically modeled using spectral features of MEG/EEG signals. Institute of Fundamental Technological Research of the Polish Academy of Sciences, Warsaw, 1.12.2022
18. Ewa Ratajczak, Microstate neurodynamics in HRV biofeedback, Faculty of Physics, Astronomy and Informatics, NCU, 29.11.2022

Doctoral dissertation not defended yet:

19. Krzysztof Dobosz, Stability of multidimensional neurodynamic systems . The Council of the Faculty of Mathematics, Informatics and Mechanics of the University of Warsaw (3 positive reviews in 2016).

Supervision- ongoing:

20. Łukasz Furman 10/2021
21. Simone Poetto 10/2021
22. Sinem Serap, 10/2022

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Tokyo University, Symmetric Group approach to molecular calculations, PhD level course, 24 hours, 11/1994

Computational Intelligence, lectures given at the School of Computer Engineering, Nanyang Technological University, Singapore (2003-2011).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

Computational Intelligence, Methods and Applications, given at NTU, Singapore, 2003-06.

How brains make up their minds. Advanced Topic in Cognitive Neuroscience and Embodied Intelligence - given as special topic at NTU in 2011, Singapore.

Lectures: "Multi-level explanations in neuroscience: from genes to subjective experiences", at the 58th Cracow School of Theoretical Physics. Zakopane, Poland, 15-23.06.2018.

I. Brain and Machine Learning inspirations. | II. Neurodynamics. Brain simulations at different levels. | III. Fingerprints of mental activity. Neurodynamics on real brain networks.

Multi-level explanations in neuroscience I: From genes to subjective experiences. Multi-level explanations in neuroscience II: Searching for fingerprints of brain cognitive activity. 1st Summer School of Interdisciplinary Research on Brain Network Dynamics, Val di Sole Monastery, Dolomite mountains, Italy, June 6/2019

Positions:

2020-now Head, Neuroinformatics and Artificial Intelligence group in the University Centre of Excellence Dynamics, Mathematical Analysis and Artificial Intelligence, at the Nicolaus Copernicus University.

2014-2015 Chair of the Polish-U.S. Fulbright Commission Board, from 06/2015 to 30.11.2015.

2014-2015 Undersecretary of State (Vice-Minister), in the Ministry of Science and Higher Education, from 22.04.2014 to 30.11.2015.

2013-now Head, Neurocognitive Laboratory, Interdisciplinary Centre of Modern Technologies, Nicolaus Copernicus University

2012-2014 Vice-Rector for Research and Informatisation (NCU)

2010-2012 Nanyang Visiting Professor, Nanyang Technological University, School of Computer Engineering,

Division of Software & Information Systems, Singapore (4 months/year).

2004-2007 Visiting Professor, Nanyang Technological University, School of Computer Engineering,

Department of Computer Science, Singapore (6 month each year).

2003 Senior Fellow, Nanyang Technological University, School of Computer Engineering, Department of Computer Science, Singapore (1 year sabbatical).

2002-2009 Visiting Professor, Dept. of Biomedical Informatics, Cincinnati Children's Research Foundation, USA. 10 times, 2-4 weeks

2001-2002 President, Executive Board of the Kopernik.pl company (March 2001, the company existed till the end of 2002).

2000-now Professor Ordinarius, Nicolaus Copernicus University (NCU), head of the Department of Informatics, Torun, Poland;

teaching, research, administration, member of countless committees.

1998-2008 President, DuchSoft research and development company, creation of GhostMiner data mining software taken over by Fujitsu.

1990-1999 Associate Professor, Nicolaus Copernicus University (NCU), head of the Department of Computer Methods, Torun, Poland;

teaching, research, administration, member of countless committees.

1996-2001 Visiting Scientist, Max-Planck-Institut für Astrophysik (MPA), Garching b. München, Germany; 1-2 month each year, research.

2000 Visiting Professor, Meiji University, Department of Computer Science, Kawasaki, Tokyo, Japan; 1 month, research.

1997 Visiting Scientist, Max-Planck-Institut für Psychologische Research (MPPF), München, Germany; 1 month, research.

Visiting Professor, LSIT, Artificial Intelligence Department, Louis Pasteur University, Strasbourg,

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

France, 1 month, research.

1996 Senior Research Fellow, Kyushu Institute of Technology, Faculty of Computer Science and Systems Engineering,

Iizuka, Fukuoka, Japan; 3 month, research.

1995 Visiting Scientist, Center for Neural Networks, King's College, London, and IUT, Université de Champagne, Reims, France, research.

1994 Senior Research Fellow, Rikkyo University, Department of Chemistry, Tokyo, Japan; 3 month, research.

1992-1994 Visiting Scientist, Max-Planck-Institut für Astrophysik (MPA), Garching b. München, Germany; 2 month each year, research.

1992 Visiting Professor, Department of Chemistry, University of Alberta, Edmonton, Canada; 1 month, research.

1991 Visiting Professor, Department of Chemistry, University of Alberta, Edmonton, Canada; 5 weeks, research.

1990 Visiting Professor, Quantum Theory Project, University of Florida, Gainesville, Florida, USA; 6 weeks, research.

1989-1991 Visiting Scientist, Max-Planck-Institut für Astrophysik (MPA), Garching b. München; 3 month each year, research.

1988 Visiting Professor, Department of Chemistry, University of Southern California, Los Angeles, California; 1.5 month, research.

Visiting Scientist, Max-Planck-Institut für Astrophysik (MPA), Garching b. München, Germany; 1.5 month, research.

1988-1991 Vice-president for computing, Nicolaus Copernicus University.

1988-1990 Associate Professor (Docent), Nicolaus Copernicus University, Institute of Physics, Toruń, Poland; teaching, research, administration.

1987 Visiting Scientist, Institute of Theoretical Physics, Stockholm University, Stockholm, Sweden; 1 month, research;

Visiting Scientist, MPA; 3 month, research.

1985-1987 Alexander von Humboldt Fellow. Max-Planck-Institut für Astrophysik (MPA), Garching b. München, Germany; 1.5 years, research.

1984-1988 Adiunkt (Assistant Professor), Institute of Physics, Nicolaus Copernicus University, Toruń, Poland; teaching and research.

1984 Visiting Scientist, Max-Planck-Institut für Astrophysik (MPA), Garching b. München, Germany; 3 months, research.

1982-1984 Senior Assistant, Institute of Physics, Nicolaus Copernicus University, Toruń, Poland; teaching and research.

1980-1982 Postdoctoral fellow, Department of Chemistry, University of Southern California (USC), Los Angeles, California, USA; 2 years, research.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Popularisation of science

Over 300 popular articles in many journals.

Two major awards for popularisation of science (1983, 1984).

Over 2.3 million views of my lectures on YouTube channel

Slides for various presentations, in Polish 169, in English 169, available here:

<https://www.is.umk.pl/~duch/refpl.html>

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Journals - editorial boards

Annals of Computer Science and Information Systems, Polish Information Processing Society (2018)
 Artificial Intelligence in Health (2023).
 Behavioral and Brain Sciences, BBS associate, 2003-2010
 Behaviormetrika (Springer), advisory board, since 2017
 Cognitive Computation (Springer), since 2012
 Cognitive Neurodynamics (Springer), since 2006, now 2019-2021 term
 Computer Physics Communications (Elsevier, North Holland), Special Editor (1994-2007)
 Frontiers in Human Neuroscience (Frontiers, Basel, Switzerland), Special Editor (2023).
 IEEE Transactions on Neural Networks, books and media editor, appointed 2000, 2002, 2004, 2006-2008 (list of reviews)
 International Journal of Computational Intelligence, editor (2004-2006)
 International Journal of Information Technology and Intelligent Computing, editor, 2006-2008
 International Journal of Neural Systems (IJNS), World Scientific, Editorial Advisory Board 2005-2010
 International Journal of Signal Processing, editor (2004-2006)
 International Journal of Transpersonal Studies, editor 2001-2015
 Journal of Artificial General Intelligence (JAGI), starting in 2008
 Journal of Artificial Intelligence and Soft Computing Research, since 2009
 Journal of Mind and Behavior, assessing editor, since 2002
 Journal of Neurophilosophy, editorial board, since 2022
 Machine Graphics and Vision, 2003-2010
 Natural Intelligence: the INNS Magazine, 2011-12
 Neural Information Processing Letters and Reviews, since 2003-08
 Nonlinear Biomedical Physics, Open Access journal (BioMed Central, London), since 2006, in 2012 re-launched as the
 European Physical Journal (EPJ) Nonlinear Biomedical Physics.
 Scientia et Fides, Scientific Council, since 2015
 Theoria et Historia Scientiarum, since 2014
 Handbook of Natural Computing: Theory, Experiments, and Applications, Springer, advisory board, since 2008

In Polish:
 Kognitywistyka i Media w Edukacji (Cognitive Science and Media in Education), scientific secretary, 1998-2012
 Avant. Trends in Interdisciplinary Studies, head of the scientific board, since 2011
 Studia z Kognitywistyki i Filozofii Umysłu, Adam Mickiewicz University, since 2015

Professional associations

European Union COST Action BM0605: Consciousness: A Transdisciplinary, Integrated Approach, since 2008.
 EU COST Action BM601 Neuromath, Advanced Methods for the Estimation of Human Brain Activity and Connectivity, since 2007.
 EU COST Action B27 Electric neuronal oscillations and cognition (ENOC) working group, 2006-08.
 EU COST IntelliCIS (Intelligent Monitoring, Control and Security of Critical Infra-structure Systems) Action IC0806, 2009.
 EUCog II - 2nd European Network for the Advancement of Artificial Cognitive Systems, Interaction and Robotics.
 European Union expert in the Horizon 2020 Programme (FET proposals), 2014-now.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF PHYSICAL SCIENCES

European Union expert in the 7th Framework Programme (FET proposals), 2007-13.
European Union expert in the 6th Framework Programme in the "Life Sciences" panel, 2003-05.
European Union expert in the 5th Framework Programme in the "Life Sciences" panel, Marie Curie program, 2000-02.
Polish Committee of Scientific Research, reviewer for VIII (1994), IX (1995), X (1996) call, section (T11E) "Medical Technologies"
Reviewer of the Foundation for Polish Science (Homing +, MPD, Pomost, Venture, Welcome, Team, FNP Prize) |
The National Centre for Research and Development (Lider) | National Science Center | and the Polish Ministry of Education.
Reviewer of the Konorski Prize, Polish Academy of Sciences, Committee of Neurobiology.
Reviewer of the NAWA-STER Programmes, Ministry of Science and Education (2020, 2021)
Asia-Pacific Artificial Intelligence Association, Fellow (since 2022)
Association for Computing Machinery (ACM) individual member since 1990.
EIT Health, high level expert group Think Tank member of the European Institute of Innovation & Technology (2017).
European Neural Network Society; now active as past President; President 2006-2008, second term 2009-2011; President-elect 2005; member of the executive committee 2001-2004; individual ENNS member since 1993.
European Physical Society, individual member since 1984.
IEEE Senior Member since 2002, Member since 1997.
IEEE Computational Intelligence Society, CIS Technical Committee member since 2003; Neural Networks Pioneer Award sub-committee (2012).
IEEE Neural Network Society (previously NN Council), active member since 6/1997, current NN Technical Committee and previous NNTC member
IEEE Signal Processing Society, since 2015.
IEEE Towards Human-like Intelligence, Computational Intelligence Society Task Force, Vice-President (since 2012)
Interdisciplinary Centre for Mathematical and Computational Modelling (ICM), Scientific Council (2017-2022).
International Artificial Intelligence Industry Alliance, AIIA Fellow, elected 2/2024.
International Association for Information and Management Sciences (IMS), vice-president 2010-2013.
International Neural Network Society; INNS Board of Governors member, 2003; elected to the College of Fellows (2013)
International Brain Research Foundation, member of the International Advisory Board.
Brain-Mind Institute, USA, Program Committee (since 2011)
Lifeboat Foundation, member of the Scientific Advisory Board
Open Systems and Information Dynamics Society, initially "Polish-Japanese-Italian Society"; member of the board, 1992-1995 and 1999-2003 (elections are every year); OSID journal now published by World Scientific.
Polish Academy of Sciences, Computational Physics Section, Founding member (1997), vice-president (2001-05).
Polish Academy of Sciences, Committee on Automatics and Robotics, Neural Networks and Fuzzy Logic, member (since 2000).
Polish Academy of Sciences, Computational Science Section, member of the board, 2009-2010.
Polish Academy of Sciences, Committee on Informatics, member 2020-23; ; 2024-26 Computational, Bio and Neuro-informatics Subgroup.
Polish Academy of Sciences, Committee of Neurobiology, member of the board, 2007-10; 2011-15; 2015-19; 2020-23; 2024-26
Polish Academy of Sciences, Committee on Science Studies, 2015-19; 2020-23; 2024-26.

Polish Chemical Society; Quantum Chemistry Section, 1980-1990.
 Polish Cognitive Science Society, founding member, on the executive board 2002-2004.
 Polish Academy of Arts and Sciences (Polska Akademia Umiejętności, PAU), Committee on Complex Systems; since 2019, .
 Polish Neural Network Society; founding member, on the board since 1995, last election in 2019.
 Polish Artificial Intelligence Society, founding member, 2010, Scientific Committee member
 Coordination Council of the Polish Initiative for the Advancement of Artificial Intelligence (PP-RAI), 2018
 Polish Physical Society, member since 1977, secretary of the Torun branch 1989-91; member of the board 1988-1992.
 Polish Transpersonal Society; founding member 1993.
 Societas Humboldtiana Polonorum, member since 1993, president of the Toruń branch 2016-2018
 Nicolaus Copernicus University, member of the Professor's Club, since 2001, vice-president 2012-16.
 Advisory Boards, Scientific Councils

Sapiens Lab, member of the International Advisory Board 2018. Mission: to accelerate insights into the spectrum of brain dynamics across the breadth of humanity.
 SRM Deemed University, Chennai, India, member of the International Advisory Board, 2004-2012.
 INEB-Instituto de Engenharia Biomédica, Porto, Portugal, external advisory council, 2008-13.
 ABM Space Education, Chief Creative Officer (2011).
 Scientific Committee of the Institute for Child Development in Gdańsk (2018).
 Nominator for: Nobel Prize in Physics
 Nominator for: VinFuture Prize

Kujawsko-Pomorskie Centrum Badań Technologicznych, sp. z o.o., member of Scientific Council (12/2021).
 Medical University of Łódź, member of the "Drzewo Pokoleń" competition council, 2016-2018.
 Polska Unia Edukacyjna, member of the Council of the Centre for Teaching and Scientific Excellence (2024).

Awards for inventions:

Gold medal: Médailles d'Or du Concours Lépine & Prix Chambre et Sénat – Systeme de soutien au développement perceptivo-cognitif des nourrissons et des jeunes enfants. May 2015
 Gold medal: INPEX, Pittsburg, USA, June 2015, America's largest invention trade show.
 Gold medal and Jury Cup: International Exhibition of Economic and Scientific Innovations INTARG, Krakow, June 2015
 Gold medal: INNOVA EUREKA 2015, Brussels, November 2015.

Other awards:

Distinction in the Jerzy Konorski Team Award 2020 competition, for the best study in neurobiology conducted in Poland, initiative of the Polish Neuroscience Society and Committee of Neurobiology of the Polish Academy of Sciences. Paper by Karolina Finc, Kamil Bonna, Xiaosong He, David Lydon-Staley, Simone Kühn, Włodzisław Duch and Danielle S. Bassett. Dynamic reconfiguration of functional brain network during working memory training. Nature Communications 11, 2435 (2020)

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

Name and surname
Anna BARTKIEWICZ
Declared disciplines
<i>Astronomy</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2016 – Doctor Habilitatus of Physical Sciences in Astronomy 2007 – Doctor of Physical Sciences in Astronomy 2001 – Master of Science in Astronomy
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Supervisor of doctoral students (Agnieszka Kobak, Ashwin Varma) – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
Achievements exclusively in astronomy, in particular in radio spectroscopy, obtained in cooperation with the academic staff of the Institute of Astronomy of the Nicolaus Copernicus University and foreign academics from the Netherlands (JIVE, Leiden University.), Germany (MPIfR Bonn) and Italy (INAF Cagliari). The research focuses on the early stages of evolution of massive stars using maser emission of CH ₃ OH, H ₂ O, OH molecules at centimetre radio waves using modern interferometers such as VLA, VLBA, EVN, ALMA. In 2019 and 2020, publications in <i>Astronomy and Astrophysics</i> , <i>Monthly Notices of the Royal Astronomical Society</i> and <i>Astrophysical Journal</i> were recognised with seven scholarships of the NCU Rectr, and publications of 2022 and 2023 with team awards of the NCU Rector.
Key publications in the last five years:
<ol style="list-style-type: none"> 1) A. Bartkiewicz, A. Sanna, M. Szymczak, L. Moscadelli, H.J. van Langevelde, P. Wolak, A. Kobak, M. Durjasz, "Proper motion study of the 6.7 GHz methanol maser rings. I. A sample of sources with little variation", <i>Astron. Astrophys.</i> 686, A275 (2024), 1-23 2) A. Kobak, A. Bartkiewicz, M. Szymczak, Olech, M., M. Durjasz, P. Wolak, Chibueze, J.O., Hirota, T., Eislöffel, J., Stecklum, B., Sobolev, A., Bayandina, O., Orosz, G., Burns, R. A., Kim, K.-T., van den Heever, S.P., „Multi-frequency VLBI observations of maser lines during the 6.7 GHz maser flare in the high-mass young stellar object G24.33+0.14”, <i>Astron. Astrophys.</i>, 2023, 671, id.A135 3) A. Bartkiewicz, A. Sanna, M. Szymczak, L. Moscadelli, H.J. van Langevelde, P. Wolak "The nature of the methanol maser ring G23.657–00.127 II. Expansion of the maser structure", <i>Astron. Astrophys.</i> 637, A15 (2020), 1-12 4) M. Szymczak, P. Wolak, A. Bartkiewicz, M. Aramowicz, M. Durjasz, "A search for the OH 6035 MHz line in high-mass star-forming regions", <i>Astron. Astrophys.</i> 642, A145 (2020), 1-14 5) Reid M.J., Menten K.M., Brunthaler A., Zheng X. W., Dame T. M., Xu Y., Li J., Sakai N., Wu Y., Immer K., Zhang B., Sanna A., Moscadelli L., Rygl K. L. J., A. Bartkiewicz, Hu B., Quiroga-Nuñez L. H., van Langevelde H. J., "Trigonometric Parallaxes of High-mass Star-forming Regions: Our View of the Milky Way ", <i>Astrophys. J.</i> 885, article id. 131 (2019), 1-18
Publications: https://orcid.org/0000-0002-6466-117X
<i>h-index: 19, number of reviewed publications: 48, number of conference publications: 43 (as of 17.01.2025)</i>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<p>Michał Durjasz, DSc in Astronomy, Institute of Astronomy, discipline: Astronomy, date of degree conferral: 24.01.2024, supervisor: prof. dr hab. Marian Szymczak, assistant supervisor: dr hab. Anna Bartkiewicz</p>
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p> <p>Anna Bartkiewicz, Dr Habil., NCU Professor, has 17 years of teaching experience as a researcher and academic teacher. She has conducted a range of courses at first- and second-cycle studies. Her feedback score in students' surveys on the evaluation of the academic staff is very high. In the years 2007/2008-2016/2017 she taught courses in <i>Mathematical Analysis</i> and <i>Physics Laboratory 1</i> for students of astronomy, automation and robotics, physics, technical physics and applied computer science. Since taking up the position of Deputy Dean for Student Affairs at the Faculty of Physics, Astronomy and Informatics (01.09.2016), she has given lectures (<i>Astrochemistry</i>, <i>Spectroscopy of interstellar matter</i>) and the <i>Observational Astronomy 2 laboratory</i> for students of astronomy of first- and second-cycle studies. She also has lectures for second-cycle students of Physics and Astronomy (English-language studies). She is a co-lecturer on the all-university lecture entitled <i>Universe for the Versatile</i>, which for years has been enjoying very positive reviews from students of various fields of study.</p> <p>Professor Anna Bartkiewicz completed preparatory courses in mentoring and participates in an innovative program at the NCU entitled <i>Uni-Me Mentoring Programme</i> supporting students, especially those planning to take advantage of international exchange programmes.</p> <p>As part of the Erasmus+ Programme, she conducted 8 hours of lectures on <i>The Science of Radio Astronomy</i> for students of the Aerospace Department at Universidad Carlos III de Madrid in Spain in 2023.</p>
<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p> <ul style="list-style-type: none"> • Academic teacher since 1.10.2007. Supervisor of 3 Master's theses and 8 Bachelor's theses as well as 3 doctoral students • Supervision of the Astronomy Students' Scientific Club in 2014/2015, • Vice-Dean for Student Affairs 2016/2017-2019/2020, 2020/2021-2023/2024, • Vice-Dean for Student Affairs as of 2024/2025, • Participation in the development of the new field of study, Physics and Astronomy, for 2020/21 academic year, • all-university lecture (co-lecturing) "Universe for the versatile" was awarded in the competition for all-university courses at the NCU in 2016/17 academic year, • Conducting classes promoting and disseminating science at the Children's and Youth University of the NCU AMICUS Foundation since 2017/2018, • Mentoring for NCU students under "UniMe Program" since 2022/2023 (https://www.umk.pl/wspolpraca/uni-me/), • Participation in trainings "Building mental resilience" and "The role of a mentor in mentoring processes" (2020) • Participation in trainings of the NCU Support Team for Persons with Special Needs,

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

- Participation in trainings under the project "MODULE4NCU - Improving the competences of NCU academic staff in 2024-2026": Problem Based Learning, Challenges in working with students, Moodle – introduction to the effective education tool for effective education, and 15-minute City.

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Professor Anna Bartkiewicz completed a 10-month research fellowship at the Jodrell Bank Observatory, University of Manchester in the UK under the Marie Curie Training Site programme (2001-2002). Since 2007, she has regularly completed short-term research fellowships (1-2 weeks) at e.g., the Max Planck Institute for Radio Astronomy in Bonn (Germany), the Jodrell Bank Centre for Astrophysics in Manchester (the UK), the Joint Institute for VLBI in Europe (JIVE-ERIC) in Dwingeloo (the Netherlands). She has actively participated in 24 international scientific conferences (e.g., in Germany, the USA, Brazil, Spain, France, Japan, Australia, Italy, the United Kingdom). She has conducted scientific and research cooperation with such foreign centres as the National Astronomical Observatory of Japan in Tokyo (Japan), Max Planck Institute for Radio Astronomy in Bonn (Germany), Jodrell Bank Centre for Astrophysics in Manchester (the UK), Joint Institute for VLBI in Europe (JIVE-ERIC) in Dwingeloo (Netherlands), INAF Bologna, Cagliari, and Arcetri in Italy. She is a member of the international Maser Monitoring Organization (M2O) <https://www.masermmonitoring.com/> which brings together about 80 members to monitor maser emission bursts of various molecules; she also takes part in the Milky Way astrometric project: Bar and Spiral Structure Legacy Program (BeSSeL) <http://bessel.vlbi-astrometry.org/>.

Since 2020, she has been co-conducting the European VLBI Network online seminars "Explore the sharpest view of the universe with the EVN": <https://www.evlbi.org/evn-seminars>

She was a Principal Investigator in 3 Opus grants of the National Science Centre for a total amount of PLN 1.7 m (Opus 2, Opus 11, Opus 22) implemented at the Institute of Astronomy of the Nicolaus Copernicus University.

She is a member of the International Astronomical Union and is the chair of the Commission of Radioastronomy of the National Committee of the Polish Academy of Sciences for cooperation with the International Union of Radio Science (UR1SI).

A member (reviewer) of the following committees assessing observational applications for devices and instruments: European VLBI Network (2012-2016), Nancay Radio Telescope (since 2015), MERLIN interferometer (since 2018), ESO (2019-2021).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

Name and surname
Krzysztof GOŹDZIEWSKI
Declared disciplines
<i>7. Natural Sciences, 7.1. Astronomy</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
<i>1997 – Doctor of Physical Sciences, NCU</i> <i>2005 – Doctor Habilitatus, NCU</i>
Academic titles (name, title conferral year, classification)
<i>Professor of Physical Sciences (2013, NCU)</i>
Courses taught at the Doctoral School
<i>Planetary systems (lecture)</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p><i>Professor Krzysztof Goździewski as a professional and active astronomer, focuses on celestial mechanics, astrodynamics, in particular planetary systems, modelling of astrophysical observations (timing, photometry, optical and radio astrometry, radial velocities) of stars with planetary systems and the analysis of their stability and long-term evolution, theory of dynamical systems and deterministic chaos (chaos indicators), numerical methods and calculations in a multiprocessor environment as well as using GPU technology, optimisation using genetic and evolutionary algorithms, Bayesian statistics and MCMC.</i></p> <p><i>His postdoctoral research achievements was summa cum laude in 2005, and he was awarded the title of professor in 2013. His scientific achievements include over 100 publications with more than 2,600 citations (Google Scholar citations), h-index= 31, including over 60 publications with more than 10 citations.</i></p> <p><i>Professor Goździewski is proficient in English and Russian, and he knows and uses several programming languages (C/C++, Fortran. Python). He has over 25 years of experience in administering the Unix family of operating systems (Linux, Open/FreeBSD), TCP/IP network services and building computer clusters. These skills facilitate performing scientific calculations under regularly obtained computational grants in HPC/KDM centres in Poland (PCSS in Poznań and TASK in Gdańsk).</i></p> <p><i>He has repeatedly obtained scientific grants from the State Committee for Scientific Research in Poland (a year-long grant in 1997), the National Science Centre three-year long grants in 2006 and 2013) and Marie-Curie VI EU Framework Programme (a four-year long grant in 2008), and was the investigator of such grants, e.g., the MAESTRO grant (a five-year long grant, with Professor Ewa Szuszkiewicz as PI, University of Szczecin). In 1994, he received a Scholarship from the Foundation for Polish Science.</i></p>

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He reviewed research grants of the National Science Centre and for the Ministries of Science of Austria, Belgium and Hungary, as well as about 15 doctoral dissertations, postdoctoral research and applications for awarding academic titles in Poland.

In 2015 and 2022, he was awarded the individual Level 1 award of the Rector of the Nicolaus Copernicus University for scientific activity; before that he received about 10 individual and team Level 2 and Level 3 award as well as distinctions for scientific activity.

Key publications since 2018:

- Goździewski, K.:** *The orbital architecture and stability of the μ Arae planetary system*, MNRAS 516, (2022)
- Zurlo, A., **Goździewski, K.** i in.: *Orbital and dynamical analysis of the system around HR 8799-New astrometric epochs from VLT/SPHERE and LBT/LUCI*, Astronomy and Astrophysics 666 (2022)
- Goździewski, K.** & Migaszewski, C.: *An exact Laplace resonance in the HR8799 Planetary System*. ApJL, 902, L40, (2020)
- Marzari, F., Nagasawa, M. & **Goździewski, K.:** *Planet–planet scattering in presence of a companion star*, MNRAS 510 (2022)
- Panichi, F., Migaszewski, C., & **Goździewski, K.:** *Two Super-Earths in the 3:2 MMR around KOI-1599*. MNRAS, 485, 4601, 2019)
- Goździewski, K.** & Migaszewski, C.: *An exact Laplace resonance in the HR8799 Planetary System*. ApJL 902, L40, (2020)
- Panichi, F., Migaszewski, C., & **Goździewski, K.:** *Two Super-Earths in the 3:2 MMR around KOI-1599*. MNRAS 485, 4601, 2019)
- Goździewski, K.** & Migaszewski, C.: *The Orbital Architecture and Debris Disks of the HR 8799 Planetary System*. ApJS 238, 6, (2018)
- Panichi, F., **Goździewski, K.**, Migaszewski, C., & Szuszkiewicz, E.: *The architecture and formation of the Kepler-30 planetary system*. MNRAS 478, 2480, (2018)
- Gawroński, M. P., **Goździewski, K.**, Katarzyński, K., & Rycyk, G.: *Another look at AM Herculis radio-astrometric campaign with the e-EVN at 6 cm*. MNRAS 475, 1399, (2018)

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

2010 – Cezary Migaszewski (NCU, doctoral dissertation cum laude)

2016 – Mikhail Vereshchagin (the Russian Federation), assistant supervision under a 4-year long EU-funded Marie-Curie grant, completed with awarding the doctoral degree at the University of Zielona Góra

2018 - Federico Panichi (Italy) affiliated at the University of Szczecin (doctoral dissertation cum laude)

2022 – Dawid Jankowski, the Doctoral School student, ongoing procedure

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor Goździewski has been teaching the following university courses:

- *course lectures with classes exercises on celestial mechanics with elements of classical mechanics, classical astronomy and astrometry for astronomy students,*
- *numerical methods and a theoretical astrophysics laboratory for astronomy students,*
- *programming in the C language for students of automation and robotics and a computer network laboratory for students of applied computer science,*
- *physics laboratory for students of astronomy, technical physics and automation and robotics,*
- *part of an all- university lecture on the Solar System and extrasolar planetary systems,*
- *courses in statistics and mathematics for geography students,*
- *a monographic lecture on contemporary celestial mechanics for doctoral students,*
- *diploma seminars for first and second-cycle students of astronomy and doctoral students (including the General Seminar at the Institute of Astronomy at NCU, for several consecutive years the Planetary Seminar at the Institute),*
- *1.5-year long lecture and classes in fundamental astronomy as part of postgraduate studies at the Nicolaus Copernicus University for teachers of physics and astronomy,*
- *participates as a lecturer in English-language courses in the field of study, Physics and Astronomy, at the Faculty of Physics, Astronomy and Informatics: a lecture entitled **Classical and Celestial Mechanics and Introduction to Astrophysics***

He has supervised over 30 master's and bachelor's theses students in astronomy and astrophysics, technical physics and automation and robotics. Dawid Jankowski's bachelor's thesis in 2021 was awarded as the best diploma thesis at the Faculty of Physics, Astronomy and Informatics.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Professor Goździewski, owing to his expert IT knowledge of Linux/Unix In 2020, recommended and participated in the implementation of the BigBlueButton (BBB) remote teaching system, which has since been used to conduct online teaching and video conferences as well as hybrid seminars at the NCU's Institute of Astronomy.

In 2018-2019, he participated in an advanced English course to improve his qualifications for conducting classes in a foreign language.

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

In 2001, Professor Goździewski completed a long-term postdoctoral fellowship at the University of Bordeaux I Observatory (France), he also took part several times in short-term research fellowships to the University of the Aegean and the Paris Observatory as well as in about 30 conferences and training trips (France, Germany, Italy, Greece, Luxembourg, the Czech Republic).

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He collaborates permanently or occasionally with scientists from various foreign centres (e.g. Deutsches Geodatisches Forschungsinstitut in Munich, University of Bordeaux I, Paris Observatory, University of Padua, Ataturk University, Astrophysical Institute in the Canary Islands under the KESPRINT project, University of Surrey, various American universities). This collaboration is reflected by peer-reviewed publications.

He was the coordinator in Poland of the international project of the Marie-Curie scientific cooperation network under the EU's VI Framework Programme (4 year-long, 2008-2012) and the investigator in the next edition (2012-2016); this project brings together 8 European institutions.

*For over 10 years he has been an active and valued associate editor in **Astrophysics and Space Science** (Springer, IF approx. 2) focusing on celestial mechanics, astrodynamics and dynamic astronomy. To date, he has evaluated almost 500 papers.*

He has prepared several dozen reviews of papers for astronomical and physical journals (Science, MNRAS, A&A, Ap&SS, Physica D, AJ, ApJ, Advances in Space Research, RAA).

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Name and surname
Michał HANASZ
Declared disciplines
Astronomy
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2003 – Doctor Habilitatus / Natural Sciences/ Physical Sciences/ Astrononmy Astrophysics 1995 – Doctor of Physical Sciences/ Astronomy/ Astrophysics
Academic titles (name, title conferral year, classification)
2013 – Professor/ Natural Sciences/ Astronomy/ Astrophysics
Courses taught at the Doctoral School
Lecture: Astrohydrodynamics (30 hours) Specialisation seminar Supervisor of 1 doctoral student – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Professor Michał Hanasz completed his Master's degree at the Faculty of Physics at the University of Warsaw, and his doctoral dissertation followed by postdoctoral research in Physical Sciences (in Astrophysics) at the Nicolaus Copernicus University, where he has been employed since 1992. In 1997-1998, he was on a one-year long scholarship from the French Government at the Paris-Meudon Observatory, and in 1999-2000, as a scholarship holder of the Alexander von Humboldt Foundation, he did a postdoc fellowship at the Astronomical Observatory of the University of Munich. In 2011-2019, he was the Head of the Nicolaus Copernicus University Astronomy Centre. In 2019-2023, he was a member of the Exact and Natural Sciences Team of the Council of National Excellence.</p> <p>Professor Hanasz's scientific interests focus on the dynamics of the interstellar medium, the magnetic field and cosmic radiation in galaxies, hydrodynamic instabilities of relativistic flows, and planet formation processes. Together with a team of collaborators, Professor Hanasz has been implementing theoretical research using computer simulation techniques. His main achievement is the development of a theoretical model of galactic magnetic field generations in the process of a "magnetohydrodynamic dynamo" driven by cosmic radiation. He is the author or co-author of over 100 scientific publications on cosmic magnetic fields, cosmic radiation, instability of relativistic outflows from active galactic nuclei and early stages of planet formation.</p> <p>He has been a guest speaker at international scientific conferences, in doctoral schools and seminars in foreign scientific centres. He was the Principal Investigator in many scientific grants of the Committee for Scientific Research, National Science Centre and the Ministra of Science and Higher Education.</p> <p>Publications:</p> <p>[1] Ngăn Lê, Le Ngoc Tram, Agata Karska, Thiem Hoang, Pham Ngoc Diep, Michał Hanasz, Nguyen Bich Ngoc, Nguyen Thi Phuong, Karl M. Menten, Friedrich Wyrowski, Dieu D. Nguyen, Thuong Duc Hoang, and Nguyen Minh Khang. Mapping and characterizing magnetic fields in the Rho Ophiuchus-A molecular cloud with SOFIA/HAWC+. <i>A&A</i>, 690:A191, October 2024.</p> <p>[2] N.Peschken, M.Hanasz, T.Naab, D.Wółtański, and A.Gawryszczak.Thephasestructureofcosmicray driven outflows in stream fed disc galaxies. <i>MNRAS</i>, 522(4):5529–5545, July 2023.</p> <p>[3] M. Weźgowiec, R. Beck, M. Hanasz, M. Soida, M. Ehle, R. J. Dettmar, and M. Urbanik. Hot magnetic halo of NGC 628 (M 74). <i>A&A</i>, 665:A64, September 2022.</p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

[4] M. Weżgowiec, R. Beck, M. Hanasz, M. Soida, M. Ehle, R. J. Dettmar, and M. Urbanik. Magnetic fields and hot gas in M 101. *A&A*, 664:A108, August 2022.

[5] N. Peschken, M. Hanasz, T. Naab, D. Wółtański, and A. Gawryszczak. The angular momentum structure of CR-driven galactic outflows triggered by stream accretion. *MNRAS*, 508(3):4269–4281, December 2021.

[6] Michał Hanasz, Andrew W. Strong, and Philipp Girichidis. Simulations of cosmicray propagation. *Living Reviews in Computational Astrophysics*, 7(1):2, December 2021.

[7] Mateusz A. Ogrodnik, Michał Hanasz, and Dominik Wółtański. Implementation of Cosmic Ray Energy Spectrum (CRESP) Algorithm in PIERNIK MHD Code. I. Spectrally Resolved Propagation of Cosmic Ray Electrons on Eulerian Grids. *ApJS*, 253(1):18, March 2021.

[8] Philipp Girichidis, Christoph Pfrommer, Michał Hanasz, and Thorsten Naab. Spectrally resolved cosmic ray hydrodynamics - I. Spectral scheme. *MNRAS*, 491(1):993–1007, January 2020.

[9] P. Girichidis, T. Naab, M. Hanasz, and S. Walch. Cooler and smoother - the impact of cosmic rays on the phase structure of galactic outflows. *MNRAS*, 479:3042–3067, September 2018.

[10] P. Girichidis, T. Naab, S. Walch, M. Hanasz, M.-M. Mac Low, J. P. Ostriker, A. Gatto, T. Peters, R. Wünsch, S. C. O. Glover, R. S. Klessen, P. C. Clark, and C. Baczynski. Launching Cosmic-Ray-driven Outflows from the Magnetized Interstellar Medium. *ApJ*, 816:L19, January 2016.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

- Antoine Baldacchino-Jordan, MSc, „Modeling of primary and secondary cosmic rays in the interstellar medium” – supervision of the doctoral student of the NCU’s Faculty of Physics, Astronomy and Informatics, ongoing supervision.
- Mgr Mateusz Ogrodnik, „Modelling the propagation of cosmic ray electrons in galaxies” - supervision of the doctoral student of the NCU’s Faculty of Physics, Astronomy and Informatics, ongoing supervision.
- Ngan Le, Multi-wavelength observations of the outer Galaxy: Identifying the impact of environment on star formation, DrSc, NCU 2023, supervisor.
- Dr Dominik Wółtański, " Cosmic ray driven dynamo in spiral galaxies” NCU, 2015, supervisor.
- Dr Kacper Kowalik, „Planetary formation due to the combined action of fluid instabilities in protoplanetary disks”, NCU 2014, supervisor.
- Dr Rafał Kosiński, „Dynamics of the interstellar medium involving the magnetic field and thermal processes”, NCU 2010, supervisor.
- Dr. Manuel Perucho, „Linear and non-linear Kelvin-Helmholtz instabilities in relativistic flows. Application to extragalactic jets”; assistant supervisor in the doctoral procedure at the University of Valencia, Spain, 2005.

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor Michał Hanasz has 35 years of teaching experience. He has given lectures, conducted classes, courses, workshops and seminars, in the following subjects: (English versions of the lecture developed for students of PANDA courses and doctoral students are specified below brackets):

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Astrophysical fluid dynamics, Galaxy formation and evolution, Contemporary astrophysics, Mathematical methods of astronomy, Theoretical astrophysics laboratory, Physics laboratory I, Mathematical analysis – classes, “Fortran” programming course, Seminar entitled ‘Numerical simulations in astrophysics’, General Seminar of the Astronomy Centre, Planetary Seminar, Master's degree proseminar, Summer fellowship at the Astronomical Observatory in Piwnice.

Educational materials:

1. Materials for the monographic lecture "Astrophysical fluid dynamics", multimedia presentation format (pdf), made available to course participants.
2. Materials for the course lecture "Galaxy formation and evolution", multimedia presentation format (pdf), made available to course participants.
3. Materials for the course lecture "Mathematical methods of astronomy", multimedia presentation format (pdf) together with a set of programs in the source version (Fortran90)
4. Materials for classes ‘Theoretical astrophysics laboratory: PIERNIK magnetohydrodynamic code’
5. Developed and used as a research tool and teaching aid (<https://piernik.umk.pl>), made available to course participants in the open code repository <https://github.com/piernik-dev/piernik.git>, developed together with students/doctoral students of the NCU's Astronomy Centre (and collaborators from other Polish and foreign centres).

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Participation in dozens of conferences and research workshops.

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Professor Michał Hanasz completed 2 long-term (1-2 years long) research fellowships in foreign centres

1997 – 1998 (11 months): postdoctoral fellowship - the French Government's scholarship - Paris-Meudon Observatory.

1999 – 2000 (20 months): postdoctoral fellowship - the Alexander von Humboldt Foundation's scholarship, Institute of Astronomy and Astrophysics, Ludwig-Maximilian University in Munich.

He also completed short-term research fellowships (from 1 to 3 months):

2003-2004 (3 months): research fellowship - scientific cooperation with a group of astrophysicists at the Institute of Relativistic Astrophysics at the University of Valencia, Spain.

2011-2018 multiple research visits under scientific cooperation at the Institute for Astronomy and Astrophysics of the Ludwig-Maximilian University in Munich and at the Max Planck Institute for Astrophysics in Garching near Munich.

2024 – Participation in a 3-week long workshop on “Cosmic ray feedback in galaxy evolution” at the Aspen Center for Physics, USA.

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Name and surname
Krzysztof KATARZYŃSKI
Declared disciplines
<i>Astronomy</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2017 – NCU professor 2012 – Doctor Habilitatus of Physical Sciences in Astronomy – the Council of the Faculty of Physics, Astronomy and Informatics 2003 – Doctor of Physical Sciences in Astronomy - the Council of the Faculty of Physics, Astronomy and Informatics
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Specialisation lecture “Astrophysics of jets”
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Professor Katarzyński's scientific career began with radio astronomical observations of the so-called jets in active galactic nuclei, and in particular with monitoring their variability. The results obtained were then interpreted using theoretical models created for this purpose, which was the basis for the doctoral dissertation. Following his doctoral degree, he completed a nearly three-year long research fellowship at the Brera Observatory, where he conducted research on high-power jets. The results of these studies were the basis for his postdoctoral research dissertation. Currently, Professor takes part in the H.E.S.S. project - the world's largest ground-based gamma radiation observatory.</p> <p>Key publications in the last 8 years:</p> <p>Aharonian, F., ... Katarzyński, K., et al. (H.E.S.S. Collaboration) Discovery of a radiation component from the Vela pulsar reaching 20 teraelectronvolts 2023 Nature Astro, 7, 1341</p> <p>Abdalla, H., ... Katarzyński, K., et al. (H.E.S.S. Collaboration) Time-resolved hadronic particle acceleration in the recurrent nova RS Ophiuchi 2022 Science, 376, 77</p> <p>Abdalla, H., ... Katarzyński, K., et al. (H.E.S.S. Collaboration) Revealing x-ray and gamma ray temporal and spectral similarities in the GRB 190829A afterglow 2021 Science, 372, 1081</p> <p>Abdalla, H., ... Katarzyński, K., et al. (H.E.S.S. Collaboration) Resolving acceleration to very high energies along the jet of Centaurus A 2020 Nature, 582, 356</p> <p>Abdalla, H., ... Katarzyński, K., et al. (H.E.S.S. Collaboration) Resolving the Crab pulsar wind nebula at teraelectronvolt energies 2020 Nature Astro, 4, 167</p> <p>Abdalla, H., ... Katarzyński, K., et al. (H.E.S.S. Collaboration) A very-high-energy component deep in the γ-ray burst afterglow 2019 Nature, 575, 464</p> <p>Goździewski, K., Gawroński, M., Katarzyński, K. & Rycyk, G., Another look at AM Herculis - radio-astrometric campaign with the e-EVN at 6 cm 2018 MNRAS, 475, 1399</p> <p>Abbott, B. P., ... Katarzyński, K., et al. Multi-messenger Observations of a Binary Neutron Star Merger 2017 ApJL, 848, 59</p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

Gawroński, M., Goździewski, K., & Katarzyński, K., Physical properties and astrometry of radio-emitting brown dwarf TVLM 513-46546 revisited 2017 **MNRAS**, 466, 4211

Katarzyński, K., Gawroński, M., & Goździewski, K. Search for exoplanets and brown dwarfs with VLBI 2016 **MNRAS**, 461A, 929

Abramowski, A., ... Katarzyński, K., et al. (H.E.S.S. Collaboration) Acceleration of petaelectronvolt protons in the Galactic Centre 2016 **Nature** 531, 476

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Professor Katarzyński has supervised 9 Masters' and Bachelors' theses or Engineers's diplomas. He was also a supervisor of three doctoral students. The results of Katarzyna Walczewska's Master's thesis entitled "Study of the correlation between X-ray radiation and high-energy gamma emission in HBL-type blazars" were published in prestigious international journal Astronomy & Astrophysics in 2010. Krzysztof Domogała's Master's thesis entitled "Analysis of low-mass stars in terms of the presence of debris disks" was recognised in 2016 as the best thesis in astronomy at the Faculty of Physics, Astronomy and Informatics of the Nicolaus Copernicus University.

