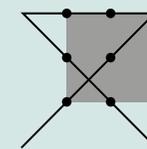




ANNUAL REPORT 2025



WITH GRATITUDE TO



SUOMALAINEN TIEDEAKATEMIA
FINNISH ACADEMY OF SCIENCE AND LETTERS



Finska Vetenskaps-Societeten
Suomen Tiedeseura
The Finnish Society of Sciences and Letters

Frits Beukers
Carlo Beenakker
Daniel W. Stroock
Maryna Viazovska
Wojciech Gajda

Darij Grinberg
Oleksiy Klurman
Oleksandr Tsymbaliuk
Timon R Weinmann
and other individual donors

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ICMU is grateful to the photographers, friends and colleagues whose pictures illustrate this report: Piotr Achinger, Olena Karlova, Šárka Chrabustovská, Yana Kolodach, Viktoriia Kondratiuk, Anna Lytova, Volodymyr Minin, Ievgeniia Tymchenko.

A BRIEF REVIEW OF 2025



Maryna Viazovska
with participants of ICMU Summer School
on Number Theory, August 2025

The year 2025 has been a remarkable and inspiring chapter for ICMU. Step by step, our Centre is growing stronger, expanding its scientific reach, and uniting mathematicians from around the world in the spirit of collaboration and hope.

We opened the year with a winter school on random matrices and complex analysis, the topic developed by the Kharkiv mathematical school and their collaborators worldwide. Over the summer, three other ICMU schools took place across western Ukraine. Altogether, the ICMU schools brought together more than 225 participants, including 46 female mathematicians and students. Lecturers and students joined us from Belgium, Canada, France, Germany, Italy, Poland, Switzerland, the United Kingdom, the United States, and Ukraine, creating an inspiring international atmosphere of learning and exchange. Continuing the tradition of close scientific exchange, ICMU hosted a collaboration group in Kyiv and welcomed four LMS Distinguished Visiting Fellows who delivered lecture courses at its workspace. The Centre also continued the ICMU Student Research Award, supporting outstanding Ukrainian students for the second year in a row. This year also marked the launch of translation of modern mathematical literature into the Ukrainian language. Through this initiative, ICMU supervises translation of books which spark interest in mathematical science among students, teachers, and motivated high schoolers. Young Ukrainian researchers are engaged in the translation process. In 2025, ICMU also became an institutional member of the European Mathematical Society, strengthening our ties with Europe's scientific community.

We are sincerely grateful to all our partners, donors, and individual supporters whose trust, generosity, and shared belief in the value of mathematics made these achievements possible. With optimism and resolve, we look forward to new steps in the growth of our Centre and the Ukrainian mathematical community.

MARYNA VIAZOVSKA

Scientific Director of ICMU
Professor at École Polytechnique Fédérale de Lausanne

CO-ORDINATION COMMITTEE

The Committee brings together the Ukrainian mathematicians who founded ICMU in 2022 and continue to guide its development. Its members coordinate ongoing activities, contribute to strategic decisions, and offer their expertise and time on a voluntary basis.

OLEKSANDRA ANTONIOUK

Institute of Mathematics of the National Academy of Sciences of Ukraine / Kyiv Academic University / American University Kyiv

DMITRI FINKELSHEIN

Swansea University, UK, **Member of the Managing Board of ICMU**

ANDREY GOGOLEV

The Ohio State University, USA
Member of the Managing Board of ICMU

KOSTIANTYN IUSENKO

University of São Paulo, Brazil

OLEKSIY KLURMAN

University of Bristol, UK

VOLODYMYR NEKRASHEVYCH

Texas A&M University, USA

PAVLO PYLYAVSKYY

University of Minnesota, USA

DMYTRO SAVCHUK

University of South Florida, USA

LYUDMYLA TUROWSKA

Chalmers University of Technology and University of Gothenburg, Sweden

MARYNA VIAZOVSKA

Winner of the Fields Medal 2022, Swiss Federal Institute of Technology in Lausanne
Scientific Director of ICMU

MASHA VLASENKO

Kyiv School of Economics,
Managing Director of ICMU

IRYNA YEHOCHENKO

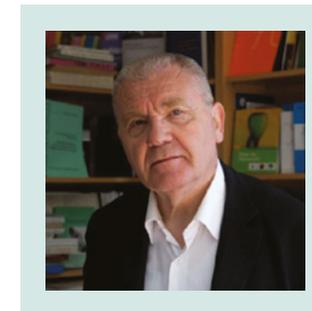
Institute of Mathematics of the National Academy of Sciences of Ukraine



Co-ordination Committee of ICMU at work, August 2025

SUPERVISORY BOARD

As an independent research institution, ICMU is governed by a Supervisory Board responsible for shaping the Centre's strategic direction. The Board provides oversight, supports long-term planning, and ensures the effective implementation of initiatives that strengthen mathematical research in Ukraine.



JEAN-PIERRE BOURGUIGNON

Chair of the Supervisory Board

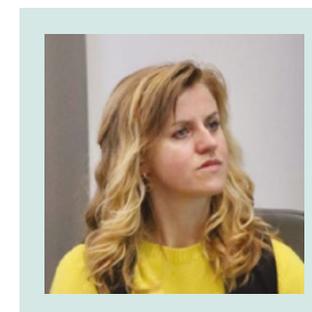
Nicolaas Kuiper Honorary Professor at Institut des Hautes Études Scientifiques (IHES), Director of IHES (1994–2013), President of the Mathematical Society of France (1990–1992), and of the European Mathematical Society (1995–1998), President of the European Research Council (2014–2019)



JØRGEN ELLEGAARD ANDERSEN

Member of the Supervisory Board

Founder and Head of the Center for Quantum Mathematics and Professor at the Department of Mathematics and Computer Science (IMADA) and DIAS Chair of Quantum Mathematics at the University of Southern Denmark (SDU)



OLHA BUDNYK & FUND OF THE PRESIDENT OF UKRAINE FOR SUPPORT OF EDUCATION, SCIENCE, AND SPORTS

Ex-officio member of the Supervisory Board

The Fund supports the advancement of talented Ukrainians in education, science, and sports aiming to restore, empower and strengthen Ukraine's leadership positions in the world. Olha Budnyk is the Advisor of the President of Ukraine on the affairs of the Fund of the President of Ukraine for the support of Education, Science, and Sports

“Education and science are the key to reconstruction [of Ukraine]. The question is whether we can preserve and increase human capital to be competitive in the world. It is not just about training personnel, but about a generation with a global mindset, capable of implementing new ideas and technologies here in Ukraine.

Our task is to ensure that talented young people see perspectives at home and serve as the ambassadors of Ukraine in the international academic community abroad.”

