



ADAM MICKIEWICZ  
UNIVERSITY  
POZNAŃ



ENGAGED  
UNIVERSITY  
2023

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2023

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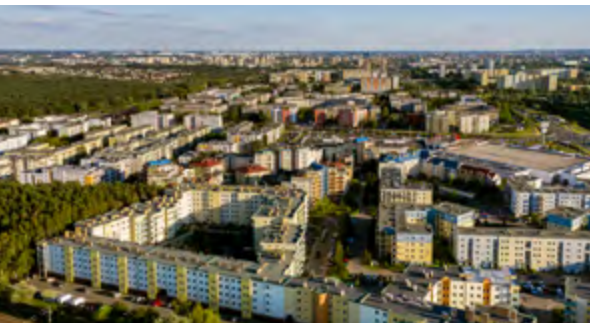


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**Prof. Bogumiła Kaniewska**  
RECTOR OF THE ADAM MICKIEWICZ UNIVERSITY IN POZNAŃ

ADAM MICKIEWICZ UNIVERSITY – POZNAŃ

“*Our lives revolve around action and passion. By avoiding engagement with the activities and passions of our time, we risk not experiencing life at all.*”

Herodotus

Ladies and Gentlemen,

It gives me great pleasure to invite you to read the newest edition of the “Engaged University” report.

Here, we highlight selected projects and initiatives of the academic community who responded to the challenges faced by the modern world; some of these initiatives have been implemented in cooperation with partners from the university’s social and economic environment. This type of cooperation is particularly important for our university, as it provides access to a variety of perspectives, knowledge and resources, opening up new research opportunities. These efforts also enrich the educational process: students have the opportunity to acquire practical skills, face real-world challenges and fulfil their potential.

Our goal is to make Adam Mickiewicz University an institution that is open to the world: a space for the development of knowledge, innovation and social progress; a meeting point for ground-breaking ideas from which valuable projects are born; and a place where people, organisations and institutions interact.

Even though this report features only some of the many initiatives implemented within the framework of the engaged university, it demonstrates that we are on the right track. I hope that you, too, will find this document a source of pride and inspiration.

Kindest Regards,

# AMU in numbers

20

faculties

4

branches

13 567

enrolled students

29 861

full-time and part-time students

1 148

doctoral students

912

postgraduate students

130

degree programmes

3 016

academic staff

2 238

administrative staff

215

specialisations

30

postgraduate programmes

253

student clubs

4 727

scientific publications

741

ongoing scientific and research projects with budgets > PLN 666 million

654

foreign students

AMU IN NUMBERS

ADAM MICKIEWICZ UNIVERSITY - POZNAŃ

# AMU Rankings

## Perspektywy Ranking

(2022)

3<sup>rd</sup> University in Poland  
4<sup>th</sup> Academic Institution in Poland

## Times Higher Education

World University Rankings (2022)  
1001-1200

### World University Rankings by Subject

LIFE SCIENCES	501-600
PHYSICAL SCIENCES	801-1000
PSYCHOLOGY	501+
EDUCATION	301-400
SOCIAL SCIENCES	501-600
ARTS AND HUMANITIES	301-400

### IMPACT Ranking 801-1000

QUALITY EDUCATION (SDG 4)	401-600
REDUCED INEQUALITIES (SDG 10)	301-400
CLIMATE ACTION (SDG 13)	401-600
PARTNERSHIPS FOR THE GOALS (SDG 17)	301-400

## QS

World University Rankings (2022)  
801-1000

### World University Rankings by Subject

LINGUISTICS	201-250
ENGLISH LANGUAGE & LITERATURE	201-250
MODERN LANGUAGES	301-330
ARTS & HUMANITIES	=323
CHEMISTRY	501-550
BIOLOGICAL SCIENCES	451-500
ARCHAEOLOGY	151-200

## Shanghai Ranking

Academic Ranking of  
World Universities (2022)  
901-1000

### Global Ranking of Academic Subjects

NATURAL SCIENCES	
ECOLOGY	201-300
SOCIAL SCIENCES	
HOSPITALITY & TOURISM MANAGEMENT	201-300

## Green Metric

(2022)

299

## US Best News

Best Global Universities  
(2022)  
817

### Best Global Universities by Subject

ARTS AND HUMANITIES	210
ENVIRONMENT/ECOLOGY	361
GEOSCIENCES	316
MATERIALS SCIENCE	537
PLANT AND ANIMAL SCIENCE	385
CHEMISTRY	566
PHYSICAL CHEMISTRY	454
PHYSICS	664
SOCIAL SCIENCES AND PUBLIC HEALTH	497

AMU RANKINGS

ADAM MICKIEWICZ UNIVERSITY – POZNAŃ



# PEOPLE

Universities are, first and foremost, people: those who make up the academic community and those to whom the university's activities are addressed. The success of a university depends significantly on engaged, interconnected and open communities.





From left to right: Dr. Magdalena Sadowska, Martyna Sujak, Karolina Pieterek, Karolina Jurga, Natalia Janczak, above – Piotr Filipowski

# Dad, come back!

Members of the *Ex Lege* Penitentiary Research Club that operates at the Department of Penitentiary Science of the AMU Faculty of Educational Studies conduct workshops for men incarcerated in the Rawicz Prison.

PEOPLE

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> For persons deprived of liberty, family is their link to the outside world and often determines whether their social rehabilitation and return to society are successful.

The workshops are carried out as part of the “Dad, come back!” programme conducted in Rawicz. The aim of the program is to support prisoners who are parents by helping them fulfil parental roles and nurture ties with their loved ones. Members of the club, who are also pedagogy students majoring in resocialisation, are Martyna Sujak, Piotr Filipowski, Karolina Pieterek, Karolina Jurga and Natalia Janczak. They work with fathers under the supervision of Dr Magdalena Sadowska to develop their parenting skills in regard to communication with the child, resolving family conflicts, introducing trust-based behavioural control and providing knowledge on the development of children in different developmental periods.

The programme has been running since 2022 and workshops are held in Rawicz Prison (during the Coronavirus pandemic, classes were conducted remotely). The initiative began when the prison educator approached the mentor of the student club with the suggestion of supporting imprisoned fathers. University units have collaborated with Rawicz Prison since 2015.

Understanding the child’s behaviour and the factors that affect it, as well as adapting behaviour to fit the child’s needs, makes it easier to build and maintain bonds between the child and the father.

This is particularly important as the connection is often negatively impacted when the parent is in prison. Fathers themselves recognise the importance of the issue. They actively participate in the workshops, inquire about opportunities to expand their knowledge and skills, and share the information they have acquired with their loved ones. At the same time, for students, the workshops provide an opportunity to put their knowledge and competences to the test in working with incarcerated persons. This also lays the groundwork for employment after graduation.



Standing at the door of the Rawicz prison, from left to right: Karolina Jurga, Natalia Janczak, Piotr Filipowski, Martyna Sujak, Karolina Pieterek.







Dr. Anna Olejnik

# New generation of UV filters

Skin cancer accounts for more than 30% of diagnosed cancers. Exposure to sunlight is considered one of the main contributors to skin cancer.

PEOPLE

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> Therefore, we need to develop new macromolecular UV filters that do not penetrate the skin and are photostable and non-toxic.

This is why it is so important to protect yourself against harmful ultraviolet radiation and to use sunscreens containing UV filters. These compounds can be divided into two groups: inorganic, also known as physical compounds, which act by reflecting or scattering UV radiation; and organic, or chemical, compounds, which absorb ultraviolet radiation thanks to the aromatic rings in their structure. They are capable of releasing absorbed energy in the form of heat or photochemical reactions. Some organic filters can, however, penetrate the deeper layers of skin and undergo photodegradation, causing allergies, dermatitis, toxic reactions or other adverse effects. They can also negatively affect the aquatic environment, causing coral reefs to die.

Dr. Anna Olejnik’s project entitled “Technology for obtaining high-molecular-weight UVA/UVB filters for modern cosmetic preparations,” which received an NCBR grant worth PLN 1.5 million, is dedicated to this issue.

The team synthesizes and characterizes new compounds intended to play the role of both UV filter and emulsifier in emulsion systems. The project also intends to test the phototoxicity of these compounds. The next stage of the research will be to introduce them into creams and start the application testing phase, following the approval of the bioethics committee. The project is primarily aimed at manufacturers of ingredients for cosmetics. They would then have to purchase licenses and subsequently carry out additional research. Although the cost of such studies is very high, a number of companies are already showing interest in this research and in new UV filters. This opportunity for synergy between science and industry bodes well for the success of the project.



Bottom left: Marta Szocik, Julia Leśniewska;  
top left: Klaudia Krysiak, Dr. Anna Olejnik, Jagoda Karaś





Dr. Jarosław Grobelny

# Wellbeing and teams in different types of work

The past few years and the pandemic have brought about lasting changes in the way employees work and collaborate. Hybrid and remote work have become significantly more popular. Bearing these trends in mind, AMU scientists carried out the research project “Wellbeing and teams,” which aims to understand how to support employees in various forms of employment.

PEOPLE

> For people working in hybrid teams, no factor was as important for wellbeing as work flexibility.

The study was conducted on a group of almost 1,300 workers, mainly from Poland and the USA. The researchers assessed the well-being of the respondents, i.e., whether they associated their jobs with positive feelings, held positive opinions, and experienced no negative emotions when working. Next, they looked at 26 important features related to organisation and working conditions (e.g., working conditions or team communication).

The researchers found that employees working in traditional, in-person teams believed that a well-equipped workplace was key for their job satisfaction. At the same time, surprisingly, they were less happy with those features than their colleagues working remotely. Therefore, the results of the study suggest that traditional teams would benefit from increasing the autonomy of employees regarding the conditions in their workplace.

Ensuring there are multiple solutions for flexible work should contribute to the comfort and wellness of these workers far more than investing in their workstations or addressing communication and team relationship issues. Finally, for people working in virtual teams (i.e., those in which everyone works remotely),

the relationship and communication with the person directly managing the team turned out to be the most important factor. The more often employees in virtual teams communicated with their cameras on, the better they felt.

The study was carried out by a team from the AMU Faculty of Psychology and Cognitive Science led by Dr. Jarosław Grobelny, a business psychologist.



Report cover

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AMU Prof. Jędrzej Kociński

# A new method of diagnosing Alzheimer’s disease

Alzheimer’s Disease International (ADI) estimates that between 15 and 21 million people worldwide suffer from Alzheimer’s disease. In Poland, the number of patients has already exceeded 350,000.