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor Katarzyński's teaching achievements include developing and conducting 18 different types of courses and classes, including three course lectures (one of them in English), one monographic lecture and an entire range of classes such as calculation exercises and computer courses. All these courses classes were developed and conducted over the last 19 years.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

40-hour long course in soft skills

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Participation in the High Energy Stereoscopic System project - the world's largest ground-based gamma-ray observatory.

Participation in the Cherenkov Telescope Array project - an initiative to build next-generation ground-based gamma-ray observatories.

Chair of the Board of Directors of the European VLBI Network.

Principal Investigator at the Astrophysics Center for Multimessenger studies in Europe (ACME)
[HORIZON-INFRA-2023-SERV-01](#)

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF ASTRONOMY

Name and surname
Magdalena KUNERT-BAJRASZEWSKA
Declared disciplines
<i>Astronomy</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2007 – Doctor of Astronomy 2016 – Doctor Habilitatus of Astronomy
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Research and scientific achievements of Professor M. Kunert-Bajraszewska include 49 peer-reviewed papers published in international journals and 44 papers in conference publications. Current scientometrics according to the Scopus database are as follows: citations – 2,037, h-index – 23. These papers focus on the so-called active galaxies, and particularly on the early stages of their development. Initial papers mainly present radio observations of these objects made using VLBI interferometry. In later papers, the scope of observations is also extended to other spectral ranges and instruments such as the Chandra X-ray satellite and the optical range (e.g. the SALT telescope). A new object of interest of M. Kunert-Bajraszewska are the so-called radio transients, the discovery of which on a larger scale has been recently initiated by new radio surveys (CNSS and VLASS) performed by the VLA interferometer. These discoveries were first published in the journal <i>Astrophysical Journal</i>. It is believed that sudden radio brightenings of observed objects (i.e. radio transients) are probably related to a new ejection of relativistic plasma, i.e. the formation of a new jet. Additionally, a very interesting phenomenon of the transition of an object from a radio-quiet state to a radio-loud state can be observed.</p> <ol style="list-style-type: none"> 1. "Caltech-NRAO Stripe 82 Survey (CNSS). IV. The Birth of Radio-loud Quasar 013815+00", Kunert-Bajraszewska et al., 2020, <i>ApJ</i>, 897, 128 2. "Quasars That Have Transitioned from Radio-quiet to Radio-loud on Decadal Timescales Revealed by VLASS and FIRST", Nyland, K. et al., 2020, <i>ApJ</i>, 905, 74 3. "Caltech-NRAO Stripe 82 Survey (CNSS). V. AGNs That Transitioned to Radio-loud State", Wołowska et al. 2021, <i>ApJ</i>, 914, 22 4. Activity in the NCA's reviewers' panels in the Preludium, Sonata, Opus and Miniatura competitions. 5. Participation in the POLFAR and ATHENA-PL consortia. 6. Member of the Scientific Board of the „Astrophysics and Astrochemistry” Centre of Excellence under the NCU as a leading university. 7. NCU's Rector's awards for publication in latach 2019, 2020, and 2021. 8. Mayor of Toruń's award for the scientific activity in 2019. 9. Press release 2019: "Astronomers publish a new star chart revealing hundreds of thousands of previously unknown galaxies ", 19.02.2019. 10. Organisation of 6th workshop on CSS and GPS radio sources', 10-14.05.2021, online event, Toruń, Poland and the Guest Editor of the Proceedings of the 6th workshop on CSS and GPS radio sources, <i>Astronomical Notes</i> 2021.

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<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<ol style="list-style-type: none"> 1. Maciej Cegłowski, defence date: 27.11.2019 – assistant supervisor. 2. Aleksandra Wołowska, defence date: 12.01.2022 – supervisor. 3. Naqsh E. Zafar, doctoral student since 10/2024, AC Doctoral School – supervisor. 4. Klaudia Kowalczyk, doctoral student since 10/2023, AST Doctoral School – supervisor (+ assistant supervisor: M. Tarnopolski, DSc). 5. Aleksandra Krauze, doctoral student since 06/2023, AC Doctoral School – supervisor 6. Jude Wijesekera, doctoral student since 10/2022, AST Doctoral School – supervisor (+ assistant supervisor: M. Koprowski, DSc)
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>Professor M. Kunert-Bajraszewska has been teaching at such fields of study as Physics, Automation and Robotics, and Astronomy. These are lectures: Elementary Particle Physics (field of study: Physics), Modern Observational Instruments and Techniques, and Observational Astronomy (field of study: Astronomy), as well as laboratory classes in Fundamentals of Signal Theory and Fundamentals and Algorithms of Signal Processing (fields of study: Technical Physics; Automation and Robotics), Astrophysics Laboratory, and Radio Astrophysics Laboratory (field of study: Astronomy). The weighted average assessment of courses given by students and PhD students in the 2023/2024 academic year is 5.00.</p> <p>In addition, over the past six years, Professor M. Kunert-Bajraszewska conducted the following promotion activities: lectures for the University of the Third Age (2019), laureates of the Astronomy Olympiad (2023, 2024), Almukantarat Astronomy Camp (2020), the Astronomy Students' REsearch Club (2022, 2023, 2024) and Astronarium (2019, 2024).</p>
<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p>
<p>International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)</p>
<p>Professor M. Kunert-Bajraszewska has held the following fellowships and longer research visits: 10/2001 – 03/2002: Marie Curie scholarship, Jodrell Bank Observatory (the UK); 01/2003 – 12/2006: Several shorter research visits: the United Kingdom (MERLIN data reduction training), USA (Chandra X-ray data analysis and VLBA/VLA data reduction school), Netherlands (EVN and Westerbork data reduction training in JIVE/ASTRON).</p> <p>Moreover, Professor M. Kunert-Bajraszewska has actively participated in several dozen scientific conferences and has conducted research cooperation with many scientific centres, e.g. the National Center for Radio Astrophysics (NCRA) - Tata Institute of Fundamental Research (India); California Institute of Technology (USA), National Radio Astronomy Observatory (USA), and the Harvard-Smithsonian Center for Astrophysics (USA).</p>

**PROFILES OF ACADEMIC STAFF MEMBERS
IN THE DISCIPLINE OF EARTH AND ENVIRONMENTAL SCIENCES**

Name and surname
Piotr HULISZ
Declared disciplines
<i>Earth and Related Environmental Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2014 – Doctor Habilitatus – Earth Sciences/ Geography/ Soil Science, Faculty of Earth Sciences, NCU, Toruń
2005 – Doctor – Earth Sciences, Faculty of Biology and Earth Sciences, NCU, Toruń
Academic titles (name, title conferral year, classification)
2023 – Professor – Natural Sciences/ Earth and Related Environmental Sciences
Courses taught at the Doctoral School
Supervisor mentoring (Kinga Kujawiak, MSc – supervisor)
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>h-index (GS) = 22, h-index (WoS) = 15, h-index (Scopus) =15</p> <p>Professor Piotr Hulisz graduated in geography, specialising in ecological soil science, from the Nicolaus Copernicus University in Toruń (1997). He has been employed at NCU since 1998, currently at the Department of Soil Science and Landscape Ecology at the Faculty of Earth Sciences and Spatial Management.</p> <p>Professor P. Hulisz's scientific achievements include over 90 full-text, peer-reviewed scientific publications and monographs. Many of these were published in prestigious scientific journals, such as "Geoderma", "Land Degradation and Development" and "Catena". Professor P. Hulisz is an expert in soil-affected and sulphur-affected soils as well as in urban soils. As the chair of the team for salt-affected and acid sulphate soils of the Commission on Genesis, Classification and Mapping of Soils of the Soil Science Society of Poland, he was responsible for the development and implementation of the classification of the above-mentioned soils to the Polish Soil Classification, 6th edition (2019). Professor P. Hulisz is an active member of the Emerging Field "Microbiology, Soil Science, Food Quality and Agricultural Genetics (OBSIDIAN) and was the leader of the Priority Research Field Team "Urban Soil Environment" (USE), research teams operating within the EI-RU. The results of research in these interdisciplinary teams are numerous works on the analysis of plant-soil and microbiological-soil correlations. He implemented four research grants funded from domestic funds (the Committee for Scientific Research, Ministry of Science and Higher Education, National Science Centre) and participated twice in international projects (COST). He was a member of an interdisciplinary research team operating under the EU project Interreg Central Europe – Historical Castle Parks (HICAPS), coordinated by the Marshal's Office of the Kujawsko-Pomorskie Voivodeship (2018).</p> <p>Key publications in the last 5 years:</p> <ul style="list-style-type: none"> • Greinert, A., Piernik, A., Grande, U., & Hulisz, P. (2024). Construction and demolition waste (CDW) in urban soils as a factor controlling their diversity. <i>Geoderma</i>, 449, 1–9. https://doi.org/10.1016/j.geoderma.2024.117019 • Hulisz, P., Loba, A., Chabowski, M., Kujawiak, K., Koźniewski, B., Charzyński, P., & Kim, K.-H. J. (2024). Microplastic contamination in soils of urban allotment gardens (Toruń, Poland). <i>Journal of Soils and Sediments</i>, 1–12. https://doi.org/10.1007/s11368-024-03797-8

**PROFILES OF ACADEMIC STAFF MEMBERS
IN THE DISCIPLINE OF EARTH AND ENVIRONMENTAL SCIENCES**

- Pindral, S., Kot, R., Malinowska, A., & **Hulisz, P.** (2023). The effect of technogenic materials on fine-scale soil heterogeneity in a human-transformed landscape. *Catena*, 221, 1–13. <https://doi.org/10.1016/j.catena.2022.106772>
- Kalwasińska, A., **Hulisz, P.**, Szabó, A., Binod Kumar, S., Michalski, A., Solarczyk, A., Wojciechowska, A., & Piernik, A. (2023). Technogenic soil salinisation, vegetation, and management shape microbial abundance, diversity, and activity. *Science of the Total Environment*, 905, 1–14. <https://doi.org/10.1016/j.scitotenv.2023.167380>
- Koczorski, P., Furtado, B., Baum, C., Weih, M., Ingvarsson, P., **Hulisz, P.**, & Hryniewicz, K. (2023). Large effect of phosphate-solubilizing bacteria on the growth and gene expression of *Salix* spp. at low phosphorus levels. *Frontiers in Plant Science*, 14, 1–18. <https://doi.org/10.3389/fpls.2023.1218617>
- Kusza, G., Kubowicz-Grajewska, A., Kłostowska, Ż., Kabacińska-Łuczak, K., Łęczyński, L., & **Hulisz, P.** (2023). Environmental effects of potentially toxic elements and the magnetic susceptibility distribution in the surface bottom sediments in the Vistula estuary (Gulf of Gdańsk, Poland). *Journal of Soils and Sediments*, 23, Article 9. <https://doi.org/10.1007/s11368-023-03595-8>
- Pirasteh-Anosheh, H., Piernik, A., Łuczak, K., Mendyk, Ł., & **Hulisz, P.** (2023). The behavior of potentially toxic elements in the technogenic soil-plant system: a study of *Salicornia europaea* L. from sites affected by the soda industry. *Ecological Modelling*, 486, 1–11. <https://doi.org/10.1016/j.ecolmodel.2023.110517>
- **Hulisz, P.**, Różański, S., Boman, A., & Rauchfleisz, M. (2022). Can acid sulfate soils from the southern Baltic zone be a source of potentially toxic elements (PTEs)? *Science of the Total Environment*, 825, 1–10. <https://doi.org/10.1016/j.scitotenv.2022.154003>
- Parnian, A., Parnian, A., Pirasteh-Anosheh, H., Furze, J. N., Prasad, M. N. V., Race, M., **Hulisz, P.**, & Ferraro, A. (2022). Full-scale bioremediation of petroleum-contaminated soils via integration of co-composting. *Journal of Soils and Sediments*, 22, 2209–2218. <https://doi.org/10.1007/s11368-022-03229-5>
- Koczorski, P., Furtado, B. U., Gołębiewski, M., **Hulisz, P.**, Thiem, D., Baum, C., Weih, M., & Hryniewicz, K. (2022). Mixed growth of *Salix* species can promote phosphate-solubilizing bacteria in the roots and rhizosphere. *Frontiers in Microbiology*, 13, 1–12. <https://doi.org/10.3389/fmicb.2022.1006722>
- Lubińska-Mielińska, S., Kamiński, D., **Hulisz, P.**, Krawiec, A., Walczak, M., Lis, M., & Piernik, A. (2022). Inland salt marsh habitat restoration can be based on artificial flooding. *Global Ecology and Conservation*, 34, 1–12. <https://doi.org/10.1016/j.gecco.2022.e02028>
- Pindral, S., Kot, R., & **Hulisz, P.** (2022). The influence of city development on urban pedodiversity. *Scientific Reports*, 12, Article 1. <https://doi.org/10.1038/s41598-022-09903-5>
- Deptuła, M., Piernik, A., Nienartowicz, A., **Hulisz, P.**, & Kamiński, D. (2020). *Alnus glutinosa* L. Gaertn. as potential tree for brackish and saline habitats. *Global Ecology and Conservation*, 22, 1–11. <https://doi.org/10.1016/j.gecco.2020.e00977>
- Pindral, S., Kot, R., **Hulisz, P.**, & Charzyński, P. (2020). Landscape metrics as a tool for analysis of urban pedodiversity. *Land Degradation & Development*, 31, Article 16. <https://doi.org/10.1002/ldr.3601>

Professor P. Hulisz uses his research experience to cooperate with the business environment and institutions dealing with environmental protection. He was a co-investigator in six projects and the Principal Investigator in two, the results of which are expert opinions made in interdisciplinary teams. In 2021 and 2024, he was appointed expert by the Institute of Nature Conservation of the Polish Academy of Sciences by the Chief Inspectorate for Environmental Protection in the project "Monitoring of natural habitats and special areas of protection of Natura 2000 habitats". Professor Piotr Hulisz is the originator and key implementer of the project to establish the Environmental

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Analysis Laboratory at the Faculty of Earth Sciences and Spatial Management, which he has been supervising since 2019. He also heads the Institute of Earth and Related Environmental Sciences / the Board of Disciplines of Earth and Related Environmental Sciences (terms 2019-2024 and 2024-2028). He is the chair of the Bydgoszcz-Toruń Branch of the Polish Soil Science Society (since 2015) and subject editor in two Polish scientific journals with IF: Bulletin of Geography. Physical Geography Series and Soil Science Annual. He is also a member of the Scientific Council of the Wolin National Park (since 2024).

The scientific, research and organisational activities of Professor Hulisz have been repeatedly awarded by the Rector of the Nicolaus Copernicus University in Toruń. This year, he received the Gold Badge of the Polish Geographical Society in recognition of his long-term organisational activities in the Soil Science Society of Poland.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Professor P. Hulisz supervised two doctoral dissertations:

- *Dr Łukasz Mendyk, The influence of anthropopressure on the evolution of the soil layer in and around former millpond basins in Chełmno Land (2017), cum laude, awarded by the Council of the Faculty of the Earth Sciences, NCU in Toruń*
- *Dr Sylwia Pindral, The influence of technogenic materials on the spatial structure and properties of soils in the city of Inowrocław (2023), cum laude, awarded by the Board of Disciplines of Earth and Related Environmental Sciences, NCU in Toruń*
- *One ongoing doctoral procedure:*
Kinga Kujawiak, MSc, Microplastics in the urban soils of Toruń: spatial distribution, characteristics and environmental threats (AST Doctoral School, NCU, 1st year)

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor P. Hulisz has over 25 years of academic teaching experience. He has conducted and still conducts lectures and classes (laboratory and fieldwork) at full-time and part-time studies at the Nicolaus Copernicus University in Toruń, for such fields of study as Geography, Environmental Geoinformation and Spatial Management, in soil science and soil geography, Earth chemistry, landscape geochemistry, hydrochemistry, fundamentals and methodology of geography, environmental quality analysis, ecosystem redevelopment, laboratory techniques. For Tourism and Leisure - also lectures and fieldwork classes in "Tourist regions of Northern Poland". In addition, he has also conducted engineering seminars in the field of study of Spatial Management, Master's seminars in such fields of study as Geography, Environmental geoinformation, and Tourism and Leisure as well as seminars at doctoral studies in Geography. He has supervised so far over 25 Master's, Bachelor's and Engineer's theses. He was a reviewer of five doctoral dissertations. In the years 2017-2022 he conducted all-university courses (lectures and classes) in English for the Erasmus programme students at the Nicolaus Copernicus University, i.e.: "Sacrum and Profanum - Religious and Pilgrimage Tourism" and "International classification of European soils", and for students of the Doctoral School of Academia Copernicana – the course entitled "Scientific data presentation and copyright I". In addition, he was a lecturer and also took part in the development of educational materials in three international projects funded by the Erasmus programme and

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implemented at the Nicolaus Copernicus University in Toruń: ERA/2012/IP/W/0013 "Lingua Franca for European Soils" (LiFeS) (2012-2014), 2015-1-PL01-KA203-016480 "Freely Accessible Central European Soils" (FACES) (2016-2018) and 2019-1-PL01-KA203-065101 "Share your soil" (SYSem) (2019-2022). He is a co-author of the course curriculum on teaching the WRB international soil classification and a dedicated textbook (FACES project):

Świtoniak M., Kabata C., Karklins A., Charzyński P., Hulisz P., Mendyk Ł., Michalski A., Novák T. J., Penížek V., Reintam E., Repe B., Saksa M., Vaisvalavičius R., Waroszewski J.: Guidelines for soil description and classification Central and Eastern European students' version, 2018, Polish Society of Soil Science, ISBN 978-83-934096-6-2, 286pp.

These materials are used in the implementation of the co-taught course "International classification of European soils" for foreign students at the Nicolaus Copernicus University in Toruń. In the years 2015-2022, under the mobility programmes funded by the Erasmus + programme, he completed teaching stays in Hungary (University of Debrecen), Morocco (Cadi Ayyad University, Marrakesh), Tunisia (University of Sfax, Tunisia), and Russia (Lomonosov Moscow State University).

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- 1997-1998: Postgraduate Studies in Microcomputer Programming and Operation at the Faculty of Physics and Astronomy, Nicolaus Copernicus University in Toruń, diploma thesis "Physical properties of soil" – application written in VBA.
- 1999: training internship "Creation a laboratory for soil survey", University of Ulster, Coleraine, Northern Ireland, Tempus Mobility Grant.
- 1999: training internship "Creation of curriculum relevant to the new study course: Ecology and Environmental Sciences", University of Geneva, Switzerland, Tempus Mobility Grant.
- 2007: research fellowship in chemical analytics "Practise on sulfur analytics of soils", Carl von Ossietzky University of Oldenburg, Germany, grant funded by the NCU's Rector.
- 2011-12 and 2016-17: English courses for academic purposes organised by the University Centre for Foreign Languages at the Nicolaus Copernicus University in Toruń, financed by the EU.
- 2016: training fellowship "DUALEM measurements in the acid sulfate soils". Geological Survey of Finland, Vaasa, Finland, Erasmus+ Staff Mobility for Training.
- 2022: training fellowship "Analysis of microplastics in the soil environment." University of Seoul, South Korea, Erasmus+ Staff Mobility for Training.

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

The results of Professor P. Hulisz's research have been presented at nearly thirty international conferences (e.g., in France, the Netherlands, South Korea, Germany, Russia, Scotland, the Czech Republic, Spain, Italy and Hungary), both as presentations and poster sessions. Collaboration with scientists from foreign centres results in numerous scientific publications (the most recent of which are listed above). Some of them were developed as part of joint research conducted in two working groups of the International Union of Soil Science Societies (IUSS): "SUITMA: Soils of Urban, Industrial, Traffic, Mining and Military Areas Working Group" and "Acid Sulfate Soils Working Group", as well as COST Action FA0901 "Halophytes - from genes to ecosystems" (2009-2012). Since 2024, he has been a member of COST ACTION CA22144 - Sustainable use of salt-affected lands (SUSTAIN). Professor P. Hulisz is one of the originators, the chair of the scientific and organisational committee of the regularly organised international scientific seminar entitled SUITMA International Seminar, the aim of which is to present the newest trends and to exchange experiences related to the study of soils of urban, industrial, communication, mining and military areas. This event has been held five times so far (2019, 2020, 2022, 2023, 2024), bringing together scientists from Poland and from other countries from the IUSS SUITMA working group (Soils of Urban, Industrial, Traffic, Mining and

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Military Areas). He is also a member of the scientific and organisational committee of the periodic International Conference "Plant productivity and food safety: Microbiology, Soil Science, Food Quality and Agricultural Genetics" organised by the EI-RU EF research team in "Microbiology, Soil Science, Food Quality and Agricultural Genetics (OBSIDIAN) NCU in Toruń (4 editions so far).

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Name and surname
Michał JANKOWSKI
Declared disciplines
<i>Earth and Related Environmental Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2014 – Doctor Habilitatus of Earth Sciences in Geography – NCU in Toruń
2004 – Doctor of Earth Sciences in Geography – NCU in Toruń
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
<i>Paleogeographical reconstruction of past landscapes - 30 h</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p><i>Selected publications on the course-related research area:</i></p> <p>Jankowski M., Rutkowska P.A., 2024. Podzolization in a 150-year chronosequence of soils under pine timber forest on inland dunes in the Toruń Basin (Northern Poland). <i>Catena</i> 247: 108551. DOI: 10.1016/j.catena.2024.108551.</p> <p>Osipowicz G., Badura M., Brown T., Hudson S., Jankowski M., Makowiecki D., Noryśkiewicz A.M., Orłowska J., Sykuła M., Weckwerth P., 2023. Human-environment interactions in the Mesolithic : the case of site Paliwodzizna 29, a lakeside site in central Poland. <i>Quaternary Science Reviews</i> 322: 1-22. DOI:10.1016/j.quascirev.2023.108388.</p> <p>Czerniec J., Kozioł K., Jankowski M., Lewińska P., Santos C.A.G., Maciuk K., 2023. How to find the undiscovered? Anthropogenic objects in forest areas : a critical assessment of current methods. <i>International Journal of Conservation Science</i> 14, 1: 115-130. DOI:10.36868/IJCS.2023.01.09.</p> <p>Jankowski M., Sykuła M., Łuczkiwicz P., Kuzioła A., Kleemann J., 2023. The landscape position of the Roman period cemetery and pedological meaning of its cultural layer at the Malbork-Wielbark archaeological site (northern Poland). <i>Catena</i> 231: 1-13. DOI:10.1016/j.catena.2023.107275.</p> <p>Zieliński P., Sokołowski R. J., Jankowski M., Standzikowski K., Fedorowicz S., 2019. The climatic control of sedimentary environment changes during the Weichselian: an example from the Middle Vistula Region (eastern Poland). <i>Quaternary International</i> 501: 120-134. DOI:10.1016/j.quaint.2018.04.036.</p> <p>Van Hoesel A., Hoek W.Z., Pennock G.M., Kaiser K., Plümper O., Jankowski M., Hamers M.F., Schlaak N., Küster M., Andronikov A.V., Drury M.R., 2015. A search for shocked quartz grains in the Allerød-Younger Dryas boundary layer. <i>Meteoritics & Planetary Science</i> 50, 3: 483-498. DOI:10.1111/maps.12435.</p> <p>Jankowski M., 2012. Lateglacial soil paleocatena in inland-dune area of the Toruń Basin (Northern Poland). <i>Quaternary International</i> 265: 116-125. DOI:10.1016/j.quaint.2012.02.006.</p> <p>Kaiser K., Hilgers A., Schlaak N., Jankowski M., Kühn P., Bussemer S., Przeglęta K., 2009. Palaeopedological marker horizons in northern central Europe: characteristics of Lateglacial Usselo and Finow soils. <i>Boreas</i> 38, 3: 591-609. DOI:10.1111/j.1502-3885.2008.00076.x</p>
Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)
<i>Doctoral students awarded with doctoral degrees:</i>

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1. *Paulina Rutkowska, 2020. The process of podzolization in the cycle of pine monoculture cultivation in selected sandy areas of northern Poland.*
2. *Marcin Sykuła, 2021. Range changes of organic soils in the young glacial landscapes in the second part of 20th century.*
3. *Joanna Michalak-Bielska, 2024. The influence of soil forming processes on mineral composition of sandy soils from young glacial area.*

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor M. Jankowski teaches at the Faculty of Earth Sciences and Spatial Management of the NCU, in all fields of study available at the Faculty. He specialises in soil science, and in particular in research on the pedogenesis, classification, soil mapping and correlations between soils and other elements of the geographical environment. Professor Jankowski is particularly interested in paleoenvironmental reconstructions based on the record of traces of ancient landscapes and processes in soil stratigraphy and properties. This research is carried out in paleopedology, paleogeography and geoarchaeology. He has developed his own original curricula for relevant courses taught, both in Polish and English. At the Faculty of Earth Sciences and Spatial Management he is the head of the Department of Soil Science and Landscape Ecology.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- *Participation in research fellowships and teaching stays under international exchange programmes*
- *Coleraine, Northern Ireland, 1998, Geneva and Lausanne, Switzerland, 1999.*
- *Participation in field and laboratory workshops on soil classification, micromorphology and paleopedology, e.g., Mexico (2010, 2022), Spain (2012), Russia (2013), Germany (2016).*
- *Participation in research expeditions to Mongolia - 1996, 2005.*

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

- *Participation in the implementation of 3 international grants funded by the European Union and Brazilian government funds.*
- *Participation in international scientific conferences (e.g., Thailand, Chile, Mexico, Australia, Russia, Germany, Spain, Denmark, Brazil), and in the World Congress of Soil Science (3 times).*
- *Permanent cooperation with researchers from the Slovak University of Agriculture in Nitra, Slovakia (since 2007) and Unicamp University in Campinas, Brazil (since 2014).*

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Name and surname
Edyta KALIŃSKA
Declared disciplines
<i>Earth and Related Environmental Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2020 – Doctor Habilitatus, NCU in Toruń, Earth and Related Environmental Sciences
2009 – Doctor of Earth Sciences, University of Warsaw
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Research methods in Earth Sciences
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
h-index: 15, 13, 13 (Google Scholar, Scopus and Web of Science respectively)
<p>E.Kalińska graduated in geology and geography from the University of Warsaw, where she also defended her doctoral dissertation in 2009. Then, she worked outside Poland for 8 years and conducted research at the Universities of Tartu (Estonia) in 2010-2013 as a post-doc and in 2017-2018 as a returning researcher, and in Lund (Sweden) in 2014-2015 as a post-doc and in 2015 as a technician researcher in the luminescence dating laboratory. She also had several multi-week stays in laboratories in Denmark and Russia, several stays in Lund (Sweden) and gave guest lectures in Finland and France. Since 2018, she has been employed at the Department of Geomorphology and Paleogeography of the Faculty of Earth Sciences and Spatial Management of the Nicolaus Copernicus University. Her key research interests focused on the paleogeographic record and chronology of late Quaternary sediments in the areas surrounding Warsaw (before her PhD in 2009), the so-called European Aeolian Sand Belt in the Baltic countries (in 2010-2018), coastal areas with particular emphasis on the record of extreme events (from 2015 to the present) and glacial megafloods (from 2020 to date). She received the NCU's Rector Achievement Awards in 2022 (individual, Level 1) and in 2023 (team, Level 2).</p> <p>She has reviewed several dozen scientific projects (mainly from the Lithuanian Research Council), as well as several dozen papers in leading journals of the discipline. Since 2020, she has been a co-editor in <i>Sedimentary Geology</i> (Q1; IF 2.7), and since 2024 also in the <i>Journal of Sedimentary Research</i> (Q1; IF 2).</p> <p>Key publications (10 in the last five years):</p> <ol style="list-style-type: none"> 1. Kalińska, E., Alexanderson, H., Weckwerth, P., Piotrowski, J.P., Wysota, W., 2025. Are quick equivalent doses realistic? Testing range-finder luminescence dating for water-lain and postglacial flooding sediments in NE Poland. <i>Acta Geologica Polonica</i> (Q3; IF 1.1), 75(1), e36. 2. Bērziņš, V., Breijers, E., Kalińska, E., Krievāns, M., Shifting shores and Stone Age settlement: the former Ventspils Lagoon area, Latvia. <i>Environmental archaeology</i> (Q3; IF 1.2), 29(6), 528-542. 3. Kalińska, E., Weckwerth, P., Lamsters, K., Alexanderson, H., Martewicz, J., Rosentau, A., 2024. Paleostrom redeposition and post-glacial coastal chronology in the eastern Baltic Sea, Latvia. <i>Geomorphology</i> (Q2; IF 3.1), 467, 109456. 4. Kalińska, E., Weckwerth, P., Alexanderson, H., 2023. Recent advances in luminescence dating of the Late Quaternary sediments in the Baltic States, Northern Europe: A review. <i>Earth-Science Reviews</i>(Q1; IF 10.8), 234, 104272. 5. Rosentau, A., Grudzinska, I., Kalińska, E., Alexanderson, H., Bērziņš, V., Ceriņa, A., Kalniņa, Karušs, J., Lamsters, K., Nartišs, M., Paparde, L., Hang, T. 2023. Holocene relative shore-level

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changes and development of the Ģipka lagoon in the western Gulf of Riga. *Boreas* (Q2; IF 2.4), 52(4), 517-537.

6. Martewicz, J., **Kalińska, E.**, Weckwerth, P., 2022. What hides in the beach sand? A multiproxy approach and new textural code to recognition of beach evolution on the southern and eastern Baltic Sea coast. *Sedimentary Geology* (Q1; IF 2.7), 435, 106154.

7. **Kalińska, E.**, Lamsters, K., Karušs, J., Krievāns, M., Rečs, A., Ješkins, J., 2022. Does glacial environment produce glacial mineral grains? Pro- and supra-glacial Icelandic sediments in microtextural study. *Quaternary International* (Q3; IF 1.9), 617, 101-111.

8. Nirgi, T., Grudzinska, I., **Kalińska, E.**, Konsa, M., Joeleht, A., Alexanderson, H., Hang, T., Rosentau, A., 2022. Late-Holocene relative sea-level changes and palaeoenvironment of the Pre-Viking Age ship burials in Salme, Saaremaa Island, eastern Baltic Sea. *The Holocene* (Q3; IF 1.6), 32(4), 237-253.

9. **Kalińska, E.**, Alexanderson, H., Krievāns, M., 2020. The Raunis section, central Latvia, revisited: first luminescence results and re-evaluation of a key Baltic States stratigraphic site. *Geografiska Annaler: Series A, Physical Geography* (Q3; IF 1.4), 102(4), 376-396.

10. **Kalińska, E.**, Kot., R., Krievāns, M., 2020. Adding another piece to NE European Aeolian Sand Belt puzzles: a sedimentary age case study of Pērtupe site, eastern Latvia. *Baltica* (Q4, IF 0.5), 33(1), 46-57.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Joanna Martewicz, MSc (3rd year, AST) – supervisor

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

E. Kalińska has 20 years of teaching experience. She has conducted classes, fieldwork and lectures at the Faculty of Geology of the University of Warsaw and at the Faculty of Earth Sciences and Spatial Management of the Nicolaus Copernicus University. At NCU, she conducts two original lectures in English (15 and 30h): Hunting extremes: severe weather and its record in the natural environment and Boom the Baltics! Lithuania, Latvia and Estonia from inside.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

E. Kalińska worked abroad for 8 years at the University of Tartu (Estonia) and at the University of Lund (Sweden).

She also completed several short-term stays, e.g., the Nordic Laboratory for Luminescence Dating, Risø (Denmark), the Russian Academy of Sciences, Moscow, the University of Lund (Sweden) and the University of Tartu (Estonia).

She participated in several scientific conferences in Australia, Russia, Portugal, Romania, Sweden, Italy, Slovakia, Iceland, Latvia and Lithuania.

She participated in 6 foreign projects, and she as the Principal Investigator in three of them (two funded by the Estonia Research Council and one by the Swedish Institute).

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Name and surname
Rajmund PRZYBYŁAK
Declared disciplines
<i>Earth and Related Environmental Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
1997 – Doctor Habilitatus of Earth Sciences in Geography and Climatology, resolution of the Council of the Faculty of Geographical and Geological Sciences of the Adam Mickiewicz University in Poznań
1988 – Doctor of Natural Sciences in Geography, resolution of the Council of the Faculty of Biology and Earth Sciences of the Nicolaus Copernicus University in Toruń
Academic titles (name, title conferral year, classification)
2006 – Professor of Earth Sciences
Courses taught at the Doctoral School
Supervisor of 2 doctoral students (B. Ghazi, G. Singh – supervisor mentoring)
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Professor Rajmund Przybylak is a full professor, and he was granted this title by the President of the Republic of Poland in 2006. In the years 2000-2022 he was the head of the Department of Meteorology and Climatology at NCU. Since September 2020 he has been the Head of the Climate Change Research Centre at the NCU. In the years 2020-22 he headed the priority research team <i>Climate Change Research Unit</i> (CCRU). Since 2023 he has been the head of the interdisciplinary Scientific Team “Weather and Climate: Reconstructions and Scenarios of the Future” (WERS). His teaching experience and achievements include the supervision of six completed doctoral dissertations, 124 Master's thesis and 28 Bachelor's theses. His research interests focus on research on climate and climate change in the Arctic and Poland, especially in the last millennium, as well as research on topoclimates and urban climate. He is the author or co-author of over 400 publications, including 88 in the WoS database (h-index=20). He participated in 21 research projects of the Committee for Scientific Research, the Ministry of Science and Higher Education, the National Science Centre, etc., including twelve as Principal Investigator (currently he is the PI in two research projects funded by the National Science Centre - PLN 2.5 million). He was the investigator and at the same time the research task leader in three international projects. In his professional research career, he took part in eight scientific expeditions to Spitsbergen, Tanzania and Nepal. He received the Award of the Minister of Science and Higher Education in 2003 and twenty awards of the NCU's Rector for scientific activity. In recent years, he has given several guest lectures at domestic and international conferences. He has made 35 scientific and research visits to various European countries and has been a member of scientific committees of several domestic and international conferences. Professor Przybylak is also very active outside the University. He represents Poland in the International Permafrost Association (since 2011), and in 2010–18 he was a member of the Working Group on the Atmosphere of the International Arctic Science Committee (IASC). Since 2018 he has been the president of the Polish Geophysical Society, since 2007 a member of the Committee on Polar Research of the Polish Academy of Sciences, since 2012 a member of the Polish Polar Consortium, and since 2018 the chair of the 3rd Department of the Scientific Society in Toruń</p> <p>List of the 10 most influential papers published since 2019 (more publications on the website): https://scholar.google.pl/citations?hl=pl&user=LdTQHjcAAAAJ&is_public_preview=1&view_op=list_works</p> <p>1. Ghazi B., Przybylak R., Oliński P., Targowski M., Filipiak J., Pospieszńska A., 2024, A comprehensive study of floods in Poland in the 17th–18th centuries, <i>Journal of Hydrology: Regional Studies</i> 53, 101796, https://doi.org/10.1016/j.ejrh.2024.101796.</p>

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2. Ghazi B., Przybylak R., Oliński P., Bogdańska K., Pospieszńska A., 2023, The frequency, intensity, and origin of floods in Poland in the 11th–15th centuries based on documentary evidence, *Journal of Hydrology*, vol. 623, 129778, <https://doi.org/10.1016/j.jhydrol.2023.129778>.
3. Ghazi B., Przybylak R., Oliński P., Chorążyczewski W., Pospieszńska A., 2023, An assessment of flood occurrences in Poland in the 16th century, *Journal of Hydrology: Regional Studies* 50, 101597, <https://doi.org/10.1016/j.ejrh.2023.101597>
4. Przybylak R., Oliński P., Koprowski M., Szychowska-Krąpiec E., Krąpiec M., Pospieszńska A., Puchałka R., 2023, The climate in Poland (central Europe) in the first half of the last millennium, revisited, *Climate of the Past*, 19, 2389–2408, <https://doi.org/10.5194/cp-19-2389-2023>.
5. Przybylak R., Wyszynski P., Arażny A., 2022, Comparison of Early Twentieth Century Arctic Warming and Contemporary Arctic Warming in the light of daily and sub-daily data, *Journal of Climate*, 35, 2269–2290, <https://doi.org/10.1175/JCLI-D-21-0162.1>.
6. Przybylak R., Svyashchennikov P.N., Uscka-Kowalkowska J., Wyszynski P., 2021, Solar radiation in the Arctic during the Early Twentieth Century Warming (1921–1950), presenting a compilation of newly available data, *Journal of Climate*, 33, 21–37, <https://journals.ametsoc.org/view/journals/clim/34/1/jcliD200257.xml>.
7. Slivinski L.C., Compo G.P., Sardeshmukh P.D., Whitaker J.S., McColl Ch., Allan R., Brohan P., Yin X., Smith C.A., Spencer L.J., Vose R.S., Rohrer M., Conroy R.P., Schuster D.C., Kennedy J., Ashcroft L., Brönnimann S., Brunet M., Camuffo D., Cornes R., Cram1 T.A., Domínguez-Castro F., Freeman J.E., Gergis J., Hawkins E., Jones P.D., Kubota H., Lee T. C., Lorrey A.M., Luterbacher J., Mock C.J., Przybylak R., Pudmenzky C., Slonosky V.C., Tinz B., Trewin B., Wang X.L., Wilkinson C., Wood K., Wyszynski P. 2021, An Evaluation of the Performance of the Twentieth Century Reanalysis Version 3, *Journal of Climate*, 34, 1417–1438, <https://journals.ametsoc.org/view/journals/clim/34/4/JCLI-D-20-0505.1.xml>
8. Przybylak R., Oliński P., Koprowski M., Filipiak J., Pospieszńska A., Chorążyczewski W., Puchałka R., Dąbrowski H.P., 2020, Droughts in the area of Poland in recent centuries in the light of multi-proxy data, *Clim. Past*, 16, 627–661, <https://doi.org/10.5194/cp-16-627-2020>.
9. Brönnimann, S., R. Allan, L. Ashcroft, S. Baer, M. Barriendos, R. Brázdil, Y. Brugnara, M. Brunet, M. Brunetti, B. Chimani, R. Cornes, F. Domínguez-Castro, J. Filipiak, D. Founda, R.G. Herrera, J. Gergis, S. Grab, L. Hannak, H. Huhtamaa, K.S. Jacobsen, P. Jones, S. Jourdain, A. Kiss, K.E. Lin, A. Lorrey, E. Lundstad, J. Luterbacher, F. Mauelshagen, M. Maugeri, N. Maughan, A. Moberg, R. Neukom, S. Nicholson, S. Noone, Ø. Nordli, K.B. Ólafsdóttir, P.R. Pearce, L. Pfister, K. Pribyl, R. Przybylak, C. Pudmenzky, D. Rasol, D. Reichenbach, L. Řezníčková, F.S. Rodrigo, C. Rohr, O. Skrynyk, V. Slonosky, P. Thorne, M.A. Valente, J.M. Vaquero, N.E. Westcott, F. Williamson, P. Wyszynski, 2019, Unlocking pre-1850 instrumental meteorological records: A global inventory, *Bulletin of the American Meteorological Society*, ES389–ES413, <https://doi.org/10.1175/BAMS-D-19-0040.1>.
10. Slivinski L. C., Compo G.P., Whitaker J.S., Sardeshmukh P.D., Giese B.S., McColl Ch., Allan R., Yin X, Vose R., Titchner H, Kennedy J., Spencer L.J., Ashcroft L., Brönnimann S., Brunet M., Camuffo D., Cornes R., Cram1 T.A., Crouthamel R., Domínguez-Castro F., Freeman J.E., Gergis J., Hawkins E., Jones P.D., Jourdain S., Kaplan A., Kubota H., Le Blancq F., Lee T-Ch., Lorrey A., Luterbacher J., Maugeri M., Mock C.J., Moore G.W.K., Przybylak R., Pudmenzky C., Reason C., Slonosky V.C., Smith C., Tinz B., Trewin B., Valente M.A., Wang X.L., Wilkinson C, Wood K., Wyszynski P., 2019, Towards a more reliable historical reanalysis: Improvements for version 3 of the Twentieth Century Reanalysis system, *Quarterly Journal Royal Met. Soc.*, 145, 2876–2908, <https://doi.org/10.1002/qj.3598>

**PROFILES OF ACADEMIC STAFF MEMBERS
IN THE DISCIPLINE OF EARTH AND ENVIRONMENTAL SCIENCES**

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Doctoral students awarded with doctoral degrees:

1. Dr Monika Panfil

Title: Air temperature variability in North-Eastern Poland in the years 1951 - 2000

Defence date: 14.01.2005; the Council of the Faculty of Biology and Earth Sciences of the NCU in Toruń

2. Dr Andrzej Arażny, cum laude, currently Doctor Habilitatus

Title: Bioclimate of the Norwegian Arctic and its variability in the years 1971-2000; *defence date:* 11.03.2005; the Council of the Faculty of Biology and Earth Sciences of the NCU in Toruń

3. Dr Zsuzsanna Vizi

Title: *Climate variability of the North American Arctic in the 19th century*

Defence date: 18.12. 2008; the Council of the Faculty of Biology and Earth Sciences of the NCU in Toruń

4. Dr Przemysław Wyszynski

Title: Meteorological conditions in the Arctic during the First International Polar Year 1882/1883 and their comparison with present-day conditions; defence date: 11.04.2012; the Council of the Faculty of Biology and Earth Sciences of the NCU in Toruń

5. Dr Aleksandra Pospieszńska, cum laude

Title: Climate changes in Toruń in last four hundred years on the basis of instrumental, historical and dendrochronological data; *defence date:* 30.06. 2015; the Council of the Faculty of Earth Sciences of the NCU in Toruń

6. Dr Babak Ghazi

Title: The occurrence and causes of floods in the Polish lands from the 11th to 18th centuries; defence date: 18.10.2024; the Board of Disciplines of Earth and Related Environmental Sciences

Ongoing supervision:

1. Garima Singh, MSc, since 2022

Title:

Climatic conditions in coastal Greenland and Labrador/Nunatsiavut (Canada) from 1771 to 1939 based on meteorological observations by the Moravian Brethren

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor R. Przybylak has 40 years of teaching experience. His teaching experience and achievements include supervising six completed doctoral dissertations, 124 Master's theses and 28 Bachelor's theses. For his contribution to student education, he was awarded the Medal of the National Education Commission. He conducted doctoral seminars in English and delivered many lectures, e.g. Fundamentals of climate and climate change (Doctoral School), using distance learning methods during the COVID-19 pandemic, Dynamic biogeography (field of study: Global Change Biology).