— Olha Budnyk, in an interview to the Interfax-Ukraine agency, 9 October 2025

SCIENTIFIC BOARD

The Scientific Board, composed of leading scientists from across the globe, guides the planning of the Centre's scientific activities. The Board evaluates and selects proposals for schools, research visits, and other academic events hosted by ICMU.

TARAS BANAKH

Ivan Franko National University of Lviv

PAVEL ETINGOF

Massachusetts Institute of Technology, fellow of the American Academy of Arts and Sciences

ÉTIENNE GHYS

École normale supérieure de Lyon, French National Centre for Scientific Research (CNRS) and French Academy of Sciences

OLEKSIY KAPUSTIAN

Taras Shevchenko National University of Kyiv

YULIYA MISHURA

Taras Shevchenko National University of Kyiv, member of the International Statistical Institute

PETER SCHOLZE

Director of the Max Planck Institute in Bonn, winner of the Fields Medal 2018

DMITRY SHEPELSKY

B. Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine

MARCELO VIANA

Director of Instituto Nacional de Matemática Pura e Aplicada in Rio de Janeiro, Vice President of the International Mathematical Union (2011–2014), President of the Brazilian Mathematical Society (2013–2015)

ALEXANDRE EREMENKO

Purdue University, fellow of the American Mathematical Society

PAVEL EXNER

Nuclear Physics Institute of the Czech Academy of Sciences, Vice President of the European Research Council for the Physical Sciences and Engineering Domain (2011–2014), President of the European Mathematical Society (2015–2018)

ROSTISLAV GRIGORCHUK

Texas A&M University, a fellow of the American Mathematical Society

VOLODYMYR MAZORCHUK

Uppsala University, President of the Swedish Mathematical Society (2020–2023)

SIMON SALAMON

King's College London. Representative of the London Mathematical Society in the Scientific Board of ICMU for co-ordination of the joint programme

MARIYA SHCHERBINA

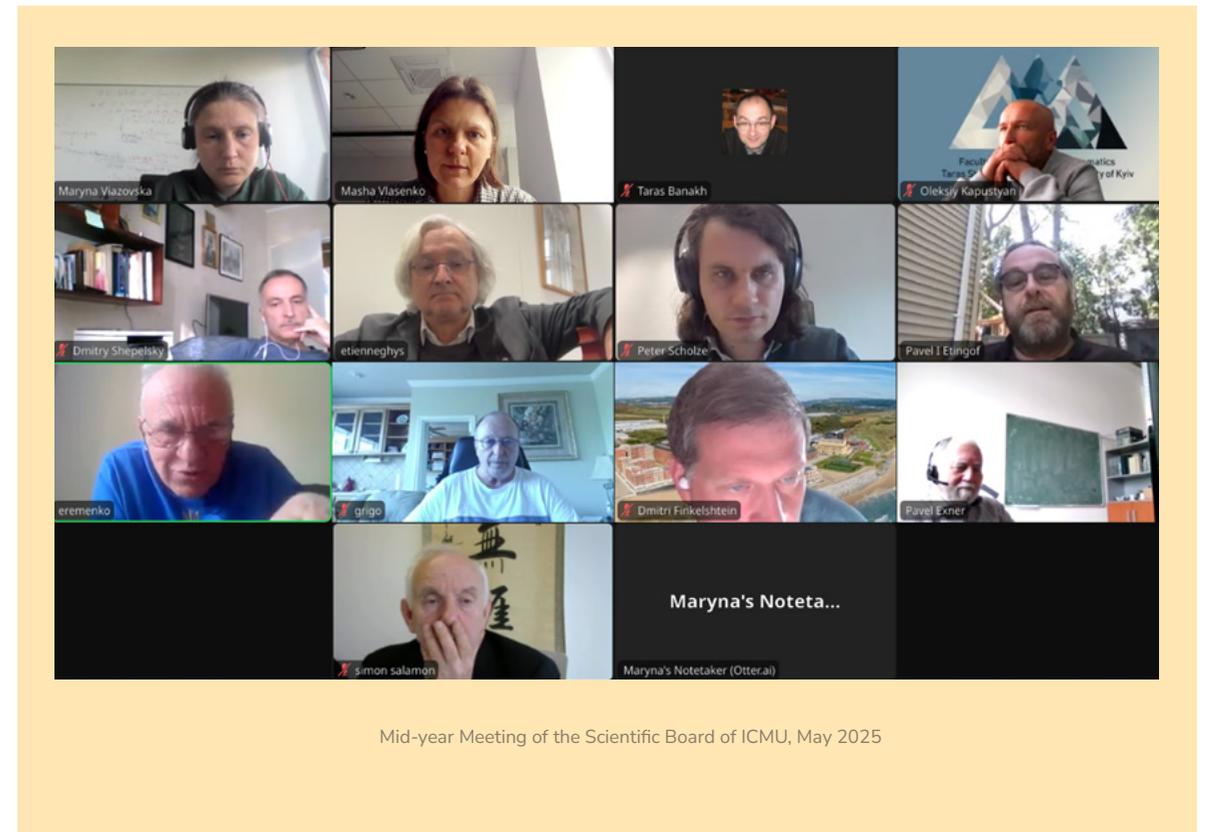
B. Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine. Member of the Virtual Ukraine Institute for Advanced Study

ADAM SKALSKI

Deputy director of the Institute of Mathematics of the Polish Academy of Sciences in Warsaw, member of the Executive Committee of the European Mathematical Society

EFIM ZELMANOV

Southern University of Science and Technology in China, winner of the Fields Medal 1994



MEMBERSHIP IN THE EUROPEAN MATHEMATICAL SOCIETY

In 2025, the International Centre for Mathematics in Ukraine (ICMU) became an institutional member of the European Mathematical Society (EMS). This important step reinforces ICMU's commitment to fostering mathematical excellence and promoting international collaboration.

ICMU is proud that two former Presidents of the EMS are involved in its development: Pavel Exner is a member of the Scientific Board of ICMU, and Jean-Pierre Bourguignon chairs the Supervisory Board of our Centre.



In March we participated in the meeting of ERCOM — EMS Union of European Research Centres on Mathematics



Andrii Khrabustovskiy



EMS Magazines in ICMU Working Space

The activities and mission of ICMU were also highlighted in the EMS Magazine in 2025. In the article “Reviving Ukrainian Science: International Centre for Mathematics in Ukraine (ICMU)” (Issue 136), Andrii Khrabustovskiy (University of Hradec Králové) provides an overview of the Centre’s establishment, development, and international support. The quotations below are cited from the EMS Magazine article:

“For students from Kharkiv and other cities where education is conducted exclusively online, the schools established by ICMU provide a rare opportunity for live interaction — both with professors and within a community of fellow students. This is especially relevant for mathematical education, which is currently facing enormous challenges in Kharkiv — a traditional centre of mathematical education and research. Students are reluctant to enrol in such programmes, as they find them difficult, especially when taught online. As a result, the remaining professors are under constant pressure due to the decreasing number of positions. Thus, the centre’s programmes offer at least some sense of ‘normality’ in studying mathematics.”

