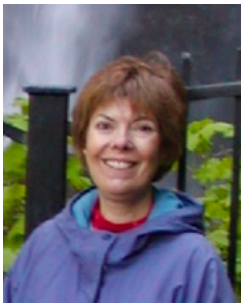
ICIAM Dianoia. Volume 12, Issue 4 October 2024



Greetings from Columbus, Ohio, USA, where Autumn is arriving and I am sending you the final issue of ICIAM Dianoia 2024, and the final issue for which I am the Editor-in-Chief. Accept my thanks for the opportunity to have served the ICIAM community in this way, for the kind words in President Wil Schilders' letter to members in this issue, and for the initiative of Poti Cuminato and his team in taking over the newsletter. In this issue you will also find brief profiles of the new team members, as well as a preview, in an article by Leo Zacarin on the annual meeting of SBMAC, of the fine journalism in Dianoia's future. It is my hope that this will inspire other member societies to report on their meetings. There is also ICIAM news: profiles of two new officers, Weizhu Bao and Jose Carillo; a copy of the new ICIAM poster; and news from the International Science Council, including an opportunity for social media training.

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From the ICIAM President, Wil Schilders, October 2024

Dear ICIAM colleagues and friends,

This is the last issue of Dianoia this year, which also means that we will be saying goodbye to the founder and first editor-in-chief of Dianoia, Barbara Keyfitz. With much help from Sean Bohun, Barbara created the quarterly newsletter during her presidency (2011-2015), and since then has been extremely active to make it a success. Being an editor-in-chief is not easy, it often means chasing people for contributions, thinking also yourself about potential contributions or events that are important for the ICIAM community. By now, the newsletter is very well established, and I hope that all ICIAM member societies distribute it within their channels. The newsletter is one of the most important instruments of ICIAM as far as communication with its members is concerned. On behalf of all past and

present officers, I would like to thank Barbara very much for the tireless efforts she has put into Dianoia. Thank you, Barbara! And, of course, we wish Jose Alberto Cuminato, better known as Poti, much success as the new editor-in-chief.

In the past few months, the officers have been meeting on a monthly basis. An important issue was the decision on the teams doing the site visits at the three potential locations for ICIAM 2031. By now, the teams have been decided, and site visits will be carried out in Busan (December 3-4, 2024), Brisbane (February 2025) and Boston (April 8-9, 2025). Full bids are expected to be available by the middle of November, perfectly in time for all site visits. Reports will be made, and then the final discussion will take place in Hanoi, September 13, 2025, during the ICIAM Board meeting. And then we will know the location of the ICIAM 2031 Congress!

The ICIAM 2027 Congress will already happen in less than 3 years; preparations are on-going and will be accelerated as we come closer to 2027. The congress is focussing on sustainability, which is an extremely important challenge for mankind. Besides that, the 2027 Congress will also be used to celebrate the 40th birthday of ICIAM. The Scientific Program Committee, led by Professor Barbara Wohlmuth of TU Munich, has been working very hard and has already supplied the list of proposed keynote speakers to the officers. In order not to waste time and leave the list untouched for a year, we have decided to call an extraordinary online Board meeting to discuss this list of keynote speakers. It will enable the organisers of ICIAM 2027 to use this list in their advertisements of the congress much sooner than September 2025 (the in-person Board meeting). The chair of ICIAM 2027, Professor Kees Vuik, anticipates that this could play an important role in attracting sponsors.

ICIAM and IMU continue to work on their common statement regarding bibliometric data, citation farms, paper mills and other issues that are influencing behaviour concerning publications. As announced in the previous issue of Dianoia, the reason for doing this is that the organisation Clarivate, which annually publishes a list of highly cited researchers (top 2%), has eliminated mathematicians in their 2023 list, and will probably do so also in the future, as there are strong suspicions of fraudulent behaviour. The IMU organised an event at the premises of the Simons Foundation in New York on September 12-13, ‘’Perspectives on Electronic Information & Communication in the Mathematical Sciences’’, and invited Luis Vega and myself to attend. It was a very interesting workshop, and we also used it to have a more detailed discussion on the joint statement which is foreseen to be available in November.

At the end of September, I also attended the annual Heidelberg Laureate Forum, where prize winners in Computer Science and Mathematics are invited and have discussions with more than 200 students invited from all over the world. The meeting always has great presentations about a variety of important topics, the prize winners playing a key role. Owing to the rather applied character of the presentations and panel discussion, presence of ICIAM prize winners would not be a bad idea. It would be great if they could also be invited.