**PROFILES OF ACADEMIC STAFF MEMBERS
IN THE DISCIPLINE OF EARTH AND ENVIRONMENTAL SCIENCES**

<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p>
<p>Summer 2010 Spitsbergen - meteorological, glaciological and topo-climatological research Summer 2005 Spitsbergen - meteorological, glaciological and topo-climatological research Summer 1989 Spitsbergen - meteorological, glaciological and topo-climatological research Autumn 1986 Tanzania - meteorological research Autumn 1984 Nepal - meteorological research Summer 1982 Spitsbergen - meteorological, glaciological and topo-climatological research Summer 1980 Spitsbergen - meteorological, glaciological and topo-climatological research Summer 1979 Spitsbergen - meteorological, glaciological and topo-climatological research</p>
<p>International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)</p>
<p>International research projects: 2009-2011 Polish Norwegian project entitled "Arctic Climate and Environment of the Nordic Seas and the Svalbard – Greenland Area (AWAKE), Principal Investigator 2011-2015 Polish –Swiss Research Programme (No PSPB-086/2010), project entitled "Climate of northern Poland during the last 1000 years: Constraining the future with the past (CLIMPOL)" , Principal Investigator 2013-2016 Polish Norway project <i>Arctic climate system study of ocean, sea ice and glaciers interactions in Svalbard area (AWAKE-2)</i>, Principal Investigator of Task No 6 <i>Atmosphere and climate change</i></p>
<p>Fellowships, research stays, research visits: 1. Institute of Meteorology and Water Management in Warsaw and Wrocław – September 1983 2. University of Greifswald and Humboldt University in Berlin (Germany) - June 1989 3. University in Riga (Latvia) - December 1990 4. Arctic and Antarctic Research Institute at Saint Petersburg (Russia) – October-November 1992 5. Danish Meteorological Institute at Copenhagen (Denmark) - February 1993 6. Scott Polar Research Institute, Cambridge (Great Britain) - June 1994, January 1995 7. Geophysical Institute of the Czech Academy of Sciences in Prague (Czech Republic) – March 1995 8. Meteo France in Toulouse (France) - July 1995 9. Norsk Polar Institutt Trondheim (Norway) - September 1997 10. Scott Polar Research Institute at Cambridge (UK) – 4 August – 10 October 1999 11. Scott Polar Research Institute at Cambridge (UK) – 1 – 28 August 2000 12. Scott Polar Research Institute at Cambridge (UK) – 6 August – 2 September 2002 13. Hydrographic Office at Taunton, Meteorological Office, Bracknell and Scott Polar Research Institute, Cambridge (UK) - 15 September – 10 October 2003 14. Norwegian Meteorological Institute in Oslo, Norway, 28 January – 9 February 2008 15. Meteorological and Hydrological University, St. Petersburg (Russia), 28 June-12 July 2008 16. World Data Center for Paleoclimatology NOAA's National Climatic Data Center, Boulder (USA), 17-28 August 2008 17. Institute of Geography of the Russian Academy of Sciences, Moscow (Russia), 27 September-7 October 2009 18. Norsk Polar Institute, Tromsø (Norway), 1-11 September 2010 19. Arctic Library, Main Library, Copenhagen, 11-25 September 2010</p>

**PROFILES OF ACADEMIC STAFF MEMBERS
IN THE DISCIPLINE OF EARTH AND ENVIRONMENTAL SCIENCES**

20. Austrian State Archives and Austrian Meteorological Institute, Vienna (Austria), 17-24 July 2011 and 16-23 October 2011
21. Vilnius University, Wróblewski Library of the Lithuanian Academy of Sciences, 23-29 September 2012
22. University Library in Lviv (Ukraine), 22-29 October 2012
23. Libraries and Archives in Berlin (Humboldt University, State Archive) (Germany) – 3-9 February and 11-24 August 2013
24. Archives of the Navy and the Library of the Russian Academy of Sciences and the Main Geophysical Observatory of St. Petersburg (Russia), August 2014
25. Libraries and Archives in Berlin (Humboldt University, State Archive) (Germany), February 2015
26. Scott Polar Research Institute – Library, Cambridge (UK), February 2017
27. Library of the University of Petersburg, National Library, St. Petersburg (Russia), June 2017
28. Archival and library research, Tallinn (Estonia), May 27-June 2, 2018
29. Archival and library research, Stockholm (Sweden), November 14-28, 2021
30. Archival and library research, London (UK), June 6-18, 2022
31. Archival and library research, Stockholm (Sweden), July 17-28, 2022
32. Archival and library research, Herrnhut (Germany), September 4-10, 2022
33. Archival and library research, Copenhagen (Denmark), November 2-10
34. Archival and library research, Hamburg (Germany), 15-21 April, 2023
35. Archival and library research, Munich and Offenbach (Germany), 10-17 May 2023

Professor Przybylak has actively participated in over 70 international conferences (with papers presented or poster sessions), e.g., in the USA, Canada, Germany, Australia, China, France, Great Britain, Italy, Russia, Norway, Sweden, the Czech Republic, Switzerland, Spain, Portugal, Denmark, etc. He has conducted and continues to conduct scientific cooperation with e.g., the University of Colorado (USA), the Norwegian Meteorological Institute (Norway), the Alfred Wegener Institute, Potsdam (Germany), the University of St. Petersburg (Russia), the University of Bern (Switzerland), the University of Alberta (Canada), the Koninklijk Meteorologisch Instituut (Belgium).

**PROFILES OF ACADEMIC STAFF MEMBERS
IN THE DISCIPLINE OF EARTH AND ENVIRONMENTAL SCIENCES**

Name and surname
Piotr SEWERNIAK
Declared disciplines
<i>Earth and Related Environmental Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2018 – Doctor Habilitatus – Forestry/ Forestry (Faculty of Forestry, SGGW Warsaw University of Life Sciences)
2009 – Doctor of Forestry in Forestry (Faculty of Forestry, SGGW Warsaw University of Life Sciences)
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Forest Ecology and Management – 30 hours
Supervisor of 1 doctoral student (N. Chabowska) – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
106 scientific publications with a total IF of 70.822 and a total number of points allocated by the Ministry of Science and Higher Education = 2,187. Principal Investigator in 2 NSC/Ministry of Science and Higher Education (MSHE) projects and a co-investigator in 1 project. Selected 10 publications in the last 10 years:
<ol style="list-style-type: none"> Sewerniak P., Chabowska N., Kunz M., Mendyk Ł., 2024. Topography affects the natural forest recovery on inland dunes in Central Europe. <i>Annals of Forest Research</i>. 67,1: 3-18. 100 pts. MSHE. Jevšenak J., (...) Sewerniak P., (...) Buras A., 2024. Incorporating high-resolution climate, remote sensing and topographic data to map annual forest growth in central and eastern Europe. <i>Science of the Total Environment</i>, 913:1-44. Numer artykułu:169692. 200 pts. MSHE. Sewerniak P., Markiewicz M., Tarnawska P., Wójcik M., 2023. Environmental effects of a management method used after fire on development of temperate Scots pine ecosystem: a 15-year study from Poland. <i>Environmental Management</i>. 100 pts. MSHE. Szumińska D., Czapiewski S., Sewerniak P., 2023. Natural and anthropogenic factors influencing changes in peatland management in Poland. <i>Regional Environmental Change</i> 23,1: 1-20. Vol.:(0123456789)1 3. 100 pts. MSHE. Lembrechts J.J., (...) Sewerniak P., (...) Lenoir J., 2022. Global maps of soil temperature. <i>Global Change Biology</i> 2022;00:1–35. 200 pts. MSHE. Sewerniak P., 2020. Plant species richness or soil fertility: which affects more the productivity of Scots pine in Central Europe? <i>Annals of Forest Research</i> 63,2: 57-73. 100 pts. MSHE Sewerniak P., Puchałka R., 2020. Topographically induced variation of microclimatic and soil conditions drives ground vegetation diversity in managed Scots pine stands on inland dunes. <i>Agricultural and Forest Meteorology</i> 291, 108054. 200 pts. MSHE. Jasińska J., Sewerniak P., Markiewicz M., 2019. Links between slope aspect and rate of litter decomposition on inland dunes. <i>Catena</i> 172: 501-508. 140 pts. MSHE. Sewerniak P., Jankowski M., 2017. Topographically-controlled site conditions drive vegetation pattern on inland dunes in Poland. <i>Acta Oecologica</i> 82: 52-60. 100 pts. MSHE. Sewerniak P., Jankowski M., Dąbrowski M., 2017. Effect of topography and deforestation on regular variation of soils on inland dunes in the Toruń Basin (N Poland). <i>Catena</i> 149: 318-330. 140 pts. MSHE.

**PROFILES OF ACADEMIC STAFF MEMBERS
IN THE DISCIPLINE OF EARTH AND ENVIRONMENTAL SCIENCES**

<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<p>Earth and Related Environmental Sciences</p> <p>Natalia Chabowska, MSc (2nd year, AST)</p> <p>Dr Justyna Jasińska – supervisor. Doctoral dissertation defended in 2021</p> <p>Dr Paulina Rutkowska – assistant supervisor. Doctoral dissertation defended in 2020</p>
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>20 years of teaching experience. Teaching several dozen courses (mostly with the original development of their curriculum) at the Nicolaus Copernicus University in Toruń in soil science, forestry, ecology and environmental protection. Teaching two subjects in English, as well as two short-term trips (5 days) as an academic teacher to foreign scientific and teaching institutions (Erasmus programme). Multiple presentations on natural and life sciences issues (mainly in soil science, forest habitat studies, forest management and wolf ecology) at scientific conferences and popular science meetings (lectures for school students and other groups). Multiple interviews (mainly regarding the wolf population near Toruń) in the media (TV, press). Conducting two training in forest habitat studies for employees of the State Forests. Conducting classes (especially during the Covid-19 pandemic) using distance learning methods.</p>
<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p>
<ul style="list-style-type: none"> • Course in statistics: "Application of numerical methods in ecology". NCU, Toruń March-May 2007, • English language course: "English for academic purposes". UNCU Toruń, 2012 – 2 semesters.
<p>International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)</p>
<p>Participation in about 10 foreign scientific conferences (e.g., Denmark, Germany, Italy, Estonia, Sweden, England, France, Slovakia). Scientific cooperation with foreign centres (Belgium, Germany, Spain) resulting in publications in renowned scientific journals (Global Change Biology, Science of the Total Environment, Annals of Forest Science). 2 trips (Erasmus Staff Mobility) to Italy (2017, 2019). Scientific supervision of 4 foreign students during their several-month stays in Poland as part of the Erasmus programme (2016, 2018).</p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF LIFE SCIENCES

Name and surname
Grażyna DĄBROWSKA
Declared disciplines
<i>Biological Sciences 75%; Agricultural Sciences 25%</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
<i>2014 – Doctor Habilitatus [doktor habilitowany] – Agricultural Sciences/ Agronomy /Molecular Biology</i>
<i>2001 – Doctor of Biological Sciences</i>
Academic titles (name, title conferral year, classification)
<i>2024 – Professor – Agricultural Sciences/ Agronomy</i>
Courses taught at the Doctoral School
<i>Supervisor of 3 doctoral students ((Wiktor Konieczna, Marcel Antoszewski, Magdalena Michalska)</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p><i>Professor G. Dąbrowska has been the Head of the Department of Genetics at the Faculty of Biological and Veterinary Sciences at Nicolaus Copernicus University in Toruń since 2019. She is a molecular biologist; she has been focusing on plant genetics since the very beginning of the Department of Genetics. She has initiated and conducted research aimed at ,e.g., understanding the mechanisms that determine plant tolerance to biotic and abiotic stress, focusing on plant stringent response Her research also concerns environmental biotechnology, removal of heavy metal and plastic pollution from water and soil using microorganisms and plants. She has participated in research work of a number of research teams, and conducted research in basic and pre-implementation research. She completed long-term research fellowships in the USA (at the Horticultural Crops Research Laboratory Corvallis, United States Department of Agriculture in Corvallis, Oregon) and in China (at The National Laboratory of Protein Engineering and Plant Genetic Engineering, Peking University in Beijing). She authored and co-authored 78 experimental publications, 22 review articles and 4 textbooks, and she has completed 30 projects, six of which concerned pre-implementation research. She combines theoretical knowledge with practice, and also conducts research aimed at developing innovative biological solutions for agriculture, horticulture and forestry, which resulted in three patents and nine registered patent applications. The achievements of Professor Grażyna Dąbrowska have been appreciated several times by the Marshal of the Kuyavian-Pomeranian Voivodeship as she received the Innovation Leader of Pomerania and Kuyavia Award in the category of Scientific Team, and she has also received the Special Award of the Mayor of the City of Toruń in the category of Science twice, and the "NCU Innovator " Special Award of the Rector of the Nicolaus Copernicus University in Toruń three times. She has presented her research achievements many times at innovation fairs, where they were recognised and appreciated by awarding the NCU with medals and distinctions, including: at the Grand Prix Eiffel International Invention and Innovation Contest in Paris, the 22nd Moscow International Salon of Inventions and Innovative Technologies "Archimedes 2019, the Euroinvent 2018 fair in Iasi, Romania, the 14th INTARG International Invention and Innovation Show in Katowice, the Africa Innovation Week IWA 2021 in Marrakesh, Morocco, the Silicon Valley International Invention Festival in Santa Clara, USA, the 117th Concours Lépine 2018 International Exhibition of Inventions in Paris, the Kaohsiung International Invention and Design EXPO in Taiwan, the iENA International Trade Fair Ideas – Inventions – New Products in Nuremberg, Germany, the E-NNOVATE International Innovation & Invention Show 2022 in Bydgoszcz. Research on the biodegradability of plastics, especially PET , were recognised by the National Agency for Academic Exchange. This solution was selected in 2019 as one of 34 essential achievements in Poland and was included in the publication NAAE Science in Poland in 34 Snapshots, which was developed to present the</i></p>

achievements of Polish science to the international scientific community and to promote Poland as a good place for conducting research and developing scientific careers. She is the original author and inventor of 3 patents and 9 patent applications.

Publications:

(1) Janczak K., Dąbrowska G., Raszkowska-Kaczor A., Hryniewicz K., Richert A.: Biodegradation of the plastics PLA and PET in cultivated soil with the participation of microorganisms and plants, *International Biodeterioration & Biodegradation*, 155, 2020, 1-10 – demonstration of biodegradation of polyethylene terephthalate using rhizosphere microorganisms

(2) Mierek-Adamska A., Dąbrowska G., Blindauer C.: The type 4 metallothionein from *Brassica napus* seeds folds in a metal-dependent fashion and favours zinc over other metals, *Metallomics*, 10, 2018, 1430-1443 - identification and characterisation of type 4 rapeseed metallothionein, a protein necessary for maintaining seed viability and initial stages of germination that determine yield

(3) Mierek-Adamska A., Kotowicz K., Goc A., Boniecka J., Berdychowska J., Dąbrowska G., Potential involvement of rapeseed (*Brassica napus* L.) metallothioneins in the hydrogen peroxide-induced regulation of seed vigour, *Journal of Agronomy and Crop Science*, 205, 6, 2019, 598-607- wykazanie nowej roli metalotionein, jako antyoksydanty

(4) Szymańska S., Dąbrowska G., Tyburski J., Niedojadło K., Piernik A., Hryniewicz K., Boosting the *Brassica napus* L. tolerance to salinity by the halotolerant strain *Pseudomonas stutzeri* ISE12, *Environmental and Experimental Botany*, 163, 2019, 55-68 – demonstration of the role of bacteria originating from saline environment in protecting rapeseed against salt stress

(5) Dąbrowska G., Tylman-Mojżesz W., Mierek-Adamska A., Richert A., Hryniewicz K., Potential of *Serratia plymuthica* IV-11-34 strain for biodegradation of polylactide and poly(ethylene terephthalate), *International Journal of Biological Macromolecules*, 193, 2021, 145-153 - sequencing the bacterial genome from the genus *Serratia* and demonstrating their participation in biodegradation of polymer materials

(6) Turkan S., Mierek-Adamska A., Głowacka K., Szydłowska-Czerniak A., Rewers M., Jędrzejczyk I., Dąbrowska G., Localization and expression of CRSH transcript, level of calcium ions, and cell cycle activity during *Brassica napus* L. seed development, *Industrial Crops and Products*, 195, 2023, 11643 – identification of biochemical and genetic factors involved in rapeseed ripening

(7) Konieczna W., Mierek-Adamska A., Warchoń M., Skrzypek E., Dąbrowska G., The involvement of metallothioneins and stress markers in response to osmotic stress in *Avena sativa* L., *Journal of Agronomy and Crop Science*, 209, 3, 2023, 371-389

(8) Konieczna W., Warchoń M., Mierek-Adamska A., Skrzypek E., Waligórski P., Piernik A., Dąbrowska G.: Changes in physio-biochemical parameters and expression of metallothioneins in *Avena sativa* L. in response to drought, *Scientific Reports*, 13, 2023, 2486 – identification of reactions of *Avena sativa* and demonstration of the protective role of metallothioneins in response to osmotic stress and drought

(9) Turkan S., Kulasek M., Zienkiewicz A., Mierek-Adamska A., Skrzypek E., Warchoń M., Szydłowska-Czerniak A., Bartoli J., Field B., Dąbrowska G.B., Guanosine tetraphosphate (ppGpp) is a new player in *Brassica napus* L. seed development, *Food Chemistry*, 436, 2024, 137648 – elucidation of the molecular mechanism determining seed dormancy

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF LIFE SCIENCES

(10) Konieczna W., Turkan S., Warchoń M., Skrzypek E., Dąbrowska G.B., Mierek-Adamska A., *The Contribution of Trichoderma viride and Metallothioneins in Enhancing the Seed Quality of Avena sativa L. in Cd-Contaminated Soil. Foods* 13, 2024, 2469 – demonstration of the role of Trichoderma in limiting the accumulation of cadmium ions in the aerial part of Avena sativa

Patents:

Dąbrowska G., Boniecka J. 2018. Method for preparation of sowable material using biological stimulant, *Biuletyn Urzędu Patentowego. Wynalazki i Wzory Użytkowe* No 20/2019 p. 2, patent application No P.424925; WUP PATENT PL No 239279.

Dąbrowska G.B., Znajewska Z., Olewnik-Kruszkowska E., Szczepańska G. 2018. Method for obtaining biological preparation of fungal origin, accelerating degradation of polymer plastics and the biological preparation. *Biuletyn Urzędu Patentowego Wynalazki i Wzory Użytkowe*, No 5, pp. 16-17, patent application No 427073; WUP PATENT PL No 237050.

Dąbrowska G., Garstecka Z., Narbutt O., Dąbrowski H.P., Pyrkoś W. 2021. Strain of the fungus *Trichoderma harzianum* ZggD-19, method of biostimulation of growth of oilseed rape and crop plants from the Brassicaceae family, method for the protection of oilseed rape and crop plants from the Brassicaceae family and a solution for the protection of oilseed rape and crop plants from the Brassicaceae family. *Biuletyn Urzędu Patentowego Wynalazki i Wzory Użytkowe*, No 23/2021 p. 21, patent application No 433460. BUP RP 33/2021 s. 6, PATENT PL No 239212.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

📄 **Supervisor of 3 doctoral students in Biological Sciences:**

Wiktoria Konieczna, MA (doctoral defence on 04.01.2025)

Marcel Antoszewski, MA (3rd year, AST NCU)

Magdalena Michalak, MA (1st year, AST NCU)

PhD students awarded with doctoral degrees:

dr Sena Turkan, Institute of Biology, Faculty of Biological and Veterinary Studies, NCU, Biological Sciences

The role of plant stringent response in Brassica napus L. in response to biotic and abiotic factors and during seed development, 13.10.2023

dr Katarzyna Janczak, Faculty of Biological and Veterinary Sciences, NCU, Biological Sciences
Znaczenie mikroorganizmów ryzosferowych i roślin w biodegradacji tworzyw polimerowych [The importance of rhizosphere microorganisms and plants in biodegradation of polymeric materials], 10.06.2019

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

As part of her teaching, Professor G. Dąbrowska developed new curricular courses: molecular genetics (Courses I and II), molecular methods in population studies and human genetics: structure,

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF LIFE SCIENCES

evolution and pathology of human chromosomes; these courses covered lectures and laboratory classes, which involved preparing teaching aids and course materials (class experiment instructions, a set of multimedia presentations for lectures and class experiments, and worksheets for students). She taught classes as part of postgraduate studies for teachers of ICT, foreign languages and a second subject (biology), funded by the European Union and carried out at the Faculty of Biology and Earth Sciences of the Nicolaus Copernicus University in the 2007/2008 academic year. She participated in a project concerning adding an interdisciplinary course to the educational offer. This course was entitled "State-of-the art research techniques used in biology, biotechnology and diagnostics" and was implemented by the Faculty of Biology and Environmental Protection of the Nicolaus Copernicus University under Priority 4 of the Human Capital Operational Programme for the period of 2007-2013 and in a project performed for molecular diagnostics. Professor Grażyna Dąbrowska is the co-author of two textbooks on general genetics and molecular biology and two sets of worksheets in genetics.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Participation in:

Workshops: "IS_MIRRI21 – Implementation and Sustainability of Microbial Resource Research Infrastructure for the 21st Century",

Training: "Cary 3500 UV-Vis spectrophotometric systems – boost your experimental capabilities",

Training: "Mobbing – practical strategies for counteracting and responding" and in training "Home Office"

TRIZ workshop: Modern Theory of Innovative Problem Solving, organised by Novismo Sp. z o.o. – completed with Level 1 MA TRIZ certificate

Training: Smart detection methods for protein interactions in living cells.

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)

Professor G. Dąbrowska participated in research work of a number of research teams, and conducted research in basic and pre-implementation research in cooperation with scientists and researchers from domestic and foreign research centres. In total, she completed 30 projects. She was a co-investigator in 7 projects. She was a principal investigator in 18 projects and a research supervisor in 8 projects. She is currently implementing four research projects, acting as a head of research task and research supervisor in a student project. She participated in international conferences organised in Germany, the United Kingdom, Greece, Spain, Korea, Italy, Finland, Ukraine, Scotland, France, Croatia and the Czech Republic.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF LIFE SCIENCES

Name and surname
Katarzyna HRYNKIEWICZ
Declared disciplines
<i>Biological Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2010 – Doctor Habilitatus (Sciences/ Biological Sciences/ Biology (Microbiology)) 2000 – Doctor of Biological Sciences
Academic titles (name, title conferral year, classification)
2018 – Professor - Sciences/ Biological Sciences/ Microbiology
Courses taught at the Doctoral School
Supervisor of two doctoral students (Jagoda Szydło, Debosmita Chakraborty) – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Summary of professional achievements in science, teaching, organisation and dissemination of science</p> <ul style="list-style-type: none"> • https://omega.umk.pl/info/author/UMKc610de3d46ad21f08284ef1981946ef1b0466aeb13c30608fc2b05ab7cbae8ae/ • 0000-0002-6606-685X • https://www.scopus.com/authid/detail.uri?authorId=6504627135 • https://www.webofscience.com/wos/author/record/O-3485-2015 <p><i>Professor Katarzyna Hryniewicz is the head of the Department of Microbiology at the Faculty of Biological and Veterinary Sciences at the Nicolaus Copernicus University. Professor Hryniewicz's key research focus is on the use of endophytic microorganisms in plant growth stimulation under biotic and abiotic stress conditions, analysis of bacterial and fungal microbiome and mycorrhizal structures, as well as the use of microorganisms in soil phytoremediation processes. She is a co-author of over 87 scientific publications (h-index - 30; number of citations - 2,679 – (Scopus database).</i></p> <p><i>Professor Hryniewicz was a coordinator in 3 EU-funded grant projects, coordinator of 7 grants funded by the Ministry of Science and Higher Education, the National Science Centre and the National Centre for Research and Development, research supervisor of two PRELUDIUM grants and a co- investigator in numerous projects carried out under international cooperation (including ERA-NET, DAAD, COST). The most important grants implemented are: (i) "Boosting plant-Endophyte STability, compatibility and Performance Across ScaleS - BestPass" - a project unded by HORIZON2020, in which she was the coordinator of the international research team WP1: Endophyte-plant compatibility; (ii) "NAPERDIV - Nature-based perennial grain cropping as a model to safeguard functional biodiversity towards future-proof agriculture" (BiodivERsA; Horizon 2020 Framework Programme for Research and Innovation), in which she is the coordinator of the international research team WP2: Crop-associated microbiome. She is the head of the Emerging Field EI-RU) "Microbiology, Soil Science, Food Quality and Genetics in Agriculture" (OBSIDIAN).</i></p> <p><i>In 2002-2004 she completed a two-year postdoctoral fellowship (Marie Curie Fellowship) at the Institute of Soil Science and Plant Nutrition (University of Rostock, Germany), during which she participated in the project entitled "Molecular and biological characterisation of ectomycorrhizal strains for phytoremediation". She has been cooperating for many years with foreign research centres in Germany, Sweden and Denmark, e.g. with the University of Tübingen, the University of Rostock, the Leibniz-Institute of Vegetable and Ornamental Crop, the Swedish University of</i></p>

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Agricultural Sciences, where she completed a number of numerous research fellowships, e.g., DAAD, STSM.

She was a reviewer and expert in numerous applications of the National Science Centre, National Centre for Research and Development, HORIZON2020. She is a member of the Biotechnology Committee of the Polish Academy of Sciences and a member of the Scientific Council of the Institute of Dendrology of the Polish Academy of Sciences. She was a supervisor for 4 doctoral students and participated in 3 EU-funded teaching projects.

In 2019-2024 she was the Head of the Academia Copernicana (ISD AC) Interdisciplinary Doctoral School the NCU.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Doctoral dissertations – Professor Katarzyna Hrynkiewicz as Supervisor

1. Sonia Szymańska: Bakterie endofityczne i ryzosferowe halofitów *Salicornia europaea* i *Aster tripolium* [Endophytic and rhizosphere bacteria of halophytes *Salicornia europaea* and *Aster tripolium*], Nicolaus Copernicus University, 2017, Defence date: 19-06-2017; date of degree conferral: 22-06-2017
2. Bliss Furtado: Określenie różnorodności i funkcjonalności endofitów grzybowych *Salicornia europaea* L. [Deciphering the diversity and functionality of fungal endophytes associated with *Salicornia europaea* L.], Faculty of Biological and Veterinary Science, 2019, Defence date: 03-12-2019; date of degree conferral: 13-12-2019
3. Michał Złoch: Wybrane aspekty mikrobiologicznie wspomaganej fitoremediacji metali ciężkich [Selected aspects of the microbiologically assisted phytoremediation of heavy metals], Nicolaus Copernicus University, Toruń, 2016, Defence date: 07-10-2016, date of degree conferral: 14-10-2016
4. Dominika Thiem: Mikrobiom korzeni *Alnus glutinosa* Gaertn. w warunkach stresu solnego [*Alnus glutinosa* Gaertn. root microbiome under salinity stress], Faculty of Biological and Veterinary Sciences, 2020, Defence date: 19-11-2020, date of degree conferral: 27-11-2020
5. Piotr Koczorski: Mikrobiom korzeniowy jako czynnik kontrolujący efektywność wykorzystania *P* w uprawach roślin drzewiastych [Root microbiomes as controls of *P* use efficiency in woody crops], Faculty of Biological and Veterinary Sciences, 2023, Defence date: 08-09-2023, date of degree conferral: 15-09-2023

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Participation in teaching projects:

- 2010-2014: Participation in the EU Programme under Sub-measure 4.1.1. implemented at the Faculty of Biology and Environmental Protection (Nicolaus Copernicus University in Toruń); Adding an interdisciplinary course "Modern research techniques used in biology, biotechnology and diagnostics" to the educational offer

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- 2012-2016: Participation in the EU Programme under Sub-measure 4.1.1 of the Human Capital Operational Programme "Interdisciplinary Doctoral Studies in the Field of Mathematical and Natural Sciences (ISDM-P)" (the project entitled "Strengthening the Teaching Potential of Nicolaus Copernicus University in Toruń in the Field of Mathematical and Natural Sciences" (project no. POKL.04.01.01-00-081/10).

- 2021-2023: the author of the application and coordinator of the National Agency for Academic Exchange STER project "Internationalization of PhD schools at NCU: a platform for joint & double degrees" (PPI/STE/2020/1/00021), which was implemented by 5 Doctoral Schools operating within the NCU

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Postgraduate studies:

2022-2023: Postgraduate Studies in the Management of Higher Education Institutions (NCU)

2023-2024: Postgraduate Studies in HUMAN Capital Management (NCU)

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Long-term research internships/ fellowships:

2002–2004: Post-doc, Marie Curie Fellowship at the Institute for Land Use, University of Rostock, Germany (26 months).

2002, September: Eberhard-Karls-University of Tübingen, Institute for Botanical Research, Systematic Botany and Mycology, Tübingen, Germany (2 weeks).

2003, August: Eberhard-Karls-University of Tübingen, Institute for Botanical Research, Systematic Botany and Mycology, Tübingen, Germany (2 weeks).

2009, September–October: ERA-NET co-investigator at the Institute for Land Use, University of Rostock, Germany (2 months).

2010, October–November: DAAD Fellowship at the Institute for Land Use, University of Rostock, Germany (2 months).

2013, October-November: STSM Grant (COST-STSM-ECOST-STSM-FA1103-020913-031009) at the Leibniz Institute for Vegetable and Ornamental Crops in Großbeeren, Germany (2 months).

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Name and surname
Jarosław KOBAK
Declared disciplines
<i>Biological Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
Doctor Habilitatus of Biological Sciences – 2010 (NCU in Toruń) Doctor of Biology – 2001 (NCU in Toruń) MA in Biology – 1997 (NCU in Toruń)
Academic titles (name, title conferral year, classification)
Professor of Exact and Natural Sciences – 2020
Courses taught at the Doctoral School
Lecture: Biological Invasions (10 h out of 30h) Supervisor of a doctoral student (Zuzanna Plichta) – supervisor monitoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Jarosław Kobak is a zoologist and ecologist; he conducts research on biology and ecology of aquatic animals, especially bivalves, crustaceans and fish. He also investigates biological invasions, behavioural ecology, habitat preferences, inter-species interactions (impact of predators, competition), and threats related to invasive species. Since 2007, he has implemented a number of grants from the National Science Centre, National Centre for Research and Development and the Ministry of Science and Higher Education as a principal investigator(3), a supervisor of the Preludium grant (2) or a co-investigator (10). His most important achievements include e.g., determining the role of behaviour of sedentary zebra mussels in shaping their distribution in the environment; identifying habitat preferences of Ponto-Caspian gammarid species in terms of their invasiveness; demonstrating the existence and investigating the mechanisms of the invasional meltdown phenomenon in the Ponto-Caspian invasive organisms.</p> <p>Field of science: Natural Sciences ; discipline: Biological Sciences h-index=23; citations: 1462 (WoS)</p> <p>Selected publications:</p> <ol style="list-style-type: none"> 1. Dzierżyńska-Białończyk A., Jermacz Ł., Maćkiewicz T., Gajewska J., Kobak J. 2018. Mechanisms and impact of differential fouling of the zebra mussel <i>Dreissena polymorpha</i> on different unionid bivalves. <i>Freshwater Biology</i> 63: 687-699. doi.org/10.1111/fwb.13107 2. Balogh C., Serfozo Z., bij de Vaate A., Noordhuis R., Kobak J. 2019. Biometry, shell resistance and attachment of zebra and quagga mussels at the beginning of their co-existence in large European lakes. <i>Journal of Great Lakes Research</i> 45: 777-787. doi.org/10.1016/j.jglr.2019.05.011 3. Jermacz Ł., Balogh C., Kobak J. 2021. Behavioural differences and interactions between two sessile bivalves forming mixed-species assemblages. <i>Animal Behaviour</i> 171: 13-28. doi.org/10.1016/j.anbehav.2020.11.001 4. Kobak J., Rachalewski M., Bącela-Spychalska K. 2021. What doesn't kill you doesn't make you stronger: Parasites modify interference competition between two invasive amphipods. <i>NeoBiota</i> 69: 51-74. doi.org/10.3897/neobiota.69.73734 5. Balogh C., Serfozo Z., Kobak J. 2022. Factors determining selective predation of the common carp on quagga vs. zebra mussels. <i>Freshwater Biology</i> 67: 619-629. doi.org/10.1111/fwb.13867 6. Jermacz Ł., Kletkiewicz H., Poznańska-Kakareko M., Klimiuk M., Kobak J. 2022. Chronic predation risk affects prey escape abilities through behavioral and physiological changes. <i>Behavioral Ecology</i> 33:298-306. doi.org/10.1093/beheco/arab142

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<p>7. Balogh C., Kobak J., Faragó N., Serfőző Z. 2023. Competition between two congener invaders: food conditions drive the success of the quagga over zebra mussel in a large shallow lake. <i>Freshwater Biology</i> . doi.org/ 10.1111/fwb.14168</p> <p>8. Stanicka A., Szopieray K., Migdalski Ł., Kobak J. 2023. Friends or enemies: multi-species interactions among biofoulers, endoparasites, and their gastropod hosts. <i>Journal of Animal Ecology</i> 92:503-513. doi.org/10.1111/1365-2656.13872</p> <p>9. Augustyniak M., Kobak J., Trojan M., Kakareko T. 2024. Behavioural responses to environmental novelty in demersal, shelter-associated invasive fish and their native analogues <i>Animal Behaviour</i> 208: 111-126. doi.org/10.1016/j.anbehav.2023.11.008</p> <p>10. Wiśniewski K., Szarmach D., Kobak J., Kakareko T., Jermacz Ł., Poznańska-Kakareko M. 2024. Dead or alive: the effect of shells and living individuals of <i>Sinanodonta woodiana</i> (Lea, 1834) on habitat selection and behaviour of European unionid bivalves. <i>Neobiota</i> 94: 243-259. doi.org/10.3897/neobiota.94.119622</p>
<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<p>- Łukasz Jermacz (2017) – doctoral dissertation cum laude (currently, Doctor Habilitatus)</p> <p>- Anna Dzierżyńska-Białończyk (2021) – doctoral dissertation cum laude</p> <p>- Zuzanna Plichta – doctorla student (4th year, AST Doctoral School)</p>
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>Conducting classes in Biology, Forensic Biology, Veterinary Medicine, Global Change Biology (in English), monographic lecture for students of the Doctoral School of Exact Sciences and Natural Sciences (in English). The topics of classes mainly concern zoology, ecology, invasive species and behavioural ecology.</p> <p>Chair of the Subcommittee for Learning Outcomes in Biology (participation in the development of new study programmes, development of the teaching specialisation study programme in Biology)</p> <p>Head of Doctoral Studies in Biology at NCU</p> <p>Member of the Programme Council of the Academia Copernicana Interdisciplinary Doctoral School</p> <p>Chair of the Recruitment Committee of the Academia Copernicana Interdisciplinary Doctoral School</p> <p>Coordinator or co-coordinator of the following courses: Dynamic Biogeography, Ecology of Populations and Communities, Biological Invasions, Identification and Biology of Invasive Animal Species, Identification and Biology of Synanthropic Invertebrates, Biology of Selected Animal Groups</p> <p>Holder of the Medal of the National Education Commission</p>
<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p>
<p>Jarosław Kobak's professional experience is related to many years of research on the biology of aquatic molluscs and crustaceans. He has been conducting field and laboratory research using equipment for sampling from water reservoirs, behaviour analysis (video recording sets, video image analysis software), water quality analysis, macro- and microscopic morphological and anatomical observation. He completed training of the Polish Society for Laboratory Animal Science (PoLLASA) for persons responsible for planning procedures and experiments and for their</p>

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implementation, for persons performing procedures and for persons killing animals used in procedures. He also has valid designations for performing these tasks at the Faculty. He is also a representative of NCU under the licence granted to the University by the General Director for Environmental Protection to derogate from bans in relation to an invasive alien species (IAS) posing a threat to the European Union (North American crayfish species).

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)

International cooperation has covered the following institutions:

Balaton Limnological Institute, Tihany, Hungary; University of Palermo, Italy; Queen's University Belfast, the United Kingdom; Université de Bourgogne Franche Comté, Dijon, France; Palacky University, Olomouc, the Czech Republic; Danube Research Institute, Budapest, Hungary; National Institute of Biology, Ljubljana, Slovenia; University of Debrecen, Hungary, and University of Minho, Portugal. He has participated in 23 international conferences (e.g., Canada, the USA, Portugal, Spain, Belgium, the Netherlands, Luxembourg, the Czech Republic, Romania, Hungary, Croatia, the UK, Türkiye).

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Name and surname
Katarzyna ROSZEK
Declared disciplines
Biological Science
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
Doctor of Biological Sciences – 2006 Doctor Habilitatus of Biological Sciences – 2017
Academic titles (name, title conferral year, classification)
N/A
Courses taught at the Doctoral School
Supervisor of 2 doctoral students of the AST Doctoral School (B. Szymczak – degree conferred; defence in 2025; A. Wikarska – 1 st year doctoral student)
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Scientific achievements include research on purinergic signalling of animal and human cells, normal and cancer cells, as well as stem cells cultured <i>in vitro</i>, research on the activity, kinetic parameters and expression profile of nucleotide-metabolizing enzymes and other enzymes with biomedical potential. A separate issue is the analysis of cytotoxicity of new nanostructured materials and their suitability as a carrier for immobilisation of biomolecules and biomaterials in regenerative medicine. A member of the Polish Biochemical Society since 2001, in 2009-2022 - Secretary of the Polish Biochemical Society. Since 2018, the Head of the Department of Biochemistry at the Faculty of Biological and Veterinary Sciences.</p> <p>Grants and projects within the last 5 years include:</p> <p>1/ Purinergic signalling in cancer cells - <i>in vitro</i> studies on pathological mechanisms and therapeutic potential</p> <p>2/ Exosomes- and microvesicles-mediated signalling and interactions within extracellular matrix in three-dimensional cell cultures – NCU EI-RU grant (2023);</p> <p>3/ Procedure for implementation of autologous chondrocyte progenitor cells on a biocompatible carrier in dogs with osteoarthritis - PI of preclinical studies in the Innovation Agency Research Voucher grant No 12/2000_1976 (2020);</p> <p>4/ Development of new small-molecule regulators (inhibitors, activators) of the catalytic activity of adenylate kinases. The molecular basis of action mechanisms of these regulators – a co-investigator in a grant of the National Science Centre No 2017/25/B/ST4/00376.</p> <p>Key publications within the last 5 years :</p> <ol style="list-style-type: none"> Erwardt P, Szymczak B, Wiśniewski M, Maciejewski B, Świdziński M, Strzelecki J, Nowak W, Roszek K (2025) Immobilized L-asparaginase as an efficient nanobiocatalytic tool for asparagine depletion in leukemia cells. <i>Bioconjugate Chemistry</i>, doi.org/10.1021/acs.bioconjchem.4c00518. (IF=4.0, Q1, 100 pts) Szymczak B, Pegoraro A, De Marchi E, Grignolo M, Maciejewski B, Czarnecka J, Adinolfi E, Roszek K (2025) Retinoic acid-induced alterations enhance eATP-mediated anti-cancer effects in glioma cells: implications for P2X7 receptor variants as key players. <i>BBA Molecular Basis of Disease</i> 1871 (3): 167611. (IF=4.2, Q2, 140 pts) Fandzloch M, Augustyniak A, Trzcińska-Wencel J, Golińska P, Roszek K. (2024) New MOF@bioactive glass composite reinforced with silver nanoparticles - a new approach to

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designing antibacterial biomaterials. Dalton Trans 53(26): 10928-10937. (IF=3.5, Q2, 140 pts)

4. Fandzloch M, Bodylska W, Trzcińska-Wencel J, Golińska P, **Roszek K**, Wiśniewska J, Bartmański M, Lewińska A, Jaromin A (2023) Cu-HKUST-1 and hydroxyapatite - the interface of two worlds towards the design of functional materials dedicated for bone tissue regeneration. ACS Biomater Sci Eng 9(8): 4646–4653. (IF=5.8, Q1, 140 pts)
 5. Hetmann A, Szymczak B, Czarnecka J, Rusak T, Wiśniewski M, Wujak M, **Roszek K** (2023) Adenylate kinase immobilized on graphene oxide impairs progression of human lung epithelial carcinoma cells through adenosinergic pathway. J Biomed Mater Res (part A) 111: 1565-1576. (IF=4.9, Q1, 100 pts)
 6. Szymczak B, Czarnecka J, Czach S, Nowak W, **Roszek K** (2023) Purinergic approach to effective glioma treatment with temozolomide reveals enhanced anti-cancer effects mediated by P2X7 receptor. Cell Signal 106: 110641. (IF=4.4, Q2, 100 pts)
 7. Fandzloch M, Bodylska W, **Roszek K**, Hałubek-Głuchowska K, Jaromin A, Gerasymchuk Y, Łukowiak A (2022) Solvothermally derived nanoglass as a highly bioactive material. Nanoscale 14(14): 5514-5528. (IF=8.3, Q1, 140 pts)
 8. Wiśniewski M, **Roszek K** (2022) Underestimated properties of nanosized amorphous titanium dioxide. Int J Mol Sci 23(5): 2460. (IF=6.2, Q1, 140 pts)
 9. Ficerman W, Wiśniewski M, **Roszek K** (2022) Interactions of nanomaterials with cell signalling systems – focus on purines-mediated pathways. Colloids and Surf B: Biointerfaces 220: 112919. (IF=5.9, Q1, 100 pts)
- Galgaro BC, Beckenkamp LR, Nunnenkamp MVM, Korb VG, Naasani LIS, **Roszek K**, Wink MR (2021) The adenosinergic pathway in mesenchymal stem cell fate and functions. Medicinal Research Reviews 41(4): 2316-2349. (IF=12.4, Q1, 140 pts)
10. Bieniek A, Terzyk A, Wiśniewski M, **Roszek K**, Kowalczyk P, Sarkisov L, Keskin S, Kaneko K (2021) MOF materials as therapeutic agents, drug carriers, imaging agents and biosensors in cancer biomedicine: recent advances and perspectives. Progress in Materials Science 117: 100743. (IF=48.2, Q1, 200 pts)

Patent: Biocatalytic systems for maintaining extracellular homeostasis of nucleotides and method for obtaining them - Urz. Pat. RP [The Patent Office of the Republic of Poland], patent No 234280 (2020-01-31)

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

PhD students awarded with doctoral degrees:

1/ dr Magdalena Wujak, Charakterystyka i ocena roli kinazy adenylanowej w fizjologii i patologii układu krwionośnego [Characterization and evaluation of the role of adenylate kinase in physiology and pathology of the vascular system], NCU in Toruń, 2015, Biological Sciences – assistant supervisor

2/ dr Paulina Erwardt, Tlenek grafenu jako substancja aktywna oraz nośnik substancji aktywnych [Graphene Oxide as the active agent and matrix for biologically active compound], NCU in Toruń, 2022, Chemical Sciences

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3/ dr Bartosz Szymczak, Sygnalizacja purynergiczna w komórkach glejaka – badania *in vitro* nad mechanizmami patologicznymi i możliwościami terapeutycznymi [Purinergic signaling in glioma – in vitro studies on pathological mechanisms and therapeutic potential], NCU in Toruń, 2025, Biological Sciences - supervisor

Supervisor of doctoral students:

1/ Agata Wikarska, MSc, The role of purinergic signalling in the processes of regeneration, repair and remodelling involving endothelial cells, AST Doctoral School (1st year), supervisor

2/ Weronika Nowak, MSc, Analysis of the $\alpha 4$ nicotinic acetylcholine receptor subunit's stoichiometric integration, Academia Copernicana (1st year), supervisor

3/ Zainab Kazim, MSc, Generation and characterization of synthetic single domain VHH antibodies against nicotinic acetylcholine receptor subtypes, Academia Copernicana (2nd year), supervisor

4/ Beata Stańczyk, MSc, Shadows and glows of protein corona, Academia Copernicana (1st year), co-supervisor

Supervision of awarded MA students:

1/ Supervisor of the grant awarded in the "Talents of Tomorrow" 2023 competition - Special Award of the Bank Gospodarstwa Krajowego for the project "New-generation stents reducing the risk of clots and restenosis" carried out by student Jakub Ostrowski

2/ Supervisor of diploma theses awarded with the Dean of the Faculty of Biological and Veterinary Sciences (in the category of Master's Thesis 2021/2022, 3rd place - Weronika Ficerman, MSc, in the category of Bachelor's Thesis 2021/2022, 3rd place - Kacper Roszak. BSc)

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

25 years of teaching experience, conducting classes in biochemistry, enzymology, in vitro cell culture for students of various fields of study at the Faculty of Biology and the Faculty of Chemistry.