— **Dmitry Shepelsky**, B. Verkin Institute for Low Temperature Physics and Engineering of the NAS of Ukraine, a member of ICMU Scientific Board

“...it is vital to keep and develop high-level scientific activities in the times when the country faces a military aggression. I am glad that the ICMU project found a wide support and the first two years of its activity were successful; I am convinced the centre will keep this spirit in the years to come, for the good of Ukraine and mathematics.”

— **Pavel Exner**, Nuclear Physics Institute of the Czech Academy of Sciences, President of the European Mathematical Society in 2015–2018, a member of the Scientific Board of ICMU

EDUCATION AND OUTREACH

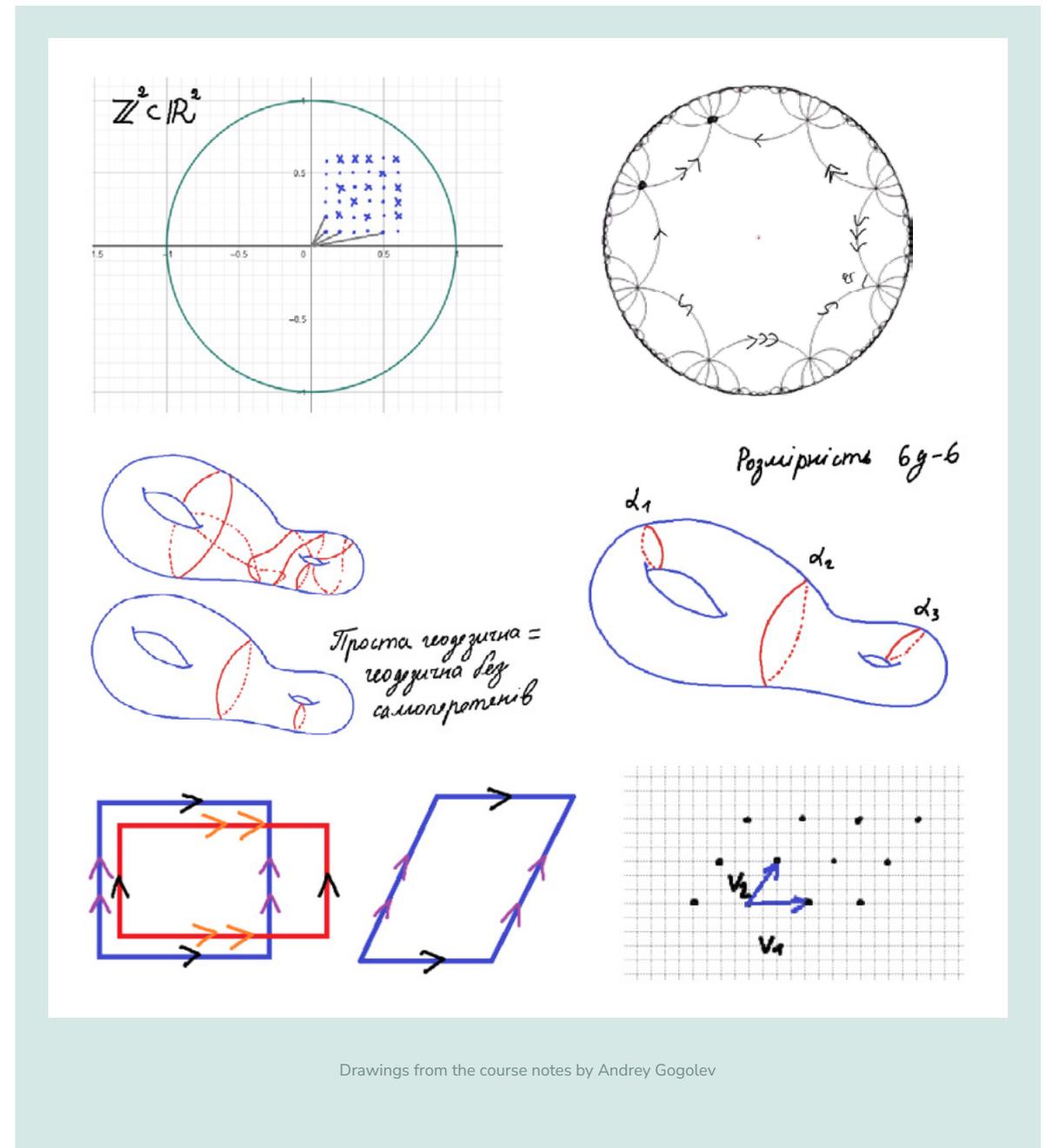
Through its educational and outreach activity, ICMU brings modern mathematics closer to school students, teachers, and all who are curious. Professional scientists deliver lecture courses that encourage young people to explore the subject in greater depth.

Between 31 March – 16 April 2025, ICMU hosted the online mini-course “Invitation to Hyperbolic Geometry” by Andrey Gogolev (The Ohio State University, Member of the Co-ordination Committee of ICMU). Designed especially for high schoolers and undergraduates, the course introduced one of the most elegant and surprising branches of geometry — the world of hyperbolic space.

ANDREY GOGOLEV specialises in geometry and dynamical systems. His research explores rigidity phenomena and the interplay between geometric structures and smooth dynamics. He is widely recognised for his contributions to these areas and for his clear, insightful approach to communicating complex mathematical ideas.



Andrey Gogolev during one of his outreach lectures



Drawings from the course notes by Andrey Gogolev

Participants learned how mathematicians moved from Euclid’s classical geometry to the discoveries of Lobachevsky, Bolyai, and Poincaré, and explored the key features of hyperbolic space, its symmetries, and its role in modern research. The course combined lectures with interactive practice sessions and homework assignments, encouraging active problem-solving and discussion. Several Ukrainian graduate students were involved as teaching assistants in this course: Anna Aleksandrova (Taras Shevchenko National University of Kyiv), Yana Kolodach (JMU Würzburg), Mykola Lysynskiy (Institute of Mathematics of the NAS of Ukraine), Anton Nazarenko and Yurii Yarosh (Kyiv Academic University).