PEOPLE

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> The project’s authors hope that the tests developed by the team will be used for screening, helping to identify individuals who require further specialised diagnostics and more complex tests.

Alzheimer’s disease is an insidious condition. The underlying processes begin decades before we notice the first symptoms of the disease. This is the so-called latent (prodromal) phase of the disease, explains Professor Jędrzej Kociński, a member of a large interdisciplinary team and an AMU representative in the Alzheimer Prediction Project. In most diseases, diagnosis at the earliest possible stage is fundamental for the success of the treatment, but also for discovering new therapies. We all hope to have an effective drug sooner rather than later, but it may turn out that the biggest barrier to its use will be access to early diagnosis, which is currently both expensive and difficult.

The development of a new, non-invasive method of diagnosing Alzheimer’s disease at its early stage is the goal of the research project, which is carried out jointly by specialists in neurology and psychiatry, as well as scientists from Adam Mickiewicz University in Poznań and the Poznań University of Technology. This method depends on testing patients in the early stages of the disease.

These tests involve solving cognitive tasks; viewing, listening to and responding to various psychophysical stimuli; testing the patients’ visual and auditory spatial orientation; analysing perceptual differences between images and sounds; memorising layouts of objects; etc. The study excludes abnormalities in vision and hearing that could affect the results of cognitive performance tests.



Magdalena Puchalska, a graduate student of the Chair of Acoustics, verifying the results of the control group







Natalia Różycka

# A few words about speech therapy

Communication is vital to our functioning in society. It allows us to share information and express our needs and thoughts, as well as interact with others. It is not only a medium for transmitting knowledge, but also a key part of building relationships, expressing emotions and forging mutual understanding.

PEOPLE

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> The promotional activities conducted at the university and online increase access and facilitate the acquisition of knowledge of speech therapy.

Children and adults alike face speech and language disorders on a daily basis. This can have a negative impact on an individual's ability to communicate effectively (both verbally and non-verbally), on their personal development, education, and social and professional relationships. These are just some of the areas addressed by speech therapy.

The FiloLOG Speech Therapy Student Club undertakes various initiatives to promote knowledge about speech therapy and raise public awareness of speech and language disorders and the availability of tools and therapies for treating them.

Members of the club organise workshops for children and adults, prepare an aphasia awareness campaign, and publish posts on the club's Facebook profile about issues such as the diagnosis and therapy for dyslexia, dyspraxia, aphasia or specific language impairment in children (SLI).

The members of the club also volunteer to conduct individual therapeutic activities with children and adults with speech and language disorders. They continuously expand their knowledge and skills by taking part in training courses, conferences and seminars, and by cooperating with specialised institutions and organisations, including the ORCHidea Foundation, the Aphasia Association, the LOGOTOM Logopaedic Clinic and numerous therapy centres.

A special achievement of the club is the organization of the annual Student Speech Therapy Conference: *I know, I use, I act*. It is a nationwide event, bringing together members of speech therapy scientific clubs from various universities.

Scientific mentor of the club: AMU Prof. Dr. Hab. Jolanta Sławek  
Chairperson: Natalia Różycka  
Members: Natalia Bednarska, Anna Dominikowska, Alicja Pietryga-Hoffmann, Katarzyna Szczepara, Oliwia Woźniak, Aleksandra Prusak, Wiktoria Trzcińska, Sabina Kardacz, Jowita Rutecka, Oliwia Rojek, Natalia Kosmala, Wiktoria Łodyga, Zuzanna Tyma, Justyna Gwoździk



Members of the FiloLOG Speech Therapy Science Club







From left to right: Dawid Pylak, Mikołaj Mumot, Anna Schmidt-Fiedler, Michał Musiałowicz, Karolina Pierzchalska, Dr. Anna Ratajczak, Mateusz Cwojdzinski, Paweł Rostecki

# Volunteering brings people together

Student and employee volunteering has grown in popularity in recent years as a demonstration of the social responsibility of institutions, organisations and companies. For students, volunteer work not only brings the satisfaction of being involved in important social causes; it is an excellent opportunity to gain new qualifications, develop interests and meet new people, including potential employers.

PEOPLE

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> Finding an interesting volunteering opportunity or suitable volunteers is not always easy, as we found out during a workshop organised by the PISOP centre for the City of Poznań.

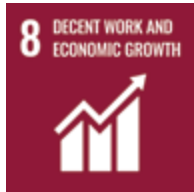
This challenge was addressed by Anna Schmidt-Fiedler, coordinator of social initiatives at AMU, together with Karolina Pierzchalska, Pedagogy student, and Dr. Anna Ratajczak, both active in VOLONTARIO. They are working on a web-based tool to effectively connect potential volunteers with organisations, institutions or companies that need them.

The technological side of the project is tackled by a group of socially-minded students from the Faculty of Mathematics and Computer Science: Dawid Pylak, Paweł Rostecki, Mikołaj Mumot, Michał Musiałowicz, and Mateusz Cwojdzinski. They are working under the supervision of AMU Prof. Jacek Marciniak as part of their engineering project. In June, the first version of the tool was showcased to NGOs during the Poznań Volunteering Days. The presentation received a lot of interest. Testing will take place in the autumn and the implementation of the finished tool is planned for the beginning of 2024. The VOLONTARIO group agreed that the application should bear the same name.

This initiative is part of the Science Shop model, which promotes the social utility of students' projects and graduate theses. In a nutshell, these projects respond to needs and questions raised by organisations from civil society in close cooperation with the commissioning institution.



Presentation during the Poznań Volunteering Fair







Anna Rutz, MA and Dr. hab Karolina Ruta-Korytowska

# Between two worlds – people who are hard of hearing

Being hard of hearing means invisibility for both the hearing and the D/deaf. After all, a hearing-impaired person is someone who hears too much to belong to D/deaf culture, but at the same time, not hearing enough to be fully included in the hearing world. This means that these people often find themselves standing ‘in between.’

PEOPLE

> The Department of Modern Polish Grammar and Onomastics, Institute of Polish Philology (Dr. hab. Karolina Ruta) and the Papillon Language Fan Club (Maria Sadowska, M.A.), with the help of the staff of the AMU Disability Support Office, decided to organise an international conference entitled *Language-Identity-Hard of Hearing*.

This was the first ever AMU conference entirely devoted to the hard of hearing community and its dimensions: linguistic, sociological, political, legal, ethno-cultural, and pedagogical. The organisers provided English and Polish sign language interpreters and stenographers in English and Polish.

The conference addressed the topic of the identity and language of the hard of hearing, which has not been a subject of scholarly interest to date. The meeting was an opportunity for knowledge exchange between academics: linguists, teachers, lecturers, interpreters, accessibility experts, hard of hearing/hearing impaired people and their allies, and all those interested in the topic of hearing loss and its impact on language and/or identity from many countries.

- The conference therefore aimed to:
- define the status of the hard of hearing in literature, culture, law and society
  - study identity issues for the hard of hearing
  - exchange experiences of conference participants from different countries and identify differences and similarities in the perception of the hard of hearing in different cultures and languages

- discuss methods of learning and teaching verbal national languages to people with hearing impairment
- propose a linguistic-cultural turn in research about people with hearing impairments.

The EU-funded event was carried out in partnership with the following organisations: the Association of Speaking Hearing Impaired People and Hearing Implant Users SUITA, the European Federation of Hard of Hearing People EFHOH, the International Federation of Hard of Hearing Young People, and the Culture Without Barriers Foundation.



One of the conference presentations

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AMU Prof. Magdalena Biniś-Szkopek

# Polish queens – co-creators of Poland’s history

The project, carried out by Professor Magdalena Biniś-Szkopek of the AMU Faculty of History, investigates the influence of queens (far less researched compared to the biographies of kings) on the political, social and cultural history of Poland.

PEOPLE

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> The project restores female rulers to their rightful place in Polish history and shows their influence on the development of the state and the formation of political, social and cultural patterns.

It is part of the queenship trend, which focuses on royalty and the roles of queens in the state, family and society.

The project focuses on queens of the Jagiellonian period, rulers from the 15th and 16th centuries. They include Jadwiga of Poland, Elisabeth of Austria and Anna Jagiellon. The researchers plan to trace the itineraries of the royal couples, identify members of the queen’s court and look at the history of emotional and personal relationships. The project involves research trips to Sweden, Vienna and Prague, as well as queries into the Polish Central Archives of Historical Records and the archives in Krakow.

The researchers hope to draw new insight from sources that are yet to be completely investigated. The final result of the project will be an edited volume detailing the results of the study, published in English to appeal to international audiences. The project aims for completion and publication by 2027.

Queen Elisabeth of Austria, wife of Casimir Jagiellon, with whom she had thirteen children, is the main focus of the project. Despite some initial difficulties and the king’s reluctance to marry, thanks to the support of her mother-in-law Sophia of Halshany, Elizabeth was able to build a close and strong relationship with

her husband, as evidenced by her long reign and numerous offspring. Elisabeth also had a significant impact on culture and international relations, maintaining contact with the elite of the European political and cultural world.

It will raise the profile of Polish queens as important figures who have helped shape the country’s history. Cementing women’s roles in history is a way to restore historical balance and justice, and uncover the hidden or under-appreciated aspects of the female experience.



Elisabeth of Austria: Queen of Poland and the Grand Duchess of Lithuania in the years 1454–1492







AMU Prof. Anna Szczepaniak-Kozak and AMU Prof. Emilia Wąsikiewicz-Firlejew

# Cultural and linguistic diversity of students

The scale of migration – whether caused by economic reasons or resulting from armed conflict – is increasing. A growing number of students does not speak the official language of the country where they are enrolled in school.

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## > The MaMLiSE project, “Majority and Minority Languages in School Environment: Helping teachers, pupils and parents,” is a response to growing cultural and linguistic diversity in European schools.

This initiative was developed at the AMU Institute of Applied Linguistics, Faculty of Modern Languages, and is funded by the Erasmus+ Programme. The project lasts from 2020 to 2023 and involves an international consortium with partners from Poland, Germany, Greece and Ireland.

According to AMU Professor Anna Szczepaniak-Kozak, coordinator of the project, “every educational experience is meaningful and valuable, even if the child has not yet mastered the language spoken in the classroom.” Supporting multilingualism and intercultural dialogue has a positive impact on teaching and learning, as well as on the social and personal development of students. The aim of the MaMLiSE project is therefore to prepare teachers to work effectively in linguistically-diverse classrooms. This is made possible through:

- a textbook for teachers
- an e-learning course that consists of 10 workshops
- recommendations
- scientific publications
- popular science materials for parents of multilingual children.