Original teaching activity includes:

1/ Developing and conducting original courses as part of the project "Universitas Copernicana Thoruniensis In Futuro-modernisation of Nicolaus Copernicus University as part of the Integrated University Programme" : a lecture "Cell models in preclinical studies", 15h (3 editions), carried out as a part of workshops for students of Medical Chemistry (second-cycle studies) in 2020-2022;

2/ Development, practical preparation and conducting of original laboratory exercises as a part of a specialist course "Chemistry of the body and for the body - diagnostic markers, cosmetics, food" under the project "Universitas Copernicana Thoruniensis In Futuro-modernisation of Nicolaus Copernicus University as part of the Integrated University Programme" - 20h, 1 edition (2022)

3/ Development, practical preparation and conducting of original classes in English "Cytotoxicity evaluation of chemical compounds" for students of Molecular Diagnostics - lecture 10h, classes 20h (from 2021 to the present day)

4/research and teaching at a foreign university: Universidade Federal de Ciências da Saúde de Porto Alegre (Brazil) - an exchange agreement under Erasmus+, completed short-term fellowships and bilateral visits as a "visiting professor".

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

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Participation in trainings (within the last 5 years):

1/ Training in coordination of students with disabilities – November 2022

2/ Training “Voice emission” – 10h, November/December 2022

3/ Training “Communication with a person with disorders in the academic environment” – December 2022

4/ “Certified Peer Reviewer Course” – Elsevier, May 2021

5/ Certified course “The role of a leader in a team” – Krakow, 7.12.2020

Activities in scientific committees of domestic conferences, e.g., the Scientific Committee of the "Copernican International Young Scientists Conference" (2017–present), the Scientific Committee of the "Challenges and Problems of Biomedical Sciences" conference (September 2022), the Scientific and Organisational Committee of the "Nano(&)BioMaterials – from Theory to Applications" conference (2016–present).

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Research and scientific cooperation with foreign centers:

1/ Professor Elena Adinolfi, University of Ferrara (Italy) – cooperation initiated in 2022 under the COST Action, 2 scientific meetings held, short-term research internship of a doctoral student and joint research on P2X7 receptor isoforms and their expression in various cell types.

2/ membership in the Management Committee under the COST Action CA21130 - P2X receptors as a therapeutic opportunity (2022-2026), cooperation with various research centres in Europe.

3/ Professor Veronique Moulin, Laval University in Quebec (Canada) – short-term research fellowship (September 2023) at the Laboratory of Tissue Engineering (LOEX) and initiation of cooperation on research on the role of extracellular signalling in the processes of fibroblast proliferation and wound healing.

4/ Professor Marcia R. Wink, Universidade Federal de Ciências da Saúde de Porto Alegre (Brazil) – cooperation established in 2018 in research on purinergic signalling in stem and cancer cells; short-term research fellowship in 2024.

In addition, active participation in dozens of international scientific conferences, also as a guest speaker (e.g. COST Meeting, Ferrara 2024; APMAS, Fethiye, Türkiye 2023; International Meeting on Purinergic Signaling, Armação dos Buzios, Brazil 2022).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF LIFE SCIENCES

Name and surname
Dariusz SMOLIŃSKI
Declared disciplines
<i>Biological Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2012 – <i>Doctor Habilitatus [doktor habilitowany]</i> – <i>Exact Sciences/ Biological Sciences/ Biology (Cell and Molecular Biology)</i>
1997 – <i>Doctor of Biological Sciences</i>
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
<i>Supervisor of two doctoral students (K. Majewska, P. Wróblewska-Ankiewicz) – supervisor mentoring</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Publications:</p> <ul style="list-style-type: none"> Autor or co-author of several scientific papers published in e.g., <i>The Plant Cell</i>, <i>Nature Plants</i>, <i>PLoS ONE</i>, <i>EMBO J.</i>, <i>Journal of Experimental Botany</i>. Recently, a co-author of papers in <i>The Plant Cell</i> (IF ~12) and <i>Nature Plants</i> (IF ~17) <i>PNAS</i> (IF ~14). Co-author of a review paper in <i>The Plant Cell</i> (2023) on biomolecular nuclear condensates h-index: 15 (Google Scholar); GS citations >900 (incl. Scopus citations >600). <p>10 key publications in the last five years:</p> <p>1. Korczeniewski E., Bryk P., Olewnik-Kruszkowska E., Kowalczyk P., Wilczewska A.Z., Markiewicz K.H., Boncel S., Al-Gharabli S., Sprynskyy M., Świdziński M., Smoliński D.J., Fujisawa K., Hayashi T., Płociennik P., Kujawa J., Terzyk A.P. (2025). Does the Snow Queen Like Black? Nanocarbon and Biosilica-Reinforced THV-Based Anti-Icing Sponges. <i>Composites Part B: Engineering</i>, in press. Q1 IF = 12.7 MNSiW [Ministry of Science and Higher Education/ MSHE] = 200</p> <p>2. Taliansky M, Love AJ, Kołowerzo-Lubnau A, Smoliński DJ (2023). Cajal bodies – evolutionarily conserved nuclear biomolecular condensates with properties unique to plants. <i>The Plant Cell</i>. DOI: 10.1093/plcell/koad140. Q1 IF = 11.6 MSHE = 200</p> <p>3. Korczeniewski E, Bryk P, Szymański GS, Kowalczyk P, Zięba M, Zięba W, Łepicka M, Kurzydłowski KJ, Boncel S, Al-Gharabli S, Świdziński M, Smoliński DJ, Kaneko K, Kujawa J, Terzyk AP (2023). Open Senu Shaped Graphene Oxide and Modern Carbon Nanomaterials in Translucent Hydrophobic and Omniphobic Surfaces – Insight Into Wetting Mechanisms. <i>Chemical Engineering Journal</i>. DOI: 10.1016/j.cej.2023.142237. Q1 IF = 16.744 MSHE = 200</p> <p>4. Rudzka M, Wróblewska-Ankiewicz P, Majewska K, Hyjek-Składanowska M, Gołębiewski M, Sikora M, Smoliński DJ, Kołowerzo-Lubnau A (2022). Functional nuclear retention of pre-mRNA involving Cajal bodies during meiotic prophase in <i>Larix decidua</i>. <i>The Plant Cell</i>. DOI: 10.1093/plcell/koac091. Q1 IF = 12.085 MSHE = 200</p> <p>5. Gonzalo L, Tossolini I, Gulanicz T, Cambiagno DA, Kasproicz-Maluski A, Smolinski DJ, Mammarella MF, Ariel FD, Marquardt S, Szweykowska-Kulinska Z, Jarmolowski A, Manavella PA (2022). R-loops at microRNA encoding loci promote co-transcriptional processing of pri-miRNAs in plants. <i>Nature Plants</i> 8: 402–418. DOI: 10.1038/s41477-022-01125-x. Q1 IF = 17.352 MSHE = 200</p>

6. Stepień A, Dolata J, Gulanicz T, Bielewicz D, Bajczyk M, Smolinski DJ, Szweykowska-Kulinska Z, Jarmolowski A (2022).

Chromatin-associated microprocessor assembly is regulated by PRP40, the U1 snRNP auxiliary protein. *The Plant Cell*. DOI: 10.1093/plcell/koac278.

Q1 IF = 12.085 MSHE = 200

7. Korczeniewski E, Bryk P, Koter S, Kowalczyk P, Zięba M, Łępicka M, Kurzydłowski KJ, Markiewicz KH, Wilczewska AZ, Kujawski W, Boncel S, Al-Gharabli S, Świdziński M, Smoliński DJ, Kaneko K, Kujawa J, Terzyk AP (2022). Are Nanohedgehogs Thirsty? Toward New Superhydrophobic and Anti-Icing Carbon Nanohorn-Polymer Hybrid Surfaces.

Chemical Engineering Journal. DOI: 10.1016/j.cej.2022.137126.

Q1 IF ≈ 16.7 MSHE = 200

8. Majewska K, Wroblewska-Ankiewicz P, Rudzka M, Hyjek-Składanowska M, Golebiewski M, Smolinski DJ, Kolowerzo-Lubnau A (2021). Different patterns of mRNA nuclear retention during meiotic prophase in larch microsporocytes. *International Journal of Molecular Sciences* 22: 8501.

DOI: 10.3390/ijms22168501.

Q1 IF = 6.208 MSHE = 140

9. Hyjek-Składanowska M, Bajczyk M, Gołębiewski M, Nuc P, Kołowerzo-Lubnau A, Jarmolowski A, Smoliński DJ (2020). Core spliceosomal Sm proteins as constituents of cytoplasmic mRNPs in plants. *The Plant Journal* 103(3): 1155–1173. DOI: 10.1111/tpj.14792.

Q1 IF = 7.091 MSHE = 140

10. Bhat SS, Bielewicz D, Grzelak N, Gulanicz T, Bodi Z, Yu X, Anderson SJ, Szewc L, Bajczyk M, Dolata J, Smolinski DJ, Gregory BD, Fray RG, Jarmolowski A, Szweykowska-Kulinska Z (2020). mRNA adenosine methylase (MTA) deposits m6A on pri-miRNAs to modulate miRNA biogenesis in *Arabidopsis thaliana*.

Proceedings of the National Academy of Sciences of the United States of America 117(35): 21785–21795. DOI: 10.1073/pnas.2003733117.

Q1 IF = 12.779 MSHE = 200

Research projects:

- **Principal Investigator of the 2025–2029 NSC projects: *Nuclear mRNA retention and delayed translation as a novel mechanism of posttranscriptional mRNA regulation in plants*.**
- **Participation/Principal Investigator in over 10 NSC projects (OPUS, PRELUDIUM BIS), including cooperation with research teams from Adam Mickiewicz University in Poznań, IBB PAN [Institute of Biochemistry and Biophysics of the Polish Academy of Sciences, UMK [Nicolaus Copernicus University], University of Nottingham and University of Pennsylvania.**
- **Previous projects in cell biology and bioimaging financed by the Ministry of Science and Higher Education [MNiSW], NCBiR [National Centre for Research and Development] and under the Excellence Initiative – Research University at the Nicolaus Copernicus University (Emerging Fields).**

Awards and accolades:

- **Polish Academy of Science Award (2023)** for publications in PNAS, *The Plant Cell* and *nature Plants* on co- and posttranscriptional regulation of miRNA and mRNA gene expression
- **Polish Society of Experimental Plant Biology Award** – Main Award for the Best Original Paper Published in 2021–2023 for the publication in *The Plant Cell* (2022) on functional mRNA retention in Cajal bodies
- **Jakub Karol Parnas Award (2016)** in biochemistry and molecular biology
- **NCU Rector's awards (more than 15)** for scientific and organisational achievements

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF LIFE SCIENCES

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

☐ **Supervisor** two doctoral students awarded with doctoral degrees (in Biology); both doctoral degrees cum laude

dr Malwina Hyjek-Składanowska „Kanoniczne białka Sm jako część cytoplazmatycznego kompleksu mRNP - nowa rola korowych białek spliceosomu u roślin” [Canonical Sm proteins as a part of cytoplasmatic mRNP complex – a novel role for core spliceosomal proteins in plants], NCU, 2018, Discipline: Biology. **Supervisor with distinction**

dr Magda Rudzka: Potranskrypcyjna regulacja ekspresji genów związana z retencją transkryptów na terenie jądra komórkowego [Posttranscriptional regulation of gene expression associated with retention of transcripts in the cell nucleus], Faculty of Biological and Veterinary Sciences, 2020, Defence date: 13-11-2020, Date of degree conferral: 27-11-2020 **Supervisor with distinction**

Supervisor of 3 doctoral students (AST NCU and Copernicana NCU)

Karolina Majewska Role of Cajal bodies in nuclear retention of mRNA in plants, 4th year, AST, NCU

Patrycja Wróblewska-Ankiewicz Mechanisms of post-transcriptional regulation of gene expression during diplotene. 5th year AST, NCU.

Arash Matin Ahmadi P bodies - regulation and proteins assessment to transcripts degradation in the cytoplasm. 4th year of Academia Copernicana, NCU.

Subject area of supervision: cell biology, regulation of gene expression, posttranscriptional processing of mRNA, biomolecular condensates (Cajal bodies, P-bodies), advanced microscopic techniques.

Reviewer and committee member in doctoral and postdoctoral procedures (about 20) in Poland (Jagiellonian University, Adam Mickiewicz University, Institute of Biochemistry and Biophysics of the Polish Academy of Sciences, M. Nencki Institute of the Polish Academy of Sciences, University of Łódź).

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Positions:

- University professor at the Institute of Biology, Faculty of Biological and Veterinary Sciences, NCU.
- Head of the Institute of Biology, NCU, since 2019.
- Head of the Department of Cell and Molecular Biology since 2018.
- Head of the Bioimaging Laboratory at the Centre for Modern Interdisciplinary Technologies, NCU (state-of-the-art microscopic equipment such as (Nikon, Leica, and Olympus confocal microscopes, TEM JEOL microscopes, or Leica laser microdissection system are available).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF LIFE SCIENCES

- Chair of the Board of Disciplines of Biological Sciences, NCU (2019–2024; 2024-2028).

☐ Teaching and teaching innovations:

- Author of academic books and teaching materials in microscopic methods and cell biology.
- Conducts lectures and classes in Polish and English (also for foreign students).
- Conducts classes using e-learning methods (Moodle platform)

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Participation in training courses on modern imaging techniques (cooperation within Euro-Biolmaging).

Organisation and co-organisation of international conferences on microscopy and cell biology (Wilhelm Bernhard Workshop, Euro-Biolmaging Meetings).

Participation in projects improving the competences of academic and teaching staff (EIRU modules, NSC webinars, project management trainings)

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)

Research internships/ fellowships and research stays

• *Completed both long-term postdoctoral research stays and fellowships (e.g. the Netherlands, Spain, Italy, Germany) and short-term research and training stays (e.g. Cambridge University, EMBL Heidelberg, Cold Spring Harbor Laboratory).*

• *Research focused mainly on cell biology methods and microscopy (SEM/TEM, confocal, superresolution microscopy), nuclear structure analyses, X-RAY and Euro-Biolmaging.*

International cooperation in recent years covers the following:

- *University of Nottingham (United Kingdom), University of Pennsylvania (USA)—research on RNA metabolism (splicing, intron retention, miRNA biogenesis).*
- *Spain (CSIC in Granada)—joint publications on the role of phytohormones in the flower abscission process.*
- *Dundee (The James Hutton Institute)—research on biomolecular condensates in plant cells (a publication in The Plant Cell).*
- *Collaboration with the Charles University in Prague in confocal microscopy and in vivo techniques for the analysis of transcript retention.*
- *Regular participation in international conferences and symposia (EMBO, Cold Spring Harbor Laboratory Meetings, Wilhelm Bernhard Workshop).*
- *Cco-author of publications in renowned journals with a global reach (The Plant Cell, Nature Plants, PNAS).*

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

Name and surname
Anna ILNICKA
Declared disciplines
<i>Chemical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2022 – Doctor Habilitatus of Natural Sciences in Chemical Sciences
2017 – Doctor of Natural Sciences in Chemical Sciences
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Renewable energy: option or necessity? – lecture, 30 hours
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
SELECTED 10 PUBLICATIONS IN THE LAST 5 YEARS:
<ol style="list-style-type: none"> 1. M. Szkoda, M. Skorupska, P. Grabowska, M. Gajewska, A. Ilnicka, Investigating BiMeVO_x Compounds as Potential Photoelectrochemical and Electrochemical Materials for Renewable Hydrogen Production, <i>International Journal of Hydrogen Energy</i>, 2024, 70, 276-287 (Q1). 2. M. Skorupska, A. Ilnicka, J. P. Lukaszewicz, Modified graphene foam as a high-performance catalyst for oxygen reduction reaction, <i>RSC Advances</i>, 2023, 13(36), 25437-25442 (Q1). 3. M. Szkoda, A. Ilnicka, Z. Zarach, D. Roda, A. P. Nowak, K. Trzciński, Ti-Fe₂O₃/In₂O₃ as photoactive material: The role of the substrate in photoelectrochemical water oxidation, <i>Journal of Alloys and Compounds</i>, 2023, 960, 170924 (Q1). 4. M. Skorupska, K. Kowalska, M. Tyc, A. Ilnicka, M. Szkoda, J. P. Lukaszewicz, Exfoliated graphite with spinel oxide as an effective hybrid electrocatalyst for water splitting, <i>RSC Advances</i>, 2023, 13, 10215–10220 (Q1). 5. A. Ilnicka, M. Skorupska, M. Szkoda, Z. Zarach, J. P. Lukaszewicz, N-doped carbon materials as electrodes for highly stable supercapacitors, <i>Materials Research Letters</i>, 2023, 11(3) 213-221 (Q1). 6. M. Szkoda, A. Ilnicka, M. Skorupska, M. Wysokowski, J.P. Łukaszewicz, Modification of TiO₂ nanotubes by graphene-strontium and cobalt molybdate perovskite for efficient hydrogen evolution reaction in acidic medium, <i>Scientific Reports</i>, 2022, 12, 22577 (Q1). 7. M. Skorupska, A. Ilnicka, J. P. Lukaszewicz, The effect of nitrogen species on the catalytic properties of N-doped graphene, <i>Scientific Reports</i>, 2021, 11, 23970 (Q1). 8. P. Kamedulski, M. Skorupska, P. Binkowski, W. Arendarska, A. Ilnicka, J. P. Lukaszewicz, High surface area micro-mesoporous graphene for electrochemical applications, <i>Scientific Reports</i>, 2021, 11(1), 1-12 (Q1). 9. G. S. Szymanski, Y. Suzuki, T. Ohba, B. Sulikowski, K. Góra-Marek, K. A. Tarach, S. Koter, P. Kowalczyk, A. Ilnicka, M. Zięba, L. Echegoyen, A. P. Terzyk, M. E. Plonska-Brzezinska, Linking the defective structure of Boron-Doped Carbon Nano-Onions with their catalytic properties: Experimental and theoretical studies, <i>ACS Applied Materials & Interfaces</i>, 2021, 13(43), 51628–51642 (Q1). 10. M. Skorupska, A. Ilnicka, J. P. Lukaszewicz, N-doped graphene foam obtained by microwave-assisted exfoliation of graphite, <i>Scientific Reports</i>, 2021, 11, 2044 (Q1).
LIST OF PROJECTS IMPLEMENTED:
1. Grant in the Small Grant Scheme competition. Title: Pt-free graphene-based catalysts for water splitting technology as green method for hydrogen production, agreement No: NOR/SGS/IL-HYDROGEN/0202/2020-00, source of funding: National Centre for Research and Development

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(NCBR). Implementation period: February 2022 - January 2024. Role in the project: Principal Investigator, investigator.

2. Tango-IV Grant. Title: Innovative concept in protection against bacterial and viral infections using biocidal filters based on 3D graphene structure, co-funded as part of R&D works, agreement No: TANGO-IV-A/0041/2019-00, source of funding: National Centre for Research and Development (NCBR). Implementation period: 02.2022 - 01.2024. Role in the project: investigator.

3. Grant LIDER-IX. Title: Hybrid materials carbon nanotubes - graphene and carbon nanotubes - activated carbon: synthesis and application in electrochemical energy accumulators, agreement No: LIDER/32/0116/L-9/17/NCBR/2018, source of funding: National Centre for Research and Development (NCBR). Implementation period: February 2019 - January 2022. Role in the project: Principal Investigator, investigator.

4. Grant OPUS-12. Title: Three-dimensional functionalisation of graphene by physical and chemical methods, agreement No: UMO-2016/23/B/ST5/00658, source of funding: National Science Centre (NCN). Implementation period: July 2017 - July 2021. Principal Investigator: Prof. dr hab. Jerzy P. Łukaszewicz. Role in the project: investigator.

5. Project No: MNISW/2017/DIR/69/II+. Project title: Method for manufacturing durable three-dimensional porous matrices based on graphene flakes obtained in the process of graphite exfoliation. Programme name and source of funding: Innovation Incubator+, Ministry of Science and Higher Education in the Smart Growth Operational Programme 2014-2020, Priority axis: IV. - Increasing scientific and research potential, Activity: 4.4. Implementation period: 2017-2018. Role in the project: co-investigator.

6. Project No: MNISW/2017/DIR/69/II+. Project title: Method for manufacturing carbon nanotubes by thermal conversion of polymers. Programme name and source of funding: Innovation Incubator+, Ministry of Science and Higher Education in the Smart Growth Operational Program 2014-2020, Priority axis: IV. - Increasing the scientific and research potential, Activity: 4.4. Implementation period: 2017-2018. Role in the project: Principal Investigator, investigator.

7. Agreement No: UMO-2014/15/N/ST8/03399. Project title: Carbon materials with high nitrogen content and high electrical conductivity. Programme name and source of funding: PRELUDIUM-8, National Science Centre (NCN). Implementation period: 2015-2018. Role in the project: Principal Investigator, investigator.

8. Agreement No: UMO-2014/13/B/ST8/04342. Project title: Design and synthesis of porous materials based on biopolymers and their composites with magnetite as potential sorbents for NSAIDs. Programme name and source of funding: OPUS-7, National Science Centre (NCN). Implementation period: 2015-2018. Role in the project: co-investigator.

9. Agreement No: UMO-2014/13/B/ST8/04342. Project title: Design and synthesis of porous materials based on biopolymers and their composites with magnetite as potential sorbents for NSAIDs. Programme name and source of funding: OPUS-7, National Science Center (NCN). Implementation period: 2015-2018. Role in the project: co-investigator.

PATENTS GRANTED:

1. A. Ilnicka, J. P. Łukaszewicz, application No P.424395, application date 28.01.2018, the Patent Office of the Republic of Poland, patent PL 240316, decision of: 22.12.2021.
2. A. Ilnicka, et al., application No P.417441, application date 04.06.2016, the Patent Office of the Republic of Poland, patent PL 234386, decision of 09.2019.
3. A. Ilnicka, et al., application No P.411608, application date 16.03.2015, the Patent Office of the Republic of Poland, patent PL 227337, decision of 06.2017.

PATENT APPLICATIONS:

1. P. Grabowska, et al., No P.444241, 03.2023.
2. A. Ilnicka, et al., No P.431275, 05.2019.
3. P. Kamedulski, et al., No P.426646, 08.2018;

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4. A. Ilnicka, et al., No P.426253, 07.2018.
5. A. Ilnicka, J. P. Łukaszewicz, No P.424395, 01.2018.
6. A. Ilnicka, et al., No P.417441, 06.2016;
7. Ilnicka, et al., No P.417135, 05.2016.
8. A. Ilnicka, J. P. Łukaszewicz, No P.411926, 04.2015.

AWARDS:

2024 Distinction for achievements in the field of science and research in 2023, along with the Team Award of the Rector of Nicolaus Copernicus University in Toruń.

2022 Distinction for achievements in the field of science and research in 2021 and the Team Award of the Rector of Nicolaus Copernicus University in Toruń.

2022 Gold medal at the 15th International Invention and Innovation Show INTARG 2022, Katowice.

2021 Level 3 award for achievements in the field of science and research in 2020, along with the Team Award of the Rector of Nicolaus Copernicus University in Toruń.

2020 Level 1 scholarship for achievements in the field of science in 2019, along with the Team Award of the Rector of Nicolaus Copernicus University in Toruń.

2020 – 2022 Scholarship of the Minister of Science and Higher Education for outstanding young scientists, Poland.

2019 Award for the best presentation at the 25th Polish Chitin Society Conference “New aspects in the chemistry and application of chitin and its derivatives”, Toruń.

2018 For the invention entitled “Method of manufacturing carbon nanotubes”, at the 117th CONCOURS LEPIEVE, award: Bronze Medal, Paris, France.

2018 Third prize for the best poster of the 24th Conference “New aspects in the chemistry and application of chitin and its derivatives”, entitled “Thermal conversion of chitin and chitosan to nitrogen-rich carbon foams”, Tyniec, Poland.

2016 Level 3 award for achievements in the field of science and research in 2015 and the Team Award of the Rector of Nicolaus Copernicus University in Toruń.

2016 Professor Henryk Struszczyk Award. Distinction in the competition announced by the Polish Chitin Society was awarded for original achievements in research in the field of chitin and its derivatives. The award was presented to Anna Ilnicka during the conference "New aspects in chemistry and application of chitin and its derivatives", Malbork.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

2016 Ambassador of Innovation 2015's statuette awarded by the Minister of Science and Higher Education, Mr Jarosław Gowin. The award was presented to Anna Ilnicka during the 23rd Invention Fair in Warsaw.

2015 First prize for the best presentation at the 21st Conference "New aspects in chemistry and application of chitin and its derivatives", Anna Ilnicka, Jerzy P. Łukaszewicz, entitled "Chitin and chitosan - precursors for obtaining nitrogen-rich carbon materials", Szczecin, Poland.

2015 64th International Exhibition of Inventions, Research and New Technologies INNOVA, Brussels, awards: (1) Gold Medal with distinction; (2) Special Prize and Gold Medal in the competition organised by the Rumanian Association for Nonconventional Technologies; (3) Gold Medal in the parallel competition organised by the Ministry of Education and Research and the National Authority for Scientific Research and Innovation. Brussels, Belgium.

2015 International Invention and Innovation Show INTARG, award: Gold Medal, Krakow, Poland.

2015 114 CONCOURS LEPINE International Invention Fair, award: Gold Medal, Paris.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Dr Małgorzata Skorupska

Title of the dissertation: "Preparation and characterization of catalytic carbon materials containing nitrogen heteroatoms and evaluation of their suitability as electrode material in metal-air batteries and in supercapacitors", 20.03.2024; the dissertation cum laude

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

CLASSES TAUGHT IN ENGLISH:

- 1) 2017-2018 - Solid and Surface Chemistry – laboratory
- 2) 2023-2024 - Renewable energy: option or necessity? – lecture
- 3) 2024-2025 - Nanomaterials and Nanostructures – lecture

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Development and acquisition of new skills in the areas of science, project management, commercialisation of results and research and development was possible through active participation in the following courses, trainings and workshops: (1) Participation in the training on "Application, use, regeneration and testing of activated carbons", organised by the Institute of Environmental Engineering, 15-17.06.2016. (2) Participation in the Startup Academy workshops on "How to function safely on the market of new technologies", 15.05.2015. (3) Participation in the Startup Academy workshops on "How to safely commercialise your ideas", 20.03.2015. Participation in the following courses: (4) "R&D project management - from searching for sources of funding, through project implementation, to implementation", Toruń, 23-24.05.2014. (5) "Design Thinking as a tool for effective search for problem solutions", Toruń, 9-11.06.2014. (6) "How to safely and effectively finance start-up activities", Toruń, 28.11.2014. (7) "2nd School of adsorption and

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absorption", Toruń, 25-26.04.2013. (8) "Interpersonal communication in business with workshops", Toruń, 20.05.2013. (9) "Establishing and running a business with workshops on making a business plan", Toruń, 21.05.2013. (10) "Funding scientific research from various sources", Toruń, 22.05.2013. (11) "Methods of cooperation between science and enterprises", Toruń, 23.05.2013. (12) "Intellectual property management", Toruń, 24.05.2013. (13) "Application, operation and regeneration of activated carbons". Organiser: Institute of Environmental Engineering, Białowieża, 9-11.10.2013. (14) "Advanced English for academic purposes course – Stage I", Toruń, 2011/2012. (15) "Genomics, proteomics and bioinformatics", Toruń, 16-20.04.2012. (16) Advanced English for academic purposes course – Stage II", Toruń, 2011/2012. (17) "A training course in teaching and using computational chemistry methods", Toruń, January-May, 2011. (18) Participation in the course: "The 1st School of adsorption and absorption", Lublin, 16-18.10.2011.

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Participation in international scientific conferences – a presentation or guest lecture (selected conferences):

- 1) 33rd International Conference on Diamond and Carbon Materials (2023)
- 2) E-MRS European Materials Research Society (2023)
- 3) 31st International Conference on Diamond and Carbon Materials (2021)
- 4) Webinar on Graphene Technology (2021)
- 5) IGRAPHENE (2020)
- 6) 2nd Global Conference on Carbon Nanotubes and Graphene Technologies (2020)
- 7) The Polish Chitin Society „New aspects in chemistry and application of chitin and its derivatives” (2019)
- 8) Scientific Workshops of the Polish Carbon Society (2019)
- 9) The World Conference on Carbon CARBON (2018) - Keynote guest speaker
- 10) 7th International Symposium on Energy (2017)
- 11) 6th International Conference on Carbon for Energy Storage/Conversion and Environment Protection (CESEP) (2015)

Fellowships completed abroad:

1) Type of stay: Research fellowship under the program "Excellence Initiative - Research University" programme

Name of the country: Norway. Name of the hosting university or scientific institution: Department of Chemistry, University of Oslo. Date: 01.05.2024 to 31.05.2024. Name of the referring entity: University of Oslo. Fellowship carried out in cooperation with Dr Athanasios Chatzitakis, Group for Electrochemistry (Group Leader: Professor Truls Norby)

Title of the project: Strategies for synthesis and characterization of novel catalysts for photo-/electrochemical water splitting in the current and a future Norway-Polish collaboration.

2) Type of stay: Postdoctoral fellowship (post-doc). Name of the country: Japan.

Name of the hosting university or scientific institution place: Institute for Materials Chemistry and Engineering, Kyushu University. Date from 01.01.2021 to 05.04.2021. Name of the referring entity: Kyushu University.

Description of the tasks performed: Conducting research on the synthesis and characterisation of new materials for applications in supercapacitors. Preparation of supercapacitors, then conducting

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

electrochemical tests including galvanostatic charge-discharge and the use of the SOLID STATE NMR technique in supercapacitor research.

3) Type of stay: Research fellowship. Name of the country: South Korea.

Name of the hosting university or scientific institution: Department of Energy Science and Engineering, Daegu Gyeongbuk Institute of Science and Technology (DGIST). Date: 17.11.2018 to 14.02.2019. Name of the referring entity: Daegu Gyeongbuk Institute of Science and Technology. Description of the tasks performed: Conducting research on the synthesis and characterisation of new materials for applications in Li-S batteries. Preparation of Li-S batteries and conducting electrochemical tests covering a large number of charge-discharge cycles (up to 2000 cycles).

4) Type of stay: Research fellowship. Name of the country: South Korea.

Name of the hosting university or scientific institution: Department of Energy Science and Engineering, Daegu Gyeongbuk Institute of Science and Technology (DGIST). Date: 27.08.2018 to 17.09.2018. Name of the referring entity: Daegu Gyeongbuk Institute of Science and Technology. Description of the tasks performed: Conducting research covering the preparation, analysis and characterisation of carbon materials for applications in the oxygen reduction reaction (ORR)

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Name and surname
Marek KRZEMIŃSKI
Declared disciplines
<i>Chemical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2016 – Doctor Habilitatus of Natural Sciences in Chemical Sciences; chemistry (organic chemistry, organic synthesis, asymmetric synthesis)
1997 – Doctor of Chemical Sciences
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
<i>Structural and Physical Organic Chemistry – lecture 30 hours</i>
<i>Supervisor of 2 doctoral students (Karolina Jezak, Henryk Szramowski) – supervisor mentoring</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p><i>h-index (GS)=15</i></p> <p><i>Professor Marek Krzemiński, after completing his Master's degree in 1992, began doctoral studies at the Faculty of Chemistry, Nicolaus Copernicus University. In 1997, he was employed at the Department of Organic Chemistry at the Faculty of Chemistry, NCU in Toruń. In the same year, he was awarded the degree of Doctor of Chemical Sciences and completed a two-year postdoctoral fellowship in the research group headed by Professor Herbert C. Brown at Purdue University, USA. His postdoctoral research achievements in organic chemistry were completed with the degree of Doctor Habilitatus in 2016. In his research he focuses on asymmetric synthesis, synthesis studies, properties and reactions of monoterpene derivatives, and synthesis and reactions of organoboron compounds. The compounds obtained were used as effective reagents and catalysts in the synthesis of chiral alcohols, lactones, epoxides and amines. Collaboration with research groups resulted in the development of methods for the synthesis of biogenic amine derivatives and compounds with antioxidant properties. He was the Principal Investigator of the Committee for Scientific Research grant and the investigator in the grants of the Committee for Scientific Research and the National Science Centre. He supervised three doctoral students and is the supervisor of another doctoral dissertation, and was also the supervisor of 30 Master's theses, 22 Bachelor's theses, and supervised three students from Spain who did their research projects under the Erasmus programme. As regards teaching activities, he gave lectures, seminars and laboratory classes in organic chemistry in such fields of study as chemistry, cosmetic chemistry, and food chemistry and technology; he also conducted lectures and laboratory classes in Advanced Synthetic Materials. He is a member of the Polish Chemical Society.</i></p> <p><i>Publications:</i></p> <p>(1) Henryk M. Szramowski, Marek P. Krzemiński, Rafał Malinowski, Aneta Raszkowska-Kaczor, „New type of primers based on polypropylene grafted maleic anhydride (PP-g-MAH) –strength analysis”, <i>International Journal of Adhesion & Adhesives</i> 2024, 132, 103710.</p> <p>(2) Jastrzębska, A.; Kmiecik, A.; Gralak, Z.; Brzuzy, K.; Nowaczyk, J.; Cichosz, M.; Krzemiński, M.P.; Szłyk, E. Determination of Biogenic Amine Level Variations upon Storage, in <i>Chicken Breast Coated with Edible Protective Film. Foods</i> 2024, 13, 985.</p> <p>(3) Aneta Jastrzębska, Anna Kmiecik, Zuzanna Gralak, Kamil Brzuzy, Marek Krzeminski, Damian Gorczyca, Edward Szłyk, A new approach for analysing biogenic amines in meat samples: Microwave-assisted derivatisation using 2-chloro-3-nitropyridine, <i>Food Chemistry</i>, 2024, 436, 137686.</p>

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- (4) Henryk Szramowski & Marek Piotr Krzemiński, „Comparative analysis of primers and alternative polypropylene pre-treatment techniques”, *The Journal of Adhesion*, **2024**, 100, 867-889.
- (5) Aneta Jastrzębska, Anna Kmiecik, Kamil Brzuzy, Zuzanna Gralak, Marek P. Krzemiński, Edward Szłyk, „Determination of selected biogenic amines in fermented vegetables juices”, *Food Control* **2023**, 154, 109980.
- (6) Kmiecik, A.; Jastrzębska, A.; Szymańska, K.; Krzemiński, M.P.; Muzioł, T.M.; Kurzawa, M.; Szłyk, E. The Selection of the Best Derivatization Reagents for the Determination of Polyamines in Home-Made Wine Samples. *Materials* **2023**, 16, 1474.
- (7) Dobrochna Rabiej-Kozioł, Katarzyna Roszek, Marek P. Krzemiński, Aleksandra Szydłowska-Czerniak „Phenolipids as new food additives: from synthesis to cell-based biological activities”, *Food Additives & Contaminants: Part A*, **2022**, 39, 1365-1379.
- (8) Zbigniew Rafiński, Marek P. Krzemiński, „New terpene triazolium salts and method of their preparation”, Patent **PL236200**
- (9) Anna Kmiecik and Marek P. Krzemiński, „Chiral terpene auxiliaries V: Synthesis of new chiral γ -hydroxyphosphine oxides derived from α -pinene”, *Beilstein J. Org. Chem.* **2019**, 15, 2493–2499.
- (10) Zbigniew Rafiński and Marek P. Krzemiński, „Synthesis of (–)-Verbenone-derived Triazolium Salts and Their Application in Enantioselective Intramolecular Stetter Reaction”, *Catalysts* **2019**, 9, 117.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Chemical Sciences, ongoing (January 2025):

Karolina Jeżak, MSc (3rd year, AST) – supervisor

And

Dr Henryk Szramowski, Faculty of Chemistry, Chemical Sciences

Selection of the composition and proportion of the primer, particularly the active substance, to enhance the surface activity of polypropylene components for the automotive industry defence date 27.11.2024, implementation PhD

Dr Marta Ćwiklińska-Kowalska, Faculty of Chemistry, Chemical Sciences

Asymmetric reduction of ketones and imines catalyzed by monoterpene spiroborate esters

Defence date 07.12.2022

Dr Anna Kmiecik, Faculty of Chemistry, Chemical Sciences

Synthesis and application of the new monoterpene ligands in catalytic asymmetric reactions

Defence date 14.05.2014 – assistant supervisor

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor M. Krzemiński has 30 years of teaching experience and obtained very positive results in student surveys of academic teachers' assessment. He conducted laboratory classes in Organic Chemistry, tutorials and lectures. He authored and conducted lectures in Organic Chemistry II for full-time and part-time students. This course was transformed into Chemistry of Natural Compounds. He

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developed a lecture and laboratory for the course in Methods of Organic Synthesis, and a lecture in Bioorganic Chemistry for Cosmetic Chemistry as the field of study (second-cycle studies). .

Under the project entitled 'Strengthening the teaching potential of the Nicolaus Copernicus University in Toruń in Mathematics and Natural Sciences', he prepared materials in English and Polish for the lecture and laboratory class in Natural and Synthetic Organic Materials and materials for the laboratory Organometallic and Bioinorganic Materials for the field of study in Advanced Synthetic Materials. He developed three experiments, which, along with full spectroscopic and photographic documentation, were published in the book 'Comprehensive organic chemistry experiments for the laboratory classroom / ed. by Carlos A. M. Afonso [et al.], Cambridge: Royal Society of Chemistry, 2017, 252-256, 803-806, 826-829.

Guidance of students:

Guidance of two Erasmus students from Spain who carried out research projects recommended: Synthesis of 3,4-dihydroisoquinolines as precursors of tetrahydroisoquinoline alkaloids (03.02.2012 – 22.06.2012) and Synthesis of selected imines derived from aromatic aldehydes and aryl- and alkyl amines (03.11.2014 – 29.05.2015); he also provided supervisor guidance of a doctoral student from Tunisia under the Erasmus Plus programme (01.03.2020 – 15.07.2020) who carried out his project entitled Synthesis of selected dihydroisoquinolines – precursors of salsolidine derivatives and modifications of verbenone towards chiral ligands

He gives lectures and teaches laboratory classes in English: Natural and Synthetic Organic Materials, Organometallic and Bioinorganic Materials, Structural and Physical Organic Chemistry

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- *Participation in domestic and international conferences.*
- *Participation in many editions of the Copernican Doctoral Seminar and work in committees assessing presentations and poster sessions of doctoral students.*
- *Training in Conducting difficult conversations with employees*
- *Training in Disciplinary proceedings against students*

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Professor M. Krzemiński completed a long-term research fellowship:

1997-1999 – Purdue University in West Lafayette, USA

Short-term stay (1 month):

03.-04.2007 Indian Institute of Chemical Biology in Calcutta, India

Cooperation with Purdue University (USA), University of California, Santa Cruz (USA)

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Name and surname
<i>Paweł Piotr Pomastowski</i>
Declared disciplines
<i>Chemical Sciences 50%</i> <i>Biological Sciences 50%</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2019 – Doctor Habilitatus of Natural Sciences in Chemical Sciences 2016 – Doctor of Chemical Sciences in Chemistry
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Supervisor mentoring [7404-MP-CHEM]
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
h-index=(GS) (RG) 31, Total ministerial score: 14,261 (omega.umk), Total IF: 600.894 (omega.umk) Co-author of over 200 publications and the Principal Investigator in 14 research projects funded by the National Centre for Research and Development, the National Science Centre, the Foundation for Polish Science, the Agency for Restructuring and Modernisation of Agriculture and the Ministry of Science and Higher Education. Selected projects: Projects: 1. Grants/research projects PI: Professor Paweł Pomastowski from the Centre for Modern Interdisciplinary Technologies, NCU in Toruń: 1. Development of a new technology for obtaining beta-butter with health-promoting properties, the Agency for Restructuring and Modernisation of Agriculture, project No. 0126.DDD.6509.00244.2022.02, 2024-2024, budget: PLN 7,821,440.87; development of technology and implementation into the business activity of Polmek Grudziądz Sp.Z.O.O. 2. Development of improved technology for obtaining juices based on lithium condensates, biologically active fruit extracts and with extended shelf life, the National Centre for Research and

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Development (Warsaw), project NUTRITECH.I-000W/22, 2023-2025, budget: PLN 9,685,192.34; development of technology and implementation into the business activity of Fortuna Sp.Z.O.O.