ICMU WINTER SCHOOL “RANDOM MATRICES, RANDOM ANALYTIC FUNCTIONS, AND NON-LINEAR PDES”

13–19 January, Chynadiyovo village, Zakarpattia

ICMU held its first winter school on modern mathematical physics and complex analysis, focusing on multivariate probability theory and integrable systems. The programme featured lecture courses on random matrix theory, zeros of random functions, and integrable nonlinear PDEs, highlighting key analytical methods and applications.

49 participants on-site, 37% female participants



Lecture courses

Statistics of eigenvectors of non-Hermitian random matrices

YAN FYODOROV
King's College London

Large sample covariance matrices and their application to deep learning networks and quantum gravity

LEONID PASTUR
B. Verkin ILTPE of NASU, Kharkiv / King's College London

Supersymmetric approach in modern mathematics

MARIYA SHCHERBINA
Institute of Science and Technology Austria (ISTA) / B. Verkin ILTPE of NASU

Integrable nonlinear partial differential equations and Riemann-Hilbert problems

DMITRY SHEPELSKY
B. Verkin ILTPE of NASU

Random zero sets

MIKHAIL SODIN
Tel Aviv University

Operator limits of random matrices

BÁLINT VIRÁG
University of Toronto

Problem sessions

IEVGENII AFANASIEV
B. Verkin ILTPE of NASU

YAN RYBALKO
University of Oslo / B. Verkin ILTPE of NASU

ROMAN SARAPIN
B. Verkin ILTPE of NASU

OREN YAKIR
Stanford University

Organisers

IEVGENII AFANASIEV
B. Verkin ILTPE of NASU

ANNA LYTOVA
Opole University

MARGARYTA MYRONYUK
B. Verkin ILTPE of NASU

ANNA SLYVKA-TYLYSHCHAK
Uzhhorod National University

"I was moved by how open the students were to learning new concepts. Rarely do I get so many questions! I was also very impressed by their ping-pong skills."

— **Bálint Virág**, University of Toronto, school lecturer

"Amid the profound darkness of war, the participants and organisers brought to life the joy of connection, the exchange of ideas, new friendships, and positive emotions. Throughout the week, the theory of random matrices was taught to everyone — even the cat, who made occasional appearances during the lectures. Only Ukrainian dumplings and lard could rival the excellence of the mathematical presentations! The experience felt seamless, enriching, and inspiring — a breath of fresh air for all involved."

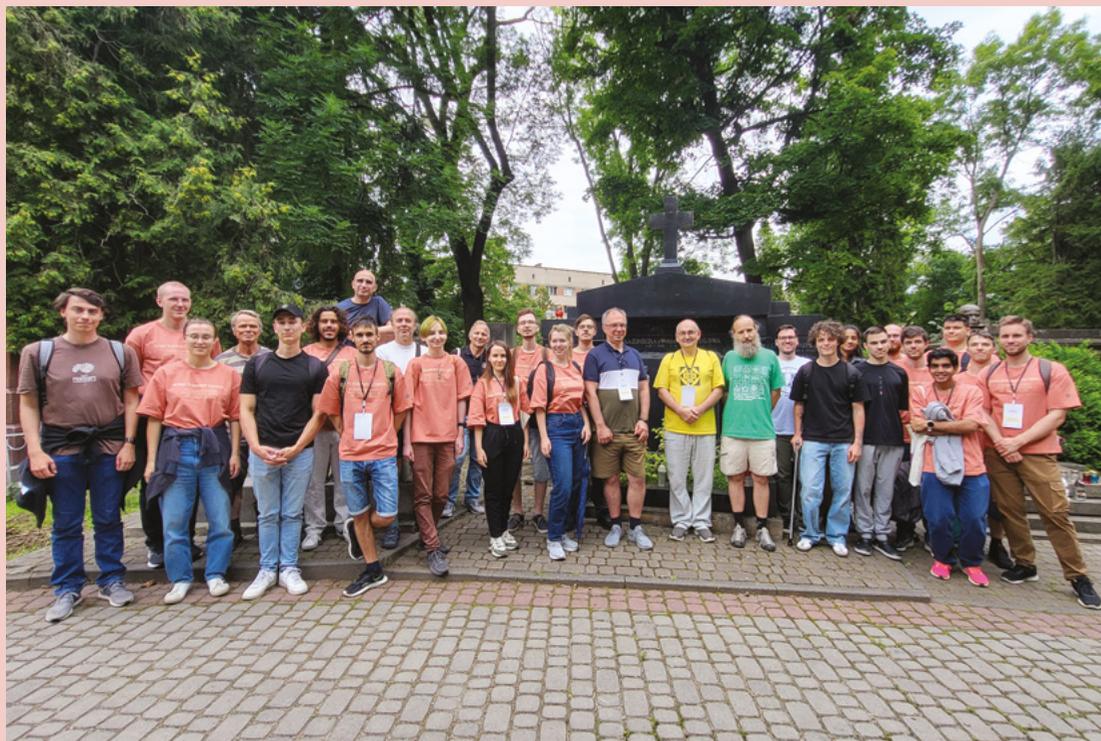
— **Olena Atlasiuk**, University of Helsinki, school participant

ICMU SUMMER SCHOOL “AUTOMORPHISMS AND EMBEDDINGS OF MANIFOLDS”

28 July – 2 August, Ukrainian Catholic University, Lviv

The school focused on the study of automorphism groups of manifolds using methods from manifold theory and algebraic topology. The programme introduced core tools such as fibre bundles, transversality, and Embedding Calculus, providing a structured overview of approaches to analysing diffeomorphisms via spaces of embeddings.

41 participants on-site, 20% female participants



School participants visiting the grave of Stefan Banach at Lychakivskiy Cemetery, Lviv



Lecturers

GREGORY ARONE
University of Stockholm

RYAN BUDNEY
University of Victoria

STEFAN FRIEDL
University of Regensburg

SERGIY MAKSYMENKO
National Academy of Sciences of Ukraine

MICHAEL WEISS
University of Münster

Organisers

TARAS BANAKH
Ivan Franko National University of Lviv

RYAN BUDNEY
University of Victoria, LMS Distinguished
Visiting Fellow at ICMU

KAVEH EFTEKHARINASAB
NAS of Ukraine, Kyiv

ROSTYSLAV HRYNIV
Ukrainian Catholic University

SERGIY KOZERENKO
Kyiv School of Economics

SERGIY MAKSYMENKO
National Academy
of Sciences of Ukraine

“I definitely liked the atmosphere of the summer school; the students were very friendly and the professors very experienced. The organization was superb. You were able to squeeze two excursions on top of the packed scientific program, and yet it did not feel like too much.”