These will help teachers and parents handle the challenges posed by multilingualism and cultural diversity in schools.

During the workshop, teachers and parents can learn up-to-date information and gain valuable insights regarding parenting in the context of multilingualism. In addition, the classes allow parents to share their experiences and receive support for the comprehensive development of their child in a new educational environment. In this way, children who experienced migration feel included in the school community, and schools become more welcoming and accommodating to pupils from different linguistic and cultural backgrounds.

Detailed information and educational material at <http://mamlise.home.amu.edu.pl/>



MaMLiSE project consortium meeting







Dr. Anna Jelec and Dr. Olga Witczak

# Translating about quantum computers

Thanks to the efforts of Dr. Anna Jelec and Dr. Olga Witczak from the AMU Faculty of English, students of creative and specialist translation have the opportunity to collaborate with IBM.

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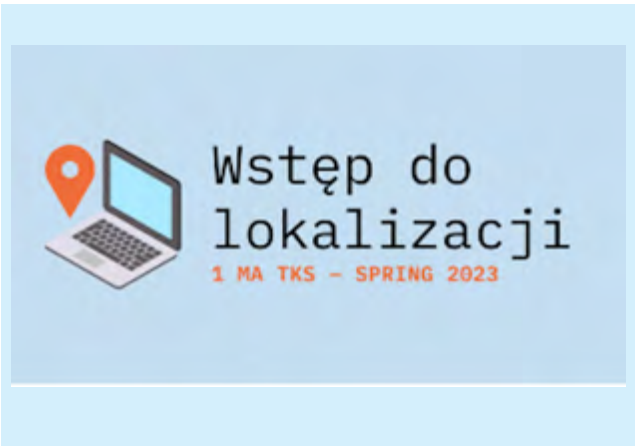
> “If the translator does not understand the source text, no one will be able to understand the translation.”

Quantum computers will revolutionize science. Because they resemble the natural behaviour of particles, they can be used to study the effects of new drugs or create dynamic climate models, while quantum protocols increase the security of the banking and finance sector. That is why the AMU Faculty of Physics has created a new engineering study programme in this field in cooperation with the IBM Quantum Hub. The young engineers are working with the open-source software Qiskit. However, the project’s documentation is written in English, and so far, the translation has been crowdsourced from users.

Is this really an obstacle? After all, people believe that in the 21st century everyone should be at least communicative in English. Machine translation is widely available, making it possible to translate virtually any text. However, knowing English is an entirely different skill than being able to translate from English. This means that translation of a quantum computer manual requires professional help.

This was the start of a collaboration between the AMU Faculty of English and IBM. At the beginning of the semester, the company’s representative, Dr. Piotr Biskupski, introduced the student translators to the basics of quantum computers. The students are trained in the use of the CROWDIN platform, after which they are able to start translating the documentation. Before the translated manual is released to users, it is proofread in terms of language (by the course lecturer) and content (by IBM). In this way, students of English help disseminate knowledge about quantum computers. The student translators themselves can be awarded a badge from IBM, certifying their translation competence.

Dr. Biskupski writes about our cooperation: “It turns out that technology and English can be combined with machine translation in a fascinating way”.



Course logo designed by Dr. Witczak for the moodle e-learning platform







AMU Prof. Monika Browarczyk

# e-HINDI for you

A Hindi language learning platform is being developed at AMU as part of a project initiated by the staff of the Institute of Oriental Studies of the AMU Faculty of Modern Languages in collaboration with the AF Group.

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> The aim is to create a free multimedia platform available to anyone who wants to learn Hindi and explore Indian culture.

The platform will offer 28 Hindi lessons, including materials on cultural, social, ethical and legal implications related to its use in professional settings. Each lesson includes two dialogues, two texts, vocabulary, audio recordings of all texts, exercises and trivia. There will also be an opportunity to review completed tasks. Gamification (learning through play and competition with other learners) will provide additional motivation.

“We offer an innovative way to combine traditional learning, interactive writing tasks to learn the Devanagari script, expand vocabulary and build communicative competence. The teaching materials will promote tolerance, and we will incorporate topics related to multiculturalism and equality,” says AMU Prof. Monika Browarczyk, Head of the AMU Department of South Asia of the Institute of Oriental Studies, and coordinator of the project.

The initiative is addressed mainly to active professionals pursuing business goals (international organisations and corporations, NGOs, translation agencies, cultural institutions, tourist offices), academics, and students wishing to learn Hindi for job and career-building purposes.

The platform will also enable the development of language skills among English speakers, as it will be available in two language versions: Polish and English.

The launch of the platform is planned for the end of November 2023. The e-HINDI project received grant funding from Iceland, Liechtenstein and Norway, and the EEA under Component III: EDUCATION, “Institutional cooperation for improving the quality and matching of vocational education and training (VET) and lifelong learning.” The program operator is the Foundation for the Development of the Education System.



Presentation of the project







Prof. Piotr Wierchoń

# From urban legend to fake news

One of the most serious contemporary challenges is the fact that it is nearly impossible to distinguish truth from fiction in the realm of mass communication. Responding to this issue is a project entitled “From urban legend to fake news. A global detector of contemporary falsehoods.”

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> “It is easier to deceive people than to convince them that they have been deceived.” – Mark Twain.

The project aims at large-scale computer-assisted analysis of Polish texts, with a particular focus on Internet content. This analysis detects the presence of fake news and clickbait in the text. It will produce and share methodological solutions that can be used to build a tool for research into these aspects of the Polish information-sharing systems. This is where traditional philology meets the IT future.

Perceiving and interpreting the world through sensationalised categories (e.g., conspiracy, anomaly, secret society, omen, miraculous sign, hallucination, actions of aliens or supernatural forces, plagues, social decline, etc.) is an important and under-recognised element of traditional thinking, which has been present in our culture for centuries and still plays an important role in many areas of social life. Therefore, research on this type of information could contribute to a better understanding of some modern phenomena.

The result of the project will be the DETECTOR system, a traditional classifying engine, i.e., a system that shows the percentage of a given piece of information classified as fake news. The proposed tools will significantly expand the toolbox of many humanities disciplines. The project uses the latest scientific methods and research results, including IT solutions, such as machine learning.

The tool will be made available at the end of the project. The project received co-financing from the INFOSTRATEG I competition: Advanced information, telecommunications and mechatronic technologies, and Verification of information sources and detection of fake news. The project is implemented in 2022-2025 by academics from the following AMU faculties: the Faculty of Political Science and Journalism, the Faculty of Mathematics and Computer Science, and the Faculty of Modern Languages. The project is headed by Prof. Piotr Wierchoń from the AMU Centre for Artificial Intelligence.



Fact or fake







Anna Młynarczyk, MA

# Treat yourself to some knowledge!

The promotion of science and the arts is a very important part of AMU’s mission. The Poznań Festival of Arts and Science is an event that brings together not only the faculties and other AMU units, but also members of the consortium of nine universities.

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> “What makes this experience valuable is the opportunity to meet people, who share their passion and time so that others can get a glimpse into the world of science and art.”

The event was created out of passion for sharing knowledge and experience, and above all, the university’s mission of making science accessible to everyone. Indeed, levelling the playing field is an important part of the work to promote science and the arts. Over the years, the festival has been, and continues to be, a place for face-to-face encounters between scientists, teachers and implementors, and young audiences fascinated with scientific discovery. During the festival, people of all ages and levels of experience devote their time to discovering the beauty of science and art. Here, they can hear and see, but above all, get involved with the highest quality of science and art.

Festival events are planned so that students, thanks to the involvement of their teachers and mentors, participate as part of their school activities. The motto of the 26th festival was: “Go ahead, explore the world.” 600 live events were organised by 9 partners, thanks to the involvement of more than 1,000 researchers, PhD students, teachers and administrations. The festival’s main coordinator is Adam Mickiewicz University, Poznań. Anna Młynarczyk, the director of the festival, works in the AMU Marketing Centre.

The festival builds relationships, fuels incredible emotions and, of course, fosters great fun with science and art. A range of workshops, demonstrations, games and many other activities are organised in Poznań, Ślubiice, Gniezno, Kalisz and Piła.

In 2023, more than 14,000 people attended the festival. The next, the 27th edition, will take place in April 2024.

Other valuable initiatives to promote learning are offered by AMU faculties and branches include, e.g. Night of Biologists, Museums, Libraries, Scientists or the Colourful University.



Young festival participants and their teachers







From left to right: Karol Idaszak, Tomasz Grzybowski, Mateusz Tylka, Mikołaj Pokrywka

# Students programming for healthcare

A group of students from the AMU Artificial Intelligence Centre received an award during the e-Health Hackathon, organized by Roche Polska and Janssen Polska in cooperation with the Federation of Polish Entrepreneurs under the auspices of the Warsaw Health Innovation Hub.

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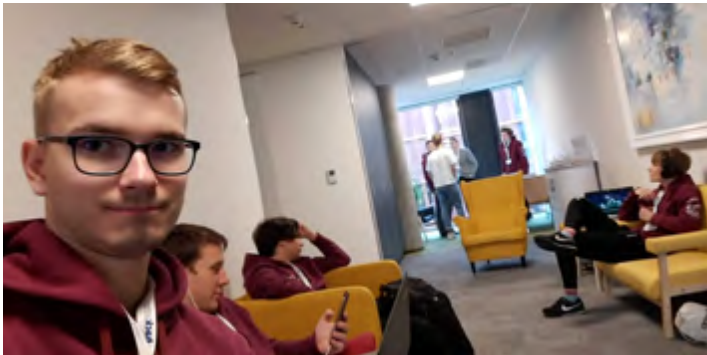
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> In early October, the team received a commendation and an invitation to present their solution in front of experts from the public sector, including the Medical Research Agency and the Ministry of Health.

The hackathon that took place in Warsaw sought potential applications for new technologies related to the issue of heart failure. After a day and night spent preparing a solution, during which time the participants could consult with medical professionals, the teams presented their solutions to the committee.

The DREAM team, which included Mikołaj Pokrywka, Mateusz Tylka, Karol Idaszak and Tomasz Grzybowski, proposed a universal solution, consistent with the policy of increasing the digitalisation of healthcare in Poland. The project offers to streamline the queue management process in medical facilities while collecting healthcare data. For this purpose, prior to the visit the patient is asked to fill in a questionnaire, which they can complete at a time and place convenient to him or her. The collected data can be used to formulate a preliminary diagnosis, which can simplify the patient's admission at the doctor's office. The authors also developed a model for overall patient diagnostics. As a result, the project is expected to increase efficiency in the healthcare sector, reducing queues, and improving the quality of visits by making work easier for doctors.