3. R&D Leader of the contractor team of PolMlek Grudziądz Sp. z o.o. in the project entitled "Development of butter with improved nutritional values and extended shelf life and original technology for its production using milk fat fractionation", No. POIR.01.01.01-00-0089/20 (2020-2023) budget: PLN 60 265 598.75 and "Development of original technology for the production of mozzarella cheese with improved nutritional values, reduced lactose and allergen levels and extended shelf life", No. POIR.01.01.01-00-2286/20 (2021-2024) budget: PLN 83 694 224.36 and Stara Mleczarnia in the project entitled "Expanding the offer of Stara Mleczarnia S.A. by developing (formulating) probiotic drinks", POIR.02.03.02 (2021-2022), budget: PLN 400,000.00; Development of technology and implementation into the business activity of Polmek Grudziądz Sp.Z.O.O.

4. Advanced biocomposites for the economy of tomorrow BIOG-NET, project No. POIR.04.04.00-00-1792/18, Foundation for Polish Science (NCU Leader 2020-2023) (Principal Investigator of the Consortium of 6 research units – since 2023), 2019-2023, budget: PLN 20,898,921.93; Development of technology and implementation in auxiliary activities: NCU in Toruń, Białystok University of Technology, University of Warmia and Mazury, Adam Mickiewicz University in Poznań.

5. Establishment of the Research and Development Centre and conducting research and development works in welding at EwiKor Korus Dawid, No. RPKP.01.02.01-04-0051/18, 2018-2022, budget: PLN 17,039,092.23

Development of technology and implementation in the business activity of EwiKor Korus Dawid Sp.Z.O.O.

+ 6 research projects below PLN 2 million:

International projects:

1. The Pukyong National University and Brain Busan 21 project grants for 2015/2016-2020: NCU Leader, 2016-2020, budget: EUR 50,000.

2. Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT and Future Planning (2017R1A2B4004500) – NCU Leader, 2018-2020, EUR 250,000.

3. Moldova State University, Republic of Moldova, 2023-2028, partnership agreement on the implementation of the technology for obtaining lactoferrin-based creams as part of the Lider XIII project

4. "Solidarity with Ukraine" Programme, the National Agency for Academic Exchange, budget: PLN 800,000; cooperation resulted in establishing framework cooperation with the National University "Kyiv-Mohyla Academy" (NaUKMA), on Interventional studies of the microbiome of wounds of soldiers from Ukraine, determining their drug resistance and developing silica-based dressings with antimicrobial properties (application submitted for NAAE 2024 Intervention Grants)

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Four patents, including :

1. Method of obtaining a strain of lactic acid bacteria and the use of thus obtained strain of lactic acid bacteria, D. Białczak (PhD student), A. Soroka, P. Pomastowski, K. Rafińska, L. Czaplewski, 2022, Pat. No. 241590 (implemented in PolMlek Sp. z o.o)

Three patent applications:

Invention developed in cooperation with the NCU in Toruń and the Białystok University of Technology

3. PL: Method of synthesis of complexes based on bovine lactoferrin and ruthenium (III) and the use of bovine lactoferrin complexes as an antimicrobial agent for combating Gram-negative bacteria *Proteus mirabilis*, *Escherichia coli*, *Pseudomonas aeruginosa*, and Gram-positive bacteria *Staphylococcus aureus* or fungi *Candida albicans*, *Candida krusei*, T. Dyrda-Terniuk (PhD student at AST), P. Pomastowski, 2024, No. P. 448969

Invention developed in cooperation with UMK in Toruń and the Plant Breeding and Acclimatization Institute – National Research Institute, Branch in Bonin, Potato Seed and Protection Department

1. PL: Method of obtaining plates with gold nanolayers for laser desorption/ionization assisted by nanostructures, Ł. Skowroński, T. Rerek, W. Brzozowska, K. Robotnik (PhD student at AST), P. Pomastowski, No. P.449747

The invention was developed in cooperation with the Nicolaus Copernicus University in Toruń and the Jan and Jędrzej Śniadecki University of Technology in Bydgoszcz

Co-author of numerous patent deposits in the Polish Collection of Microorganisms (PCM)

Awards:

1. "A Step into the Future - Scholarships for PhD Students" - Editions IV and V (2013/2014; 2014/2015)

2. Award of the Committee of Analytical Chemistry of the Polish Academy of Sciences in the Best PhD thesis category in 2016

3. Award of the Polish Academy of Sciences, the Branch in Gdańsk, for young scientists

4. START 2017 Scholarship of the Foundation for Polish Science (FNP)

5. Level 1 and Level 2 Team Awards of the Rector of the Nicolaus Copernicus University in Toruń

6. Scientific scholarship for an outstanding young scientist, Ministry of Science and Higher Education (2018).

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7. Innovation Leader of Pomerania and Kujawy – this title was awarded in 2018, 2020 and 2021,

8. Professor Paweł Pomastowski also received awards of the NCU's Rector for achievements in the field of science and research or for publications indexed in the JCR.

10 selected scientific publications:

No	Publications	Pts	IF
1	Pryshchepa O., Sagandykova G., Rudnicka J., Pomastowski P., Sprynskyy M., Buszewski B.: Synthesis and physicochemical characterization of zinc-lactoferrin complexes, <i>Journal of Dairy Science</i> , vol. 105, No 3, 2022, pp. 1940-1958, DOI:10.3168/jds.2021-20538	200	3,5
2	Rafińska K., Wrona O., Krakowska-Sieprawska A., Walczak-Skierska J., Kiełbasa A., Rafiński Z., Pomastowski P., Kolankowski M., Buszewski B.: Enzyme-assisted extraction of plant material : new functional aspects of the process on an example of <i>Medicago sativa</i> L. , <i>Industrial Crops and Products</i> , vol. 187, 2022, No: 115424, pp. 1-11, DOI:10.1016/j.indcrop.2022.115424	200	5,9
3	Railean-Plugaru V., Pomastowski P., Buszewski B.: Use of <i>Lactobacillus paracasei</i> isolated from whey for silver nanocomposite synthesis : antiradical and antimicrobial properties against selected pathogens, <i>Journal of Dairy Science</i> , vol. 104, No 3, 2021, pp. 2480-2498, DOI:10.3168/jds.2020-19049	200	4,225
4	Walczak-Skierska J., Złoch M., Pauter K., Pomastowski P., Buszewski B.: Lipidomic analysis of lactic acid bacteria strains by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry, <i>Journal of Dairy Science</i> , vol. 103, No 12, 2020, pp. 11062-11078, DOI:10.3168/jds.2020-18753	200	4,034
5	Pryshchepa O., Pomastowski P., Buszewski B.: Silver nanoparticles : synthesis, investigation techniques, and properties, <i>Advances in Colloid</i>	200	12,984

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	and Interface Science, vol. 284, 2020, pp. 1-31, DOI:10.1016/j.cis.2020.102246		
6	Mametov R., Sagandykova G., Ferreira Silva Souza Monedeiro F., Florkiewicz A., Piszczek P., Radtke A., Pomastowski P.: Metabolic profiling of bacteria with the application of polypyrrole-MOF SPME fibers and plasmonic nanostructured LDI-MS substrates, Scientific Reports, Nature Publishing Group, vol. 14, No 1, 2024, No: 5562, pp. 1-13, DOI:10.1038/s41598-024-56107-0	140	3,8
7	Rogowska A., Król-Górniak A., Railean V., Kanawati B., Schmitt-Kopplin P., Michalke B., Sugajski M., Pomastowski P., Buszewski B.: Deciphering the complexes of zinc ions and hen egg white lysozyme : instrumental analysis, molecular docking, and antimicrobial assessment, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Elsevier BV, vol. 305, 2024, No: 123490, pp. 1-13, DOI:10.1016/j.saa.2023.123490	140	4,3
8	Golubeva A., Roychoudhury P., Dąbek P., Pałczyńska J., Pryshchepa O., Piszczek P., Pomastowski P., Gloc M., Dobrucka R., Buszewski B.: A novel effective bio-originated methylene blue adsorbent: the porous biosilica from three marine diatom strains of Nanofrustulum spp. (Bacillariophyta), Scientific Reports, Nature Publishing Group, vol. 13, No 1, 2023, No: 9168, pp. 1-14, DOI:10.1038/s41598-023-36408-6, total No of authors:: 14	140	3,8
9	Mametov R., Sagandykova G., Monedeiro-Milanowski M., Gabryś D., Pomastowski P.: Electropolymerized polypyrrole-MOF composite as a coating material for SPME fiber for extraction VOCs liberated by bacteria, Scientific Reports, Nature Publishing Group, vol. 13, No 1, 2023, No: 8933, pp. 1-10, DOI:10.1038/s41598-023-36081-9	140	3,8
10	Król-Górniak A., Railean V., Pomastowski P., Płociński T., Gloc M., Dobrucka R., Kurzydłowski K., Buszewski B.: Comprehensive study upon physicochemical properties of bio-ZnO NCs, Scientific Reports, Nature Publishing Group, vol. 13, No 1, 2023, No: 587, pp. 1-21, DOI:10.1038/s41598-023-27564-w	140	3,8

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Cooperation:

Universities in Poland:

1. Faculty of Materials Science and Engineering, Warsaw University of Technology
2. Department of Non-Food Product Quality and Packaging, Institute of Quality Science, Poznań University of Economics
3. Institute of Marine and Environmental Sciences, University of Szczecin
4. Department of Materials and Production Engineering, Faculty of Mechanical Engineering, Białystok University of Technology
5. Department of Plant Physiology, Genetics and Biotechnology, Department of Botany and Evolutionary Ecology, Faculty of Biology and Biotechnology; Department of Entomology, Phytopathology and Molecular Diagnostics, Faculty of Agriculture and Forestry, University of Warmia and Mazury in Olsztyn
6. Department of Biopharmacy and Pharmacodynamics, Faculty of Pharmacy, Medical University of Gdańsk
7. Department of Animal Breeding and Nutrition, Department of Animal Biotechnology and Genetics, Faculty of Animal Breeding and Biology, J.J. Śniadecki University of Technology in Bydgoszcz
8. Department of Physiology and Toxicology, Faculty of Biological Sciences, Kazimierz Wielki University in Bydgoszcz
9. Department of Biopharmacy, Faculty of Pharmacy, Medical University of Lublin

Hospitals and healthcare centres:

1. Human Milk Bank, Ludwik Rydygier Voivodeship Hospital in Toruń
2. Department of Obstetrics, St. Sophia's Hospital in Warsaw

Research institutions in Poland:

1. Department of Radiotherapy, Department of Analytics and Clinical Biochemistry, Maria Skłodowska-Curie National Institute of Oncology, National Research Institute, the branch in Gliwice

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2. Laboratory of Biodegradable Materials, Łukasiewicz Research Network - New Chemical Syntheses Institute in Puławy

3. Jan Czocharlski Kujawsko-Pomorskie Science and Technology Centre sp. z o.o. in Toruń

4. Department of Animal Nutrition, Jan Kielanowski Institute of Physiology and Animal Nutrition of the Polish Academy of Sciences in Jabłonna

Polish companies:

1. Polmlek Grudziądz Sp. z o.o.

2. Fortuna Sp. z o.o.

3. Polgen Machejko (Łódź, Poland)

4. NatChemLab Sp. z o. o.

5. PKN Orlen S.A.

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Doctoral students awarded with doctoral degrees

Name and surname	Defence date (DD-MM-YYYY)	Title of doctoral dissertation	Discipline of science	
Agnieszka Rodzik-Krzyżanowska	05.03.2024 (cum laude)	The study of the mechanisms for the formation metal-protein nanocomposites as potential antimicrobial agents	Chemical Sciences	Assistant supervisor- P.Pomastowski, Supervisor- Professor Bogusław Buszewski
Ewelina Sibińska	10.09.2024 (cum laude)	The significance of developing spectrometric methods for microorganism's identification	Chemical Sciences	Supervisor - P.Pomastowski, Assistant supervisor - Dr Michał Złoch

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Radik Mametov	18.11.2024	Novel approach Low Molecular Weight Compounds analysis using nanomaterials-assisted Laser Desorption/Ionization Mass Spectrometry and Solid-Phase Microextraction	Chemical Sciences	Supervisor P. Pomastowski, Assistant supervisor – Professor Aleksandra Radtke
Gulyiam Sagandykova	20.01.2021 (cum laude)	Study of biological activity of naturally occurring compounds by modern analytical techniques	Chemical Sciences	Assistant supervisor - P. Pomastowski, Supervisor – Professor Bogusław Buszewski
Oleksandra Pryshchepa (AST)	17.05.2023 (cum laude)	Study on molecular mechanisms of metal-protein binding	Chemical Sciences	Supervisor - P. Pomastowski

Ongoing supervision:

Supervisor of the following doctoral dissertations:

1. Tetiana Dyrda-Terniuk, (AST) Development of methodology for a comprehensive study of biocolloids and their application in dairy industry, expected defence date: 3/ 4 quarter of 2026 (research assistant)
2. Kinga Robotnik, (AST) Advancing Microbial Profiling Through Spectroscopic and Spectrometric Integration on Nanostructured Platforms, expected defence date: 3/ 4 quarter of 2028
3. Piotr Fijałkowski, (AST) Exploring the mechanisms of metal ions binding with ovotransferrin, ovalbumin, and lysozyme: a new generation of protein nanocomplexes, expected defence date: 3/ 4 quarter of 2028
4. Dewi Sartika Innovative strategies in the isolation and functionalization of biologically active lactoferrin – towards therapeutic and prophylactic applications, expected defence date: 3/ 4 quarter of 2028

Implementation PhDs, supervisor - P. Pomastowski:

1. Dorota Białczak (AST, Polmlek Grudziądz Sp.Z.O.O.)

Project title: "Physicochemical and microbiological factors influencing the fractionation of anhydrous milk fat (AMF) in the butter production process"

Principal Investigator: Professor Paweł Pomastowski

Funding: PLN 324,077

Competition: Ministry of Science and Higher Education, implementation PhD, agreement No DWD/6/0121/2022 (internal No 179-ICNT)

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Implementation period: 01.10.2022 – 30.09.2026

2. Tomasz Zieliński (AST, Orlen S.A.)

Project title: "Factors influencing the formation of interfering deposits in diesel fuel at various stages of production and distribution"

Principal Investigator: Professor Paweł Pomastowski

Funding: PLN 324,077

Competition: Ministry of Science and Higher Education, implementation PhD, agreement No DWD/5/0039/2021 (internal No 174-Ch)

Implementation period: 01.10.2021 – 30.09.2025

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Authorship of textbooks/educational materials:

Books:

- Fizykochemiczne metody rozdzielania w medycynie i farmacji: ćwiczenia laboratoryjne [Physicochemical methods of separation in medicine and pharmacy: laboratory exercises] / ed. Magdalena Ligor, Bogusław Buszewski, Ligor Magdalena, Gadzała-Kopciuch Renata, P. Pomastowski [et al.], 2020, Toruń, Nicolaus Copernicus University Scientific Publishing House, 111 pp., ISBN 978-83-231-4515-8

Edited books:

Translation into Polish of a work important for science or culture

- General chemistry / Peter Atkins, Loretta Jones, Leroy Laverman ; [science ed. Bogusław Buszewski, Paweł Pomastowski, Buszewski Bogusław, Pomastowski Paweł (ed.)], 2020, Warsaw, PWN Scientific Publishing House, XXVIII, P105, 890, A26, B28, C91, D9 pp., ISBN 978-83-01-21427-2

Chapters in academic textbooks:

- Environmental toxicology

Buszewski Bogusław, Rafińska Katarzyna, Pomastowski Paweł [et al.], In: Toksykologia. 2: Toksykologia szczegółowa i stosowana / [Toxicology. 2: Detailed and applied toxicology] / science ed. ed. Nauk. Kamil Jurowski, Wojciech Piekoszewski, 2020, Warsaw, PZWL Medical Publishing House, pp. 677-686, ISBN 978-83-200-5931-1

- Application of spectroscopic techniques in the analysis of biocolloids

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Pomastowski Paweł, Król Anna, Rogowska Agnieszka [et al.], In: Bioanalitika w nauce i życiu. 2: Nowe strategie analityczne i rozwiązania aparaturowe [Bioanalytics in science and life. 2: New analytical strategies and equipment solutions] / science ed. Irena Baranowska, Bogusław Buszewski / Baranowska Irena, Buszewski Bogusław (ed.), 2020, Warsaw, PWN Scientific Publishing House, pp. 565-588, ISBN 978-83-01-21282-7

- Modern methods of microorganism identification

Pryshchepa Oleksandra, Złoch Michał, Pomastowski Paweł [et al.], In: Bioanalitika w nauce i życiu. 2: Nowe strategie analityczne i rozwiązania aparaturowe [Bioanalytics in science and life. 2: New analytical strategies and equipment solutions] / ed. Nauk. Irena Baranowska, Bogusław Buszewski / Baranowska Irena, Buszewski Bogusław (ed.), 2020, Warsaw, PWN Scientific Publishing House, pp. 589-611, ISBN 978-83-01-21282-7

- Capillary electrophoresis of microbial aggregates

Dziubakiewicz Ewelina, Pomastowski Paweł, Buszewski Bogusław, In: ISC'2012: 29th International Symposium on Chromatography [September 9-13, 2012, Toruń, Poland] : abstract book / [eds.: B. Buszewski & J. Kowalska]., 2012, Toruń, Adam Marszałek Publishing House, pp. 156-156, ISBN 978-83-7780-440-7

Conducting classes in English under YUFE, or Young Universities for the Future of Europe:

Interdisciplinary multiomics research in exact and natural sciences, classes 10h, seminar 10h, fieldwork 10h, 2023-02-20 - 2023-09-30

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Professor Pomastowski is involved in international and domestic research projects, such as NSC grants (e.g., Symfonia and Opus) or cooperation programmes with foreign partners. Working in interdisciplinary teams allows him to acquire new knowledge and skills in advanced analytical techniques and their applications in chemical and biotechnological research.

He has been actively cooperating with outstanding scientists, such as Proesor Rudi van Eldik, and this enables him to capitalise on the experience of mentors and develop new research areas. Participation in this cooperation includes, e.g., developing innovative analytical methods and submitting joint project applications.

He regularly participates in scientific conferences, both in Poland and abroad, presenting the results of his research and establishing cooperation with other researchers. He also takes part in training courses and workshops on modern research methods and teaching tools.

Postgraduate studies:

10.2023 – 06.2024 Postgraduate studies "Higher Education Institution Management" Nicolaus Copernicus University in Toruń

10.2011– 09.2012 Postgraduate studies in Professional Education Preparation, Kazimierz Wielki University in Bydgoszcz

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Trainings, e.g.:

- 16.11–17.11.2017 – training in using LC – Orbitrap – MS in Wrocław (Poland). *Organiser: Department of Pharmacodynamics and Molecular Pharmacology, Faculty of Pharmacy, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń*
- 17.10.2018 – training in using a flow cytometer “Multiparametric cell analysis” in Bydgoszcz (Poland). *Organiser: Merck sp. z o.o.*

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)

Professor P. Pomastowski's involvement in international cooperation:

Foreign universities:

1. Zoology Department, University of Burdwan, Burdwan, India
2. Department of Chemistry, Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo, Brazil
3. Wisconsin Center for Dairy Research, University of Wisconsin—Madison, Madison, USA
4. Department of Chemistry, National University of Singapore, Singapore
5. Analytical Food Chemistry, Technische Universität München, Germany
6. Department of Biomedical Engineering, Pukyong National University, South Korea
7. Faculty of Chemistry and Chemical Technology, Al-Farabi Kazakh National University, Kazakhstan
8. Faculty of Medicine, Department of Microbiology and Parasitology, University of Navarra, Spain
9. Clausthal University of Technology, Germany

Foreign research institutions:

1. Research Unit Analytical BioGeoChemistry, Helmholtz Center Munich—German Research Center for Environmental Health, Germany
2. Marine Research Institute of Klaipėda University, Lithuania

Foreign companies:

1. Bruker Daltonik GmbH, Bremen, Germany
2. Zybion Inc., Chongqing Municipality, China

Professor Paweł Pomastowski recently completed the following fellowships:

- research fellowship at Pukyong National University, Intelligent Systems Laboratory in Busan (Republic of South Korea) from 24.03 to 30.03.2017;
- Research fellowship at Babes-Bolyai University, Raluca Ripan Institute for Research in Chemistry in Cluj Napoca (Romania) from 19.07 to 25.07.2018.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

- Research fellowship at Polmlek Grudziądz Sp. Z.O.O. dairy, July-August 2019, July-August 2020. Lectures and presentations.

- Industrial fellowship at Polmlek Grudziądz Sp. z o.o. from 01.10.2021 to 31.05.2022.

- Norway, National Institute of Occupational Health, research fellowship, June-July 2024.

Participation in scientific conferences: international (55), domestic (5); lectures (6), oral communication (22) and poster sessions (35) in e.g., Spain, Germany, the Czech Republic, Japan, Lithuania, Hungary, Italy.

Other activities: Scientific advisor to the POLMLEK Group, CBR Orlen SA, Leader of the MICT Team "Centre of Excellence Towards Personalized Medicine" NCU in Toruń, BioSep Team, Reviewer: 1 postdoctoral research achievements, 2 doctoral dissertations, 5 R&D projects funded under FENG.

Editor of scientific journals: Discover Nano (Springer),

Positions:

Nicolaus Copernicus University in Toruń; Interdisciplinary Center of Modern Technology, Associate Professor

Member of the Polish Academy of Sciences Committee: Analytical Chemistry Committee; Spectral Analysis Section

Member of the American Dairy Science Association and the Polish Metabolomic Society

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Name and surname
Aleksandra RADTKE
Declared disciplines
<i>Chemical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2019 – Doctor Habilitatus of Chemical Sciences (conferred in December 2019 by the Board of Disciplines of the Faculty of Chemistry of the NCU)
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
Publications: <ol style="list-style-type: none"> 1 Kubiak Barbara, Muzioł Tadeusz, Jabłoński Mirosław, Radtke Aleksandra, Piszczek Piotr: Investigation of titanium(IV)-oxo complexes stabilized with α-hydroxy carboxylate ligands : structural analysis and DFT studies, Dalton Transactions, RSC Publications, vol. 53, No 34, 2024, pp. 14457-14468, DOI:10.1039/d4dt01710b, 140 pts, IF(3,5) 2 Kubiak Barbara, Muzioł Tadeusz, Wrzeszcz Grzegorz, Radtke Aleksandra, Golińska Patrycja, Jędrzejewski Tomasz, Wrotek Sylwia, Piszczek Piotr: Structural characterization and bioactivity of a titanium(IV)-oxo complex stabilized by mandelate ligands, Molecules, s.n., vol. 29, No 8, 2024, paper No: 1736, pp. 1-19, DOI:10.3390/molecules29081736, 140 pts, IF(4,2) 3 Mametov Radik, Sagandykova Gulyaim, Ferreira Silva Souza Monedeiro Fernanda, Florkiewicz Aleksandra, Piszczek Piotr, Radtke Aleksandra, Pomastowski Paweł: Metabolic profiling of bacteria with the application of polypyrrole-MOF SPME fibers and plasmonic nanostructured LDI-MS substrates, Scientific Reports, Nature Publishing Group, vol. 14, No 1, 2024, paper No: 5562, pp. 1-13, DOI:10.1038/s41598-024-56107-0, 140 pts, IF(3,8) 4 Pryshchepa Oleksandra, Pałczyńska Jagoda, Radtke Aleksandra, Pomastowski Paweł: Problem <i>mastitis</i>- niepożądane mikroorganizmy w produktach mlecznych, sposoby ich identyfikacji oraz zmiany jakościowe i ilościowe składu mleka [Problem <i>mastitis</i>- undesirable microorganisms in dairy products, methods of their identification and qualitative and quantitative changes in the composition of milk, Przegląd Mleczarski: miesięcznik przeznaczony dla pracowników przemysłu mleczarskiego , PHZ SM LACPOL Sp. z o.o., No 1, 2024, pp. 12-27, 5 pts 5 Sibińska Ewelina, Walczak-Skierska Justyna, Arendowski Adrian, Ludwiczak Agnieszka, Radtke Aleksandra, Piszczek Piotr, Gabryś Dorota, Robotnik Kinga, Pomastowski Paweł: Advances in LDI-MS analysis : the role of chemical vapor deposition-synthesized silver nanoparticles in enhancing detection of low-molecular-weight biomolecules, Journal of the American Society for Mass Spectrometry, vol. 35, No 9, 2024, pp. 2041-2055, DOI:10.1021/jasms.4c00071, 70 pts, IF(3,1) 6 Śmigiel Julia, Piszczek Piotr, Wrzeszcz Grzegorz, Jędrzejewski Tomasz, Golińska Patrycja, Radtke Aleksandra: The composites of PCL and tetranuclear titanium(IV)-oxo

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- 27 Radtke Aleksandra, Grodzicka Marlena, Ehlert Michalina, Jędrzejewski Tomasz, Wypij Magdalena, Golińska Patrycja: "To be microbiocidal and not to be cytotoxic at the same

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 - 30 Radtke Aleksandra, Ehlert Michalina, Jędrzejewski Tomasz, Bartmański Michał: The morphology, structure, mechanical properties and biocompatibility of nanotubular titania coatings before and after autoclaving process, *Journal of Clinical Medicine*, vol. 8, No 2, 2019, pp. 1-22, DOI:10.3390/jcm8020272, 140 pts, IF(3,303)
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 - 34 Janek Maciej, Radtke Aleksandra, Muzioł Tadeusz M., Jerzykiewicz Maria, Piszczek Piotr: Tetranuclear oxo-titanium clusters with different carboxylate aromatic ligands : optical properties, DFT calculations, and photoactivity, *Materials*, MDPIAG, vol. 11, No 9, 2018, pp. 1661-1-17, DOI:10.3390/ma11091661, 35 pts, IF(2,972)
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- 38 Radtke Aleksandra, Topolski Adrian, Jędrzejewski Tomasz, Kozak Wiesław, Sadowska Beata, Więckowska-Szakiel Marzena, Piszczek Piotr: Bioactivity studies on titania coatings and the estimation of their usefulness in the modification of implant surfaces, *Nanomaterials*, vol. 7, No 4, 2017, pp. 1-18, DOI:10.3390/nano7040090, 35 pts, IF(3,504)
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48	Piszczyk Piotr, Radtke Aleksandra, Wojtczak Andrzej, Muzioł Tadeusz, Chojnacki Jarosław: Synthesis, structure characterization and thermal properties of $[\text{Zr}_6(\mu_3\text{-O})_4(\mu_3\text{-OH})_4(\text{OOCCH}_2\text{tBu})_9(\mu_2\text{-OH})_3]_2$, Polyhedron, Pergamon, vol. 28, No 2, 2009, pp. 279-285, 24 pts, IF(2,207)
49	Piszczyk Piotr, Radtke Aleksandra, Grodzicki Antoni, Wojtczak Andrzej, Chojnacki Jarosław: The new type of $[\text{Zr}_6(\mu_3\text{-O})_4(\mu_3\text{-OH})_4]$ cluster core: Crystal structure and spectral characterization of $[\text{Zr}_6\text{O}_4(\text{OH})_4(\text{OOCR})_{12}]$ ($\text{R} = \text{Bu}^t, \text{C}(\text{CH}_3)_2\text{Et}$), Polyhedron, Pergamon, vol. 26, No 3, 2007, s. 679-685, 20 pts, IF(1,756)
50	Piszczyk Piotr, Grodzicki Antoni, Richert Monika, Radtke Aleksandra: Thermal properties of multinuclear Ti(IV) and Zr(IV) carboxylate derivatives characterized using thermal analysis and variable temperature MS and IR methods, Materials Science-Poland, Politechnika Wrocawska, vol. 23, No 3, 2005, pp. 663-670, 10 pts, IF(0,571)
51	Grodzicki Antoni, Piszczyk Piotr, Richert Monika, Radtke Aleksandra, Wojtczak Andrzej: Structure and thermal properties of multinuclear Ti(IV) and Zr(IV) oxo carboxylate derivatives, Annals of the Polish Chemical Society : preliminary reports presented during Annual Meeting of the Polish Chemical Society., University of Silesia, Institute of Chemistry, vol. 3 part 1, 2004, pp. 197-200
Research projects:	
<ul style="list-style-type: none"> • Biodegradable iron-based materials - research on the relationship between the chemical structure and surface morphology of systems and their mechanical properties, susceptibility to corrosion and biological activity; NSC Preludium BIS, Principal Investigator at NCU: Radtke Aleksandra, start date 01-10-2020, end date 30-09-2024, in progress • Pilot research studies on biodegradable 3D iron-based systems. EI-RU – Debiuty 1, Project Principal Investigator at NCU: Radtke Aleksandra, start date 05-03-2020, end date 30-06-2022, completed and implemented; 	
Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)	
Assistant supervisor: Radik Mametov, DSc Michalina Ehlert (implementation doctoral dissertation) Supervision (currently, four doctoral students) Assistant supervision (currently, one doctoral student)	
Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).	

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

- Collaboration with EMBA postgraduate students of the Faculty of Economic Sciences and Management of the Nicolaus Copernicus University in Toruń, focusing on theses concerning aspects of commercialisation of scientific research results: 2017, 2018, 2019
- Supervision of students from China (academic years: 2014/2015; 2015/2016; 2016/2017)
- Supervision of Bachelor's theses – 15
- Supervision of Engineering theses - 6
- Supervision of Master's theses – 20
- Preparation of classes, educational materials: Materials for the needs of contemporary custom-made implantology; Medical chemistry, S2
- President of the Board of the academic company (Nano-implant Sp. z o.o.)

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

1. Internships in companies:

o § Internship project "Internship as a scientist's success – 2nd edition", company: Witmar Sp. z o.o., Pędzowo, 01.10.2012-- 30.04.2013

o § Internship project "Internships and training – a path to commercialisation of knowledge", company: Marwit Sp. z o.o., Zła Wieś Wielka, 01.09.2013-- 28.02.2014

o § Internship project "STER – for R&D", company: Henkell&Co. VINPOL Polska Sp. z o.o., Toruń, 01.03-- 31.05.2014

o § Internship project "Internship as a scientist's success – 3rd edition", company: Marwit Sp. z o.o., Zła Wieś Wielka, 01.05.2014-- 31.10.2014

2. Completion of a 108-hour course in academic entrepreneurship for the academics: "Academic business – a key factor in the competitiveness of economy", organised in partnership by Faber Consulting Sp. z o.o., NCU and the Amicus Universitatis Nicolai Copernici Foundation with the substantive support of the LEWIATAN Polish Association of Private Employers; Toruń, March 2009 – September 2009

3. Participation in the training "BioBusiness School" organised by the Pomeranian Science and Technology Park and the company Pro-science.eu under the "Innovation Creator" programme; Gdynia, 31 January – 6 February, 2010

4. Participation in the project "CSR – a platform for knowledge transfer and creation of joint socially responsible undertakings" implemented by the Nicolaus Copernicus University in Toruń along with three enterprises from the Kuyavian-Pomeranian Voivodeship: Miejskie Przedsiębiorstwo Oczyszczania Toruń, Apator S.A. and Soda Ciech Inowrocław (training, internships, workshops), Toruń, October 2010 – June 2011

5. Participation in a specialist language course – English for Specific Purposes I/ English for Specific Purposes II, under the project entitled "Strengthening the teaching potential of the Nicolaus Copernicus University in Toruń in mathematics and natural sciences" which was co-funded by the European Union under the European Social Fund - Human Capital Operational Programme (Priority IV: Higher education and science, Measure 4.1: Strengthening and developing the teaching potential of universities and increasing the number of graduates of key fields of study for the knowledge-based economy, Sub-measure 4.1.1: Strengthening the teaching potential of universities) February 2011 – June 2012

6. Participation in workshops "Intellectual property management - the key to success in science and business relations" under the project coordinated by Eco-Invest Centre for Medical Technology Transfer, Toruń, October 2012

7. Active participation in the works of InLab NCU Toruń – development of a commercial offer of the Faculty of Chemistry, NCU in Toruń

8. Participation in trainings and workshops "Entrepreneurial Researcher" carried out by ERRD Office of Regional Policy and Development Ltd. under Priority IV - Higher education and science,

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

Measure 4.2 of the Human Capital Operational Programme - Development of qualifications of the R&D system staff and increasing the awareness of the role of science in economic development, December – April 2013, Warsaw

9. Co-investigator of the Research Voucher „Physicochemical and toxicological analysis of soda lime - environmentally harmful waste - in order to produce valuable material for medical and utility needs" carried out for the Railway Spa Hospital in Ciechocinek; October 2014 – February 2015

10. Active participation in the organisation of the Toruń Science and Art Festival (2007-2012)

11. Coordinator of the Faculty of Chemistry for the 11th Toruń Science and Art Festival 2011

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

- *Three postdoctoral research fellowships (under the NCU "Young Scientists' Fund" grant) – Laboratory of Inorganic Chemistry, Department of Chemistry, Faculty of Science, University of Helsinki, Finland – a research group of Professor Markku Leskelä that has been focusing on obtaining nanometric oxide and metal layers using the atomic layer deposition (ALD) method*
-- 29.08-- 25.09.2009

-- 19.09 – 9.10.2010

-- 3.07 – 16.07.2011

- *Cleanroom training (workshops aimed at getting familiarised with working conditions in cleanroom laboratory facilities), Micronova, Research Centre for Micro-- and Nanotechnology, Espoo, Finland, September/October 2010*

- *Fellowship at the Innovation and Technology Transfer Centre Università degli Studi di Milano and Fondazione Filarete -- Business Accelerator for the development of the biotechnology research (Milan, Italy) under the project "Intellectual property management – the key to success in science-business relations"*

-- 26.05.2013 – 31.05.2013

- *Three research fellowships under the Short Term Scientific Mission grant (COST NAMABIO and NEWGEN projects); Danish Technological Institute, Tribology Centre (Aarhus, Denmark) research group of Dr Lars Pleth Nielsen – photocatalytic research;*

-- 20.01.2013 – 02.02.2013

-- 06.10.2013 – 19.10.2013

-- 01.06.2014 – 14.06.2014

- *Research fellowship under the Short Term Scientific Mission grant (COST HERALD project); Laboratory of Inorganic Chemistry, Department of Chemistry, Faculty of Science, University of Helsinki, Finland – research group of Professor Markku Leskelä – enrichment of TiO₂ coatings with silver and hydroxyapatite;*

-- 21.06.2015 – 04.07.2015

- *Research fellowship under the Short Term Scientific Mission grant (COST BIONECA project); Università degli Studi di Ferrara, Dipartimento di Medicina Traslazionale e per la Romagna, research group of Professor Barbara Zavan; fellowship research topic -- Bioactivity and biointegration tests of biodegradable metallic biomaterials for cardiac purposes; 05/09/2021-- 11/09/2021*

Participation in European COST Actions projects:

- *MP1005 NAMABIO "From NAno to MAcro BIOMaterials – design, processing, characterization, modeling – and applications to stem cells regenerative orthopedic and dental medicine" (09.2012 – 04/2015); a member of the working group*

- *MP1301 NEWGEN "New Generation Biomimetic and Customized Implants for Bone Engineering" (10/2013 – 10/2017); a member of the working group*

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

- TD1305 IPROMEDAI *"Improved Protection of Medical Devices Against Infection"* (05/2014 - 05/2018); a member of the working group
- MP 1402 HERALD *"Hooking together European research in atomic layer deposition"* (12.2014 – 12.2018); a member of the working group
- CA 16122 BIONECA *"Biomaterials and advanced physical techniques for regenerative cardiology and neurology"* – a Member of the Management Committee on behalf of Poland; MC Member; (03.2017 – 03.2021)

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

Name and surname
Aleksandra SZYDŁOWSKA-CZERNIAK
Declared disciplines
<i>Chemical Sciences</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2011 – Doctor Habilitatus of Chemical Sciences in Chemistry, Analytical Chemistry and Food Chemistry
2000 – Doctor of Chemical Sciences in Analytical Chemistry
Academic titles (name, title conferral year, classification)
2020 – Professor of Exact and Natural Sciences
Courses taught at the Doctoral School
Antioxidants - progress in food, cosmetic and medical chemistry in the 21 st century - 30 hours Techniques for presenting results and disseminating scientific knowledge - 10 hours Supervisor of one doctoral student (Agnieszka Kowalik) – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p><i>In her research and scientific activity, Professor Aleksandra Szydłowska-Czerniak has been focusing on the analysis of antioxidant properties of food, mainly vegetable oils, in order to determine the impact of methodological, raw material, technological and storage factors on the quality of final products. Her scientific achievements to date cover 120 papers, including 85 in journals indexed in the Journal Citation Reports database, 15 monographic articles, 2 Polish patents and presentations (203) at international and domestic conferences. The total number of citations of Professor Szydłowska-Czerniak's works according to the Web of Science database is 1,607 (without self-citations = 1,444), h-index = 22, while according to the Scopus database, the number of citations is 1,744 (without self-citations = 1,565), h-index = 21. She is a co-editor of 3 monographs and a member of editorial committees of 5 international journals. She has completed 12 research projects funded by the Ministry of Science and Higher Education, the National Science Centre and the Rector of the Nicolaus Copernicus University, in 7 of which she was the Principal Investigator. She also was the coordinator of the China-Poland Intergovernmental S&T Cooperation Proposal project on the Polish side and as the Principal Investigator in the European project of Bunge Zrt., Budapest.</i></p> <p><i>She improved her research skills during research fellowships at Ghent University (Belgium), Eindhoven University of Technology (the Netherlands), Corvinus University of Budapest (Hungary), Bunge Europe Research and Development Center, Budapest (Hungary).</i></p> <p><i>Professor Aleksandra Szydłowska-Czerniak has been cooperating intensively with many research centres in Poland and abroad (including the Institute of Plant Breeding and Acclimatization (IHAR) in Poznań, the Poznań University of Life Sciences, the Institute of Animal Reproduction and Food Research of the Polish Academy of Sciences and the University of Warmia and Mazury in Olsztyn, the Warsaw University of Life Sciences (SGGW), the Corvinus University of Budapest, the University of Chemistry and Technology in Prague, the Max Rubner-Institut, Detmold, Germany, and the Hefei University of Technology, China). It should be stressed that the implementation of Professor Szydłowska-Czerniak's research interests is possible owing to close cooperation with the food industry in the Kuyavian-Pomeranian Voivodeship, including ZT "Kruszwica" S.A. in Kruszwica and the Kopernik Confectionery Factory in Toruń.</i></p> <p><i>She is a valued reviewer of articles (over 100) in prestigious international journals. She also reviewed applications of the National Science Centre. In 2016, she reviewed the FONDECYT project and the CONICYT Programme of the Ministry of Education of the Government of Chile. She reviewed several doctoral theses, postdoctoral research achievements and an application for the title of professor.</i></p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

She is an external expert of the National Agency for Academic Exchange and an expert of the Science Fund of the Republic of Serbia.

In 2016-2018, she was a member of the Food Analytics Team of the Committee of Analytical Chemistry of the Polish Academy of Sciences, is a member of the Polish Chemical Society, the Polish Society of Food Technologists, the Section of Chemistry and Technology of Fats. Since 2019, she has been supporting NCU as a Research University within the Emerging Field of Soil Science, Microbiology, Genetics in Agriculture and Food Quality, of which she is a member.

Since 2012, she has been the Head of the scientific team of Analytical Chemistry and Food, and since 2023 she has been the Head of the Department of Analytical Chemistry and Applied Spectroscopy. She has supervised five doctoral students and is the supervisor of another doctoral dissertation.

She actively participates in science-promoting events, giving popular science lectures as part of the Toruń Science and Art Festivals and the Promotion Days of the Faculty of Chemistry at NCU.

In 2013, Professor Aleksandra Szydłowska-Czerniak developed a new field of study at the Faculty of Chemistry at NCU called Chemistry and Food Technology, and is the co-author of two academic textbooks.

For her scientific, teaching and organisational activities, Professor Aleksandra Szydłowska-Czerniak has been awarded 16 times by the NCU's Rector.