— from the feedback form filled by an anonymous school participant

“We discussed open problems with other participants during breaks and informal gatherings. These conversations led to the beginning of a potential collaborative project. Now we continue working together online, and we hope this can develop into a research paper in the future.”

— Artem Hak, National University of Kyiv-Mohyla Academy, school participant

ICMU SUMMER SCHOOL “OPTIMAL TRANSPORT AT THE INTERFACE OF ANALYSIS, PROBABILITY, SCIENTIFIC COMPUTING AND MACHINE LEARNING”

4–8 August, Ukrainian Catholic University, Lviv

This Summer School aims to give an introduction to the research area of optimal transport by exploring the analytical, probabilistic, geometrical, computational, and statistical aspects of the theory. Applications in natural sciences (e.g., theoretical chemistry, computational biology) and machine learning may also be discussed.

47 participants on-site, 19% female participants



School participants on the background of the Church of St. Sophia the Wisdom of God



Discussion moments in a classroom with Natalia Monina (left) and Lorenzo Portinale (right)

Lecture courses

Optimal Transport in Natural Sciences and Statistics

AUGUSTO GEROLIN
Canada Research Chair / University of Ottawa, LMS Distinguished Visiting Fellow at ICMU

Gradient Flows in the space of Probability Measures: Analysis and Geometry

LORENZO PORTINALE
University of Milan

Introduction to Optimal Transport

GEORGII RIABOV
Institute of Mathematics of NAS of Ukraine / National Technical University of Ukraine “Kyiv Polytechnic Institute”

Organisers

AUGUSTO GEROLIN
CRC / University of Ottawa

ROSTYSLAV HRYNIV
Ukrainian Catholic University

NATALIIA MONINA
University of Ottawa

IRYNA NISHCHENKO
NTUU “Kyiv Polytechnic Institute”

GEORGII RIABOV
NAS of Ukraine / NTUU “Kyiv Polytechnic Institute”

TETIANA ZAKHARCHENKO
Ukrainian Catholic University

Tutorials

NATALIIA MONINA
University of Ottawa



School participants in the legendary Scottish Café — the place of meetings of the Lwów School of Mathematics in 1930s and 1940s



The very beginning of the school in the UCU bomb shelter

“Despite the fact that the school started immediately from an Air Raid Alert, everything exceeded all my expectations. I don’t remember last time I have seen so much engagement from students, all the questions and comments and the genuine interest in the optimal transport! I am very grateful to all the sponsors, the lecturers, my co-organizers, and of course, the participants for making it happen! I hope to see a lot of faces again at future events!”

— **Natalia Monina**, University of Ottawa, school organiser and tutor

“A week of deep dives into theory, algorithms, and applications — from cutting-edge research talks to engaging problem sessions with peers from around the world. Grateful to the organizers and lecturers (Natalie Monina, Lorenzo Portinale, Augusto Gerolin, Georgii Riabov) for creating an inspiring environment to learn, exchange ideas, and explore new directions in optimal transport and its applications. Excited to bring these insights into my future projects!”

— **Vadym Tunik**, Taras Shevchenko National University of Kyiv, school participant

ICMU SUMMER SCHOOL ON NUMBER THEORY

22–28 August, Babyn village, Ivano-Frankivsk Region

The school consisted of three lecture courses introducing fundamental topics in classical and modern number theory, as well as their applications in computer science. Each course was accompanied by practical sessions which were run by teaching assistants chosen among the participants.

27 participants on-site, 44% female participants



Lecture courses

**Geometry of numbers
and Euclidean lattices**

FRANÇOIS CHARLES
École Normale Supérieure

**Analytic
number theory**

JAVIER FRESÁN
Sorbonne University

**Elliptic
modular forms**

MARYNA VIAZOVSKA
École Polytechnique Fédérale
de Lausanne (EPFL)

Organisers

PIOTR ACHINGER
Kyiv School of Economics / Institute
of Mathematics of the Polish
Academy of Sciences (IMPAN)

OLENA KARLOVA
Yuriy Fedkovych Chernivtsi
National University

MASHA VLASENKO
Kyiv School of Economics

Practical sessions

OLEKSANDR DASHKOV
Kyiv School of Economics

YANA KOLODACH
Julius Maximilian University of Würzburg

ŁUKASZ ORSKI
Jagiellonian University

KAROLINA SUSOL
Taras Shevchenko National
University of Kyiv

ANDREA TACCANI
University of Padova

YURIY YAROSH
Kyiv Academic
University

Other lectures

JOLANTA MARZEC-BALLESTEROS
Adam Mickiewicz University in Poznan



The school was organised in Khata–Maysternya, a charming seminar house located in the midst of Carpathian mountains. It provides an inspiring atmosphere and facilitates connections between the participants and the lecturers for productive collaboration.

Over time, Khata–Maysternya has become a second home for ICMU, supporting focused work and shared time together. Its calm, natural setting inspires creative thinking and mathematical discussions that often continue beyond the formal programme.





"We discussed open problems with other participants during breaks and informal gatherings. These conversations led to the beginning of a potential collaborative project. Now we continue working together online, and we hope this can develop into a research paper in the future."

— **Artem Hak**, National University of Kyiv-Mohyla Academy, school participant

"From the brightest personal experiences – these young people are worth conducting such a powerful school for, and conversely, these powerful lecturers deserve such talented listeners. After the lectures, problem sessions took place, where the young people solved problems, shared their own solutions, and collaboratively worked on difficult issues. In plain words, at every minute (breakfast, lunch or dinner, or a break between lectures or a mountain trip) – they talk about mathematics! Aftertaste: our country has incredibly talented youth and endlessly conscientious organisers in the form of ICMU, which means there is still more to come... There is a future."

— **Olena Karlova**, Yuriy Fedkovych Chernivtsi National University, school organiser

"Our summer school ...is a real marvel that I would like to share. Three incredibly brilliant mathematicians, Maryna Viazovska, Javier Fresán, and François Charles, have come here from afar to show students attractive topics, and to blaze trails for them to subjects and problems that they themselves are engaged in. The cosy Khata-Maysternya accommodates only 27 participants, so getting into the school wasn't easy. Some of the best Ukrainian mathematics students have gathered here, many of whom have come from foreign universities. There are also participants from Poland, Italy, and Mexico (!). Work is in full swing, it's raining, Carpathian herbal tea is being brewed, and my heart rejoices."

— **Masha Vlasenko**, Kyiv School of Economics, Managing Director of ICMU, school organiser

LMS DISTINGUISHED VISITING FELLOWS

In 2023 the London Mathematical Society (LMS) launched a ten-year collaboration with ICMU, allocating £100,000 to support visits by distinguished mathematicians over the following decade. As part of this initiative, Professor Simon Salamon joined the Scientific Board of ICMU as the LMS representative.