The team members study computer science with a specialization in artificial intelligence (Master's degree) as part of the Academy of Innovative Applications of Digital Technologies (AI Tech) project, which is implemented as part of a consortium of five leading Polish universities providing computer science education.



A short break while working on a solution







Dr. Łukasz Rogowski

# Science shop at the faculty of sociology

“The role of the father in raising a child,” “Emotionality of boys and men,” “Artists and the world of art”; these are some of the topics of presentations made in the academic year 2022/2023 by people studying sociology in the first year as part of classes conducted in cooperation with entities from the social environment.

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> “We assume,” says Dr. Łukasz Rogowski, “that every university, including AMU, is a member of the local community. Moreover, the university has obligations toward its community: to promote positive social change and support social partners.”

The starting point for these graduate projects to engage with partners from the university’s social environment and respond to their needs, resulting in theses that have a strong applied aspect. Such a model is referred to as the *Science Shop*, and it has operated at the Faculty of Sociology of Adam Mickiewicz University since the academic year 2021/2022. The model was implemented also at Faculty of Sociology by Dr. Łukasz Rogowski, Vice-Dean for Cooperation and Development, and Anna Schmidt-Fiedler, MA, coordinator of social initiatives.

During the 2022/2023 academic year, the *Science Shop* initiative participated in Social Imagination classes. The collaboration was with Patryk Moszka, who runs equality workshops on such subjects as masculinity; and Florentyna Macioszczyk from the Galeria Piramida, whose work involves multi-faceted activism. Throughout the semester, students consulted on their projects with our partners, who wanted to know the students’ perspectives on the topics they deal with. As a result, six projects were created to respond to the needs of our partners. The projects provided our partners with insight they can use in the development of their business. The projects were presented to the public in Galeria Piramida.

“I believe initiatives like this are very necessary. As an anti-discrimination educator, I have gained new perspectives regarding what is going on in the minds of young people. I am glad that these presentations took place in this gallery, and that this place can be associated with more than just art,” says Florentyna Macioszczyk.

Patryk Moszka adds, “I am very pleased that the topic of masculinity engages a diverse group of people, including sociology students. It has been an inspiring experience to consult on projects that define masculinity and boyhood in a diverse and inclusive way.”



Student presentations in Galeria Piramida







From left to right: Dr. Jakub Jakubowski, Małgorzata Dynowska – ODN Poznań, Joanna Zielińska – ODN Poznań

# School of the 21<sup>st</sup> century. Challenges for teachers and students

In the view of experts, as well as students, teachers, and parents, the education system in Poland is in dire need of reform.

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> This edition of the conference was unique for two reasons. It was the first conference co-organised with the AMU Faculty of Polish and Classical Philology. Additionally, this was the first time we invited students from associated schools to participate in the event.

This stems from various factors. For many years, the AMU Faculty of Political Science and Journalism has cooperated with schools on all levels in various topics. AMU staff and students meet with the school staff and students during workshops, lectures and debate tournaments. One of the outcomes of this expansive collaboration is the conference “School of the 21<sup>st</sup> Century. Challenges for the teacher and the student.”

This annual event integrates the school and academic community. The most recent conference was held on 9 December 2022. The theme of the conference, in line with the Faculty of Sociology’s key areas of interest, was student media. The event was attended by teachers and students from all over Poland. The teachers attended a plenary session on texts in the media, as well as fact-checking, while the young people soaked up knowledge and gained skills during journalism workshops held by students from various journalism bodies, Faculty of Political Science and Journalism staff, and students from the Faculty of Polish and Classical Philology.

Further highlights of the programme were panel discussions for students and teachers, which addressed issues relevant to school media. The conference was concluded with round table discussions, the announcement of a post-conference publication, and launch of a competition for the best student journalist report.

The conference was attended by nearly 200 participants. Next year’s edition plans to include another group of attendees: the parents. The event has been supported by our long-term cooperation with the Teacher Training Centre in Poznań.



Workshops with teachers





# CITY

An aerial photograph of a city, likely Vilnius, Lithuania, showing a dense urban landscape. The foreground and middle ground are filled with numerous multi-story apartment buildings, many of which are painted in light colors like white, yellow, and blue. There are also green spaces and trees interspersed among the buildings. In the background, the city extends to the horizon under a blue sky with scattered white clouds. The word "CITY" is written in large, bold, yellow capital letters in the top left corner.

As a leading academic institution, AMU shapes the character of the city and the region. It acts as a catalyst for development and a beneficiary of the processes and initiatives in its environment in the spirit of mutual aid.





Dr. Adam Wronkowski and Dr. Przemysław Ciesiółka

# Poznań Academy of Spatial Planning

The perception of the environment and its impact on our lives is a scientific and educational project carried out by members of the Academic Spatial Management Club (AKNGP) from the Faculty of Socio-economic Geography and Spatial Management.

> It is aimed at a wide audience, including pre-school and school children, high school students, university students and adults. Since 2015, several hundred people have taken part in its events.

It was established in 2015 by Dr. Przemysław Ciesiółka (AKNGP supervisor) and Dr. Adam Wronkowski (former member of the club, currently an employee of the faculty).

In addition to university classrooms, the Academy holds classes in kindergartens, primary and secondary schools, village centres, children’s homes, senior citizens’ clubs and a school for special needs students. Each meeting is tailored to the needs of the group.

The main objectives of the project are:

- introducing participants to the world of spatial planning to help them build social and spatial awareness and sensitivity to the environment,
- helping participants understand social behaviours and mutual relationships between people and space,
- empowering the participants and developing interdisciplinary methods of creating space.

The project includes:

- practical workshops, aimed at drawing attention to the variety of situations occurring in cities, starting from how they arise, what they consist of, and what is important, to create a shared understanding of the needs of people living in the city. The activities are intended to show that cities are not just buildings and streets, but above all, cities are people.

- lectures devoted to the perception of space, sensitivity to the environment and the relationship between people and space. They introduce the broadly-understood concept of spatial management and discuss its contemporary issues.
- an urban treasure hunt that empowers the participants to interact in the city space. Through the game, the participants learn about the space in which they live by creating mental maps and memorising details. The participants also develop such skills as spatial orientation and map reading.

Those interested in joining the Academy may apply via e-mail: [akngp.amu@gmail.com](mailto:akngp.amu@gmail.com)



A workshop with preschoolers

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Prof. Monika Bakke

# Silent Park project

Urban spaces are increasingly perceived as multi-species ecosystems, in which non-human inhabitants are increasingly in focus, and their needs are appreciated. The human-dominance model is replaced by the concept of interspecies coexistence.

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> “The city offers spaces for entertainment and relaxation, but silence is virtually nowhere to be found,” says Professor Monika Bakke, who is behind the idea to create the Silent Park at the former Szczytno Stadium in Poznań.

This type of project and this perspective lies at the core of the AMU Centre for Environmental Humanities. In the recently implemented project „Refugia. Beware of these places,” in cooperation with the Arsenal Municipal Gallery and activists for green spaces in the city, the staff of the centre, inspired by the artistic work of Anna Siekierska, drew attention to the former Edmund Szczytno stadium in Poznań. Erected in 1929, the stadium had a design flaw and just before the war, a decision was made to demolish it. Unfortunately, during World War II, the stadium became witness to suffering and atrocity as the Jews from Wielkopolska and the Łódź ghetto were imprisoned and executed there. Rebuilt and used after the war, it began to fall into disrepair after 1989, creating a unique natural habitat.

Professor Monika Bakke, director of the Centre, developed a project to commemorate the tragic history of this place by designating it a Silent Park. The idea was submitted to city authorities. In our culture, silence is associated with respect. Here, it would also create opportunities for people, animals and plants to coexist, and for everyone to find shelter and peace. The Silent Park would benefit people, as visitors would be able to stay and relax in this silence.

This would be a chance to work through the place’s tragic history in the spirit of respect for nature and support for urban communities welcoming to multiple species.

The project and the activities of the centre are part of the growing focus on issues related to light and noise pollution.



A path leading from the top of the stadium







AMU Prof. Eliza Rybska

# Sustainable public health

Sustainable public health is the main objective of a European research project called the Partnership for Scientific Education (PAFSE).

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## > PAFSE aims to raise public awareness and empower schools and local communities to prepare for threats to public health: epidemics, chronic diseases and more.

The project is based on collaboration between schools, research centres, businesses, public health authorities, libraries and NGOs. The common goal is to create a local community of educators and support networks that promote sustainable health education and are ready to prevent and manage risks to public health.

The implementation of the PAFSE project is based on three pillars:

- public health in the spirit of one health, which means tackling key public health issues through collaboration between different services,
- open schools, cooperating with the local community, experts and scientists,
- inquiry-based learning (IBSE), which involves using methods such as argumentation, project and problem-based learning to promote health.

The project is currently in its pilot phase, involving eight schools in Poznań. Lesson plans have been developed and students take part in activities led by experts from such fields as dietary health, cancer prevention or debating. In addition, students and teachers are invited to popular science classes held at the university and other cooperating institutions, including the Probiotics company, the Regional Sanitary and Epidemiological Station, and Diagnostics.

An educational web platform has also been created to support collaboration and sharing of educational resources.

PAFSE is a multidisciplinary initiative carried out by the staff of the AMU Faculty of Biology and the AMU Faculty of Educational Studies: AMU Prof. Eliza Rybska, Dr. Zofia Chyleńska, Dr. Anna Gulczyńska, AMU Prof. Sylwia Jaskulska, AMU Prof. Barbara Jankowiak, Dr. Kamila Kacprzak-Wachniew, AMU Prof. Michał Klichowski, Dr. Karolina Walkowiak-Nowicka, Dr. Jakub Barylski, AMU Prof. Joanna Mokracka, and AMU Prof. Robert Nawrot.



Popular science course







Students from the Faculty of Geographical and Geological Sciences participate in drilling in the Żurawiniec Nature Reserve

# Żurawiniec nature reserve

*How to be a good neighbour.* The Morasko University Campus borders directly on the Żurawiniec Nature Reserve, created in 1959 to protect the transitional peat bog vegetation complex.

> As part of promotional effort activating the local community, the researchers and the Centre for Local Initiatives in Piątkowo are planning a series of teaching walks for the residents of Poznan, especially the Piątkowo and Naramowice districts.