Key 10 publications within the last 10 years:

1. **Szydłowska-Czerniak A.**, Moździerz A., Kowaluk A., Strzelec M., Topka P., Sawicki T., Tańska M. Optimization of eco-friendly extraction of bioactive compounds from *Mentha spicata* L. using ultrasound-assisted extraction combined with choline chloride-based deep eutectic solvents. *Plant Foods for Human Nutrition*, 80 (2025) 31.
2. Rabiej-Kozioł D., **Szydłowska-Czerniak A.** Antioxidant potential evaluation at various stages of black cumin oil production. *Foods* 13 (2024) 3518.
3. Turkan S., Kulasek M., Zienkiewicz A., Mierek-Adamska A., Skrzypek E., Warchoń M., **Szydłowska-Czerniak A.**, Bartoli J., Field B., Dąbrowska G.B. Guanosine tetraphosphate (ppGpp) is a new player in *Brassica napus* L. seed development. *Food Chemistry* 436 (2024) 137648.
4. Włodarczyk K Czaplicki S., Tańska M., **Szydłowska-Czerniak A.** Microwave pre-treatment as a promising strategy to develop functional milk alternatives obtained from oil industry by-products. *Innovative Food Science and Emerging Technologies* 88 (2023) 103443.
5. Jakubowska E., Gierszewska M., **Szydłowska-Czerniak A.**, Nowaczyk J., Olewnik-Kruszkowska E. Development and characterization of active packaging films based on chitosan, plasticizer, and quercetin for repassed oil storage. *Food Chemistry* 399 (2023) 133934.
6. Turkan S., Mierek-Adamska A., Głowacka K., **Szydłowska-Czerniak A.**, Rewers M., Jędrzejczyk I., Dąbrowska G.B. Localization and expression of CRSH transcript, level of calcium ions, and cell cycle activity during *Brassica napus* L. seed development. *Industrial Crops & Products* 195 (2023) 116439.
7. Tymczewska A., **Szydłowska-Czerniak A.**, Nowaczyk J. Bioactive packaging based on gelatin incorporated with rapeseed meal for prolonging shelf life of rapeseed. *Food Packaging and Shelf Life* 29 (2021) 100728.
8. **Szydłowska-Czerniak A.**, Tymczewska A., Momot M., Włodarczyk K. Optimization of the microwave treatment of linseed for cold-pressing linseed oil - Changes in its chemical and sensory qualities. *LWT - Food Science and Technology*. 126 (2020) 109317
9. **Szydłowska-Czerniak A.**, Rabiej D., Krzemiński M. Synthesis of novel octyl sinapate to enhance antioxidant capacity of rapeseed-linseed oil mixture. *Journal of the Science of Food and Agriculture* 98 (2018) 1625–1631.
10. **Szydłowska-Czerniak A.**, Łaszewska A. Optimization of a soft degumming process of crude rapeseed oil – Changes in its antioxidant capacity. *Food and Bioproducts Processing*. 105 (2017) 26–35.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Chemical Sciences, at present (October 2024):

Agnieszka Kowaluk/ MSc (1st year, AST) – supervisor – implementation doctoral dissertation

Supervisor of doctoral students who were awarded their doctoral degrees:

5) dr inż. Monika Momot-Ruppert, Faculty of Chemistry, NCU, Chemical Sciences, implementation doctoral dissertation

Analiza sensoryczna i fizykochemiczna jako potencjalne narzędzia badania jakości rafinowanych i tłoczonych na zimno olejów roślinnych [Sensory and physicochemical analyses as potential tools for assessing the quality of refined and cold-pressed oils],

Defence date: 06.03.2024

(4) dr inż. Szymon Poliński, Faculty of Chemistry, NCU, Chemical Sciences, implementation doctoral dissertation

Innowacyjne wyroby cukiernicze jako element zróżnicowanej i zbilansowanej diety przyczyniający się do walki z chorobami cywilizacyjnymi [Innovative confectionery as an element of a varied and balanced diet contributing to the fight against lifestyle diseases]

Defence date: 06.03.2024

(3) dr inż. Dobrochna Rabiej, Faculty of Chemistry, NCU, Chemical Sciences

Fenolipidy jako nowe potencjalne składniki olejów roślinnych [Phenolipids as new components of vegetable oils]

Defence date: 04.11.2020

(2) dr Anna Łaszewska, Faculty of Chemistry, NCU, Chemical Sciences

Wpływ modyfikacji procesu odszlamowania na aktywność przeciwutleniającą oleju rzepakowego [Effect of modification of degumming process on antioxidant capacity of rapeseed oil]

Defence date: 20.06.2018

(1) dr Agnieszka Tułodziecka, Faculty of Chemistry, NCU, Chemical Sciences, DOCTORAL DISSERTATION CUM LAUDE

Opracowanie metod analitycznych do oceny aktywności przeciwutleniającej nasion oleistych z rodzaju Brassica oraz ich produktów [Analytical methods for determination of antioxidant capacity of Brassica oilseeds and their products]

Defence date: 16.11.2016

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Professor Aleksandra Szydłowska-Czerniak has over 30 years of teaching experience, and obtained very good results in student surveys of academic teachers' assessment. She conducts lectures, seminars and lab classes, including the following subjects:

Fundamentals of analytical chemistry, Fundamentals of fat technology, Fundamentals of sugar and confectionery technology, Contemporary trends in food processing, Photochemistry and free radicals, Antioxidants in raw materials and cosmetic preparations, and diploma seminars. For many years she has been the Head of the Fundamentals of analytical chemistry laboratory; she is the head

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

of the Fundamentals of fat technology laboratory. She has prepared a number of educational materials for laboratory classes and e-learning materials from the lecture on the fundamentals of analytical chemistry lecture. She is the coordinator of engineering studies in Chemistry and food technology at the Faculty of Chemistry of the Nicolaus Copernicus University. She was also a member of the working group for the development of a study programme in Food Chemistry in English resulting to a double diploma in cooperation with Al-Farabi Kazakh National University in Almaty (Kazakhstan).

She supervised students under the "Studies with Mentor" programme, and students from France, Spain, the Basque Country, Georgia, Tunisia, and Türkiye implementing their research projects under the Erasmus programme and international cooperation. She was the supervisor of 84 diploma theses prepared at the Faculty of Chemistry of the Nicolaus Copernicus University. In 2023, she actively participated in preparing an application for project funding under the European Funds for Social Development programme.

For her teaching and educational activities, she was awarded a team award by the Rector of the Nicolaus Copernicus University in Toruń.

Awards received by students supervised:

- Alicja Tymczewska – laureate cum laude of the 10th edition of the "Golden Medal of Chemistry" competition from DuPont
- Alicja Tymczewska - finalist of the 10th edition of the "Golden Medal of Chemistry" competition
- Alicja Tymczewska - best student of the Faculty of Chemistry
- Alicja Tymczewska - laureate of the competition of the Toruń Branch of the Polish Chemical Society for the best engineering diploma thesis
- Alicja Tymczewska - scientific scholarship of the Mayor of Toruń for 2019/20 and 2020/21 academic years
- Katarzyna Włodarczyk - scientific scholarship of the Mayor of Toruń for 2020/21 academic year
- Alicja Tymczewska - best graduate of the Faculty of Chemistry and Nicolaus Copernicus University in Toruń
- Alicja Tymczewska - laureate of the first edition of the "Pearls of Science" Ministry's competition

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- Member of the Disciplinary Appeal Committee for Doctoral Students for the 2017-2021 term (training on 26.01.2017 - obtaining a certificate)
- Participation in the training "Author Profile - administration, profile functionalities and adding publications". February 5, 2021. Completed training with a certificate.
- Participation in the training "IC Tour: Ion chromatography - theoretically and practically", Toruń. Obtaining a certificate.
- Participation in scientific onsite and online conferences in food technology and analysis and analytical chemistry.
- Organisation and participation in the International Conference on Research and Technology "North European Olive Oil - Rapeseed Oil", in Toruń in 2008-2011.
- Co-organiser of the Virtual International Conference "Plant productivity and food safety: Soil science, Microbiology, Agricultural Genetics and Food quality" under the Emerging Field

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Fellowships, visits and international cooperation:

- Ghent University, Faculty of Agricultural and Applied Biological Sciences, Ghent, Belgium – participation in the training Volatile Organic Compounds in the Environment

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF CHEMICAL SCIENCES

- *Eindhoven University of Technology, Eindhoven, Netherlands – research fellowship and teaching stay*
- *Bunge Europe Research and Development Center, Kvassay J. ut. 1., Budapest H-1095, Hungary –research fellowship*
- *Corvinus University of Budapest, Faculty of Food Science, Department of Food Engineering, H-1118 Budapest, Menesi ut 44, Hungary –research fellowship*
- *Bunge Europe Research and Development Center, Kvassay J. ut. 1., Budapest H-1095, Hungary*

International cooperation:

- *Faculty of Food Science, Department of Food Engineering and Department of Applied Chemistry, Corvinus University of Budapest*
- *Department of Dairy, Fat and Cosmetics, University of Chemistry and Technology Prague*
- *Max Rubner-Institut, Federal Research Institute of Nutrition and Food, Department for Safety and Quality of Cereals, Working Group of Lipid Research, Detmold, Germany*
- *Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes)—UMR 6226, F-35000 Rennes, France*
- *Faculty of Biotechnology and Food Engineering, Hefei University of Technology, China*

Active participation in one of the working groups under the COST CA18101 action "Sourdough biotechnology network towards novel, healthier and sustainable food and bioprocesses"

Participation in international conferences: over 80

Member of the Editorial Boards of Journals:

- 1) Advances in Food Science and Engineering;*
- 2) Analytical and Bioanalytical Techniques*
- 3) Gastronomy MDPI*

Appointment as a member of the Topical Advisory Panel Member of Foods of the Foods journal

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

Name and surname
Marcin GOŁYŃSKI
Declared disciplines
<i>Veterinary Science</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2018 – Doctor Habilitatus of Veterinary Science 2007 – Doctor of Veterinary Science
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Course code: 7404-WET-PPK Lectures: "Scientific veterinary approach to clinical practice, pharmaceutical industry and animal nutrition", 30hours
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>In 2002, he received the title of Veterinarian at the Agricultural University of Lublin. In 2007, he was awarded the degree of Doctor of Veterinary Science from the Faculty of Veterinary Medicine of the same university on the basis of the dissertation entitled "The impact of immunostimulation and zinc supplementation on the course of enzootic trichophytosis in cattle". In 2018, he obtained a postdoctoral degree of Doctor Habilitatus in Veterinary Sciences at the same faculty on the basis of postdoctoral research achievements entitled "Systemic effects of experimental and natural hypothyroidism in animals". In 2019, he was employed at the Nicolaus Copernicus University in Toruń. Since the beginning of his professional career, he has been a practicing veterinarian in the fields of dermatology, endocrinology and internal diseases of animals. A creator of dietary supplements and care products for animals.</p> <p>Publications:</p> <ol style="list-style-type: none"> 1 Liput K., Lepczyński A., Poławska E., Ogłuszka M., Starzyński R., Urbański P., Nawrocka A., Pareek C., Gołyński M., Woźniakowski G.: Murine hepatic proteome adaptation to high-fat diets with different contents of saturated fatty acids and linoleic acid : α-linolenic acid polyunsaturated fatty acid ratios, Journal of Veterinary Research, National Veterinary Research Institute, 2024, s. 1-15, DOI:10.2478/jvetres-2024-0041 2 Tomaszewska E., Dobrowolski P., Muszyński S., Donaldson J., Gołyński M., Zwolska J., Szadkowski M., Osęka M., Mielnik-Błaszczak M., Balicki I.: Longitudinal analysis of bone metabolic markers and bone mechanical properties in STZ-induced diabetic rats, Journal of Clinical Medicine, MDPI, vol. 13, nr 18, 2024, paper No: 5595, pp. 1-18, DOI:10.3390/jcm13185595 3 Gołyński M., Metyk M., Ciszewska J., Szczepanik M., Fitch G., Bęczkowski P.: Homocysteine - potential novel diagnostic indicator of health and disease in horses, Animals, Multidisciplinary Digital Publishing Institute (MDPI), vol. 13, No 8, 2023, paper No: 1311, pp. 1-12, DOI:10.3390/ani13081311

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

<ol style="list-style-type: none"> 4 Szczepanik M., Gołyński M., Wilkołek P., Kalisz G.: Evaluation of a hydrolysed salmon and pea hypoallergenic diet application in dogs and cats with cutaneous adverse food reaction, Polish Journal of Veterinary Sciences, vol. 25, No 1, 2022, pp. 67-73, DOI:10.24425/pjvs.2022.140842 5 Jaworska-Adamu J., Krawczyk A., Rycerz K., Gołyński M.: Reactivity of astrocytes in hippocampal CA1 area in rats after administration of habanero peppers, Folia Histochemica et Cytobiologica, vol. 59, nr 1, 2021, s. 1-7, DOI:10.5603/FHC.a2021.0001 6 Krumrych W., Danek J., Markiewicz H., Gołyński M.: Analysis of peripheral blood chemiluminescence in horses, Polish Journal of Veterinary Sciences, vol. 24, No 4, 2021, pp. 537-546, DOI:10.24425/pjvs.2021.139978 7 Wilkołek P., Szczepanik M., Rodzik B., Sitkowski W., Pluta M., Taszkun I., Gołyński M.: A comparison of multiple allergen simultaneous tests (MASTs) using allergen-specific IgE concentration and intradermal skin tests in atopic horses with pollen allergy, Journal of Equine Veterinary Science, vol. 90, 2020, pp. 1-24, DOI:10.1016/j.jevs.2020.102992 8 Wilkołek P., Szczepanik M., Sitkowski W., Rodzik B., Pluta M., Taszkun I., Gołyński M.: Evaluation of multiple allergen simultaneous (sIgE) testing compared to intradermal testing in the etiological diagnosis of atopic dermatitis in horses, Journal of Veterinary Science, vol. 20, No 6, 2019, pp. 1-9, DOI:10.4142/jvs.2019.20.e60 	<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<p>Supervisor of doctoral dissertation:</p> <p>Michał Metyk. The effect of training on homocysteine concentration and prooxidant-antioxidant balance in jumper horses. University of Life Sciences in Lublin. Faculty of Veterinary Medicine, 2022.</p>	<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>Professor Marcin Gołyński has 22 years of teaching experience in Veterinary Medicine. He has conducted classes and lectures in internal diseases of animals, endocrinology and dermatology. He was the founder of the Endocrinology Section in the Polish Association of Small Animal Veterinarians and the educational project for veterinarians called the Veterinary School of Endocrinology. He is an official expert in Animal Reproduction and Horse Diseases. He permanently cooperates with the Medical Tribune and Elamed publishing houses; he is a member of the scientific board of two journals for veterinarians, i.e., Weterynaria w Praktyce and Magazyn Weterynaryjny.</p>	

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

- *graduate of postgraduate studies in higher education management at the Nicolaus Copernicus University in Toruń (2024)*

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

He completed science fellowships abroad at veterinary faculties in Košice (Slovakia), Hannover (Germany) and Hong Kong (China).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

Name and surname
Paweł KORDOWITZKI
Declared disciplines
<i>Veterinary Science</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2013 – Veterinary Surgeon - Freie Universitaet Berlin 2016 – Doctor of Veterinary Science, Freie Universitaet Berlin Specialisation: 2019, European specialisation in animal reproduction and reproductive biotechnology (Dipl. ECAR), European College for Animal Reproduction 2024: Doctor Habilitatus of Veterinary Science, Nicolaus Copernicus University in Toruń
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
Assisted Reproductive Technologies (2023/2024 academic year)
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Scientometrics data:</p> <ol style="list-style-type: none"> 1. Total Impact Factor: 263,298 2. Total score of MNiSW [Ministry of Science and Higher Education]: 4,780 3. Publications in JCR: 38 4. Citations: 544 5. h-index =11 (Scopus), h=14 (Google Scholar) <p>The list of scientific achievements that are a significant contribution to the development of Veterinary Science in the discipline of Veterinary Medicine (selected achievements and publications (max. 10) in the last 6 years):</p> <ol style="list-style-type: none"> 1. Haghani A, ..., Kordowitzki P, ..., Horvath S (2023). DNA Methylation Networks Underlying Mammalian Traits. Science, doi: 10.1038/s43587-023-00462-6., IF: 63.832 2. Lu A, ..., Kordowitzki P, ..., Horvath S (2023). DNA Universal DNA methylation age across mammalian tissues. Nature Aging, doi: 10.14336/AD.2023.0716., IF: 16.6. 3. Kordowitzki P, Graczyk, Haghani A, Klutstein M (2023). Oocyte aging: A multifactorial phenomenon in a unique cell. Aging and Disease. DOI: 10.14336/AD.2023.0527, IF: 9.968 4. Derevyanko A, Skowronska A, Skowronski MT, Kordowitzki P (2022). The Interplay between Telomeres, Mitochondria, and Chronic Stress Exposure in the Aging Egg. Cells. 2022 Aug 22;11(16):2612. doi: 10.3390/cells11162612, IF:7.666 5. Wasielak-Politowska M, Kordowitzki P (2022). Chromosome Segregation in the Oocyte: What Goes Wrong during Aging. Int J Mol Sci. 2022 Mar 7;23(5):2880. doi: 10.3390/ijms23052880, IF:6.2 6. Szostek-Mioduchowska A, Kordowitzki P. Shedding Light on the Possible Link between ADAMTS13 and Vaccine—Induced Thrombotic Thrombocytopenia. Cells. 2021; 10(10):2785. https://doi.org/10.3390/cells10102785, IF:7.666 7. Kordowitzki P, Merle R, Hass P-K, Plendl J, Rieger J, Kaessmeyer S. Influence of Age and Breed on Bovine Ovarian Capillary Blood Supply, Ovarian Mitochondria and Telomere Length. Cells. 2021; 10(10):2661. https://doi.org/10.3390/cells10102661, IF:7.666 8. van der Reest J, Nardini Cecchino G, Haigis MC, Kordowitzki P. (2021). Mitochondria: Their relevance during oocyte ageing. Ageing Res Rev. 2021 Jun 4;70:101378. DOI: 10.1016/j.arr.2021.101378, IF:11.3

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9. Kordowitzki P, Haghani A, Zoller JA, Li CZ, Raj K, Spangler ML, Horvath S. (2021). Epigenetic clock and methylation study of oocytes from a bovine model of reproductive aging. *Aging Cell*. 2021 Apr 2:e13349. DOI: 10.1111/ace1.13349. **Aging Cell**, IF: 11.003
10. Kordowitzki, P., López de Silanes, I., Guío-Carrión, A., and Blasco, M. (2020). Dynamics of telomeric repeat-containing RNA expression in early embryonic cleavage stages with regards to maternal age. In: **Aging** (Albany-NY), DOI: 10.18632/aging.103922, IF: 5.6

Awards and accolades:

- Scientific Award of the Marshal of the Kujawsko-Pomorskie Voivodeship (1. Place), 2024
- Individual Award of the NCU Rector (1. Place) for research achievements, 2024
- Individual award of the NCU Rector for outstanding scientific achievements 2021
- 9 Awards of the NCU Rector for highly indexed publications
- Aging Journal Cover Picture Selection for the Summer Issue (Volume 12/2020: <https://www.aging-us.com/issue/v12i16>)
- 3rd Place in the Competition *Person of the Year 2019* in the section *Science* of "Polska Times" magazine
- "Seal of Excellence" Certificate granted by the European Commission, for high-quality project proposal Marie Skłodowska Curie Actions, 2019
- 1st Place in Student Research competition of the International Embryo Transfer Society, Austin/Texas, 2017
- 2nd Place in Student Scientist Award of the European Association for Embryo Transfer, Barcelona/Spain, 2016
- Young scientist travel award of the World Association for Buiatrics, Dublin/Ireland, 2016

Research projects:

Principal Investigator in the grant awarded by the National Centre for Research and Development (NCBiR), POIR.04.01.04-00-0030/20: "Development of immunological veterinary products for the prevention and treatment of dairy cow mastitis, alternative to conventional chemotherapeutic agents and antibiotics".

Investigator in the grant awarded by the National Science Center (NCN) OPUS 2018/29/B/NZ9/00391: "Biological study and mathematical modeling to describe and predict new processes controlling the development, function and atresia of ovarian follicles in cows".

2023: Debut Grant of the "Excellence Initiative-Research University", title: Investigations on the relevance of endometriosis on ovarian cancer in women. (PLN 50,000.00)

2022: Fellowship of Polish Education and Science Minister for young outstanding scientists (PLN 194,040.00)

2018-2021: Research Grants of the Institute of Animal Reproduction and Food Research of the Polish Academy of Sciences: Effect of cow aging on the efficiency of in vitro embryo production: a preliminary studies, 2018-2019 (EUR 17,500)

Can telomeres, TERRA, and the epigenetic clock condition aging of oocytes: finding new markers of female oocyte quality. 2020-2021 (EUR 115,000)

2018: Postdoc fellowship of the KNOW Consortium (EUR 17,500)

2016: Grant of Hannover Graduate School for Veterinary Pathobiology, Neuroinfectiology and Translational Medicine, "Financial support to finish PhD thesis" (EUR 4,000)

2016: Carl-Duisberg International Fellowship of Bayer Foundation (EUR 6,000)

2016: Grant of the Thünen Institut „Untersuchungen zu dem Einfluss der Gene H1FOO und SIRT1 auf die Entwicklungskompetenz in vitro gereifter präpuberaler und adulter Boviner Oozyten" (EUR 10,000)

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

<p>2015: Grant of the Jutta and Georg Bruns Foundation, „Untersuchungen zu dem Einfluss der Gene H1FOO und SIRT1 auf die Entwicklungskompetenz in vitro gereifter präpuberaler und adulter boviner Oozyten" (EUR 12,000)</p> <p>2015: Travel Grant of the Akademie für Tiergesundheit e.V. (EUR 500)</p> <p>2015: Travel Grant of European Association for Embryo Transfer (EUR 500)</p>
<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<ol style="list-style-type: none"> 1. Supervision of veterinarians as a Supervisor during residency under the ECAR European specialisation 2. Supervision of the "RES RUMINATIAE" Buiatric Student Research Group 3. Supervision of doctoral students 4. Joint publications with students: 6 publications 5. Activities abroad: Visiting Assistant Professor at Harvard Medical School 6. 2023: completed the "Advanced Teaching Skills" course at Harvard Medical School in order to improve the skills of teaching veterinary students and provide them with the highest standards of learning 7. 2023: As part of the SPINAKE-Intensive International Education Programmes conducted lectures and practical classes in English for foreign students. 8. 2023: Lecture in English for students of the International Veterinary Students Association (IVSA) from the Netherlands entitled "Assisted reproductive technologies in small and farm animals", Olsztyn, 9. 2022: Lecture in English for students of the International Veterinary Students Association (IVSA) from Turkey entitled "Assisted reproductive technologies in farm animals", Toruń 10. Conducted classes at TiHo in Hanover and at JLU in Giessen. 11. Supervision of the "Pearls of Science" and "Grants4NCUstudents" grants.
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>Professional experience as an academic teacher: since 2013 I have been giving lectures, seminars and classes in animal reproduction and reproductive biotechnology in the field of study of Veterinary Medicine at Tierärztliche Hochschule Hannover, Justus-Liebig-Universität, Giessen, and at the Nicolaus Copernicus University in Toruń. Since 2019, I have been a member of the European Board for Veterinary Specialisation (EBVS) and a member/Diplomate of the European College for Animal Reproduction (ECAR). The European Board of Veterinary Specialisation/EBVS is an organisation associating veterinary specialisations in Europe. EBVS includes 27 specialist veterinary colleges, covering over 38 different specialisations, with over 4,000 veterinarians acting as European Veterinary Specialists, of which I am a member and as the first and only one in Poland I represent European animal reproduction specialists (an ECAR Diplomate). Since 2022, I have been the supervisor of two resident veterinarians of the European specialisation in animal reproduction (European College of Animal Reproduction/ECAR), Dr Ana Amaral and Dr Natalia Słowinska.</p>

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I obtained my gained professional clinical experience during my residency as part of the specialisation in the following centres:

1. Tierklinik für Reproduktionsmedizin und Neugeborenenkunde, Giessen, Germany
2. Friedrich-Loeffler-Institute, Department Biotechnologie der Reproduktion, Mariensee, Germany

I expanded my experience in reproductive biotechnology during my residency; these cases are particularly useful in conducting classes in animal reproduction, animal physiology, histology and embryology.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Visiting Professor na Harvard Medical School

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)

The scientific career path of Professor Paweł Kordowitzki, Dipl. ECAR has led through many leading scientific and research centres in the world. After obtaining the title of veterinarian at Freie Universitaet Berlin (Germany), he began a five-year European specialisation in animal reproduction and reproductive biotechnology as a research assistant and doctoral student at the Department of Gynecology, Obstetrics and Andrology of Animals at Justus Liebig Universitaet in Giessen (Germany). After completing a mandatory one-year internship according to the regulations of the European College for Animal Reproduction (ECAR), between 2014 and 2019 he was an ECAR Resident, e.g., at the School of Medical Sciences at the University of New South Wales (UNSW) in Sydney (Australia), and at the National Cancer Research Centre (CNIO) in Madrid (Spain). In 2016 he defended his doctorate magna cum laude at the Faculty of Veterinary Medicine/ Freie Universitaet Berlin (Germany).

During his internship in the group of Professor Maria Blasco from CNIO, Professor Kordowitzki, Dipl. ECAR managed to describe for the first time the expression of telomeric repeats RNA (TERRA) in early embryonic development in a bovine and mouse model, which was followed by the second publication in history describing the effect of rapamycin on the length of telomeres in bovine egg cells. During his work at CNIO in Madrid, Professor Kordowitzki met Professor Elizabeth Blackburn (<https://www.vet.umk.pl/?id=19011>), who received the Nobel Prize in 2009 for the discovery of telomeres and who inspired Professor Kordowitzki, Dipl. ECAR to conduct further research on telomeres in oocytes.

As a Carl-Duisberg Fellowship holder, he worked in the group of Dr Lindsay Wu from the School of Medical Sciences (UNSW) in collaboration with Professor David Sinclair from Harvard Medical School (USA) under the project "Female reproductive health preservation by nicotinamide adenine dinucleotide (NAD+) and Sirtuin2 (SIRT2)".

Owing to the work of Professor Kordowitzki as a member of the "DNA-Methylation" consortium, headed by Professor Steve Horvath, a German-American researcher of the aging process, geneticist and biostatistician at the University of California (UCLA) in Los Angeles (USA) and at Altos Labs in Cambridge (UK), papers were published in renowned journals such as *Science* and *Nature Aging*. The outstanding achievement in Professor Kordowitzki's professional career is the title of "Diplomate of the European College for Animal Reproduction" (Dipl. ECAR) at the University of Liege (Belgium).

It is worth emphasising that to date Professor Kordowitzki is the first and only scholar in Poland to pass the two-day final exam and receive this prestigious title from ECAR, which additionally highlights his above-average and internationally recognised qualifications. The title of European

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

specialist awarded by the colleges is a qualification considered to be the highest level of competence possible to obtain in the discipline of Veterinary Science in Europe. Moreover, this title was particularly important for the development of my career, because after obtaining it, I was offered the position of Visiting Professor (<https://www.vet.umk.pl/?id=35250>) at Harvard Medical School in Boston (USA).

At present, Professor Paweł Kordowitzki, Dipl.ECAR, actively cooperates with Professor Jalid Sehouli and Professor Sylvia Mechsner from the Charité Medical University in Berlin to investigate and explain the correlation between endometriosis and ovarian cancer; with Professor Vadim Gladyshev from Harvard Medical School, and with Professor Melina Schuh (Max-Planck-Institute, Goettingen/Germany). Under research cooperation with Dr d'Adda di Fagagna (The FIRC Institute of Molecular Oncology, Milano/Italy), he was invited to edit the section on the reproductive system in the review paper entitled "Telomere dysfunction in ageing and age-related diseases.", published in *Nature Cell Biology*, which is mentioned in *Acknowledgements*. For the high-scored project submitted to the Marie Skłodowska-Curie Actions Panel together with the Centro Nacional de Investigaciones Oncológicas (Madrid/Spain), Professor Kordowitzki, Dipl.ECAR, received the "Seal of Excellence" of the European Commission.

In addition, in 2022 he received a scholarship from the Minister of Science and Higher Education for Outstanding Young Scientists. An outstanding achievement and recognition of his scientific achievements work was the invitation of the Pontifical Academy for Life to a conference in the Vatican entitled "1st International Conference Ethics of Engineering Life" in 2022, to present the results of research on the egg cell (<https://www.youtube.com/watch?v=t6lbU5ZpCKQ>), and a meeting with Pope Francis at the Audience with the Pope (<https://www.biol.umk.pl/wiadomosci/?id=27338>).

On 12 June 2024, he received the Award of the Marshal of the Kujawsko-Pomorskie Voivodeship for scientific achievements (<https://kujawsko-pomorskie.pl/aktualnosci/nagrody-marszalka-2024/>), and on 1 July 2024, the Level 1 Individual Award of the Rector of the Nicolaus Copernicus University (UMK), Professor Andrzej Sokala in Toruń, for scientific achievements (<https://portal.umk.pl/pl/article/nagrody-rektora-dla-kadry-naukowej-2>).

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

Name and surname
Małgorzata OLEJNIK
Declared disciplines
<i>Veterinary Science</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2016 – Doctor Habilitatus of Veterinary Science, the National Veterinary Research Institute – State Research Institute
2009 – Doctor of Veterinary Science, the National Veterinary Research Institute – State Research Institute
Academic titles (name, title conferral year, classification)
Courses taught at the Doctoral School
<ul style="list-style-type: none"> – Supervisor mentoring – Chromatographic methods in veterinary science
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Professor Małgorzata Olejnik graduated from Pharmacy in 2005. She worked at the National Veterinary Institute – State Research Institute in Puławy, where she got her doctoral and postdoctoral degrees. Since 2020, she has been employed at the Institute of Veterinary Medicine, Nicolaus Copernicus University. She focuses on veterinary pharmacology and toxicology, and particularly on the impact of antimicrobial and antiparasitic drugs used in veterinary medicine on animal health, the environment and public health. She is the Principal Investigator in three projects funded by the National Science Centre (OPUS 21: Threats associated with contamination of feed with antibiotics, SONATA BIS 10: Mechanism of salinomycin toxicity - causes of differences in species sensitivity of chickens and turkeys, SONATA 4: Studies on the impact of salinomycin metabolism on its toxicity) and participated in the implementation of several other projects. Since 2023, she has been the leader of the team "One Health - antimicrobial stewardship in human and veterinary medicine" selected in the EI-RU Emerging Fields' competition. She received two team awards of the Minister of Agriculture and Rural Development for achievements in the implementation of progress in agriculture, rural development and agricultural markets and fisheries.</p> <p>Scientific achievements (WoS): 45 full-text publications, h-index=14.</p> <p>Key publications in recent years:</p> <ol style="list-style-type: none"> 1. Lidia Radko, Małgorzata Olejnik: Cytotoxicity of anticancer candidate salinomycin and identification of its metabolites in rat cell cultures. <i>Toxicology in Vitro</i> 2018, 52, 314-320. 2. Konrad Pietruk, Małgorzata Olejnik, Marta Piątkowska: Electrochemical reduction of azo-dyes - mimicking their biotransformation to more toxic products. <i>Journal of Veterinary Research</i> 2019, 63, 433-438. 3. Lidia Radko, Małgorzata Olejnik, Andrzej Posyniak: Primary human hepatocytes, but not HepG2 or Balb/c 3T3 cells, efficiently metabolize salinomycin and are resistant to its cytotoxicity. <i>Molecules</i> 2020, 25, 1174. 4. Konrad Pietruk, Małgorzata Olejnik, Piotr Jedziniak: Risk of residues of toltrazuril sulfone in eggs after oral administration – could setting maximum residue limit be helpful? <i>Food Chemistry</i> 2021, 360, 130054. 5. Marta Pietruk, Piotr Jedziniak, Małgorzata Olejnik: LC-MS/MS determination of 21 non-steroidal anti-inflammatory drugs residues in animal milk and muscles. <i>Molecules</i> 2021, 26, 5892. 6. Marta Giergiel, Małgorzata Olejnik, Artur Jabłoński, Andrzej Posyniak: The markers of acute stress in swine oral fluid. <i>Journal of Veterinary Research</i> 2021, 65, 487-495.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

<p>7. Ilksen Berfin Ekinci, Agnieszka Chłódowska, Małgorzata Olejnik: Ionophore Toxicity in Animals: A Review of Clinical and Molecular Aspects. International Journal of Molecular Sciences 2023, 24,1696.</p> <p>8. Tina Møller Sørensen, Karolina Scahill, Jorge Espinel Ruperez, Małgorzata Olejnik, Faye Swinbourne, Denis Verwilghen, Mirja Christine Nolff, Stephen Baines, Cátia Marques, Alexandra Vilén, Elsa Leclerc Duarte, Margarida Correia Dias, Suzanne Devulf, Agnieszka Wichtowska, Alejandra Carranza Valencia, Ludovic Pelligand, Els Broens, Pierre-Louis Toutain, Mentor Alishani, Marnie Brennan, John Scott Weese, Lisbeth Rem Jessen, Fergus Allerton: Antimicrobial prophylaxis in companion animal surgery: a scoping review for European Network for Optimization of Antimicrobial Therapy (ENOVAT) guidelines. The Veterinary Journal 2024, 304, 106101.</p> <p>9. Agnieszka Chłódowska, Konrad Pietruk, Edyta Protasiuk, Małgorzata Olejnik: Risk assessment of residues of coccidiostats in food 14 years after the introduction of maximum levels. Food Control 2024, 164, 110557.</p> <p>10. Ewelina Iwan, Anna Grenda, Arkadiusz Bomba, Katarzyna Bielińska, Dariusz Wasyl, Robert Kieszko, Anna Rolska-Kopińska, Izabela Chmielewska, Paweł Krawczyk, Kamila Rybczyńska-Tkaczyk, Małgorzata Olejnik, Janusz Milanowski: Gut resistome of NSCLC patients treated with immunotherapy. Frontiers in Genetics 2024, 15, 1378900.</p>
<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<p>Ongoing supervision:</p> <ul style="list-style-type: none"> – Ilksen Berfin Ekinci, MSc (3rd year, AST) – Agnieszka Chłódowska, VS (3rd year, AST) – Magdalena Sobuś, VS (2nd year AST) <p>Assistant supervision:</p> <p>Marta Piątkowska, DVM (2015)</p>
<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>Conducting classes in English:</p> <ul style="list-style-type: none"> - Chromatographic methods in veterinary science (AST, discipline – Veterinary Science) - I know what I eat - food toxicology and chemistry (all-university classes) - The Nobel Prizes explained – the stories of breakthroughs in life sciences <p>She is the leader of the team developing a new study programme and curriculum for Veterinary Medicine. She participated in the works of the team developing the objectives for the new field of study of Veterinary Analytics under the FERS Integral Support Programme for Key Competencies for Economy 4.0 of students and the academic staff of the Nicolaus Copernicus University in Toruń.</p> <p>Since 2024, she has been the Deputy Head of the Institute of Veterinary Medicine at the Nicolaus Copernicus University.</p>
<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p>
<p>2024-2025 – YUFE Research Leadership Programme</p> <p>2021-2022 – postgraduate studies in “Antibiotics and Antimicrobial Drug Management”, Jagiellonian University/ Medical University of Warsaw</p>

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2012-2013 – postgraduate studies in “Research and Development Project Manager”, WSB University in Poznań
2005-2006 – postgraduate studies in “Environmental Protection Analytics”, Nicolaus Copernicus University
International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)
COST Action CA18217 – European Network for Optimization of Veterinary Antimicrobial Treatment; member of the core group WG3: Clinical breakpoints, member of WG4: Antimicrobial treatment guidelines; 2020-2024. Postdoctoral fellowship, project implementation

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Name and surname
<i>Chandra Shekhar PAREEK</i>
Declared disciplines
<i>Veterinary Science</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2006 – Doctor Habilitatus of Agricultural Sciences in Animal Science 1999 – Doctor of Agricultural Sciences in Animal Science
Academic titles (name, title conferral year, classification)
2012 – Professor of Agricultural Sciences (Animal Science) 2024 – Professor of Veterinary Science (Veterinary Medicine)
Courses taught at the Doctoral School
<ol style="list-style-type: none"> <i>Interdisciplinary Ph: Operational Programme Knowledge Education Development</i> Interdisciplinary translational research and bioinformatics, Lecture (EN)- 30h <i>Multi-Omics research in exact science – one month summer camp 2023, Organised by YUFE, NCU Torun, 20h online course and 20h onsite</i> <i>Supervisor of 4 doctoral students (Klaudia Mietkiewska, VS; Sharmin Sultana, Garima Kalra, VS; Nihal Purohit) – supervisor mentoring</i>
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
h-index (GS) =19, citations 2,593 (GS).
<p>Prof. Chandra Pareek graduated in 1981 from a secondary school in Bikaner, Rajasthan and pursued post-secondary education in Biology and took the qualifying examination in Veterinary and Medical Sciences. A year later, he was admitted to the College of Veterinary and Animal Sciences (CV & AS), Rajasthan Agriculture University, (RAJAU) Bikaner, Rajasthan, India. He obtained his Bachelors' degree in Veterinary Sciences & Animal Husbandry (BVSc & AH) in 1988 (1983-88). This was followed by a 6-month internship in four major veterinary centres in Rajasthan. In 1989, he obtained a state scholarship for Masters' in Veterinary Sciences (M.V.Sc.) in Animal Breeding and Genetics from CV & AS, RAJAU, Bikaner. In 1991, he defended his Master's thesis in animal breeding and genetics entitled: "Study of lactation curve and projection of milk yield in Tharparkar cattle (<i>Bos Indicus</i>) in hot semi-arid climate". During his Master's studies, in 1990 he was employed by the authorities of the state of Rajasthan as a licenced veterinarian in the position of veterinary surgeon; he held this post for 4 years (1990-1994). In April 1994, he came to Poland to continue his education in animal breeding and genetics. He was a doctoral students at the Department of Animal Genetics at the Faculty of Animal Science (currently the Faculty of Animal Bioengineering) of the University of Agriculture and Technology (AR-T) in Olsztyn (currently the University of Warmia and Mazury [UWM] in Olsztyn), under the supervision of Professor Krzysztof Walawski. Under the Indian-Polish cultural exchange, he was granted a doctoral scholarship through the Indian Ministry of Human Resource Development (MHRD), New Delhi, India. During his doctoral studies, in 1995 he was granted a Humboldt research scholarship at the Institute for Basic Research on Animals in the Tropics, Humboldt University in Berlin (Germany) under the supervision of Professor Peter Horst. In June 1999, he defended his doctoral dissertation entitled "Association between lysozyme gene polymorphism and differentiation of natural resistance diagnostic indices in young cattle". The innovative discovery of lysozyme polymorphism and activity in cattle blood serum and the publication of these results in the <i>Animal Genetics</i> journal contributed to the development of scientific career at the international level. Immediately after defending his doctoral dissertation, he obtained an international postdoctoral fellowship CIMO (Centre for International Mobility) funded by the Finnish Ministry of Education at the University of Helsinki, under the supervision of Professor Matti Ojola. In August 1999, he began his postdoc research (2000-2001) working on the selection of microsatellites in bulls based on the</p>

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF VETERINARY MEDICINE

available genetic maps of the cattle genome made available in the bioinformatics internet database (National Center for Biotechnology Information-NCBI).

In 2003, he submitted an application for the Polish citizenship to the President of the Republic of Poland. The application submitted was positively considered, which resulted in his Polish citizenship by decision of the President of the Republic of Poland, Aleksander Kwaśniewski, in May 2004.

At the end of the grant, in 2005 he published his postdoctoral research dissertation entitled:

"Genome-wide screening of 184 *Bos taurus* microsatellite markers and quantitative trait loci analysis of two candidate genes for milk production traits", UWM Publishing House in Olsztyn. On 8 December 2006, he was awarded the degree of Doctor Habilitatus in Agricultural Sciences by the Council of the Faculty of Animal Bioengineering. In October 2008, he started working at the Nicolaus Copernicus University (UMK) in Toruń as an assistant professor at the Institute of General and Molecular Biology (IBOIM) of the Faculty of Biology and Earth Sciences (BiNoZ), and in May 2009 he was appointed head of the newly established Functional Genomics Laboratory (PGF) at the NCU in Toruń. In February 2011, the NCU's Rector nominated him for professor position. In August 2012, he was granted with the title of Professor. In the same year, he became the leader of the research group "Functional genomics in biological and biomedical research" at the Interdisciplinary Center for Modern Technologies (ICNT: <http://www.icnt.umk.pl>), NCU, Toruń. 2012–2019 - employed full-time (research and teaching) as NCU professor and as the leader of the research group at ICNT of Nicolaus Copernicus University in Toruń.

2019 – to date - employed full-time (researcher) as Full Professor at the Institute of Veterinary Medicine, Faculty of Biological and Veterinary Sciences, Nicolaus Copernicus University in Toruń.

Publications (usually 140 pts): 10 in recent years

Pareek Chandra, Sachajko Mateusz, Kalra Garima, Sultana Sharmin, Szostak Agnieszka, Chalaskiewicz K., Kepka-Borkowska K., Poławska Ewa, Ogłuszka Magdalena, Pierzchała Dorota: Identification of trait-associated microRNA modules in liver transcriptome of pig fed with PUFA-enriched supplementary diet, *Journal of Applied Genetics*, 2024, pp. 1-19, DOI:10.1007/s13353-024-00912-w, total number of authors: 22, 140 pts, IF(2)

Mohsin Muhammad Ali, Zhou Xiaojing, Yu Huiru, Shen Wenxiang, He Baoxiang, Sobiech Przemysław, Pierzchała Mariusz, Ogłuszka Magdalena, Woźniakowski Grzegorz, Pareek Chandra: Effect of β -hydroxybutyrate acid on gene expression levels of antioxidant biomarkers and growth hormone-related genes in liver cell culture, *Journal of Veterinary Research, National Veterinary Research Institute*, vol. 68, No 2, 2024, pp. 313-324, DOI:10.2478/jvetres-2024-0037, total number of authors: 17, 140 pts, IF(1,3)

Liput Kamila P., Lepczyński Adam, Poławska Ewa, Ogłuszka Magdalena, Starzyński Rafał, Urbański Paweł, Nawrocka Agata, Pareek Chandra, Gołyński Marcin, Woźniakowski Grzegorz: Murine hepatic proteome adaptation to high-fat diets with different contents of saturated fatty acids and linoleic acid : α -linolenic acid polyunsaturated fatty acid ratios, *Journal of Veterinary Research, National Veterinary Research Institute*, vol. 68, No 3, 2024, pp. 427-441, DOI:10.2478/jvetres-2024-0041, total number of authors: 14, 140 pts, IF(1,3)

Ogłuszka Magdalena, Chen Chih-Yu, Poławska Ewa, Starzyński Rafał R., Liput Kamila P., Siekierko Urszula, Pareek Chandra, Pierzchała Mariusz, Kang Jing X.: Elevated tissue status of omega-3 fatty acids protects against age-related telomere attrition in fat-1 transgenic mice, *Clinical Nutrition*, vol. 43, No 6, 2024, pp. 1488-1494, DOI:10.1016/j.clnu.2024.05.001, 140 pts, IF(6,6)

Miętkiewska Klaudia, Kordowiczki Paweł, Pareek Chandra: Effects of heat stress on bovine oocytes and early embryonic development : an update, *Cells*, vol. 11, No 24, 2022, Paper No: 4073, pp. 1-14, DOI:10.3390/cells11244073, 140 pts, IF(6)

Mohsin Muhammad Ali, Zhou Xiaojing, Yu Huiru, Du Yulan, Huang Lijin, Shen Wenxiang, Pierzchała Mariusz, Sobiech Przemysław, Miętkiewska Klaudia, Pareek Chandra: Effects of higher plasma growth hormone levels on subclinical ketosis in postpartum Holstein cows, *Annals of Animal*

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Science, Instytut Zootechniki, vol. 22, No 4, 2022, s. 1265-1272, DOI:10.2478/aoas-2022-0034, total No of authors: 12, 140 pts, IF(1,9)

Pierzchała Dorota, Liput Kamila, Korwin-Kossakowska Agnieszka, Ogłuszka Magdalena, Poławska Ewa, Nawrocka Agata, Urbański Paweł, Sachajko Mateusz, Herudzińska Magdalena, Pareek Chandra: Molecular characterisation of uterine endometrial proteins during early stages of pregnancy in pigs by MALDI TOF/TOF, International Journal of Molecular Sciences, vol. 22, No 13, 2021, Paper No: 6720, pp. 1-26, DOI:10.3390/ijms22136720, łączna liczba autorów: 22, 140 pts, IF(6,208)

Liput Kamila P., Lepczyński Adam, Nawrocka Agata, Poławska Ewa, Ogłuszka Magdalena, Jończy Aneta, Grzybek Weronika, Liput Michał, Szostak Agnieszka, Pareek Chandra S.: Effects of three-month administration of high-saturated fat diet and high-polyunsaturated fat diets with different linoleic acid (LA, C18:2n-6) to α -linolenic acid (ALA, C18:3n-3) ratio on the mouse liver proteome, Nutrients, vol. 13, No 5, 2021, pp. 1-34, DOI:10.3390/nu13051678, LA: 13, 140 pts, IF(6,706)

Brym Paweł, Wasilewska-Sakowska Karolina, Mogielnicka-Brzozowska Marzena, Mańkowska Anna, Paukzto Łukasz, Pareek Chandra S., Kordan Władysław, Kondracki Stanisław, Fraser Leyland: Gene promoter polymorphisms in boar spermatozoa differing in freezability, Theriogenology, vol. 166, 2021, pp. 112-123, DOI:10.1016/j.theriogenology.2021.02.018, 140 pts, IF(2,923)

Fraser Leyland, Brym Paweł, Pareek Chandra S., Mogielnicka-Brzozowska Marzena, Paukzto Łukasz, Jastrzębski Jan Paweł, Wasilewska-Sakowska Karolina, Mańkowska A., Sobiech Przemysław, Żukowski Kacper: Transcriptome analysis of boar spermatozoa with different freezability using RNA-Seq, Theriogenology, vol. 142, 2020, pp. 400-413, DOI:10.1016/j.theriogenology.2019.11.001, 140 pts, IF(2,74).

Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)

Veterinary Science (January 2025):

Garima Kalra, VS (1st year, AST) – supervisor

Nihal Purohit, MSc (1st year, rok AST) – supervisor

Sharmin Sultana, MSc (1st year, AC) – promotor

Klaudia Mietkiewska, VS (4th year +, AC) – supervisor and PI in Preludium BIS2 (international project: cooperation with Spain)

He supervised 3 doctoral dissertations: (i) *pt. "Analysis of gene expression profile of pituitary gland in selected cattle breeds using cDNA-AFLP technology"* - defended by Dr Joanna Michno at the Faculty of Biology and Earth Sciences, NCU in Toruń (**08.12.2010**) and *"SNPs detection in bos taurus pituitary gland transcriptome"* - defended by Dr Rafał Smoczyński at the Faculty of Biology and Environment Protection, NCU in (**08.07.2015**) as well as Dr Mateusz Sachajko, Akademia Copernicana, at the Faculty of Biological and Veterinary Sciences, NCU in Toruń, discipline: Biological Sciences.

Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).

Prof. Ch S. Pareek has 25 years of teaching experience, and regularly gets top results in student surveys of academic teachers' assessment. Within the teaching hours, he conducted classes (lectures, laboratory classes and auditorium classes, seminars, Master's diploma seminars) in animal genetics, animal genomics, biotechnology in animal breeding, functional genomics in mammals, molecular biology, molecular diagnostics with students of the following faculties: i) Animal Bioengineering (Animal Science) (WBZ) UWM in Olsztyn, ii) Veterinary Medicine (WMW) UWM in Olsztyn, iii) Biology

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(WB) UWM in Olsztyn and the Faculty of iii) Biology and Earth Sciences (currently: the Faculty of Biological and Veterinary Sciences: WNBiW) at the NCU in Toruń.

The list of achievements in teaching and education – UWM (University of Warmia and Mazury), Olsztyn:

During his work as an academic teacher, employed since 2001 at the University of Warmia and Mazury in Olsztyn, as an assistant professor he tried to transfer scientific advancements to the teaching process carried out in the Department of Animal Genetics (KGZ) at the Faculty of Animal Bioengineering (WBZ) as quickly as possible. Academic teaching work and education-related organisational activities have always been – since his employment in 2008- an integral part of his work at the UWM in Olsztyn. The nature of his research, which mostly concerned issues related to molecular genetics, and the rapid progress in this field allowed him to constantly improve the teaching process. Introducing new elements to laboratory analytics simultaneously enabled the transfer of state-of-the-art information on the application of genetics in veterinary medicine and breeding.

During his work as an assistant professor at the Department of Animal Genetics, he taught full-time, and his duties initially included classes with students of the Faculty of Animal Bioengineering and the Faculty of Veterinary Medicine (a course in Animal Genetics). He also conducted classes in the curriculum of the Faculty of Biology and the Faculty of Animal Bioengineering (a course in "DNA Molecular Diagnostics"). As part of the curriculum of the field of study of Biotechnology at the Faculty of Biology and the Faculty of Animal Bioengineering, he also taught some classes in "Molecular Genetics in Animal Breeding".

Table: List of subjects taught at the Faculty of Biology (WB), Faculty of Animal Bioengineering (WBZ) and the Faculty of Veterinary Medicine (WMW) in the years 2001-2008 at the UWM in Olsztyn.

	Course name PL	Course name EN	Faculty
1	Genetyka zwierząt	Animal genetics	WBZ, WMW
2	Diagnostyka molekularna DNA	Molecular diagnostic test	WBZ, WB
3	Genetyka molekularna w hodowli zwierząt	Molecular genetics in animal breeding	WBZ
4	Zastosowanie genetyki molekularnej w sterowaniu jakością surowców zwierzęcych	Application of molecular genetics in animal production	WBZ
5	Immunogenetyka w hodowli zwierząt	Immunogenetics in animal breeding	WBZ
6	Biologia molekularna	Molecular biology	WBZ, WB
7	Mapowania genów w zwierząt gospodarskich	Gene mapping in farm animals	WBZ

He conducted classes with MSc students of the Faculty of Animal Bioengineering in the field of study of Biotechnology in Animal Breeding in such courses as "Application of molecular genetics in the quality control of animal raw materials" and "Immunogenetics in animal breeding", and with students of the field of study of Biotechnology at the Faculty of Biology – a course in "Molecular biology". Proficiency in English in speech and writing led him to developing the study programme and being the head of "Gene mapping in farm animals", which was the first inter-faculty curriculum in English, included in the second-cycle study programme in the field of study of Biotechnology in Animal Breeding at the Faculty of Animal Bioengineering, and in the field of study of Biotechnology at the Faculty of Biology, UWM in Olsztyn.

The list of achievements in teaching and education - the Nicolaus Copernicus University in Toruń:

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Since October 2008, he has been the Head of the Functional Genomics Laboratory (PGF) at the Faculty of Biology and Earth Sciences (WBiNoZ), currently the Faculty of Biological and Veterinary Sciences (WNBiW) at the Nicolaus Copernicus University in Toruń. His teaching currently includes a number of lectures with students in Biology, Biotechnology and Environmental Protection at the Faculty of Biology and Earth Sciences (currently: the Faculty of Biological and Veterinary Sciences (WNBiW)) and the courses specified in the table.

Table: List of subjects taught at the WBiNoZ, WBiOS and WNBiW in the years 2008-2020 at the Nicolaus Copernicus University in Toruń:

Course name PL (compulsory courses)	Nazwa przedmiotu EN (compulsory courses)	USOS Code
Genetyka ogólna i weterynaryjna	General and veterinary genetics	7100-GEN-2-SJ
Technologie produkcji zwierząt	Animal production technologies	7100-GEN-2-SJ
Markery genetyczne i naprawa sprzężeń u ssaków	DNA markers and linkage mapping in mammals	2100-MGBIOT-1-S2
Techniki diagnostyki molekularnej u ssaków	Molecular diagnosis techniques in mammals	2100-MDT-SX
Interdyscyplinarne badania nad translacją w bioinformatyce i genomice funkcjonalnej (dla doktorantów)	Interdisciplinary translational research in bioinformatics and functional genomics (PhD students)	0600-S3-ISDMP-IBTBGF
Genomika zwierząt	Animal Genomics	2100-K6-GZ-BIOT
Genetyka cech użytkowych zwierząt hodowlanych	Genetics of economic trait in animal breeding	2100-K5-GCU-PRZ
Sekwencjonowanie nowej generacji całego genomu u ssaków	Next generation whole genome sequencing in mammals	0501-NGWGSM-SX
Mapowanie genomu i genomika u zwierząt domowych	Genome Mapping and Genomics in Domestic Animals	2100-WOU-GMD
Zaawansowana genomika funkcjonalna ssaków	Advanced functional genomics in mammals	2100-AFS-SX
Metodologie w zaawansowanej genomice	Methodologies in advanced genomics	0501-MAGMdok-SX
Bioinformatyka i genomika funkcjonalna	Bioinformatics and Functional Genomics	2600-OG-EN-BFG
Genomika żywieniowa	Nutritional Genomics	2100-WOU-NG
Diagnostyka molekularna chorób genetycznych	Molecular diagnosis of genetic diseases	2100-WOU-MD
Ekologia molekularna	Molecular ecology	2100-WOU-ME
Badania nad translacją w bioinformatyce	Translational research in bioinformatics	2100-WOU-TRB
Badania nad translacją w genomice	Translational Research in Genomics	2600-OG-EN-TRG

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

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International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or fellowships in other countries)

Participation in scientific conferences and symposia:

During his work at UWM, Olsztyn and NCU Toruń, he participated in 29 international and world conferences. His research results were presented at international scientific conferences in the Czech Republic, Slovakia, France, India, Poland, Germany, Brazil, Scotland, the USA.

As part of the dissemination of knowledge in animal genetics, including in particular issues related to structural and functional genomics of animals, he participated actively or passively in 23 world (11 lectures) and international conferences, and 10 domestic scientific conferences and symposia (7 lectures), and the results of his research work were presented at international conferences in the United States, Germany, the Czech Republic, Scotland, Brazil, France, Switzerland and India.

Prof. Chandra Pareek completed 13 research fellowships in foreign centers:

Humboldt University, Berlin, Germany (3 months, 1995).

the FBN Institute, Dummerstorf, Germany (2 months, 1996).

the FBN Institute, Dummerstorf, Germany (6 weeks, 1997).

the MTT Institute, Jokioinen, Finland. (1 month, 1998).

the University of Helsinki, Finland. (10 months, 1999-2000).

the University of Helsinki, Finland. (2 months, 2000).

the FBN Institute, Dummerstorf, Germany (1 month, 2000).

the FBN Institute, Dummerstorf, Germany (3 weeks, 2002).

the FBN Institute, Dummerstorf, Germany (2 weeks, 2004).

the EAAP Institute, Italy (1 week, 2005).

the FBN Institute, Dummerstorf, Germany (3 weeks, 2007).

the FBN Institute, Dummerstorf, Germany (2 weeks, 2008).

RUTGERS University, NJ, USA (1 month, 2015).

He is the editor-in-chief of the OPEN ACCESS journal *Translational Research in Veterinary Science* published by NCU, Toruń.

Currently, he is the coordinator of the international scientific project: NCN/DFG OPUS22 LAP 2021/43/I/NZ9/02612, *Multilevel molecular analysis of the hepatoprotective effect of medicinal herbs extracts in prevention of liver dysfunction caused by aflatoxin B1 in pig as an animal model (in-vivo), and hepatocyte cell culture analysis in human and pig (in-vitro)* (2023-2027).

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Name and surname
Grzegorz BOBIŃSKI
Declared disciplines
<i>Mathematics</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2002 – Doctor of Mathematical Sciences in Mathematics 2010 – Doctor Habilitatus of Mathematical Sciences in Mathematics
Academic titles (name, title conferral year, classification)
2022 – Professor of Exact and Natural Sciences in Mathematics
Courses taught at the Doctoral School
Galois theory Krull's and Dedekind's domains Supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p><i>Professor Bobiński authored or co-authored 40 scientific publications. His research concerns primarily the representation theorem for algebras, as well as problems at the interface of this field and algebraic geometry and homological algebra (with particular focus on the category of derivatives). His works were published e.g., in Advances in Mathematics, International Mathematics Research Notices, Journal of the London Mathematical Society and Transactions of the American Mathematical Society.</i></p> <p><i>He was a co-investigator in several grants of the Committee for Scientific Research, the Ministry of Science and Higher Education and the National Science Centre. He also worked on two NSC OPUS grants as Principal Investigator.</i></p> <p><i>For his scientific achievements, he was granted with the Award of the Minister of Education and Sport for a doctoral dissertation cum laude, the Kazimierz Kuratowski Award and a scholarship of the Foundation for Polish Science.</i></p> <p><i>Professor Bobiński is a member of the editorial committee of the Colloquium Mathematicum journal.</i></p>
Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)
<i>Professor Bobiński is currently the supervisor of one doctoral student. He has also been a reviewer in four doctoral procedures, including one abroad (the University of Bielefeld).</i>
Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).
<i>Professor Bobiński is very active in organisational activities. Between 2012 and 2020 he was the head director of doctoral studies in mathematics at the Faculty of Mathematics and Computer Science of Nicolaus Copernicus University in Toruń. Between 2020 to 2024 he was the Vice-Dean for research at this faculty, and currently (since 2024) he has been the Faculty's Dean.</i>

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In 2021-2024 he was a member of the Committee on Mathematics of the Polish Academy of Sciences, and between 2019 and 2021 he was a member of the advisory team for the assessment of applications for the Minister's scholarships intended for students and outstanding young researchers.

Professor Bobiński has been regularly uploading course books for his lectures on his website. During his postdoc fellowship at the University of Bern he taught Mathematical Analysis and Algebraic Curves in English.

Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students

Professor Bobiński regularly participates in conferences, workshops and scientific seminars, mainly in the representation theorem for algebras. He was also involved in the organisation of two scientific conferences held in Toruń.

International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)

Professor Bobiński has participated in over a dozen international scientific conferences, and has given over 20 plenary lectures. He completed a one-year postdoctoral fellowship at the University of Bern, and spent two years at the University of Bielefeld under the Alexander von Humboldt Foundation Scholarship. He also undertook short-term research visits to the University of Bonn and the Norwegian University of Science and Technology. The research conducted resulted in joint publications with mathematicians from other countries.

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF MATHEMATICS

Name and surname
Stanisław KASJAN
Declared disciplines
<i>Mathematics</i>
Academic degrees (name, award/recognition procedure, degree conferral year, degree awarding entity, degree classification)
2004 – Doctor Habilitatus of Mathematical Sciences in Mathematics, NCU 1996 – Doctor of Mathematical Sciences
Academic titles (name, title conferral year, classification)
2014 – Professor of Mathematical Sciences in Mathematics
Courses taught at the Doctoral School
Supervisor of N. Haque – supervisor mentoring
Scientific or artistic achievements (scientific publications /artistic achievements, patents and rights of protection, research projects, domestic/ international awards for scientific/ artistic achievements)
<p>Stanisław Kasjan has been focusing on algebra, in particular the representation theorem for algebras, and – for several years - the dynamical systems theory. Papers on the dynamical systems prevails among his publications within the last 10 years; in the list below, these are No 1,2,3,6,7,8,10</p> <ol style="list-style-type: none"> 1 Dymek Aurelia, Kasjan Stanisław, Keller Gerhard: Automorphisms of B-free and other Toeplitz shifts, Ergodic Theory and Dynamical Systems, vol. 44, No 4, 2024, pp. 1058-1101, DOI:10.1017/etds.2023.43, 140 pts IF(0,8) 2 Dymek Aurelia, Kasjan Stanisław, Kułaga-Przymus Joanna: Minimality of B-free systems in number fields, Discrete and Continuous Dynamical Systems, American Institute of Mathematical Sciences, vol. 43, No 9, 2023, pp. 3512-3548, DOI:10.3934/dcds.2023056, 100 pts, IF(1,1) 3 Kasjan Stanisław, Lemańczyk Mariusz, Zuniga Alterman Sebastian: Dynamics of B-free systems generated by Behrend sets. 1, Acta Arithmetica, vol. 209, 2023, pp. 135-171, DOI:10.4064/aa220525-14-2, 70 pts, IF(0,5) 4 Kasjan Stanisław, Kosakowska Justyna: The existence of Hall polynomials for x^2-bounded invariant subspaces of nilpotent linear operators, Journal of Pure and Applied Algebra, vol. 226, No 5, 2022, No of paper: 106921, pp. 1-12, DOI:10.1016/j.jpaa.2021.106921, 100 pts, IF(0,8) 5 Kasjan Stanisław, Skowroński Andrzej: On tame strongly simply connected algebras, W: Advances in representation theory of algebras : conference in honor of José Antonio de la Peña's 60th birthday Advances in Representation Theory of Algebras (ARTA VII), September 24-28, 2018, Instituto de Matemáticas, Universidad Nacional Autónoma de México, Mexico / Assem Ibrahim, Geiss Christof, Trepode Sonia (red.), Contemporary Mathematics, vol. 761, 2021, American Mathematical Society, ISBN 978-1-4704-5159-2, pp. 117-129, DOI:10.1090/conm/761/15311, 20 pts 6 Kasjan Stanisław, Keller Gerhard, Lemańczyk Mariusz: Dynamics of β-free sets : a view through the window, International Mathematics Research Notices, No 9, 2019, pp. 2690-2734, DOI:10.1093/imrn/rnx196, 140 pts, IF(1,291) 7 Bartnicka Aurelia, Kasjan Stanisław, Kułaga-Przymus Joanna, Lemańczyk Mariusz: B-free sets and dynamics, Transactions of the American Mathematical Society, vol. 370, No 8,

PROFILES OF ACADEMIC STAFF MEMBERS IN THE DISCIPLINE OF MATHEMATICS

<p>2018, pp. 5425-5489, DOI:10.1090/tran/7132, 40 pts, IF(1,318)</p> <p>8 El Abdalaoui El Houcein, Kasjan Stanisław, Lemańczyk Mariusz: 0-1 sequences of the Thue-Morse and Sarnak's conjecture, <i>Proceedings of the American Mathematical Society</i>, vol. 144, No 1, 2016, pp. 161-176, DOI:10.1090/proc/12683, 25 pts, IF(0,679)</p> <p>9 Kasjan Stanisław, Pastuszak Grzegorz: Super-decomposable pure-injective modules over algebras with strongly simply connected Galois coverings, <i>Journal of Pure and Applied Algebra</i>, vol. 220, No 8, 2016, pp. 2985-2999, DOI:10.1016/j.jpaa.2016.01.014, 25 pts, IF(0,652)</p> <p>10 Downarowicz Tomasz, Kasjan Stanisław: Odometers and Toeplitz systems revisited in the context of Sarnak's conjecture, <i>Studia Mathematica</i>, vol. 229 fasc. 1, 2015, pp. 45-72, DOI:10.4064/sm8314-12-2015, 25 pts, IF(0,623)</p> <p>He was a co-investigator in the research grants on the dynamical systems theory and (earlier) the representation theorem for algebras.</p>	<p>Scientific guidance competence (individuals with doctoral degrees along with a list of doctoral dissertations cum laude; ongoing supervision, auxiliary supervision, supervision of implementation doctorates, supervision of the Diamond Grant winners)</p>
<p>Doctoral students who were awarded their doctoral degrees:</p> <ul style="list-style-type: none"> • Maja Maria Sędkak: Representation- finiteness of algebra and the change of characteristic of the basis field, the Faculty of Mathematics and Computer Science, 2010, defence date: 02.06.2010, date of degree conferral: 02.06.2010 • Grzegorz Pastuszak: The existence of super-decomposable algebraically-compact modules over strongly simply connected algebras of non-polynomial growth, the Faculty of Mathematics and Computer Science, 2014, defence date: 23.06.2014, date of degree conferral: 25.06.2014 	<p>Professional achievements and professional activity (e.g., authoring a textbook/ instructional materials; teaching innovations implemented; conducting classes in a foreign language, incl. at a university in another country, e.g. under academic staff mobility programmes; conducting classes in distance learning).</p>
<p>Stanisław Kasjan teaches courses in linear algebra for such fields of study as Mathematics and Applied Mathematics, as well as courses in game theory (also in English). He is a co-author of educational materials for the game theory course. He has given an elective lecture on geometry and topology, and this academic year he is teaching Algebraic Topology in English for the theory specialisation.</p>	<p>Activities for professional development that improve qualifications and competences, both in terms of the individual's scientific or artistic development, and scientific or artistic guidance of doctoral students</p>
<p>International scientific activity (activity in international calls for proposals for research and project funding; involvement in the implementation of international research or artistic projects; participation in international scientific conferences; scholarships or internships in other countries)</p>	
<p>Stanisław Kasjan has been taking part in international scientific activity by cooperating with foreign mathematicians (J.A. de la Pena (UNAM, Mexico), Gerhard Keller (Erlangen)) and participating in international scientific conferences, in particular in the regularly held <i>International Conference on Representations of Algebras</i> (ICRA) and <i>Advances in Representation Theory of Algebras</i> (ARTA). Since 2024, he has been a member of the scientific committee of the ARTA conference.</p>	

Recruitment Committees

On June 13 2019 AST director nominated for two-years term the AST **Recruitment Committee** (15.06.2019 – 14.06.2021):

1. Prof. dr hab. Roman Ciuryło (physical sciences)
2. Prof. dr hab. Grzegorz Bobiński (mathematics)
3. Prof. dr hab. Wojciech Kujawski (chemical sciences)
4. Dr hab. Jarosław Tyburski, prof. UMK (biological sciences)
5. Dr hab. Magdalena Kunert Bajraszewska (astronomy)
6. Dr hab. Paweł Molewski (Earth and environmental sciences)
7. Prof. Wiesław Nowak – AST director
8. Dr hab. Piotr Żuchowski, prof. UMK (physical sciences, AST director deputy for recruitment)

The **Recruitment Committee** elected a Chairman został p. dr hab. W. Kujawski, prof. UMK.

The choice was based on very good scientific achievements and experince in education and supervising of previous doctoral candidates.

NCU computer center has prepared new computer recruitment system IRK2.

The person responsible for graphical side of NCU www pages helped to set formats for www pages of AST school and official email addresses. WWW pages content has been prepared in Polish and English.

There were two official email addresses for recruitment procedure and correspondence. In May 2020 the first stage of recruitment , i.e. concourse of doctoral project has been completed. The rules were announced for faculty members.

In term 2021-23 there were some personal changes:

1. prof. dr hab. Wiesław Nowak - Dyrektor AST (phys)
2. prof. dr hab. Wojciech Kujawski – Przewodniczący Komisji (chem)
3. dr hab. Agnieszka Goroncy, prof. UMK (math)
4. dr hab. Edyta Kalińska-Nartisa, prof. UMK (geo)
5. dr hab. Jarosław Tyburski, prof. UMK (biol)
6. prof. dr hab. Roman Ciuryło (phys)
7. dr hab. Magdalena Kunert-Bajraszewska, prof. UMK – secretary (astro)
8. dr hab. Piotr Żuchowski (phys)

And further modifications happened in 2023-25 team:

1. prof. dr hab. Wiesław Nowak - Director AST (phys)
2. prof. dr hab. Wojciech Kujawski – Chair (nauki chemiczne)
3. dr hab. Kułaga-Przymus, prof. UMK (math)
4. dr hab. Mieczysław Kunz, prof. UMK (geo)
5. dr hab. Jarosław Tyburski, prof. UMK (biol)
6. dr hab. Dawid Piątkowski, prof. UMK (phys) – secretary
7. dr hab. Magdalena Kunert-Bajraszewska, prof. UMK (astro)
8. dr hab. Michał Zawada (phys)
9. dr hab. Marcin Gołyński (vet)
10. prof. dr hab. Aleksandra Szydłowska-Czerniak (chem)

One should notice that in interviews with candidates 5-member teams participated and at least 3 members of RC were present during each interview. Moreover, Some 30-50 faculty members from NCU (dr hab., Prof) participated in interviews as experts or prospective supervisors.

**Recruitment rules (in a nutshell) for candidates to Doctoral School of Exact and Life Sciences
Academia Scientiarum Thoruniensis (AST)
Nicolaus Copernicus University in Toruń, Poland
2020/2021 academic year**

In AST, graduate students prepare PhD theses in one of the following **six disciplines**:

- **astronomy** (Faculty of Physics, Astronomy and Informatics)
- **mathematics** (Faculty of Mathematics and Computer Science)
- **biological sciences** (Faculty of Biological and Veterinary Sciences)
- **chemical sciences** (Faculty of Chemistry)
- **physical sciences** (Faculty of Mathematics and Computer Science)
- **earth and environmental sciences** (Faculty of Earth Sciences and Spatial Management)

Recruitment stage	Deadline
Registration in the IRK2 online system <i>(starting from 24.08.2020)</i> https://irk2.umk.pl/en-gb/offer/registration-select/	24-31.08.2020 (23:59)
Document submission to AST Office: Institute of Physics, Grudziądzka 5, room 390 / ast@umk.pl	27.08-3.09.2020 (15:00)
Interviews with candidates (internet allowed, individual schedule)	9-15.09.2020
Results are announced: https://www.phd.umk.pl/ast/	before 17.09.2020

AST Doctoral School candidates will select their MAIN PhD project and up to two “second-choice” projects that also fall within the interests of the candidate, from the following list:

<https://www.phd.umk.pl/ast/dokumenty/wykaz-projektow-2020/>

(N.B. The candidates do not submit their own projects, however at later stage they will contribute to the research plan)

Recruitment into AST Doctoral Schools is composed of two steps:

1. An evaluation of the submitted documents;
2. An interview (oral, in English or Polish, an internet interview is allowed).

Candidates with the highest scores (points) will be offered placements in AST.

Required documents:

Application form – printed out from the IRK system and signed by the candidate
Scientific CV in English
A motivation letter, containing a clear indication of preference in the selection of the main doctoral project, as well as, optionally, up to two second-choice projects; titles of all projects must be sourced from the list published on the School's website with an indication of the scientific discipline in which the doctorate will be carried
An official copy of the diploma of completion of the second-cycle or long-cycle Master's degree programme (or an equivalent diploma) or a photocopy of such a copy certified by Nicolaus Copernicus University staff or a declaration of the candidate on the planned date of obtaining such a diploma (of completion of the second-cycle or long-cycle Master's degree programme), which must occur <u>no later than September 15th 2020</u>
If your diploma is issued by a state which has signed the Hague convention (https://www.aina.pl/legalizacja-czy-apostille-konwencja-haska): authorization in the form of Apostille In case the candidate's diploma country has not signed the Hague convention: authorization in the form of legalization, as well as the scientific council of the appropriate discipline (NCU: Rada Dyscypliny Naukowej) must validate the diploma through nostrification
For foreign students: a copy of the visa, or the residency card, or another document granting the right to stay in Poland
An English or Polish translation of the Master of Science diploma (by a certified translator)
A short summary of the Master's Thesis (in English or Polish)
A list of co-authored papers (including hard copies or pdf files)
A list of research projects funded by grants (international, national, local) on which the candidate was working (a written confirmation is required)
A list of research visits / stays / internships in external research units; a list of seminars, conferences with active participation of the candidate (e.g. poster / talk, a written confirmation is required)
A list of research projects conducted by the candidate for external entities
A list of distinctions, awards, fellowships, and other honors (a written confirmation / copy of the diploma is required)
A confirmation of English language skills at B2 level or above, or a document confirming the completion of the first-cycle or second-cycle studies delivered in English
3 current photographs (including one in an electronic form, which the candidate uploads into the IRK system) compliant with the requirements applied for issuing ID
A signed declaration, committing the candidate, if accepted and while at AST, to not undertake studies in other Doctoral Schools
Two recommendation letters (optional, but recommended)
Grade average (GPA) statement (an example: https://www.phd.umk.pl/en/ast/recruitment/)
A statement on the grading scale used in the foreign university issuing the MSc diploma

Candidate application scoring and assessment:

1. Interview			max 60 pts
a.	description of the most recent diploma project, goal, methods, results	max 10 pts	
b.	level of understanding of the chosen PhD research project	max 10 pts	
c.	a general question regarding the discipline of the PhD thesis (main laws, theorems, principles, research methodology)	max 15 pts	
d.	a detailed (advanced) question regarding the discipline of the PhD thesis (main laws, theorems, principles, research methodology)	max 15 pts	
e.	motivation for enrollment into the AST School	max 10 pts	
2. Scientific achievements			max 15 pts
a.	major papers / patents	15 pts	
b.	authorship of a scientific monography / patent application	10 pts	
c.	authorship of a chapter in a scientific monography	5 pts	
d.	other papers (local research organizations, popular science, etc.)	max 3 pts	
e.	other	max 5 pts	
3. Participation in scientific projects			max 5 pts
a.	participation in a major research project, externally funded	5 pts	
b.	participation in a local research project, a research stay in an external research unit	3 pts	
c.	active participation in a conference, seminar, workshop, etc. (presentation of results)	max 3 pts	
d.	participation in a local University research project (grant)	1 pt	
4. Awards and stipends			max 5 pts
a.	stipends / fellowships / awards in international competitions	5 pts	
b.	the best Alumnus award (university level)	5 pts	
c.	stipends / fellowships / awards in national competition	max 5 pts	
d.	the best Alumnus award (faculty level)	4 pts	
e.	a stipend of the University Rector (Chancellor) or equivalent	3 pts	

5. Grades/Average	max 15 pts
<p>5.00 or 100% or Polish Diamond Grant – 15 pts</p> <p>[4.75; 5.0) or [95%; 100%) - 14 pts</p> <p>[4.50; 4.75) or [90%; 95%) - 12 pts</p> <p>[4.25; 4.50) or [85%; 90%) - 10 pts</p> <p>[4.00; 4.25) or [80%; 85%) - 8 pts</p> <p>[3.75; 4.00) or [70%; 80%) - 4 pts</p> <p><3.75 or < 70% - 0 pts</p> <p>for two level (3+2 or similar) higher education leading to a Master's diploma, a time-weighted average will be used to calculate the average grade:</p> <p>$AG = (t_1 * AG_1 + t_2 * AG_2) / (t_1 + t_2)$</p>	
Minimum number of points required (but not guaranteed) for AST admission	60 pts

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Minimum number of points required (but not guaranteed) for AST admission	60 pts



BIULETYN PRAWNY

UNIwersytetu Mikołaja Kopernika w Toruniu

Rok 2019; poz. 429

RESOLUTION No. 159

of the Senate of the Nicolaus Copernicus University in Toruń

of 17 December 2019

Regulations of the doctoral school of the Nicolaus Copernicus University in Toruń

Pursuant to art. 205.2 of the Act of 20 July 2018 - Law on Higher Education and Science (Dz. U. of 2018, item 1668 as amended).

i t i s r e s o l v e d as follows:

Chapter 1 General provisions

Article 1

1. The Regulations of the doctoral school of the Nicolaus Copernicus University in Toruń, hereinafter referred to as "the School", shall establish the organisation and functioning of the school, the powers of its organs and the rights and duties of doctoral students.
2. The following schools were established at the Nicolaus Copernicus University in Toruń, hereinafter referred to as the "University":
 - 1) Interdisciplinary Doctoral School under the name *Academia Copernicana*, abbreviated name AC;
 - 2) Doctoral School of Humanities, Theological Sciences and Arts under the name *Academia Artium Humaniorum*, abbreviated name AAH;
 - 3) Doctoral School of Medical and Health Sciences operating in the Ludwig Rydygier Collegium Medicum in Bydgoszcz under the name *Academia Medica Bydgosciensis*, abbreviated name AMB;
 - 4) Doctoral School of Social Sciences under the name *Academia Rerum Socialium*, abbreviated name ARS;
 - 5) Doctoral School of Exact and Natural Sciences under the name *Academia Scientiarum Thoruniensis*, abbreviated name AST;
3. Supervision over the activities of the school shall be exercised by the Vice-Rector for Research.

Article 2

The school shall create the conditions for:

- 1) conducting independent scientific research by the doctoral student;
- 2) scientific collaboration in research teams;
- 3) preparation by the doctoral student of scientific publications in ministerial list journals or public presentations of artistic works;

- 4) scientific development of the doctoral student through the opportunity to do research internships and participate in conferences, including foreign ones;
- 5) implementation of the curriculum based on the level 8 of the Polish Qualifications Framework;
- 6) preparation of the doctoral dissertation under the guidance of a supervisor or supervisors or a supervisor and an assistant supervisor.

Chapter 2

School authorities

Article 3

1. The school shall be run by the director appointed for a four-year term by the rector from among the academic teachers employed in the group of professors, after consultation with the doctoral student government and the competent school Council.
2. The director of the school shall:
 - 1) participate in the works on the school's regulations;
 - 2) develop a draft curriculum for the school;
 - 3) develop draft rules for the recruitment to the school;
 - 4) organise and monitor the implementation of the doctoral education process;
 - 5) take decisions regarding individual cases involving doctoral students, including administrative decisions on behalf of the rector;
 - 6) submit every two years a report to the rector on the school's operations.

Article 4

1. The school shall have a doctoral school Council acting as a consultative and advisory body.
2. The competences of the doctoral school Council shall include in particular:
 - 1) providing an opinion on the candidate for the director of the school;
 - 2) providing an opinion on the school curriculum;
 - 3) monitoring the quality of education provided by the school;
 - 4) providing an opinion on the manner in which the placements are done and credited;
 - 5) providing an opinion on the manner of conducting the mid-term evaluation;
 - 6) providing opinions on other matters laid down in the NCU statutes.
3. The Vice-Rector for Research may appoint a five-member scientific Council, the majority of whose members shall be non-employees of the University.
4. The tasks of the scientific Council shall in particular include:
 - 1) monitoring the quality of research conducted by doctoral students;
 - 2) monitoring the level of internationalisation of the Schools.
5. The director of an externally financed school shall have the discretion to appoint an additional school council under separate rules.

Chapter 3

Organisation of education in the School

Article 5

1. Education in the doctoral school shall not exceed four years subject to art. 5.2.
2. The education of doctoral students financed entirely from external sources, in particular from European Union programmes, may last 3 years.
3. Enrolment to the school shall be on a rolling basis.

4. The framework organisation of education based on the curriculum shall be established by the director of the school.
5. Classes may be provided in a modular, semester or annual system. Doctoral students shall sign up for classes.
6. The course of education shall be recorded in the University Study-Oriented System, hereinafter referred to as the "USOS", or in an equivalent system, and in course crediting reports and periodic records of the doctoral student in the form of electronic data printouts from the USOS.

Article 6

1. The supervisor(s) designated by the doctoral student shall submit to the director of the school a plan for the substantive support and for the organisation of doctoral training no later than within 2 months from the date of entering the doctoral student in the register of doctoral students.
2. Within 3 months from the date of entering in the register of doctoral students, the director of the school, in consultation with the doctoral student and the chair of the relevant council for the discipline of science, shall assign the supervisor(s) to the doctoral student.
3. Where the recruitment criteria provide for the candidate to choose one of the projects submitted for implementation, its leader shall be deemed the assigned supervisor.
4. In justified cases, the director of the school, at the request of the doctoral student or the supervisor and in agreement with the chair of the respective council for discipline of science, the doctoral student and the supervisor(s), may assign another supervisor(s) to the doctoral student whereas the subject matter of the project to be implemented should be within the same disciplines.
5. With regard to the assistant supervisor who assists both the supervisor in the guidance provided to the candidate for the academic degree of doktor and the doctoral student in the proper preparation of the doctoral dissertation, the provisions of art. 6.1 and 6.2 shall apply accordingly subject to art. 6.6.
6. The assistant supervisor may be appointed within 12 months from the date of entering the doctoral student in the register of doctoral students with the consent of the director of the school and the chair of the council for the discipline of science.
7. The doctoral student, in consultation with the supervisor(s), shall draw up an individual research plan containing, in particular, the description of the research problem, the description of the methodological basis and the date of preparation of the doctoral dissertation, and submit the said plan to the director of the school within 12 months from the date of entering in the register of doctoral students.
8. Education of doctoral students shall be based on the curriculum adopted by the Senate in accordance with the individual research plan of the doctoral student approved by the supervisor(s) and the director of the school.
9. Adjustments to the individual research plan may be made in justified cases after approval by the supervisor(s) and with the consent of the director of the school.

Article 7

1. The implementation of the individual research plan shall be subject to the mid-term evaluation in the middle of the period of education defined in the curriculum.
2. The mid-term evaluation shall end with a positive or negative result. The result of the evaluation, together with the justification, shall be public.
3. The Mid-term evaluation shall be conducted by a committee composed of three members, including at least one person holding the degree of doktor habilitowany or the title of profesor in the discipline in which the dissertation is prepared and employed outside the entity operating

- the doctoral school. The supervisor(s) and assistant supervisor shall not be members of the committee.
4. A member of the committee who is employed outside the entity operating the doctoral school shall be entitled to a salary amounting to 20% of a professor's salary. The agreement shall be signed by the rector at the request of the director of the school.
 5. The evaluation shall be carried out on the basis of materials submitted by the doctoral student confirming the implementation of the individual research plan and the interview with members of the committee.
 6. The materials referred to in art. 7.5 shall include:
 - 1) a report on the implementation of the individual research plan;
 - 2) a list of published, accepted for publication, and submitted for publication scientific papers, indicating the publications that have been developed in international collaboration;
 - 3) information and documentation to certify works of art and artistic events, indicating those created in international collaboration;
 - 4) list of research internships in external research centres, in particular foreign ones, in which the doctoral student took an active part, i.e. conducted research or presented its results;
 - 5) a list of applications submitted by the doctoral student in university competitions or to external bodies for funding of mobility or research abroad;
 - 6) a list of courses or workshops pursued beyond the compulsory curriculum which have contributed to the development of soft skills of the doctoral student;
 - 7) the opinion of the supervisor(s) on the progress of the doctoral student made in preparing their doctoral dissertation;
 - 8) additional opinions (maximum two) on the doctoral student provided by scientists from other research centres, in particular foreign ones, who are involved in the research conducted by the doctoral student.
 7. The materials referred to in art. 7.5 may also shall include:
 - 1) a list of publications in high ranking publications with an indication of those developed in international collaboration;
 - 2) a list of research works conducted by the doctoral student for external entities; (patents, spin-offs);
 - 3) other documents specified by the director of the school.
 8. The place and date of the interview shall be determined by the director of the school who shall inform the doctoral student of the date of the interview at least one month in advance. The documents referred to in art. 7.6 and art. 7.7 shall be submitted within two weeks of the date of the interview by the doctoral student after the approval by the supervisor.
 9. The committee shall issue a positive or negative evaluation result in writing together with the justification.
 10. The positive evaluation shall result in an increase in the minimum amount of the doctoral scholarship.
 11. The negative evaluation may be appealed against by the doctoral student to the rector.
 12. In justified cases, at the request of the supervisor(s), the director of the school in consultation with the school Council may order an additional evaluation of the doctoral student other than the mid-term evaluation.
 13. The mid-term evaluation criteria and the criteria for the progress in preparing the doctoral dissertation shall be individual and shall depend on the subject, discipline, and nature of the conducted research work.

Article 8

1. All classes provided for in the curriculum must be credited. The form of credit assessment shall be specified in the course syllabus.
2. For the implementation of the tasks covered by the curriculum, the doctoral student shall be awarded credits in accordance with the European Credit Transfer and Accumulation System (ECTS). The number of ECTS credits shall be specified by the director of the school.
3. Education and testing of knowledge or skills may be conducted partly or entirely in languages other than Polish.
4. Education may be provided with the use of distance learning methods and techniques. The director of the school shall decide which classes delivered in this mode meet the requirements of the curriculum.
5. The training and testing of the knowledge or skills of the doctoral student who is a person with a disability shall be adapted to the nature of their disability.
6. The final date for obtaining the credits provided for in the curriculum shall be the date of submitting the doctoral dissertation to the director of the school.

Article 9

1. The education of the doctoral student shall end with the submission of their dissertation to the director of the school together with the opinion of the supervisor(s) on the course of study and the quality of the doctoral dissertation.
2. The form of the dissertation must comply with the requirements laid down by the relevant Council for discipline of science.
3. A doctoral student who has been struck off the list of doctoral students may receive a certificate on the course of study.

Chapter 4 **Rights and obligations of doctoral students**

Article 10

1. A person enrolled on the list of doctoral students shall begin education and acquire doctoral student rights upon taking the oath the content of which shall be specified in the NCU Statutes.
2. Doctoral students shall receive doctoral scholarships pursuant to the rules laid down in the Act and in separate regulations.
3. The rights and obligations of the doctoral student shall expire on the date of the completion of education at the school or on the date on which the decision to remove the student from the register of doctoral students becomes effective.
4. The doctoral student shall receive an electronic doctoral student ID card. An electronic doctoral student ID card is a document certifying the status of the doctoral student.
5. The validity of a doctoral student's electronic ID card shall be confirmed each year by updating the data in the electronic system and placing the hologram in the successively marked boxes.
6. Doctoral students shall have the right to use their doctoral student's electronic ID card until the date of graduation, suspension of their doctoral rights or until the date on which the decision on the removal from the register of doctoral students becomes legally binding.
7. In the event of the destruction or loss of an electronic ID card, the doctoral student shall be obliged to notify the University about the said without delay.

Article 11

The doctoral student shall have the right to:

- 1) use laboratories, libraries, research facilities, IT infrastructure, scientific equipment, and other study aids of the University;
- 2) benefit from scientific and organisational support provided by the supervisor(s);
- 3) publish the results of their research or artistic work and present them at national and international scientific conferences, in consultation with the supervisor(s) or the director of the school;
- 4) join the University doctoral student organisations, in particular research groups and artistic and sports teams;
- 5) social security and national health insurance on the principles laid down in separate provisions;
- 6) rest breaks not exceeding eight weeks per year; the dates of rest breaks shall be agreed between the doctoral student and the supervisor and the director of the school;
- 7) breaks in education for a period corresponding to the duration of maternity leave; paternity leave, and parental leave as defined in the Act of 26 June 1974 as amended - Labour Code (Dz.U. of 2019, item 1040);
- 8) breaks in education for a period corresponding to the duration of health leave which may be taken because of illness, treatment or rehabilitation that excludes or seriously hinders the continuation of studies, for the duration of illness, treatment or rehabilitation.
- 9) breaks in education for a period corresponding to the duration of health leave which may be taken due to illness, treatment or rehabilitation that excludes or seriously hinders the continuation of studies, for the duration of illness, treatment or rehabilitation.

Article 12

1. Pursuant to the rules set out in the student benefit regulations, the doctoral student may apply for:
 - a) accommodation in a student house or an employee house;
 - b) accommodation for a spouse or a child in a student house or an employee house.
2. A doctoral student may apply for a student loan.
3. A doctoral student who is a person with disabilities shall have the right to have the organisation and implementation of the education process adapted to the type of their disability.