The programme enables leading international scientists to spend an extended period of time in Ukraine, delivering lecture courses and colloquia for Ukrainian researchers and students. In 2025, ICMU hosted four LMS Distinguished Visiting Fellows.



“The course struck a good balance: it was accessible enough to serve as an introduction for students, yet deep enough to touch upon open problems for the experts. The audience, a mix of Kyiv university students and senior mathematicians, showed stable attendance and participated in lively discussions after lectures.

I am incredibly grateful to the LMS and ICMU for supporting this initiative... It was an inspiring experience demonstrating that despite the challenges, high-level mathematical discourse continues to thrive in Kyiv.”

— **Roman Nikiforov**, hosting scientist to Bill Mance's visit



BILL MANCE (Adam Mickiewicz University in Poznań) visited Ukraine from 19 to 27 May to deliver a week-long lecture series at ICMU devoted to the theory of normal numbers and its connections with descriptive set theory, uniform distribution, ergodic theory, and generalized numeration systems.

The course aimed to introduce young mathematicians to an active research area with many accessible yet highly nontrivial open problems, encouraging new collaborations and broadening the participants' scientific outlook. Across six lectures, Professor Mance introduced participants to the theory of normal numbers, moving from basic questions of normality to generalisations such as Cantor series, β -expansions, continued fractions, and Lüroth series. The course outlined essential tools — including uniform distribution, ergodic methods, and elements of descriptive set theory.

The hosting scientist was Roman Nikiforov from Drahomanov National Pedagogical University. With additional assistance from Taras Banakh (Ivan Franko National University of Lviv), Professor Mance also delivered a colloquium lecture in Lviv.



RYAN BUDNEY (University of Victoria, Canada), LMS Distinguished Visiting Fellow at ICMU, played a key scientific role in the Summer School “Automorphisms and Embeddings of Manifolds” in Lviv. He delivered several lectures and led problem sessions, introducing participants to triangulations, cell complexes, Morse functions, and core duality theorems.

In his exploration of automorphisms and embeddings of 2- and 3-manifolds, he demonstrated how diffeomorphisms can be understood through the behaviour of embedded submanifolds. His talks on the use of Embedding Calculus in 3-dimensional knot theory gave participants access to modern techniques for studying embedding spaces.



Ryan Budney in Lviv during the Summer School

AUGUSTO GEROLIN (University of Ottawa) visited Ukraine for the second time and served as a lecturer and one of the organisers of the ICMU Summer School “Optimal Transport at the Interface of Analysis, Probability, Scientific Computing and Machine Learning”.

As part of the programme, he taught the course “Optimal Transport in Natural Sciences and Statistics,” which formed one of the core components of the school’s academic programme. His lectures contributed to the broader exploration of optimal transport from analytical, probabilistic, geometrical, computational, and statistical perspectives, aligning with the overall scientific goals of the school.



Summer School participants continue Augusto Gerolin's lecture course in a shelter during an air alert, Lviv, Ukraine

DIERK SCHLEICHER (Aix-Marseille University), visited Kyiv from 17 October to 5 November and delivered a lecture series devoted to holomorphic dynamics. The course explored classical and modern approaches to problems arising from the iteration of holomorphic functions.

The lectures examined the relationship between holomorphic dynamics and root-finding methods, with particular emphasis on the Newton method. Topics included recent research on starting points, computational complexity, and algorithmic implementation for high-degree polynomials, as well as advances in techniques capable of factoring polynomials of extremely large degree. The series also highlighted open questions and current challenges in the field.



The Introductory lecture to the course "Holomorphic Dynamics and Root Finding" by Dierk Schleicher in Kyiv

COLLABORATION @ICMU

ICMU Working Space, Kyiv, Ukraine

The Centre continues to host international scholars through the Collaboration @ICMU programme, which supports short-term joint research visits and facilitates international cooperation involving researchers with a Ukrainian affiliation. The programme provides conditions for focused research stays at ICMU and contributes to the advancement of mathematical research in Ukraine.

In 2025, ICMU hosted a collaboration between Dmytro Bolotov (B. I. Verkin Institute for Low Temperature Physics and Engineering) and Wilhelm Klingenberg (Durham University). Their joint research visit took place from 16 to 24 October and focused on problems in differential geometry and topology, in particular on the existence, properties, and deformability of foliations and embeddings of low-dimensional manifolds.

"Our stay at ICMU went smoothly and the workspace and infrastructure were perfect. Travel to Kyiv and accommodation were also excellent. We thank ICMU for the opportunity to take part in the Collaboration @ICMU programme and recommend it to other researchers for an inspiring visit at a world-class centre of modern mathematics."