In addition to its natural beauty, the Żurawiniec nature reserve hides valuable organic sediments that allow us to trace the history of the local ecosystem and the transformation the landscape undergone since the early Middle Ages, before human activity intensified in the area as the Piast dynasty laid the foundations for the Polish state.

The reserve had been in decline for many years, subject to desiccation, until an investment in irrigation was made in recent years as a result of an initiative by the Poznań Forestry Department, preceded by research by staff from the AMU Faculty of Geographical and Geological Sciences. “The peat bog has been re-hydrated; we used small-scale retention by supplying rainwater through a drainage system.”

Professor Mirosław Makohonienko, head of the Institute of Geoecology and Geoinformation, is fascinated by the natural and social potential of the place. For many years, professor Makohonienko has been conducting research at the site using its resources to teach classes. Now, together with Prof. Ryszard Goldyn from the AMU Institute of Environmental Biology (WB) and his team, they have written a popular science publication about Żurawiniec. It will include natural and social motifs. Printing is planned for autumn this year because the researchers want to share their knowledge of

the reserve with the residents of the Piątkowo and Naramowice districts, with whom they collaborate to defend the area from greedy developers. It is thanks to the local residents and the efforts of our researchers that Żurawiniec is still a reserve, even though the plants that were the reason the site gained its protected status no longer grow there. The research of Prof. Mirosław Makohonienko and the efforts of Prof. Bogdan Jackowiak established these valuable biogenic sediments as the basis for maintaining the protected status of Żurawiniec.



Forest swamps in the vicinity of Żurawiniec

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Signing the agreement. From left to right: Dr. Jan Zgrzywa, Director of the University High School in Słubice, Wojciech Stramski, President of the Management Board of Beyond.pl, Prof. Bogumiła Kaniewska, Rector of the Adam Mickiewicz University, Krzysztof Kielec, President of the Kostrzyn-Słubice Special Economic Zone, Karol Seifert, Director of the 6th High School in Poznań

# Quantum computing – degree of the future

Collaborating with the environment to diagnose and support the professions and competences of the future is very important for AMU.

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> This is reflected in a cooperation agreement signed on 9 January 2023 between the Kostrzyn-Słubice Special Economic Zone, Adam Mickiewicz University in Poznań, the VI High School in Poznań, the University High School in Słubice, and one of the largest investors in Wielkopolska, Beyond.pl.

One of the first projects will be to collaborate in quantum computing, the newly-emerging field of study at AMU.

“These studies will educate experts in the implementation of quantum technologies in the IT sector, as well as researchers in the basic fields of physics. Students will also learn to independently create and optimise programs for quantum computers or their simulators, and will gain insight into existing quantum algorithms. Currently, quantum computers offer new algorithms and new ways of processing information, allowing for faster solutions to optimization problems encountered, for example, in medicine, chemistry, environmental protection, banking, logistics and management,” says Prof. Michał Banaszak, AMU Vice-Rector for Digitalization and Business Cooperation.

Business partner Beyond.pl has been a leader in data centre and cloud services in Poland and the Central European region for more than 15 years.

“Supporting initiatives that build the capacity for innovation and cutting-edge technological competences is a must, as digital transformation affects our lives on an increasing scale. We are witnessing

increasing use of artificial intelligence (AI), machine learning, blockchain technology, 5G networks, or the Internet of Things (IoT) in both business and private life. All the technologies I mentioned have a common denominator: data. Their volume increases exponentially, doubling every three years. This requires the sustainable computing power necessary to store and process the data.

Quantum computers are one of the solutions that will allow us to process large volumes of data faster than it’s ever been possible,” argues Wojciech Stramski, President of the Management Board of Beyond.pl.



AMU Rector at a meeting with the media







Dr. hab. Sylwia Bródka

Prof. Andrzej Macias

# Micro-regions in landscape and environmental protection

A team of geographers from AMU published a ground-breaking publication that delineates and describes in detail the physical and geographical microregions of the Wielkopolska Region. Comprehensive knowledge about new natural units will primarily serve to protect the landscape and the environment.

> “In Wielkopolska, valuable landscapes dotted by occasional church towers or town halls are disappearing, together with the forests and trees that used to be an important structural element of the environment. In many regions of the country, a centuries-old traditional landscape has been preserved. I would like to preserve it for future generations,” says Prof. Macias.

The volume “Physio-geographical regions of the Wielkopolska Region,” edited by Prof. Andrzej Macias and Dr. Sylwia Bródka, is the result of five years of work and a response to a landscape audit carried out in Poland in connection with the implementation of the provisions of the European Landscape Convention into national law. The audit identifies the unique features of the national landscape that should be protected. Action is needed now, because the beauty and coherence of natural landscape is threatened by adverse changes, such as the spontaneous sprawl of development in suburban zones in recent decades.

“In the next several years, our challenge is developing social sensitivity,” adds Dr. Sylwia Bródka. “As a society, we know we should protect architectural and natural monuments, but we do not realize that they come together to create a whole bigger than its respective parts: the landscape,” she explains.

The book by the Poznań geographers is not just a scientific monograph. It is primarily intended to protect the landscape, because it not only provides the latest, detailed, systematic information, but it has an applied aspect. The updated division into mesoregions, and establishment of the new microregions, will be used by local governments and taken into account in strategic documents as a starting point for making environmental assessments, introducing protective measures and spatial planning.



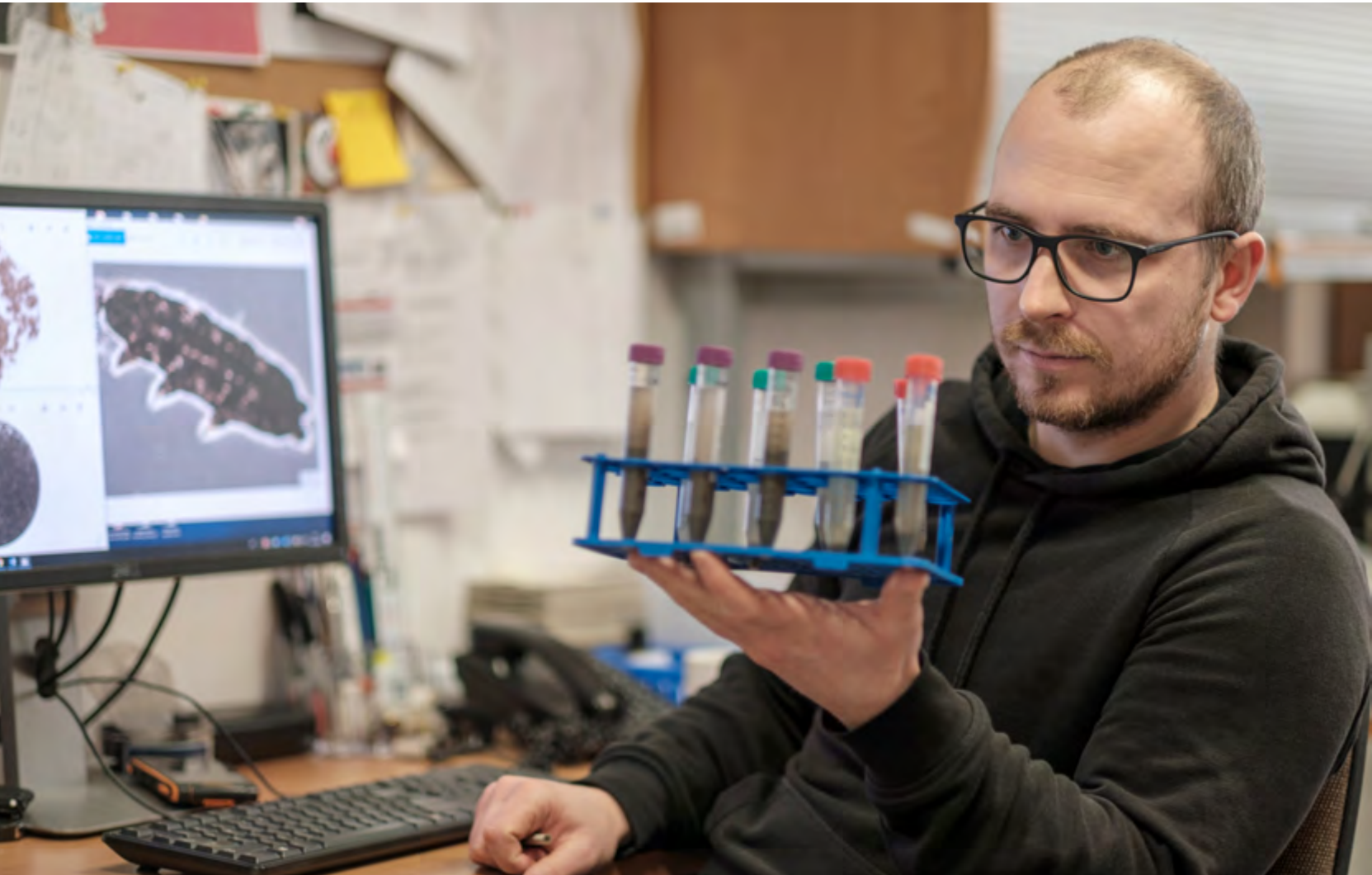


# ENVIRON- MENT

A close-up photograph of a field of wildflowers. In the foreground, several tall, spiky green stems of purple thistles are in focus, with their vibrant purple flower heads. Interspersed among the thistles are numerous white daisies, some in full bloom and others as buds. The background is a soft-focus expanse of more greenery and flowers, creating a sense of a vast, natural landscape. The lighting is bright and natural, suggesting a sunny day.

Nature and the environment are extremely important areas of activity at AMU; our scientists, as well as students, deal with issues such as environmental education, climate change, sustainable agriculture or access to drinking water.





AMU Prof. Krzysztof Zawierucha

# Biogeoeko. Experiencing climate change

Seven students from the AMU Faculty of Biology, people who are passionate about science, enjoy uncomfortable expeditions, thrive in challenging natural environments and want to discover how they work, took part in the Arctic course on experiencing climate change in the Spitsbergen.

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> The expedition was spearheaded by AMU Prof. Krzysztof Zawierucha, and the course was taught by Prof. Beata Messyasz, a hydrobiologist and researcher on the diversity and ecology of micro- and macroalgae, and an enthusiast of flowing and standing waters; and Dr. Łukasz Grewling, an aerobiologist and botanist, a respected specialist studying pollen and airborne fungal spores.