In the past week, Kenji Kajiwara and myself attended the first African Conference on Industrial and Applied Mathematics (ACIAM 2024) in Cape Town. On the first day, the deputy minister of Higher Education, Science and Technology was present, as well as the ambassadors of Cameroon and Guinea. After having heard presentations about the importance of mathematics (among others also the ICIAM presentation), and about the lack of funding for African mathematicians to attend important conferences (at ICIAM 2023, not many Africans were present), he promised to invest more so as to increase the visibility of African mathematics. The ambassador of Cameroon was also very impressed, and promised he would show our presentations to his prime minister. Possibly, the next ACIAM conference will be held in Cameroon in 2026. An important event during ACIAM 2024 was the official founding of the organisation ASIAM, the African Society for Industrial and Applied Mathematics.

The foregoing shows that there is much activity within ICIAM, and in industrial and applied mathematics worldwide. Also in the next period, there will be important congresses organised by our member societies. We refer to our web page to find more information.

Just as last time, I would like to draw your attention to an important election that will take place during the next Board meeting in Hanoi, namely the election of the president-elect. Later this year we will announce how to nominate candidates, but in view of the importance of this position I hope you will all start thinking

about suitable candidates from your societies.

I sincerely hope we can continue to count on your support in all of ICIAM's activities. Don't hesitate to share your opinions, ideas or suggestions with us. We can learn a lot from each other, and being together will make mathematics, especially in applications and industry, much stronger and more visible. This is our joint mission!

Wil Schilders, president

Wil Schilders

ICIAM President Wil Schilders is emeritus professor, Eindhoven University of Technology and director of the Dutch Platform for Mathematics. Previously he worked at Philips Research and NXP Semiconductors. He was founder and President of EU-MATHS-IN.

ICIAM Reminders: October 2024

Members are reminded to update their Society's information.

ICIAM maintains a self-service membership directory (http://www.iciam.org/members). Please take this opportunity to check your membership information, and update it if appropriate.

Instructions on how to update your entry or to add new information can be found in our membership FAQ (http://www.iciam.org/faq-members). Note that updates can only be done by a person designated as the "Editor" for that society. If you do not have that information, then send e-mail to the ICIAM Secretary (mailto:secretary@iciam.org) (secretary@iciam.org (mailto:secretary@iciam.org)) to name a new editor.

Here's a reminder that you can download a PDF file of any issue of ICIAM Dianoia (as long as the ICIAM Dianoia editor has remembered to set it up). Clicking on the "Downloads" button at the top of the browser view of the newsletter will bring up a screen that offers you a choice of A4 or US Letter to fit your printer.

ICIAM Adds Two New Officers: Weizhu Bao and Jose A. Carillo

At the 2024 ICIAM Board Meeting, Weizhu Bao and Jose A. Carillo were elected Officers-at-Large. This brings the set of officers to full strength, following the decision at an earlier meeting to increase the number of at-large officers from two to six. The most recent officers join Kenji Kajiwara and Yvonne Stokes, who were elected last year.

Weizhu Bao is Provost's Chair Professor at Department of Mathematics, and Vice Dean for Graduate Studies and Academic Affairs of Faculty of Science, National University of Singapore (NUS). He got his PhD from Tsinghua University in 1995 and afterwards he had postdoc and faculty positions at Tsinghua University, Imperial College in UK, Georgia Institute of Technology and University of Wisconsin at Madison in USA.

Weizhu Bao joined NUS as an Assistant Professor in 2000 and was promoted to Professor in 2009. His research interests include numerical methods for partial differential equations, scientific computing/numerical analysis, analysis and computation for problems from physics, chemistry, biology and engineering sciences. He has made significant contributions in modeling and simulation of Bose-Einstein condensation, solid-state dewetting and geometric PDEs; and in multiscale methods and analysis for highly oscillatory PDEs. He had been on the Editorial Board of SIAM Journal on Scientific Computing during 2009--2014 and is currently on the Editorial Board of SIAM Journal of Numerical Analysis.

Bao was awarded the Feng Kang Prize in Scientific Computing by the Chinese Computational Mathematics Society in 2013. He has been invited to give plenary and/or invited talks in many international conferences including an Invited Speaker at the International Congress of Mathematicians (ICM) in 2014. He was elected a Fellow of the American Mathematical Society (AMS Fellow), a Fellow of the Society of Industrial and Applied Mathematics (SIAM Fellow) and a Fellow of Singapore National Academy of Science (SNAS Fellow) in 2022.

For more about Weizhu Bao, see his web page: https://discovery.nus.edu.sg/819-weizhu-bao/about (https://discovery.nus.edu.sg/819-weizhu-bao/about)

José A. Carrillo is currently Professor of the Analysis of Nonlinear Partial Differential Equations at the Mathematical Institute and Tutorial Fellow in Applied Mathematics at The Queen's College, University of Oxford associated to the OxPDE, Numerical Analysis and WCMB groups. He was previously Chair in Applied and Numerical Analysis at Imperial College London from October 2012 till March 2020 and ICREA Research Professor at the Universitat Autònoma de Barcelona during the period 2003-2012. He was a lecturer at the University of Texas at Austin 1998-2000; and held assistant and associate professor positions at the Universidad de Granada 1992-1998 and 2000-2003, where he also did his PhD.