— from the report of the collaboration group

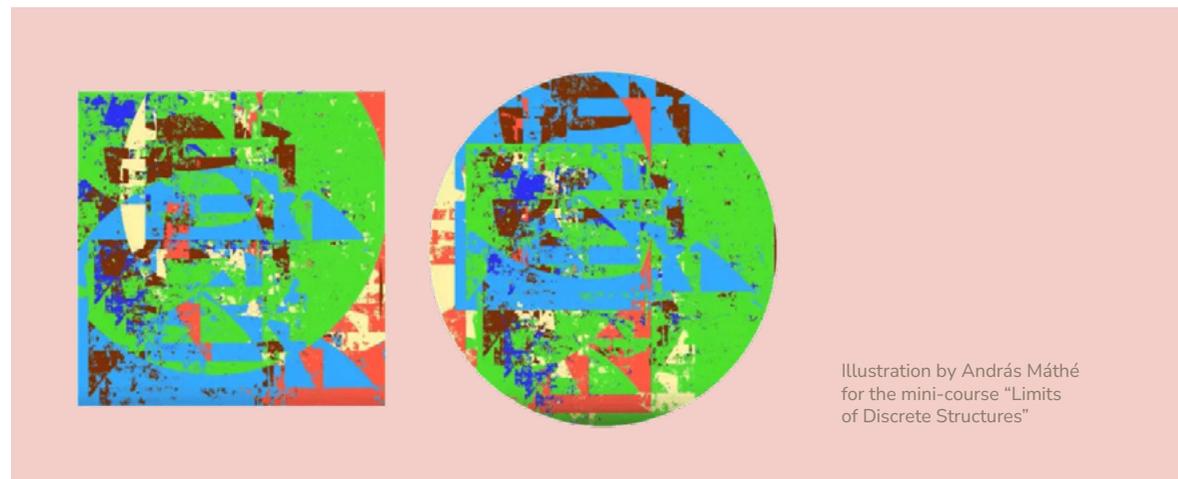
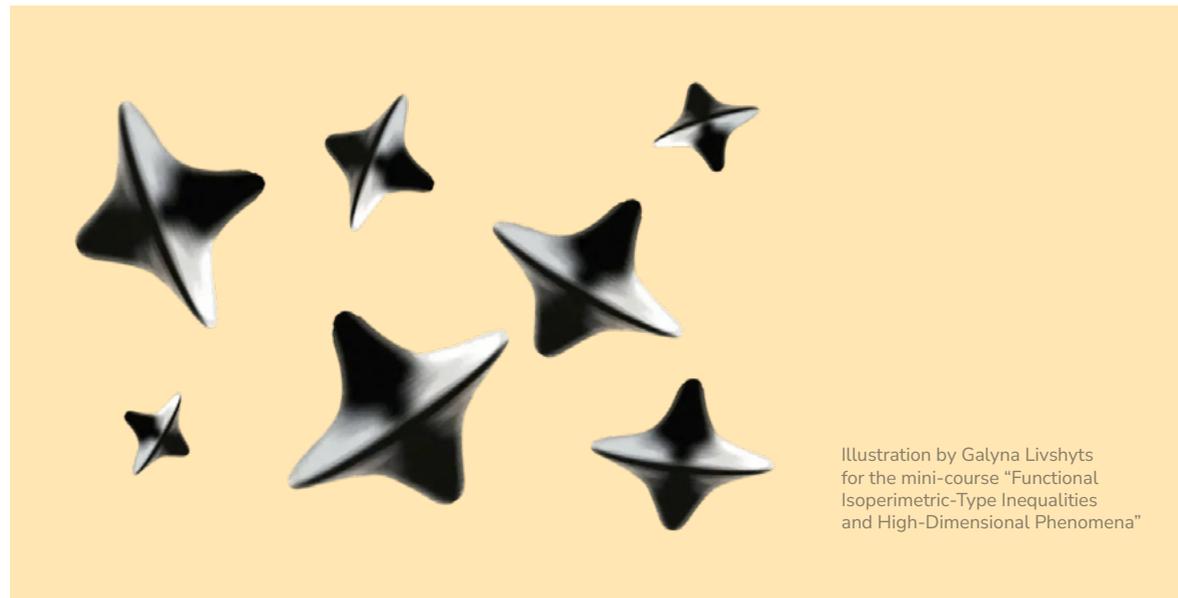


Dmytro Bolotov and Wilhelm Klingenberg at the ICMU workspace

ONLINE MINI-COURSES

ICMU continued its programme of short online mini-courses, offering compact introductions to specialised areas of the mathematical sciences. The programme was launched to provide opportunities for Ukrainian mathematicians abroad to contribute to academic activities in Ukraine and to remain connected with the Ukrainian mathematical community. The courses are designed for undergraduate and graduate students, as well as advanced high-school students. Each mini-course includes homework reviewed and assessed by a teaching assistant.

In 2025, ICMU offered three mini-courses — two in late June and one at the end of September. Altogether, more than 150 participants took part in the mini-courses offered throughout the year.



Lecture courses

23–27 June 2025

Functional Isoperimetric-Type Inequalities and High-Dimensional Phenomena

GALYNA LIVSHYTS
Georgia Institute of Technology

Teaching assistant: Stephanie Mui,
Georgia Institute of Technology

23–27 June 2025

Limits of Discrete Structures

OLEG PIKHURKO
University of Warwick

Teaching assistant: Riley Thornton,
Carnegie Mellon University

22 September – 2 October

Introduction to Bayesian Statistics with Applications

VOLODYMYR MININ
UC Irvine

Teaching assistants: Thanasi Bakis,
UC Irvine; Jessalyn Sebastian, UC Irvine;
Yevhenii Bundiuk, Taras Shevchenko
National University of Kyiv

Organisers

ARTEM DUDKO
Institute of Mathematics
of Polish Academy of Sciences

OLEKSII KLURMAN
Bristol University

OLEKSANDR TSYMBALIUK
Purdue University



ICMU STUDENT RESEARCH AWARD

ICMU conducts a competition for the annual Student Research Award. The award is intended to recognise outstanding student research papers in the mathematical sciences that have led to a publication. Each award consists of a one-time cash prize of UAH 50,000, and several awards are planned to be presented each year.

In 2025 the award Selection Committee consisted of the following mathematicians:

DMYTRO SAVCHUK

University of South Florida / ICMU, Chair of the Committee

OLEKSIY KAPUSTYAN

Taras Shevchenko National University of Kyiv

YEVHEN KAROLINSKYI

V. N. Karazin Kharkiv National University

OLHA KICHMARENKO

Military Academy, Odesa

VOLODYMYR NEKRASHEVYCH

Texas A&M University / ICMU

GEORGIY SHEVCHENKO

Kyiv School of Economics

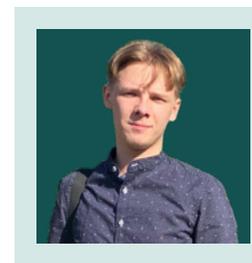
LYUDMYLA TUROWSKA

University of Gothenburg / ICMU

MYKHAILO ZARICHNYI

Ivan Franko National University of Lviv

In 2025, university students from across Ukraine took part in the competition for the ICMU Student Research Award. The Selection Committee honoured four students for their exceptional scientific work:



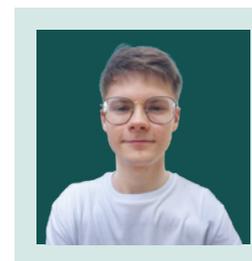
DANIIL DOROSHENKO for the paper “Boyanov-Naydenov problem and the inequalities of various metrics”, published in the Ukrainian Mathematical Journal (co-authored with Vladimir Kofanov). Daniil is a Master’s student at the Faculty of Mechanics and Mathematics at Oles Honchar Dnipro National University. His mathematical interests are primarily focused on approximation theory, function theory, operator theory, and functional analysis.



MYKOLA KORABLYOV for the master’s thesis “Mathematical Models for Constructing Optimal Routes with Special Constraints”, defended at the Department of Mathematics of the State Research Institution “Kyiv Academic University.” The thesis was completed during his Master’s studies in Computer Science at Kyiv Academic University. Mykola is a PhD student at the V.M. Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine. He also has experience in teaching, academic consulting, and the organisation of scientific events.



OLES MAZURENKO for the paper “Strictly convex abelian metric groups are normed spaces”, published in Carpathian Mathematical Publications (co-authored with Taras Banakh). Oles is a Master’s student at the Faculty of Mechanics and Mathematics at Ivan Franko National University of Lviv. He also has experience tutoring school and university students in mathematics.