They explored Arctic ecosystems, conducted scientific research, and, above all, tangibly experienced the ongoing climate change.

From Spitsbergen, even without specialized research equipment, it is clear exactly how quickly glaciers are disappearing and how vulnerable the Arctic ecosystem is to global climate change. It is there, standing on the seashore, that we have the opportunity to see simple relationships: birds feeding in the sea and transporting bio genes to the nutrient-poor land in the form of guano, which then fertilises the tundra, creating beautiful, vibrant green mossy carpets. It is there, after the glaciers have receded, that one can observe the formation of a new tundra ecosystem in the foreshore, and finally, it is there that one can see how even a limited human impact negatively affects the ecosystem.

The course focused on studying the impact of bird colonies on terrestrial polar ecosystems, the study of bioaerosols (microscopic invertebrates, pollen and fungal spores in the air) and the biology and ecology of glacial ecosystems. Part of this study is considered pioneering in the region.

The course did not end with an expedition to the Arctic; it continues. Students are currently analysing material and compiling data to prepare for publication in international scientific journals. A magnificent herbarium and photographic documentation were prepared as part of the course. They will be available for visitors at the Faculty of Biology. Part of the collection will be deposited at the Natural History Museum of Adam Mickiewicz University in the Collegium Biologicum building after processing. But all of this is not what is the most important; the most profound benefits of the project are the knowledge, experience and understanding of the effects of climate change that the students gained during the course.



Field activities







Prof. Anna Preis

# Wind turbines vs. noise

The advantage of wind farms is that they generate clean energy; the disadvantage is the distinctive noise made by the turbines. Some people also do not like what the wind turbine looks like.

> The main objective of the HETMAN (Healthy society – towards optimal management of wind turbines’ noise) project is to create the foundations, methods and tools for reliable assessment, control and management of noise generated by wind power plants.

Sounds emitted by wind turbines are different than common industrial noise. They have different temporal and spectral characteristics, and affect large areas. Poland – as well as many other countries – use the same noise limits to monitor industrial and wind turbine noise, even though the indicators are not appropriate for measuring wind turbine noise.

For some residents, the sound produced by a wind turbine working in the area is annoying. This public discontent has led to changes in Polish law regarding the conditions for locating new wind farms, virtually halting the development of this market in Poland.

There is still much we do not know about how various characteristics of turbine noise impact level of perceived nuisance, as further research is on the topic is needed.

Multiple recordings have been made as part of the project. Continuous monitoring of noise generated by the wind turbines is conducted on a selected site. The measurements are coupled with the results of surveys conducted among residents in the neighbourhoods of the turbines.

The project will result in a Best Practice Guide that outlines a methodology for measuring, predicting and assessing noise generated by turbines and sets out recommendations for limiting noise below the level that would cause a nuisance.

The Polish Wind Energy Association, which is also a partner in the project, has already expressed interest in the recommendations. The initiative, implemented between 2021 and 2024 by an international consortium of universities and institutions, is led by Prof. Anna Preis from the AMU Department of Acoustics at the Faculty of Physics.



Wind turbines







Wojciech Wysoczański, MA

# Amazing mushrooms

For Wojciech Wysoczański, a PhD student from the AMU Faculty of Biology, the world of fungi is downright magical. The interactions between fungi and plants are still being explored, and the young scientist is fascinated by their complexity and ability to adapt to a changing environment.

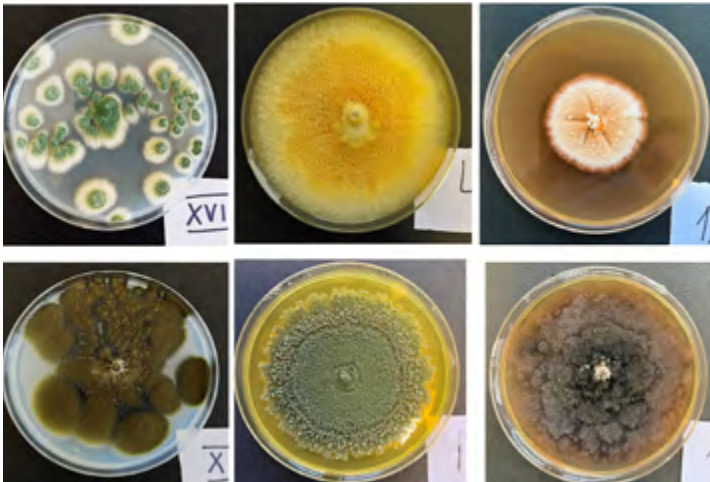
> Observing Nature and studying it has time and again provided innovative solutions that we use in our daily lives.

They have been with us for a very long time, likely around 1.5 billion years, so mushrooms have lived through a lot.

“I am particularly interested in using fungi symbiosis with plants to improve the condition of the latter. Particularly the plants that are in danger of extinction.” More recently, Wojciech has been looking for evidence of fungal endosymbionts in species reintroduced into the Tatra National Park, such as the *pulsatilla halleri slavica* and the *senecio umbrosus*. In the absence of fungal endosymbionts, these very rare species may not be able to survive, despite the efforts of researchers to reintroduce them to our mountains.

“The possibility of using endophytic fungi to fight cancer is also intriguing,” enthuses the scientist. The researcher, working as part of a team, is looking for fungi that produce chemical compounds with anti-cancer properties. He has recently succeeded in extracting taxol-producing fungi from a colonised plant. The chemical compound is already used to fight cancer cells. What kind of plant was it? The species is *Wollemia nobilis*, a so-called living fossil. In the wild, the plant only grows in Australia, and the location of the specimens is kept secret.

However, the scientist’s research focus lies in the movement of fungal endosymbionts in networks of self-cloning plants, i.e., plants that are able to reproduce asexually. The offspring from asexual reproduction are called ramets; they are connected by rhizomes, or runner roots. Internet networks operate on a principle similar to networks of self-cloning plants. Wysoczański believes that the research can be useful to IT professionals working on increasing the capacity of IT networks.



In vitro culture of endophytic fungi isolated from the *Wollemia nobilis* plant.







Dr. Jakub Baranek

# Bacteria as the farmers’ allies

Dr. Jakub Baranek from the AMU Faculty of Biology studies the bacterium *Bacillus thuringiensis*. It has the ability to infect and kill insects while being safe for humans and other vertebrates.

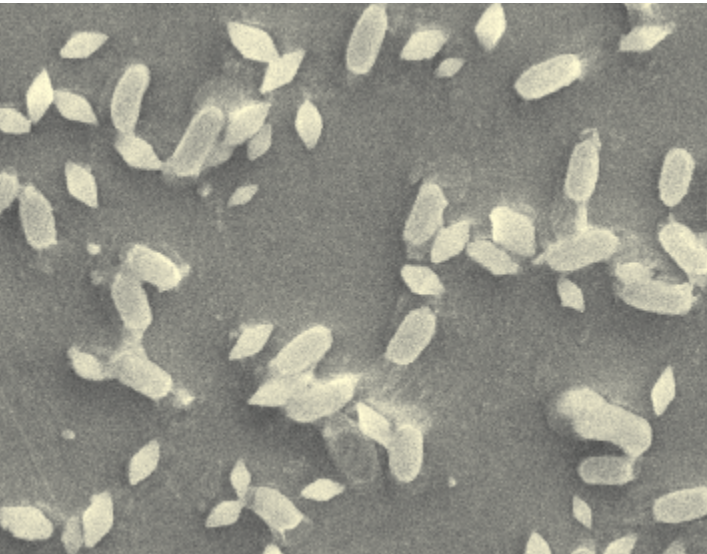
> Dr. Baranek’s research focuses on battling four species of pests: the codling moth, the beet armyworm, the heart and dart moth, and the pine-tree lappet, all of which can cause significant losses in the agriculture, horticulture and forestry sectors.

The main objective of the research is to isolate and describe the proteins produced by this bacterium, among them the Cry and Vip family proteins, which have insecticidal properties. Several of those proteins have already been tested, and experimental results demonstrate their efficacy against harmful insects. Some solutions have already been patented.

Compared to chemical pesticides, biological agents have several important advantages. They act selectively and are safe for the environment and humans. Chemical pesticides affect all organisms, whether they are considered harmful or beneficial. This causes environmental degradation and destabilizes biological balance. In addition, chemical pesticide residues can end up in food and affect consumer health.

Biological agents also have some limitations. They are narrowly effective, acting only on specific groups of pests. They have a short-lived effect, due to degradation under UV light. In addition, they require UV protection in the field, which can be a challenge for farmers. An alternative is transgenic plants that produce insecticidal proteins, but their introduction is

controversial and has been met with public resistance. Dr. Baranek’s work is quite advanced; the results uncover the great potential that these proteins can have for the economy. However, in order to market these formulations, further research is needed, including field studies, the development of an application method, and an expensive and lengthy product registration process.



*B. thuringiensis* seen through the scanning electron microscope (SEM). The bipyramidal crystals are protein crystals containing insecticidal toxins and the oval particles are bacterial endospores







Justyna Olszewska, MA

# Darker, please!

Doctoral students from the AMU Astronomical Observatory, Justyna Olszewska and Karolina Dziadura, placed first in the ekoMasters 2022 competition for their project „Dark Sky over Morasko.” The winning project is about protecting the dark skies over the AMU campus.

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> Although LED light is praised as economical, it is harmful to humans and animals, disrupts the sleep cycle and affects the secretion of melatonin. It also kills pollinating insects by creating islands of light, such as parks and city squares illuminated at night. Brightly-lit illumination parks, often created on the outskirts of cities, are particularly disruptive to animal life, especially if they also play music.

“We believe that at this moment, since there is so much emphasis on environmentalism, we should also address the problem of light pollution in the sky. (...) Large buildings, including stores and warehouses, are unnecessarily and excessively illuminated at night. The scattered light, often directed upwards to the sky poses a huge problem. One such large luminous complex is AMU’s Morasko campus.” Hence, the two researchers came up with several solutions. Among the more expensive proposals is replacing lamps with ones that can be fitted with shields that prevent light spills in the direction of the sky. Dimmer light bulbs that are a warmer colour can also be used. “One of the cheaper solutions we propose is to install shields on existing light fixtures. This solution is used at the AMU Astronomical Observatory. Further solutions are to switch off some of the lamps or to install motion sensors that would switch on the lights only when needed; both of these solutions would further contribute to saving energy.”