Article 13

1. Subject to the consent of the supervisor and the director of the school, the doctoral student may do internships or part of their research or training in another higher education institution in accordance with the principles provided for in agreements or doctoral exchange programmes.
2. The duration of the research internship shall count towards the period of education at school. In the event of long-term mobility, the director of the school shall take a decision to shift obligations arising from the curriculum and to credit the achievements of the research internship towards these obligations.

Article 14

A doctoral student of another university may apply for admission to the school by way of a transfer from a doctoral school operated at another university insofar as a doctoral scholarship is secured.

Article 15

The basic obligations of a doctoral student shall include:

- 1) conducting scientific research, in particular the timely implementation of research set out in the individual research plan;
- 2) acquiring competences required to work in academic and research institutions;
- 3) implementing the curriculum;
- 4) preparing the doctoral dissertation;
- 5) submitting by the end of each academic year to the director of the school a report approved by the supervisor(s) containing information on the implementation of the individual research plan, implementation of the school curriculum, list of publications (submitted for printing, accepted, published) and applications (submitted correctly in formal terms, approved) for financing of research and study visits abroad related to doctoral dissertation or the development of soft skills;
- 6) doing work placement in accordance with the rules laid down by the school Council;
- 7) seeking the opportunity to participate in conferences and/or scientific internships, including those abroad;
- 8) justifying for breaks, supported by a medical certificate, in the implementation of the individual research plan resulting from the medical condition;
- 9) notifying without delay the director of the school of a change of name and address;
- 10) notifying without delay the director of the school of taking up of employment;
- 11) following the regulations of the doctoral school and other regulations in force at the University
- 12) nurturing the good name of the University and respect for the intangible assets associated with the University;
- 13) respecting the property of the University.

Article 16

A doctoral student shall be liable to disciplinary action for any breach of any rules and regulations in force at the University and for acts that violate the dignity of the doctoral student pursuant to the principles laid down in the NCU Statutes.

Chapter 5 Suspension and extension of education

Article 17

1. At the request of the doctoral student, education shall be suspended for the period corresponding to the duration of maternity leave, leave on the conditions of maternity leave, paternity leave and parental leave as defined by the Act of 26 June 1974 as amended – Labour Code (Dz.U. of 2019, item 1040) and the health leave referred to in art. 11.8.
2. In justified cases, the director of the school may extend the deadline for submitting the doctoral dissertation, but by no longer than two years and the total duration of the scholarship may not exceed four years. The director of the school shall take the said decision upon a reasoned request from the doctoral student with a positive opinion from the supervisor(s) submitted immediately after the occurrence of health reasons or other circumstances justifying an extension of the period of education.

Chapter 6 Removal from the register of doctoral students

Article 18

1. A doctoral student shall be removed from the register of doctoral students in the event of:

- a) a negative result of the mid-term evaluation;
 - b) failure to submit the doctoral dissertation within the deadline specified in the individual research plan;
 - c) opting out of further education expressed in writing by the doctoral student.
2. A doctoral student may be removed from the register of doctoral students in the event of:
 - a) unsatisfactory progress in the preparation of their doctoral dissertation based on the option of the supervisor(s) or the director of the school;
 - b) failure to comply with the obligations referred to in art. 15.
 3. Removal from the register of doctoral students shall be effected by way of an administrative decision. The decision shall be subject to a motion for reconsideration.

Chapter 7

Transitional and final provisions

Article 19

1. The following resolutions shall be repealed:
 - 1) resolution No. 112 of the NCU Senate of 24 September 2019 - Regulations of the Interdisciplinary Doctoral School of Social Sciences of the Nicolaus Copernicus University in Toruń (Biuletyn Prawny UMK of 2019, item 294);
 - 2) resolution No. 113 of the NCU Senate of 24 September 2019 - Regulations of the Doctoral School of Humanities, Theology and Arts of the Nicolaus Copernicus University in Toruń (Biuletyn Prawny UMK of 2019, item 295);
 - 3) resolution No. 114 of the NCU Senate of 24 September 2019 – Regulations of the Interdisciplinary Doctoral School "Academia Copernicana" of the Nicolaus Copernicus University in Toruń (Biuletyn Prawny UMK of 2019, item 296);
 - 4) resolution No. 115 of the NCU Senate of 24 September 2019 - Regulations of the Doctoral School of Exact and Natural Sciences of the Nicolaus Copernicus University in Toruń (Biuletyn Prawny UMK of 2019, item 297);
 - 5) resolution No. Nr 116 of the NCU Senate of 24 September 2019 – Regulations of the Doctoral School of Medical and Health Sciences of the Nicolaus Copernicus University in Toruń (Biuletyn Prawny UMK of 2019, item 298).
2. The regulations of the doctoral school agreed with the NCU University Council for Doctoral Students becomes effective as of 1 October 2020.

**On behalf of Rector
Vice-Rector for Research**

Prof. dr hab. Jacek Kubica



LEGAL BULLETIN

NICOLAUS COPERNICUS UNIVERSITY IN TORUŃ

Year 2024; item 143

RESOLUTION No. 30

of the Senate of the Nicolaus Copernicus University in Toruń

of 23 April 2024

Regulations of the doctoral school of the Nicolaus Copernicus University in Toruń

Pursuant to Art. 205 of the Act of 20 July 2018 - Law on Higher Education and Science (Journal of Laws of 2023, item 742 as amended) and art. 124 of the resolution No. 37 of the Senate of the Nicolaus Copernicus University in Toruń of 16 April 2019 - Statutes of the Nicolaus Copernicus University in Toruń (NCU Legal Bulletin of 2024, item 10)

i t i s r e s o l v e d as follows:

Chapter 1 General provisions

Article 1

1. The regulations of the doctoral school of the Nicolaus Copernicus University in Toruń specify the principles of operation of the doctoral school, the competencies of its bodies, as well as the organization of education and the rights and obligations of doctoral students, including in particular:
 - 1) method of appointing and changing the supervisor, supervisors or auxiliary supervisor;
 - 2) method of documenting the course of education;
 - 3) method of conducting the mid-term evaluation;
 - 4) conditions for extending the deadline for submitting a doctoral dissertation.
2. The provisions of the regulations shall apply to doctoral schools operating at the University.

Article 2

Whenever the provisions of the regulations mention:

- 1) **APD** – it shall mean the Diploma Theses Archive;
- 2) **doctoral student** – it shall mean a doctoral student pursuing education at a doctoral school;
- 3) **PRK** – it shall mean the Polish Qualifications Framework;
- 4) **doctoral school** - it shall mean the doctoral school referred to in art.1.2;
- 5) **University** - it shall mean the Nicolaus Copernicus University in Toruń;

- 6) **USOS** – it shall mean the University Study-Oriented System (an IT system used to manage the course of studies at the University);
- 7) **Act** - it shall mean the Act of July 20, 2018 - Law on Higher Education and Science (Journal of Laws of 2023, item 742, as amended).

Article 3

The task of the doctoral school shall be to create conditions for doctoral students to:

- 1) conducting scientific research;
- 2) scientific cooperation in research teams;
- 3) preparation of scientific publications, in particular in journals included in the list drawn up under the regulations issued pursuant to Art. 267.2 point 2 letter b of the Act, as well as artistic works presented in public space;
- 4) scientific development through the possibility of carrying out research internships and conference trips, including abroad;
- 5) implementation of an education program adequate to qualifications at PQF level 8;
- 6) preparation of a doctoral dissertation.

Article 4

1. Supervision over the education of doctoral students at the doctoral school shall be exercised by the relevant vice-rector for research, except for individual matters of doctoral students, in which the supervision authority is the relevant vice-rector for student affairs.
2. The body monitoring the quality of education in a doctoral school shall be the doctoral school council and, in a university-wide interdisciplinary school, the University Senate.

Article 5

1. Decisions of the doctoral school director to which the Act of 14 June 1960 - Code of Administrative Procedure (Journal of Laws of 2024, item 572) does not apply may be appealed to the vice-rector responsible for student affairs. The appeal shall be submitted through the director of the doctoral school within 14 days from the date of delivery of the decision to the doctoral student.
2. Delivery of the decisions referred to in Art.5.1 shall be made by sending a copy of the decision to the doctoral student's account referred to in Art.13.8, collecting it in person at the Doctoral Schools Secretariat or sending it via the postal operator serving the University.

Article 6

The rector may authorize the relevant director of the doctoral school to issue administrative decisions in the first instance in matters relating to doctoral students, and the relevant vice-rector for student affairs to consider applications for reconsideration of the case pertaining to these decisions.

Chapter 2 **School authorities**

Article 7

1. The doctoral school shall be run by the director appointed for a four-year term by the rector from among the academic teachers employed in the group of professors after consultation with the doctoral student government and the competent school council.
2. The director of the school shall:
 - 1) develop a draft curriculum for the school;

- 2) develop draft rules for the recruitment to the school;
- 3) organize recruitment to the doctoral school;
- 4) prepare the teaching offer of the doctoral school;
- 5) appoint a supervisor, supervisors or a supervisor and an auxiliary supervisor and dismiss or change them;
- 6) organize the conduct of a mid-term evaluation;
- 7) establish, in cooperation with the doctoral school council, framework principles for conducting mid-term evaluation;
- 8) organize and monitor the implementation of the doctoral education process;
- 9) take decisions regarding individual cases involving doctoral students;
- 10) consent to extending the deadline for submitting a doctoral dissertation;
- 11) every two years, present a report on the activities of the doctoral school to the rector and, in the case of an interdisciplinary school, also to the senate.

Article 8

1. The doctoral school council shall act as an opinion-giving and advisory body consisting of:
 - 1) director of the doctoral school as its chairperson,
 - 2) chairpersons of councils of scientific disciplines belonging to relevant fields,
 - 3) deans of faculties competent for scientific disciplines,
 - 4) representative of the Doctoral Students' Self-Government.
2. In a university-wide interdisciplinary school, the doctoral school council shall consist of persons appointed by the rector at the request of the rector's council.
3. The scope of activities of the doctoral school council shall include in particular:
 - 1) providing an opinion on the candidate for the director of the school;
 - 2) providing an opinion on the school curriculum;
 - 3) approval of the qualification committee conducting the recruitment;
 - 4) monitoring the quality of education at the doctoral school, subject to art.4.2;
 - 5) giving opinions on the manner of conducting the mid-term evaluation and the evaluation referred to in Article 21;
 - 6) giving opinions on other matters specified in the University's statute.

Article 9

1. The relevant vice-rector for research may, at the request of the director of the doctoral school, appoint for the period of the director's term of office a five-person scientific council of the doctoral school, the majority of whose members shall be non-employees of the University.
2. The tasks of the scientific council shall in particular include:
 - 1) monitoring the quality of research conducted by doctoral students;
 - 2) monitoring the level of internationalization of the doctoral school.
3. Other bodies may operate in a doctoral school co-financed from external sources under the principles specified in the acts on which they operate.

Chapter 3 Rights and obligations of doctoral students

Article 10

1. A person admitted to the doctoral school shall begin education and acquire the rights of a doctoral student upon taking the oath, the content of which is specified in the University's statute.

2. One may be a doctoral student at only one doctoral school at a time.
3. The person admitted to the doctoral school shall confirm taking the oath electronically in USOS within 7 days from the beginning of the academic year, and in the case of doctoral students admitted to the doctoral school during the academic year, within 7 days from the date of admission.
4. The rights and obligations of a doctoral student shall expire on the day of completing education at the doctoral school or being removed from the list of doctoral students.
5. The status of a doctoral student shall be confirmed by a doctoral student card issued free of charge by the University, the form of which and the rules for issuing and extending its validity shall be regulated by separate regulations.

Article 11

The doctoral student shall have the right to:

- 1) free education, in particular obtaining reliable and modern knowledge to the extent necessary to obtain a doctoral degree;
- 2) conducting scientific research, in particular to the extent necessary to obtain a doctoral degree;
- 3) use the infrastructure of teaching, service and support units, as well as laboratories, libraries, rooms intended for conducting scientific work, IT infrastructure, scientific equipment and other scientific aids of the University;
- 4) scientific supervision of the supervisor or supervisors or supervisor and auxiliary supervisor in the preparation of the doctoral dissertation;
- 5) applying for internal and external grants;
- 6) publish the results of their research or artistic work and present them at national and international scientific conferences in consultation with the supervisor(s) or the director of the school;
- 7) join the University doctoral student organizations;
- 8) suspension of education for a period corresponding to the duration of maternity leave; paternity leave, and parental leave as defined in the Act of 26 June 1974 - Labour Code (Journal of Laws of 2023, item 1465);
- 9) suspension of education at the doctoral school under the terms specified in Article 34;
- 10) extension of the deadline for submitting the doctoral dissertation, but not longer than by two years, under the terms specified in Article 35;
- 11) rest breaks not exceeding 8 weeks a year;
- 12) doctoral scholarship and applying for a student loan under the terms specified in the Act;
- 13) sickness insurance on the terms specified in separate regulations;
- 14) ensuring the possibility of continuing education at another doctoral school in a given discipline or covering the costs of proceedings for awarding a doctoral degree on an extramural basis in the cases specified in Art. 206 of the Act;
- 15) accommodation in a student or academic house, as well as accommodation of their spouse or child in a student or academic house, on the terms specified in separate regulations.

Article 12

1. A doctoral student with a disability and a doctoral student who is a parent may apply for adapting the organization and implementation of the educational process to the type of disability or needs resulting from parenthood, in particular for changing the rules of participation in doctoral student education and the procedure for passing courses.

2. The director of the doctoral school, in the cases referred to in art 12.1, at the request of a doctoral student, may consent in particular to:
 - 1) including third parties in classes, especially as sign language interpreters, stenographers, and laboratory assistants;
 - 2) enabling the use of technical devices, including image and sound recording devices;
 - 3) preparation of teaching or assessment materials in an alternative form of recording;
 - 4) changing the form of verification of learning outcomes;
 - 5) changing the form of conducting classes, consisting of conducting classes on an individual basis;
 - 6) changing the place of taking classes or completing subjects;
 - 7) extension of the duration of credit tests;
 - 8) including third party into courses assigned by the organizational unit of the University responsible for doctoral students with disabilities, especially as sign language interpreters, stenographers, and lectors, for credit purposes;
 - 9) enabling the use of technical devices while passing subjects, including computers, Braille and sound devices;
 - 10) carrying out the course assessment on an individual basis.
3. If the doctoral student's disability or parenthood makes it impossible to participate in classes in a given semester, the director of the doctoral school, at the request of the doctoral student, shall designate another semester in which they will be able to participate in classes.
4. Decisions regarding doctoral students with disabilities referred to in art. 12.2 and 12. 3 shall be issued by the director of the doctoral school after seeking the opinion of the organizational unit of the University responsible for doctoral students with disabilities.

Article 13

The doctoral student shall be obliged to:

- 1) conduct in accordance with the content of the oath and applicable regulations at the University, including in particular the regulations of the doctoral school;
- 2) submit to the director of the doctoral school, within 12 months from the date of commencement of education, agreed with the supervisor or supervisors, an individual research plan, including, in particular, the schedule for the preparation of the doctoral dissertation and the deadline for its submission; if an auxiliary supervisor is appointed, the plan shall be presented after receiving the opinion of this supervisor;
- 3) implementation of the educational program and individual research plan;
- 4) submit to the director of the doctoral school by the end of each academic year, approved by the supervisor or supervisors, a report on the implementation of the individual research plan;
- 5) immediately provide information about scientific and artistic achievements, in particular:
 - a) publications of which they are the author or co-author to the University unit responsible for bibliometrics,
 - b) information about artistic achievements obtained by entering them into the Artistic Achievements application operating within the Nicolaus Copernicus University Form System,
 - c) information about obtained patents and protection rights to the University Patent Advocate;
- 6) submit declarations authorizing the University to demonstrate achievements resulting from education at the doctoral school for the purposes of evaluating the quality of scientific activity of the discipline or one of the disciplines included in the field in which the doctoral dissertation is being prepared;

- 7) immediately notify the director of the doctoral school about obtaining a doctoral degree, if it occurred during the education at the doctoral school, as well as about changes to the data referred to in Article 28;
- 8) create and have an account on the university server (USOS account), as well as contact via this account in matters related to education at the doctoral school;
- 9) verification of data in USOS, as well as receiving decisions of the University authorities via the account referred to in point. 8, and to immediately report errors in the documentation of the course of education to the Doctoral School Secretariat;
- 10) respect for University property;
- 11) comply with the rules of using the computer network applicable at the University.

Article 14

A doctoral student shall be subject to disciplinary liability under the principles specified in separate regulations for violating the regulations applicable at the University and for an act violating the dignity of a doctoral student.

Chapter 4 **Supervisor, supervisors, and auxiliary supervisor**

Article 15

1. The supervisor or supervisors or the supervisor and auxiliary supervisor shall provide scientific supervision to prepare a doctoral dissertation.
2. The supervisor may be a person holding a habilitated doctor's degree or the title of professor.
3. The supervisor may be a person who does not meet the conditions specified in art.15.2, who is an employee of a foreign university or scientific institution, if the director of the doctoral school, after consultation with the appropriate discipline council, decides that this person has significant achievements in the field of scientific issues covered by the doctoral dissertation.
4. The supervisor or auxiliary supervisor cannot be a person who:
 - 1) during the last 5 years:
 - a) was the supervisor of 4 doctoral students who were removed from the list of doctoral students due to a negative result of the mid-term evaluation, or
 - b) supervised the dissertation preparation by at least 2 persons applying for a doctoral degree who did not obtain positive reviews referred to in Art. 191 section 1 of the Act, or
 - c) was the supervisor of 2 doctoral students for whom the evaluation of scientific supervision carried out during the mid-term evaluation resulted in a negative result:
 - 2) was punished with a disciplinary penalty of deprivation of the right to perform the tasks of a supervisor, referred to in Art. 276 section 1 point 4 of the Act - during the period of this penalty.
5. An auxiliary supervisor may be a person with at least a doctoral degree.
6. Rules for providing care referred to in art.15.1, shall be determined by the director of the doctoral school, by way of an order, after consultation with the doctoral school council. The rector shall approve the order of the director of the doctoral school.

Article 16

1. Within 6 weeks of starting education, a doctoral student shall submit an application to the director of the doctoral school to appoint a supervisor or supervisors or a supervisor and an auxiliary supervisor. The doctoral student must attach to the application a supervisory plan prepared by the candidate for supervisor or supervisors, a declaration of the candidate for a

supervisor or auxiliary supervisor on meeting the requirements to serve as a supervisor or auxiliary supervisor, and a list of their scientific achievements.

2. The director of the doctoral school, by way of a decision issued after consulting the chairperson of the relevant scientific discipline council:
 - 1) shall appoint:
 - a) the supervisor or supervisors, or
 - b) supervisor and auxiliary supervisor;
 - 2) shall refuse to appoint the persons referred to in point 1.
3. The decision referred to in art.16.2 shall be delivered to the doctoral student and the supervisor or supervisors and the auxiliary supervisor. The relevant dean and the relevant chairperson of the discipline council shall be notified of the decision.
4. In the event of refusal referred to in art.16.2 point 2, the doctoral student, within 14 days from the date of delivery of the decision to refuse the appointment, shall submit to the director of the doctoral school another application for the appointment of a supervisor or supervisors or a supervisor and an auxiliary supervisor. In the application, the doctoral student shall indicate a candidate for a supervisor or auxiliary supervisor other than the one whom the director of the doctoral school previously refused to appoint. To the proposal art.16.1 and 16.2 shall apply accordingly.
5. If a decision refuses to appoint the persons referred to in art.16.4, the provision of art.17.3 shall apply accordingly.
6. If the recruitment rules for the doctoral school provide for the candidate to select one of the research projects submitted for implementation, the director of the doctoral school shall appoint the supervisor of the project chosen by the doctoral student as the supervisor.

Article 17

1. In justified situations, particularly in the event of a negative result of the evaluation of scientific supervision referred to in art. 33, the director of the doctoral school, after consultation with the chairperson of the relevant scientific discipline council, shall:
 - 1) change the appointed supervisor or auxiliary supervisor;
 - 2) dismiss one of the appointed supervisors or an auxiliary supervisor;
 - 3) appoint a second supervisor or an auxiliary supervisor.
2. In the event of:
 - 1) death of the supervisor;
 - 2) factual circumstances that make it impossible or significantly difficult for the supervisor to perform this function;
 - 3) the supervisor losing the right to perform this function- the director of the doctoral school shall call on the doctoral student to resubmit the application referred to in art.16.1, within 14 days from the date of delivery of the request.
3. If the application is not submitted within the deadline referred to in art. 17.3, the director of the doctoral school, after consulting the chairperson of the relevant scientific discipline council, ex officio shall appoint a new supervisor.
4. To change or appoint a supervisor or auxiliary supervisor art. 16.3 and 16.4 shall apply accordingly.

Chapter 5

Organization of education at the doctoral school and method of its documentation

Article 18

1. The education of doctoral students shall be based on the educational program adopted by the senate, according to the individual research plan of the doctoral student agreed upon

with the supervisor and approved by the director of the doctoral school.

2. Education at the doctoral school shall last from six to eight semesters.
3. Education shall begin at the beginning of the semester. Framework organization of education based on the education program shall be determined by the director of the doctoral school.
4. Classes at the doctoral school may be conducted in a block or semester system.
5. Education may be conducted using educational methods and techniques remotely in accordance with the rules applicable at the University.
6. Education and tests of knowledge or skills may be conducted partially or completely in a foreign language, the knowledge of which the doctoral student demonstrated in the recruitment procedure to the doctoral school.
7. Classes included in the educational program shall require passing. The form of passing the classes shall be specified in the course syllabus.

Article 19

The doctoral student, in consultation with the supervisor or supervisors, shall develop an individual research plan containing, in particular, a schedule for the preparation of the doctoral dissertation and submit it to the director of the doctoral school for approval within 12 months from the date of commencement of education.

Article 20

In the event of starting the education of doctoral students at the University in a new scientific discipline, the doctoral student may change the scientific discipline in which the doctoral dissertation is being prepared within the same doctoral school, subject to Art. 201 section 1 of the Act.

Article 21

In justified cases, including a threat to the implementation of the doctoral project, a negative opinion of the supervisor or supervisors on the progress of the dissertation, the director of the doctoral school, ex officio or at the request of the supervisor or supervisors, in consultation with the council of the doctoral school, may carry out an additional assessment of the doctoral student, other than mid-term. For additional evaluation, the provisions on the mid-term evaluation of a doctoral student shall apply accordingly. Obtaining a negative result of the additional assessment may constitute grounds for removing the doctoral student from the list of doctoral students.

Article 22

1. Education at the doctoral school shall end with the submission of a doctoral dissertation by the doctoral student, along with a positive opinion of the supervisor or supervisors.
2. The submission of a doctoral dissertation means the acceptance of the final version of the doctoral dissertation by the supervisor or supervisors in APD, after checking the dissertation in the Unified Anti-Plagiarism System.
3. The doctoral student shall be obliged to submit the doctoral dissertation to the APD on the date agreed with the supervisor or supervisors, but no later than 7 days before the deadline for submitting the dissertation specified in the individual research plan.
4. A person who has completed the education program and submitted a doctoral dissertation shall receive a certificate of completion of education at the doctoral school.
5. A person who has been removed from the list of doctoral students shall be issued a certificate of education progress upon their request.

Article 23

1. Doctoral schools shall keep documentation of the course of doctoral students' education.
2. Documentation of doctoral students' education shall include:

- 1) education program;
- 2) documentation of the course of education, including course completion reports and periodic achievement cards;
- 3) individual research plans;
- 4) doctoral student's album;
- 5) personal files of doctoral students.

Article 24

The education program shall specify in particular:

- 1) name of the education program;
- 2) name of the education program in English;
- 3) disciplines in which education is provided;
- 4) the number of semesters provided for in the education program;
- 5) total number of ECTS points;
- 6) total number of hours of classes;
- 7) ISCED classification;
- 8) learning outcomes defined for the education program related to the characteristics of the second level of the PQF for level 8 qualifications;
- 9) names of classes or groups of classes along with their specific form of classes, number of ECTS points, symbols of learning outcomes, methods of verifying learning outcomes and their concise description.

Article 25

1. The course of education shall be documented electronically in USOS and the personal files of doctoral students.
2. The University shall provide the doctoral student with access to documentation of the course of education.

Article 26

1. The doctoral student's album shall be kept centrally for all doctoral schools in electronic form in USOS. A person admitted to the doctoral school shall be assigned the following number of the doctoral student's album within the University.
2. The following data shall be entered in the doctoral student's album:
 - 1) album number;
 - 2) name(s) and surname as well as date and place of birth of the doctoral student;
 - 3) PESEL number, and if it is missing, the number of the document confirming the identity and the name of the country that issued it;
 - 4) information about the document constituting the basis for applying for admission to the doctoral school (type and number of the document, date and place of issue and name of the issuing institution);
 - 5) name of the doctoral school;
 - 6) discipline or disciplines or field in which the doctoral dissertation is being prepared;
 - 7) date and period of suspension of education, date of completion at the doctoral school or date of removal from the list of doctoral students.

Article 27

For a person admitted to the doctoral school, a folder of the doctoral student's personal files marked with an album number shall be kept. The doctoral student's personal file shall contain the following information:

- 1) documents required from the candidate upon admission to the doctoral school;
- 2) documents confirming admission to the doctoral school, including in particular:
 - a) individual report from the recruitment procedure with information about being entered into the list of doctoral students,
 - b) decision on admission to the doctoral school and confirmation of delivery of this decision to the doctoral student - in the case of a foreigner;
- 3) documents regarding the doctoral student's insurance;
- 4) oath certificate;
- 5) documents related to the course of education, in particular:
 - a) applications and decisions regarding the appointment or change of a supervisor or supervisors and an auxiliary supervisor,
 - b) the doctoral student's individual research plan and its changes,
 - c) the doctoral student's reports on the implementation of the individual research plan,
 - d) documentation of professional practice in the form of conducting classes or participating in them,
 - e) mid-term evaluation report, decision on the mid-term evaluation,
 - f) education record card;
- 6) conclusions and decisions regarding individual matters of the doctoral student;
- 7) doctoral dissertation (information on storing the doctoral dissertation in APD, containing data enabling its search);
- 8) opinion of the supervisor or supervisors on the doctoral dissertation;
- 9) a certificate confirming that the doctoral student has achieved learning outcomes for qualifications at PQF level 8 or a certificate of the course of education - a copy for the file.

Article 28

1. The doctoral student shall be obliged to immediately, but no later than within 7 days from the date of commencement of education, verify the following data in the USOS system and, in case of errors, indicate to the director of the doctoral school:
 - 1) names and surname;
 - 2) PESEL number, and if it is missing, the series and number of the ID card or passport;
 - 3) citizenship, and in the case of foreigners, the name of the country of birth and information about having the Polish Card;
 - 4) year of birth;
 - 5) gender;
 - 6) discipline or disciplines or field in which the doctoral dissertation is being prepared;
 - 7) residential address;
 - 8) information about the degree of disability - if applicable;
 - 9) permanent residence address;
 - 10) residential address, if different from the permanent residence address,
 - 11) correspondence address, if different than the address referred to in point. 9 or 10.
2. The doctoral student shall be obliged to immediately, but no later than within 7 days from the date of award or determination, provide the director of the doctoral school with information about:
 - 1) assigning an electronic researcher ID in accordance with international standards;
 - 2) determining the right to a pension or disability pension.
3. In the event of a change in the data referred to in art.28.1 and 28.2, the doctoral student shall be obliged to immediately, but no later than within 7 days from their change, provide the

director of the doctoral school with new data.

Chapter 6

Mid-term evaluation of a doctoral student

Article 29

The implementation of the individual research plan shall be subject to mid-term evaluation in the middle of the education period specified in the education program, and in the case of education lasting 6 semesters - during the fourth semester.

Article 30

1. Mid-term evaluation shall be carried out by a committee appointed by the director of the doctoral school after consultation with the relevant chairperson of the discipline council. The committee shall consist of 3 people, including at least 1 person with a habilitation degree or the title of professor in the discipline in which the doctoral dissertation is being prepared, employed outside the University or a person referred to in Art. 190 section 5 of the Act. The supervisor or supervisors and the auxiliary supervisor cannot be committee members.
2. A person who is a member of the committee and is employed outside the University shall be entitled to remuneration amounting to 20% of the professor's remuneration.

Article 31

1. Mid-term evaluation shall be carried out on the basis of documents submitted by the doctoral student confirming the implementation of the individual research plan and an interview between the doctoral student and the committee members.
2. The criteria for mid-term evaluation shall be determined individually and depend on the topic, discipline, and nature of the research work carried out and take into account, in particular, the degree of implementation of the individual research plan, including published scientific works, conference presentations, patent and grant applications.
3. The documents referred to in art. 31.1 shall include, in particular:
 - 1) report on the implementation of the individual research plan;
 - 2) a list of published, accepted for publication and submitted for publication scientific works, with an indication of the publications that were created in international cooperation;
 - 3) information and documentation confirming artistic works and events, highlighting those that were created in international cooperation;
 - 4) a list of research internships in external research centers, in particular foreign ones, in which the doctoral student took an active part, i.e. conducted research or presented its results;
 - 5) a list of applications submitted by the doctoral student in University competitions or to external entities for financing foreign trips or scientific research;
 - 6) a list of classes or workshops conducted outside the compulsory education program that contributed to the development of the doctoral student's soft skills;
 - 7) list of research works carried out by the doctoral student for external entities; (patents, spin-offs);
 - 8) opinion of the supervisor or supervisors on the doctoral student's progress in preparing the doctoral dissertation;
 - 9) additional opinions (maximum two) about the doctoral student prepared by scientists from other research centers, especially foreign ones, involved in the research conducted by the doctoral student.
4. Place and date of the interview, referred to in art. 31.1, shall be determined by the director

of the doctoral school. The director of the doctoral school shall inform the doctoral student about the date of the interview at least 1 month before its date. The committee meeting and the interview with the doctoral student may be conducted remotely. Documents indicated in art.31.3 shall be provided by the doctoral student, no later than 2 weeks before the interview date.

Article 32

1. The mid-term evaluation shall end with a positive or negative result. The evaluation result and its justification shall be public.
2. A doctoral student may appeal against a negative grade to the rector. Until revocation, Article 5 shall apply accordingly.

Article 33

1. During the mid-term evaluation, the committee shall evaluate the scientific supervision provided by the supervisor or supervisors or the supervisor and auxiliary supervisor taking into account the rules specified pursuant to art.15.6.
2. Evaluation referred to in 33.1 shall end with a positive or negative result and shall be delivered in writing to the director of the doctoral school, the supervisor or supervisors or the supervisor and auxiliary supervisor, and the doctoral student.

Chapter 7

Suspension of education and extension of the deadline for submitting a doctoral dissertation

Article 34

1. At the request of the doctoral student, education shall be suspended for the period corresponding to the duration of maternity leave, leave on the conditions of maternity leave, paternity leave and parental leave as defined by the Act of 26 June 1974– Labour Code (Journal of Laws of 2023, item 1465).
2. The doctoral student's education may be suspended at their request for unforeseeable reasons, and in particular in the case of:
 - 1) diseases,
 - 2) disability;
 - 3) the need to provide personal care for a sick family member or a child up to 4 years of age or a child with a medical certificate
 - 4) about disability;
 - 5) other reasons of an accidental or family nature;- excluding or seriously hindering the continuation of education.
3. The doctoral student shall submit an application for suspension of education along with justification and documents confirming its validity to the appropriate director of the doctoral school.
4. In the case of suspension of education, the director of the doctoral school shall issue a decision specifying the date for which education is suspended.
5. The decision on suspension of education due to illness, treatment or rehabilitation shall be issued by the director of the doctoral school based on a decision of a medical commission appointed by the rector. A referral for the committee to issue a decision shall be issued by the director of the doctoral school immediately after the doctoral student submits an application for suspension of education.
6. The Rector shall determine the mode and principles of operation of the committee referred to in art.34.5.

7. The director of the doctoral school, at the request of a doctoral student, may consent to the implementation of part of the education program or an individual research plan during the suspension of education.
8. Within 14 days from the end of the suspension of education, the doctoral student, in consultation with the supervisor or supervisors, shall submit an updated individual research plan to the director of the doctoral school for approval, including an indication of the new deadline for submitting the doctoral dissertation.

Article 35

1. In justified cases, and in particular in the case of the need to conduct long-term scientific research in order to prepare a doctoral dissertation or for the reasons referred to in art.34.2, the director of the doctoral school may extend the deadline for submitting the doctoral dissertation, but not longer than by two years.
2. The director of the doctoral school shall issue a decision on extending the deadline for submitting a doctoral dissertation upon a substantiated request of a doctoral student, approved by the supervisor or supervisors, and submitted immediately after the reasons justifying the extension occur.
3. The application referred to in art.35.2, together with a justification and documents confirming its validity, as well as an updated individual research plan, including an indication of the new deadline for submitting the doctoral dissertation, shall be submitted by the doctoral student to the appropriate director of the doctoral school immediately after the occurrence of a reason justifying the extension of the deadline for submitting the doctoral dissertation.
4. In the decision referred to in art.35.2, the director of the doctoral school shall set a new deadline for submitting the doctoral dissertation.

Chapter 8 **Removal from the list of doctoral students**

Article 36

1. A doctoral student shall be removed from the list of doctoral students in the event of:
 - 1) negative result of the mid-term evaluation;
 - 2) failure to submit the doctoral dissertation within the deadline specified in the individual research plan;
 - 3) resignation from education;
 - 4) not taking up education;
 - 5) violation of the prohibition referred to in Art. 200 section 7 of the Act;
 - 6) being punished with a disciplinary penalty of expulsion from the doctoral school.
2. A doctoral student may be removed from the list of doctoral students in the event of:
 - 1) unsatisfactory progress in the preparation of the doctoral dissertation, after consultation with the supervisor or supervisors;
 - 2) failure to fulfill the obligations referred to in Article 13.
3. Resignation from education shall require the doctoral student to submit a written declaration.
4. The failure to undertake education shall also mean failure by a person admitted to the doctoral school to take the oath within 3 months from the date of admission.
5. In the proceedings to remove a doctoral student from the list of doctoral students, in the event of a violation of the prohibition referred to in Art. 200 section 7 of the Act, the doctoral student shall be requested to submit their resignation within a period not shorter than 30 days from the date of delivery of the request from education at another doctoral school.

6. Removal from the doctoral student list shall take place through an administrative decision.

Chapter 9

Transitional and final provisions

Article 37

1. The existing provisions shall apply to proceedings in individual cases of doctoral students initiated and not finally completed by the date of entry into force of this resolution.
2. Resolution No. 159 of the NCU Senate of 17 December 2019 – Regulations of the doctoral school of the Nicolaus Copernicus University in Toruń (NCU Legal Bulletin of 2019, item 429) shall be repealed.
3. The regulations become effective as of 1 October 2024.

President of the Senate

prof. dr hab. Andrzej Sokala
R e c t o r

Detailed rules for the mid-term evaluation
at the Doctoral School of Exact and Natural Sciences (year 2024)

According to § 7. "Regulations of the doctoral school of the Nicolaus Copernicus University in Toruń" (RESOLUTION No. 159 of the Senate of the Nicolaus Copernicus University in Toruń of December 17, 2019, BP UMK Year 2019; item 429), the subject of the assessment is the implementation of the individual plan research. Assessment is carried out on the basis of materials submitted by doctoral students, confirming the implementation of an individual research plan and their interviews with committee members.

Council

The Council which will conduct the mid-term evaluation is appointed by the school head in agreement with the chairman of the relevant discipline council. Members of the committees dedicated to individual disciplines include 3 people, including at least 1 person with a doctoral degree habilitated doctor or the title of professor in the field and discipline in which a doctoral dissertation is prepared, employed outside the Nicolaus Copernicus University. A person in the Council, employed outside the Nicolaus Copernicus University is entitled to remuneration in the amount of 20% of the professor's remuneration. Contract is signed by the rector at the request of the school principal. People from the Nicolaus Copernicus University who are members of the commission receive a lump sum bonus to their salary in the amount of 10% of the professor's salary.

Sending the names of the candidates by the school head to the chairman of the council of a given discipline starts the procedure for appointing the composition of the Council. The supervisor or supervisors can send the Director the proposals for candidates for members of the Council. The selection of people sitting in the Council should take into account the

research specialties of doctoral students. The chairman of the Council is appointed by the director of AST.

PhD students materials

According to the regulations of the doctoral school, doctoral students submit the following for evaluation materials:

- 1) Report on the implementation of an individual research plan (IPB). It contains a precise and documented information on the implementation of tasks and should be described by individual (IPB) points (tasks), the Gantt graph included in IPB might prove to be useful:
 - a. Characteristics of the research results obtained, including the indication and justification of the changes to the IPB questionnaire,
 - b. the status of implementation of research tasks and organizational undertakings provided in project schedule,
 - c. implementation of plans for the internationalization of the project, in particular cooperation in preparation of joint publications, internships in foreign research centers, participation in international workshops and seminars,
 - d. internships or research in domestic and foreign scientific institutions,
 - e. participation in conferences, specifying the form of participation,
 - f. possible achievements in organizing conferences,
 - g. submitting applications to external institutions and / or NCU for support for a research project with a description of the effects of these efforts,
 - h. apprenticeships,
 - i. classes carried out as part of the 3rd module of the "Framework education plan",

j. other forms of the doctoral student's research activity related to education and project implementation.

2) List of scientific works:

(i) published, (ii) accepted for publication, (iii) submitted for publication, which were created in international cooperation.

Copies in pdf of the published texts or a link to the DOI should be attached to the list for open access articles, and confirmation of the publication status.

3) List of research internships in external research centers, in particular abroad, in which the doctoral student participated.

4) List of applications submitted by the doctoral student in competitions of universities or to other external entities financing trips abroad or scientific research, along with documentation confirming their submission and the result of applying for funds for research.

5) List of classes or workshops carried out outside the compulsory study program, which contributed to the development of the doctoral student's soft skills. Failure to meet this point does not will negatively affect the assessment.

6) List of publications announced in highly scored publishers (> 100), please point those that were created in international cooperation;

7) List of research works conducted by the doctoral student for external entities;
(patents, spin-offs);

8) The supervisor's or supervisors' opinion on the doctoral student's progress in preparing the dissertation.

9) It is possible to submit additional opinions (maximum two) about the doctoral student, prepared by scientists from other research centers involved in the research conducted by the doctoral student.

The indicated materials should be delivered in a digital copy (file or pdf files) to the address ast@umk.pl, after approval by the promoter, at least 2 weeks before the date of the interview.

Interviews with the Council

During the interview, the doctoral student has the opportunity (15 minutes) to present his/her scientific achievements and explain external circumstances that prevented him/her from fully implementing their IPB or changed it. The Council members ask questions about achievements and progress of the research project, the conditions for the implementation of the project and other issues related to education and scientific development of the doctoral student.

The interviews will be held in September 2024. The meetings can be organized via the internet. The type of the messenger and information about addresses / passwords will be decided and provided by the chairmen of individual Councils. If there is such a need the AST office will help to inform the doctoral students about the dates and technical details via e-mail. Detailed timetable for mid-term talks will be given (by e-mail) at least one month in advance. In case of technical difficulties the Council chairman sets a new date for the meeting / interview - by 15 September 2024.

Assessment criteria

The submitted materials and the interview will be the basis for the evaluation. The following criteria will be the most relevant for its formulation:

- 1) advancement of the research project according to the schedule (IPB),
- 2) publication of scientific papers, quality of scientific papers, applying for research grants, disseminating the effects of the project,
- 3) the course of the presentation of the progress in the implementation of the project and the related discussion

The auxiliary criteria are:

- 4) opinions of the promoter (s) or other researchers,
- 5) implementation of the education program, both the school's framework program and individual internships and courses.

The Commission also takes into account individual criteria in formulating the mid-term evaluation, resulting from the topic, discipline and nature of the conducted research.

Committee is also obliged to take into account the limitations resulting from the Covid-19 pandemic, which may have caused delays or changes in the implementation of IPB.

Assessment

The Council issues a positive or negative assessment in writing in the form of a resolution of the Council along with justification (in case of a negative assessment). A positive assessment results in an increase in the minimum amount of the doctoral scholarship. In case of receiving a negative evaluation, the doctoral student appeal to the rector within the administrative period of 14 days from the receipt of the decision.

The result of the assessment with justification is open. The content of the assessment and the justification will be sent to the person subject to assessment by post with acknowledgment of receipt.

PEŁNOMOCNICTWO nr 246/2024-2028

Niniejsze pełnomocnictwo udzielono przez:

prof. dr. hab. Andrzeja Tretyna, Rektora Uniwersytetu Mikołaja Kopernika w Toruniu, zwanego dalej „Mocodawcą”
dla

prof. dr. hab. Wiesława Nowaka, dyrektora Szkoły Doktorskiej Nauk Ścisłych i Przyrodniczych „Academia Scientiarum Thoruniensis” zatrudnionego na stanowisku profesora w Instytucie Fizyki na Wydziale Fizyki, Astronomii i Informatyki Stosowanej Uniwersytetu Mikołaja Kopernika w Toruniu, zwanego dalej „Pełnomocnikiem”.

§ 1

Mocodawca udziela Pełnomocnikowi pełnomocnictwa do:

- 1) podpisania i złożenia raportu samooceny Szkoły Doktorskiej Nauk Ścisłych i Przyrodniczych „Academia Scientiarum Thoruniensis”,
- 2) podpisania oświadczeń samooceny Szkoły Doktorskiej Nauk Ścisłych i Przyrodniczych „Academia Scientiarum Thoruniensis”,
- 3) wysłania raportu samooceny Szkoły Doktorskiej Nauk Ścisłych i Przyrodniczych „Academia Scientiarum Thoruniensis” do Komisji Ewaluacji Nauki w systemie SEdok.

§ 2

Pełnomocnictwo zostaje udzielone na czas określony od 13 marca 2025 r. do 14 marca 2025 r. i może być odwołane w każdym czasie.

§ 3

Pełnomocnik nie może ustanowić dla Mocodawcy innych pełnomocników.

§ 4

W kwestiach nieunormowanych w niniejszym pełnomocnictwie zastosowanie mają odpowiednie przepisy Kodeksu Cywilnego, w szczególności przepisy o przedstawicielstwie.

§ 5

Pełnomocnictwo sporządzono z zachowaniem elektronicznej formy czynności prawnej i opatrzone kwalifikowanym podpisem elektronicznym. Data złożenia wymaganego kwalifikowanego podpisu elektronicznego stanowi datę udzielenia pełnomocnictwa.

KEN

2023-2027



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Minister of Science
Republic of Poland

Assessment of the quality of education in doctoral schools
is made by the Science Evaluation Committee

The Evaluation System of Doctoral Schools
is financed by the Ministry of Science