OLEKSANDR LYUBIMOV for the paper “Ergodic approach to the study of boundedness of solutions of one type of the first-order semilinear difference equations”, submitted to the Journal of Difference Equations and Applications (co-authored with Andrii Chaikovskiy). Oleksandr is a Bachelor’s student at the Faculty of Mechanics and Mathematics at Taras Shevchenko National University of Kyiv. He has also participated in jury committees of Ukrainian mathematical olympiads and mathematics tournaments at the city and national levels.

FINANCIAL REPORT

Income

Donations

XTX Markets	EUR 380,991
Anonymous donor	EUR 100,000
Individual donors *	EUR 2,040

Event funding and programme support

École Polytechnique Fédérale de Lausanne	EUR 26,642
Lorentz Institute for theoretical physics, Leiden University	EUR 10,000
London Mathematical Society **	EUR 9,500
Nova Ukraine	EUR 8,500
International Mathematical Union – Committee for Developing Countries	EUR 4,000
Centre International de Mathématiques Pures et Appliquées	EUR 3,000
Women in Mathematics, University of Waterloo	EUR 1,290
Natural Sciences and Engineering Research Council of Canada **	EUR 1,050

* ICMU is grateful to Wojciech Gajda, Timon Ruben Weinmann, Oleksandr Tsymbaliuk, Oleksii Klurman, Darij Grinberg, Eduardo Marcos, Nataliya Chaban, Yurii Sherehii and anonymous donors.

** Support is provided on a direct reimbursement basis and therefore does not appear as income in ICMU's financial statements.

In 2025, ICMU strengthened mathematical life in Ukraine by offering schools, lectures, research visits, online mini-courses, and other activities that keep Ukrainian students and researchers connected to the wider world of modern mathematics. Together, our programmes support those who continue to study and teach mathematics in Ukraine despite difficult times.

To continue our work, we rely on the support of our partners and friends. As an independent institution, ICMU needs stable funding to grow and to develop the next steps of our work — long-term visiting scholarships, semester-length thematic programmes, and a permanent space that can host our many activities. These plans arise from a simple goal: to give Ukrainian mathematicians a place where they can study, collaborate, and draw inspiration for new ideas.

We ask for support not only to develop mathematics in Ukraine, but also because this work matters far beyond our field. By helping us grow, you support a future in which Ukrainian science remains strong and engaged with the global community. Mathematics does not stand alone: it drives progress in IT, business, medicine, defence, and many other areas essential to the country's resilience and recovery. Every contribution brings us closer to our goals and helps Ukraine move toward a stronger, independent, and successful future built on knowledge and innovation.

In-kind donations

ICMU extends its heartfelt gratitude to the Kyiv School of Economics (KSE) for providing us with a dedicated space on their campus and for their invaluable support in organizing our events. Until ICMU moves to its own building, this space serves as our home for research collaboration, schools, and lecture series. We deeply appreciate KSE's commitment to fostering mathematical research and education in Ukraine.

We are deeply grateful to Frits Beukers for donating to ICMU his personal collection of mathematical literature of circa 140 volumes. Books of Professor Beukers enriched the library of ICMU in Kyiv.

ICMU would like to thank Carlo Beenakker, Fernando Rodriguez Villegas, and the staff of the International Centre for Theoretical Physics (ICTP) for their generous support in organisation of the upcoming ICMU Winter School "Mathematics of Quantum Matter".

Expenses

Administrative and operating expenses	UAH 3,332,265
Personnel costs (salaries, benefits and taxes)	UAH 2,284,492
Website maintenance	UAH 379,159
Accounting services	UAH 253,286
HR services (recruitment)	UAH 195,573
Business travel	UAH 68,478
Marketing and communications	UAH 42,367
Software licences and subscriptions	UAH 34,889
Bank fees and charges	UAH 34,138
Postal services	UAH 18,697
Legal services	UAH 10,878
Office and library maintenance	UAH 10,308

Scientific activities	UAH 2,892,432
ICMU Summer/Winter Schools	UAH 2,012,998
Visitors programme *	UAH 499,054
ICMU Student Research Award	UAH 127,277
Book translation	UAH 83,657
Education and outreach activities	UAH 73,377
Collaboration groups	UAH 61,850
ICMU online mini-courses	UAH 34,219

Total expenses of ICMU **UAH 6,224,697 (circa EUR 126,350)**

* Our visitors programme is supported by the London Mathematical Society (LMS) through the scheme of the LMS Distinguished Visiting Fellowships at ISMU. This year LMS covered approximately 92.4% of the programme costs, while 7.6% were covered by ICMU.

ICMU Winter School
“Random matrices, random analytic functions, and non-linear PDEs”

13–19 January, Chynadiyovo village, Zakarpattia

Total budget	UAH 1,034,148 (circa EUR 23,270)
Local costs	UAH 892,264
Travel compensations for participants	UAH 30,784
Travel of lecturers and organisers	UAH 74,805
Materials	UAH 36,295

Sponsor contributions

Nova Ukraine	EUR 8,500
CIMPA	EUR 3,000
IMU-CDC	EUR 2,000



ICMU Summer School
“Automorphisms and Embeddings of Manifolds”

28 July – 2 August, Ukrainian Catholic University, Lviv

Total budget	UAH 576,292 (circa EUR 11,900)
Local costs	UAH 362,981
Travel compensations for participants	UAH 19,300
Travel of lecturers and organisers	UAH 161,400
Materials	UAH 32,611

Sponsor contributions

EPFL	EUR 8,750
LMS	EUR 3,200



ICMU Summer School “Optimal Transport at the Interface of Analysis, Probability, Scientific Computing and Machine Learning”

4–8 August, Ukrainian Catholic University, Lviv

Total budget	UAH 549,909 (circa EUR 11,300)
Local costs	UAH 305,806
Travel compensations for participants	UAH 23,717
Travel of lecturers and organisers	UAH 183,274
Materials	UAH 37,112

Sponsor contributions

EPFL	EUR 7,100
LMS	EUR 3,200
NSERC	EUR 1,050



ICMU Summer School on Number Theory

22–28 August, Babyn village, Ivano-Frankivsk Region

Total budget	UAH 440,062 (circa EUR 9,100)
Local costs	UAH 272,315
Travel compensations for participants	UAH 42,451
Travel of lecturers and organisers	UAH 104,759
Materials	UAH 20,538

Sponsor contributions

EPFL	EUR 5,800
IMU-CDC	EUR 2,000
Women in Mathematics, University of Waterloo	EUR 1,290