Both doctoral students are members of a collective dedicated to promoting astronomy and, in particular, the topic of dark sky preservation. “We called ourselves the Good Night Collective so that we could have good evenings and beautiful nights,” explains

Justyna Olszewska, who is also the curator of the unusual exhibition “Not This Sky,” featured in the Zamek Cultural Centre. The exhibition sought to fascinate the public with outer space and demonstrate the potential of space research at Poznań institutions.



PhD students Justyna Olszewska and Karolina Dziadura







Nature walk. A spring field excursion into the peat bogs and forest swamps on the border of the municipalities of Piła, Kaczory and Skóra. Organised and led by: Dr. Paweł M. Owsianny and forest rangers from the Zdrojowa Góra Forest District

# Natural baths with the Piła branch of AMU

Meeting other people and experiencing things together is among key human needs. It significantly improves our physical and mental health, particularly when we are able to experience it close to nature.

ENVIRONMENT

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> “Our dream is that the area of the Piła campus will become an environmentally-friendly, health-promoting natural cyber park. We want it to be open, provide modern education, connect the broken strands of the connection between humans and nature,” says Dr. Owsianny.

Among the social initiatives organized by the Adam Mickiewicz University’s Nadnotecki Institute in Piła, nature walks are particularly popular. Some, like “Day on the Wetlands,” take visitors to the peat bogs; others, such as the “Spring University Walk,” show them around the region’s important natural and cultural sights, or encourage field study of different forest species at night, like “Night in the Forest.” These well-attended events are organised in cooperation with the Zdrojowa Góra Forestry Commission, the Piła Branch of the Polish Forestry Association and the Piła Teachers’ Advisory Centre. The participants are residents of the city of Piła and the surrounding area. The walks offer a combination of physical exercise and a helping of new knowledge.

“The more we bathe in nature, the better for our health! Let’s get out of the house. Whether it’s to the nearest park, forest, meadow, river or lake area, a walk alone, or a hike with friends – this is our opportunity to meet new people with a common outlook. A number of studies show how important it is for our wellbeing. However, sometimes it is difficult to take the first step. This is why AMU offers a solution: a series of “natural baths” where participants learn about the importance of the environment for human wellbeing, and need to protect it,” says the organizer and tour guide, Dr. Paweł M. Owsianny, director of the AMU Nadnotecki Institute in Piła.

To take care of your health and gain new knowledge, you can visit the Piła branch of AMU, where a pro-climatic nature garden has been growing for three years. It includes an educational apiary and a community garden that we operate together with the Pszczola Foundation. This part of the AMU Nadnotecki Institute is beloved by children, young people and adults.



Educational apiary







AMU Prof. Krzysztof Dragon

# Safe water supply through shoreline infiltration

Water plays a key role in the life of all organisms on Earth, including humans. In the context of climate change, it is among the natural resources facing the biggest threat.

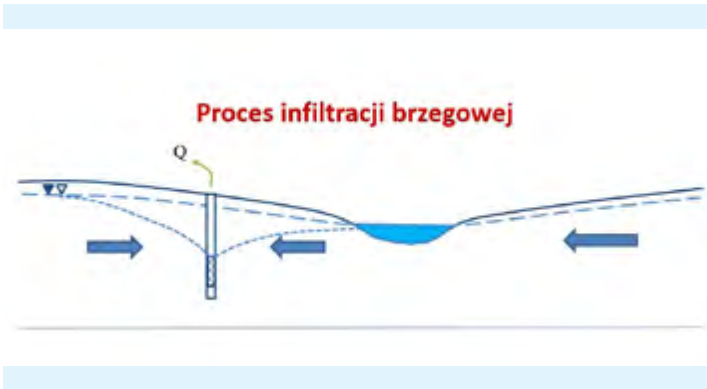


> **Rising temperatures, changing rainfall patterns, droughts and floods affect water availability in various regions of the world. With an increasing proportion of the population living in cities, ensuring sufficient quantity and quality of water is a priority.**

To supply water to large urban agglomerations, groundwater resources are normally artificially boosted with surface water. This method is used to avoid reliance on poorer quality surface waters. One method for artificially boosting groundwater resources is called shoreline infiltration. A well is drilled in close proximity to a river (usually <100 m), creating a depression that causes the flow of infiltration water from the river (sometimes a lake) into the well. As the infiltrating surface water passes through the ground, it is naturally treated and takes on the characteristics of groundwater. However, the quality of infiltration waters largely depends on the quality of the surface waters undergoing infiltration. Some pollutants can only be partially removed with this method. This applies to organic micropollutants, such as pharmaceuticals, personal care products or pesticides. They are called emerging contaminants.

The project “Safe water supply as a result of shoreline infiltration – Study of the migration of emerging micropollutants” is carried out by AMU Prof. Krzysztof Dragon from the Faculty of Geographical and Geological Sciences.

Its main objective is to study organic micropollutants (pesticides, pharmaceuticals and their metabolites) and the conditions for their migration in infiltration waters used for municipal drinkwater supply. The research is carried out on three groundwater intakes (Śrem, Gorzów Wielkopolski and Oborniki) that use shoreline infiltration from surface waters. The results of this grant-funded study will also have an applied angle. The researchers will develop guidelines for predicting changes in groundwater quality (caused by organic micropollutants), as well as methodological guidance for groundwater protection (e.g., for designing protection zones for water intakes).



Shoreline infiltration. Diagram from the materials of Prof. Dragon





From left to right: Patryk Musiatek, Mariola Majewska, Aleksandra Adamczyk, Michalina Krakowiak, Natalia Kielich, Dr. Jakub Barylski

# The secret relationship between viruses and bacteria

When two dogs fight for a bone, the third runs away with it – this old saying can be used to explain project PhageBlaster, implemented as part of the Ministry of Education grant “Student research clubs create innovations” at the Faculty of Biology.

ENVIRONMENT

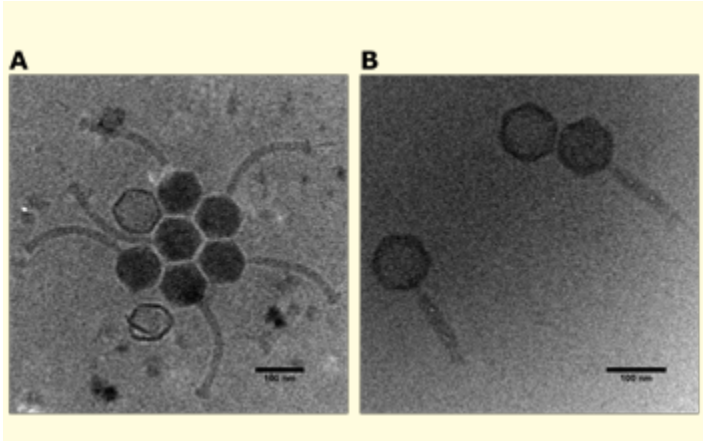
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> The students showed that humans have much to gain by studying the relationship between bacteria and bacteriophages. In the course of the project, four new, previously unknown, phages have been identified; their genome was sequenced and incorporated into the PhageBlaster learning sequence database.

The project „Modernization of the innovative PhageBlaster program for predicting phage-host interactions” develops an innovative tool: an AI-supported program for predicting interactions between the viruses that infect bacteria and their hosts. These viruses, known as bacteriophages, are widespread in a variety of environments. Their diversity opens up potential not only in scientific research, but also in medicine, biotechnology, the pharmaceutical industry and food production. Understanding their relationship is important for such applications as phage therapy, which involves treating bacterial infections with preparations containing bacteriophages. Interest in this method is increasing with the spread of antibiotic-resistant pathogens.

The laboratory methods used so far to identify bacteriophages infecting specific bacterial species are expensive and time-consuming, and the existing computer programs used for this purpose have limited effectiveness. However, pilot studies indicate the high quality of PhageBlaster predictions. The program correctly identifies more than 70% bacterial hosts of the tested phages. This is 15% better than other available programs.

The Scientific Society of Naturalists received PLN 60,000 for research. The principal investigator is Michalina Krakowiak, graduate of the Faculty of Biology, currently a doctoral student at the Doctoral School of Natural Sciences; scientific supervisors are Dr. Jakub Barylski from the Department of Molecular Virology and Dr. Andrzej Zieleziński from the Department of Computational Biology.



Micrographs showing the viral particles of the Turkus bacteriophage (A and B). Source: Węglewska et al., 2023.







# Kaleidoscope: promotion of science, integration, activation

In addition to research and education, AMU hosts many initiatives that integrate and activate local communities. We promote science and raise awareness of the needs of other people, nature and culture.

KALEIDOSCOPE

ENGAGED UNIVERSITY 2023



## Cleaning up litter

organized by „Kurier Akademicki” on Earth Day, is an event that unified AMU students and staff, including the AMU rectors and chancellor. “I don’t know if there’s a more fun and useful way to spend Earth Day. I think people can get quite messy and litter. We should try to fix this as much as we can,” said AMU Rector Professor Bogumiła Kaniewska. Unfortunately, a whole container of garbage was collected during the event.



## Polish climate atlas 1991-2020

created in cooperation with scientists from several academic centres in the country, provides current knowledge on the topic. The previous edition of this publication dates back to the beginning of the century, and climate conditions have changed significantly since then. The publication can support teaching in schools and universities, contains a detailed analysis of the of frost patterns and heat waves, and is available for free online.



## The Travel Festival

took place in March at the AMU Faculty of Geographical and Geological Sciences to celebrate the 20th edition of Tourism Days. The organizers prepared a range of workshops, competitions and lectures, invited many interesting guests, and planned numerous surprises. Fans of exploration and travel had the opportunity to discover the rich and diverse nature of the various corners of our globe.



## Sustainable tourism

is a grant project funded by the Visegrad fund that raises public awareness of the protection of UNESCO-listed cultural heritage. The head of the Polish research group was AMU Prof. Alina Zajadacz. The project will produce a best practice manual for sustainable tourism management, and a list of criteria for monitoring tourism development in UNESCO sites that takes into account multiple social perspectives.

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## Orhan Pamuk receives an honorary doctorate from AMU

The conferment of the title of Doctor Honoris Causa on the Turkish writer known from his commitment to defending freedom of speech and human rights, is “an expression of admiration for an outstanding humanities scholar and a great writer who draws on the great traditions of the epic while continuously searching for new forms of expression. His novels and essays bear witness to the problems of our times” said AMU Rector Professor Bogumiła Kaniewska, during the ceremony, which took place on 29 June in the AMU Auditorium.



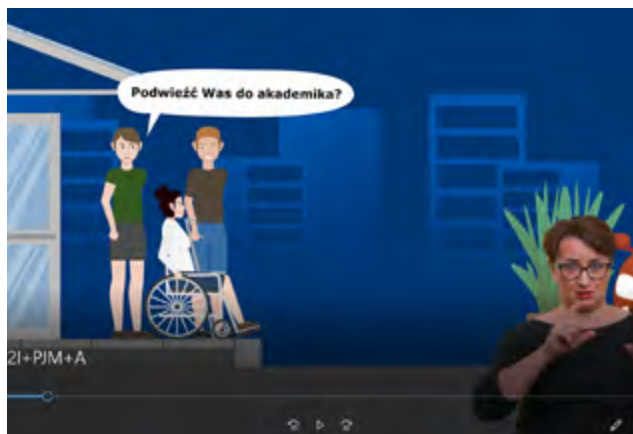
## Wetlands of the Górczyn district

AMU scientists support local communities by offering knowledge and expertise. Professor Mariusz Lamętowicz helped prepare an assessment regarding the green areas in the Górczyn district, which the residents are trying to protect from a housing developer. Part of this initiative was the St. John's Night Parade “Fyrtle na Warcie 2023.” The wetlands and their plant life are key for the quality of life of the residents of Górczyn. They have a mitigating effect on the city's climate, reducing the increasingly oppressive heat waves.



## Wampiriada

is a recurring initiative of the Independent Students' Union that promotes voluntary blood donation among students. Its aims are to selflessly help others through blood donation, to encourage participation in saving lives and to promote a healthy lifestyle among students. The Wampiriada is organised in cooperation with the Regional Blood Donation and Hemotherapy Centres at dozens of universities across Poland. The event takes place twice a year, in autumn and spring.



## Communicating with persons with various disabilities

is the subject of 30 short animated films prepared by the AMU Office for Persons with Disabilities. Each film explains the basic rules for communication in a particular context. All animations are accompanied by audio description (verbal description of visual content), and are translated into Polish sign language. The campaign was realised as part of the project “A university open to all – a university for the 21st century,” funded by the POWER programme from EU funds.



## Heads up!

is an event organized on Mental Health Day on Friday, October 21 by the Clinic for Development and Mental Support and the AMU Office for Persons with Disabilities. Workshops, lectures and sports activities took place on the Morasko and Szamarzewo campuses, in AMU sports facilities and at the Faculty of Pedagogy and Fine Arts in Kalisz. All classes on this day were cancelled by the AMU Rector.



## “Repressed stories. Anti-semitism at The University of Poznań in 1919-1939”

is the title of a conference that tackles a difficult topic in the history of our university. The event presented the results of research concerning the situation of Jewish female and male students at the University of Poznań in the interwar period that have been published in a special publication.



## Szyfrantki (Code-breakers)

is a project implemented jointly by AMU and the Poznań Heritage Centre, promoting knowledge about the contribution of women to the development of science, in particular in the history of the digital revolution. It highlights the contributions of female pioneers in the field of mathematics, philosophy, computer sciences, cryptology and intelligence during World War II. The initiative included seminars and lectures, as well as so-called editheons at the Enigma Cipher Centre. AMU and ECC are planning to establish a digital archive devoted to women who had an influence on history.



## Leaders of their lives

“Female Ukrainian war refugees. Identity, trauma and hope.” Prof. Agnieszka Gromkowska-Melosik and AMU Prof. Aleksandra Boroń have written a book in which they give voice to refugees from Ukraine. The researchers captured the moment of Ukrainian women's arrival in Poland, a liminal time where they felt suspended between two realities. This research studies how refugees perceive their experience. The conclusions can be used to set out migration policy.





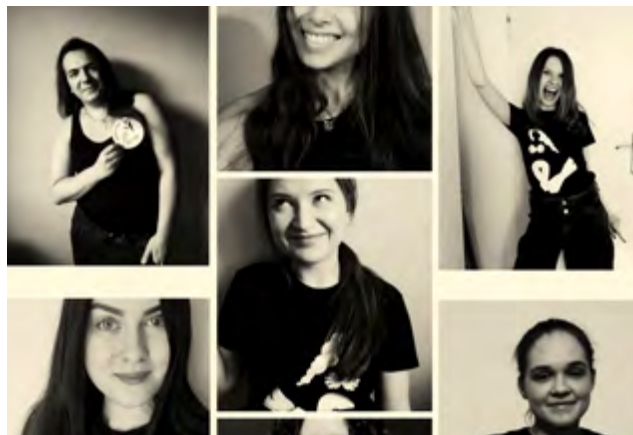
## AMU Staff Week for Ukraine

is a week full of conversations, exchanges of experience and information. Participants from 26 Ukrainian universities attended a series of lectures on exchange programmes such as Erasmus+, Epicur Alliance and NAWA. They held a discussion about the opportunities offered by the programmes in the context of further cooperation. The highlight was a round table, where expectations for further cooperation were shared and the foundations were laid for joint projects and summer schools for Ukrainian students.



## Chemistry Master Class

and discussions under the slogan the AREOPAGUS OF CHEMISTRY are events carried out by scientists from the Faculty of Chemistry as part of project EPiC (Education, Popularization and Chemistry). The project is addressed to students, as well as other people interested in this field of science. Classes take the form of debates and competitions, prompting participants to conduct their own research, while workshops are a platform for individual experiments in well-equipped university laboratories.



## Touch the jewels

is an initiative of the Scientific Society of Naturalists that supports early detection of malignant cancers. The project offers self-examination tutorials, teaching participants how to conduct palpation of breasts and testicles using special dummies. It is accompanied by a series of podcasts featuring specialists from the onco-sphere. Jewels... are presented as part of many popular science festivals and conferences under the motto „knowledge – awareness – prevention.” The project won the Kowadło 2.0 competition.



## Poznań Tolkien Reading Days

were organised by the AMU Department of History, together with the Poznań Society of Tolkien Fans, “The Fellowship of Pyrlandia.” The annual event brings participants together to read excerpts of Tolkien’s prose, a student conference on the writer and his work, meetings with special guests (translators and Tolkien experts), exhibitions, screenings, etc. It runs over the course of two days, one of which is always March 25th, and anyone interested in Tolkien’s writing, as well as the fantasy genre in general, is welcome.



## A poetry reading competition

marking the year of Wisława Szymborska, was held in spring at AMU. Competitors included high school students, university students, and adults. In the first stage of the competition, the participants recorded a fragment of the Nobel Prize winner’s poem, based on which the jury selected 18 finalists. “Different interpretations, different readings, different emotions, some restrained, others more intense...” Prof. Joanna Wójcik summarised the entries to the competition.



## Seniors of Science School

is a space that holds lectures and seminars with active scientists of retirement age, passing their knowledge and experience to the younger generations. Meetings are meant to spark scientific debate and offer insight. The initiative has been expanded to other universities from Poznań, as well as senior researchers from outside the academic community. The meetings were spearheaded by Professor Kazimierz Przyszczykowski.



## Night of Museums at AMU

For the first time, the walls of the university display the original of Jan Matejko’s masterpiece, “The Foundation of the Lubrański Academy in Poznań,” exhibited in the Lubrański Hall of Collegium Minus. The painting was presented in the company of its three copies: one belonging to Adam Mickiewicz University, one brought from the Archdiocesan Museum in Poznań and one from the University Library in Poznań. During that time, visitors could attend lectures and take part in children’s art workshops, as well as attend exhibitions and tours.



## Library Week

is an initiative of the Polish Librarians’ Association promoting reading and libraries as a place for inspiring encounters, which the University Library of Adam Mickiewicz University joined from May 8-15. During that time, guests could take part in interesting open lectures and attend special exhibitions. “The library is like that friend who always makes you have a good time. It offers something interesting for everyone,” said the event organisers.





## Cultural Diversity Days

is an event organized annually at the Faculty of Modern Languages. Its aim is to promote tolerance and respect, as well as admiration for cultural diversity. Thirty events took place over the two days: workshops, exhibitions, concerts and lectures. Invited were all those interested in multiculturalism and foreign languages in general; people not only from the academic community, but also residents of the city and region of all ages.



## Culminations

is a student-organised cultural festival that combines cinema, theatre, visual arts and music. This year's edition was held under the motto *Inclusions*, it was prepared jointly by all faculties from the AMU Ogrody campus, and offered the academic community and residents of our city workshops, shows, exhibitions, competitions and an urban game. The festival symbolically opens with a burning piano – an art installation on campus.



## Planners' Days

is an initiative organised by the Academic Spatial Management Club. The slogan of the 2023 edition was *Resilient Cities*. During the event, students and graduates who specialise in spatial management, urban planning, architecture, environmental management and socio-economic geography presented their projects and discussed the results of their research with academics. A workshop was held on the second day. Among other things, the participants visited the Invisible Street – Poznań's Exhibition in the Dark.



## AMU fantastic

under this motto, AMU took part in Pyrkon, one of the largest fantasy conventions in Europe. For the first time ever, Pyrkon participants were able to visit an entire village prepared by university staff. Alongside interviews with scientists, the AMU stand featured ancient tabletop games, secrets of 3D printing, and a (re)construction of an archaeological site. The initiative was coordinated by Jakub Wojtczak from the Faculty of History and Dr. Mateusz Frankiewicz from the Collegium Historicum Library.



## Perspektywy Women In Tech Summit

several science clubs from AMU promoted women's activity in tech from a variety of perspectives. Presentations included: sterile carnivorous plant cultures and their applications in space travel, the extraordinary potential of octopuses, spatial planning in virtual reality, and a breast self-examination tutorial.



## #jestemzUAM

is a campaign in which we ask our graduates about their memories from the time spent studying at AMU. AMU is proud of its many excellent graduates, who have been successful in their professional, social and political lives. We want to show them off, which is why their profiles are featured as part of the promotional campaign on social media and on the university's website.



## Remote and Hybrid Student Apprenticeships

are explained in publicly available, free e-learning courses. Practical advice is given in short films and animations. The materials were created in cooperation between the university and employers as part of the EPIDI project (European Partnership for Innovation in Distant Internships). They are available in four languages: English, French, Polish and German. You are welcome to view them at [www.epidi.unistra.fr](http://www.epidi.unistra.fr)



## Anthropologists as experts in volunteering

is a project improving communication skills in intercultural contexts by AMU professor Agnieszka Chwieduk and AMU professor Jacek Schmidt, who received funding within the University of Tomorrow II initiative for academic excellence. The project, which is co-funded by the EU, organises a series of expert training courses for ethnology students focusing on supporting migrants' needs.





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