He works on kinetic equations and nonlinear nonlocal diffusion equations. He has contributed to the theoretical and numerical analysis of PDEs, and their simulation in different applications such as granular media, semiconductors and lately in collective behaviour. His main scholarship contributions in analysis of PDEs are in aggregation-diffusion problems, i.e. nonlinear Fokker-Planck type equations; the use of optimal transport techniques and entropy methods to analyse theoretically and numerically gradient-flow structures for PDEs and their singularities; the analysis of kinetic models for self-organization, and their implications in mathematical biology, control engineering and global optimization. His interests in mathematical biology include the understanding of cell sorting by differential adhesion and synchronization phenomena in neuroscience.

He served as chair of the Applied Mathematics Committee of the European Mathematical Society 2014-2017 and of the 2018 Year of Mathematical Biology. He was the Program Director of the SIAM activity group in Analysis of PDE 2019-2020. He was vice-president of the European Society for Mathematical and Theoretical Biology 2021-2023, now member of its board; and member of the Scientific Committee of the Spanish National Science Agency 2021-2024. He was elected as member of the European Academy of Sciences, Section Mathematics in 2018, SIAM Fellow Class 2019, Fellow of the Institute of Mathematics and its Applications, and Foreign Member of the Royal Academy of Sciences of Spain in 2021.He is now the head of the Division of the European Academy of Sciences, Section Mathematics.

He was recognised with the SEMA prize (2003) and the GAMM Richard Von-Mises prize (2006) for young researchers, a Wolfson Research Merit Award by the Royal Society 2012-2017, and the 2016 SACA award for best PhD supervision at Imperial College London. He has been Highly Cited Researcher in 2015, 2016, 2017, 2018, 2019, and 2020 by Web of Science. He received the 2022 Echegaray Medal of the Royal Spanish Academy of Sciences. This is the highest scientific award granted by the Spanish Royal Academy of Sciences and is awarded in recognition of an exceptional scientific career. He has been plenary speaker in important conferences of the area among which the International Congress on Industrial and Applied Mathematics at Tokyo in 2023. He has been awarded an ERC Advanced Grant 2019 to pursue his investigations in complex particle dynamics: phase transitions, patterns, and synchronization.

For more about Jose Carillo, see his web page: https://www.maths.ox.ac.uk/people/jose.carrillodelaplata (https://www.maths.ox.ac.uk/people/jose.carrillodelaplata)

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Meet the New Dianoia Editorial Team

As announced earlier in Dianoia, and in Wil Schilders' letter this month, beginning with the January 2025 issue of ICIAM Dianoia (Volume 13, Issue 1), Poti Cuminato will take over as Editor-in-Chief of the ICIAM newsletter. Along with the ICIAM Editorial Committee (which will be renewed, as most of the committee members have completed a four-year term), Poti will be working with a team in San Carlos: Raquel Vieira and Leonardo Zacarin. You will find a sample of Leo's journalism in the article in this issue on the annual meeting of SBMAC.

Here is a little bit about them. (See the end of the article for the meaning of the acronyms.)

Raquel Vieira

Raquel is a journalist who graduated in 1998 and has been dedicated to television journalism for 25 years, working as a reporter, presenter, text editor, and editor-in-chief. Currently, she is a press officer focused on scientific journalism, working at a FAPESP CEPID: CeMEAI. She is also a video and digital content producer for the Data Science MBA at USP/ICMC/CeMEAI and a freelancer in press relations at ICMC/USP-São Carlos. She has previously worked in corporate journalism in the marketing departments of major companies in Brazil and abroad, and she is a volunteer journalist for projects related to the third sector.

Leonardo Zacarin

Leonardo Zacarin holds a degree in Journalism and has been working in the field of science communication for 10 years, serving major institutions such as USP, FGV, SBM, SBMAC, TYAN-TWAS, among others.

He is currently the owner of Start Communications, a company specializing in news articles, videos, graphic materials, websites, social media management, and other activities aimed at disseminating science to the broader community, as well as maintaining relationships with the press.

FAPESP CEPID: CeMEAI = Center of Mathematical Sciences Applied to Industry

ICMC/USP= Insititute of Mathematics and Computer Sciences/ São Paulo University

FGV = Fundação Getulio Vargas, a very important educational foundation in Brazil

SBM = Brazilian Mathematical Society

TYAN-TWAS = the Young Affiliates Network of The World Academy of Sciences.

Barbara Lee Keyfitz

Barbara Lee Keyfitz is Emeritus Professor of Mathematics at The Ohio State University. She has a PhD from New York University, and works in partial differential equations. She is a former President of ICIAM, and Editor-in-Chief of ICIAM Dianoia.

ICIAM

The New ICIAM Poster

ICIAM has a newly designed poster, reproduced below. It can be found on the ICIAM website (https://iciam.org/sites/default/files/page-attach/iciam_flyer_2024_online.pdf).

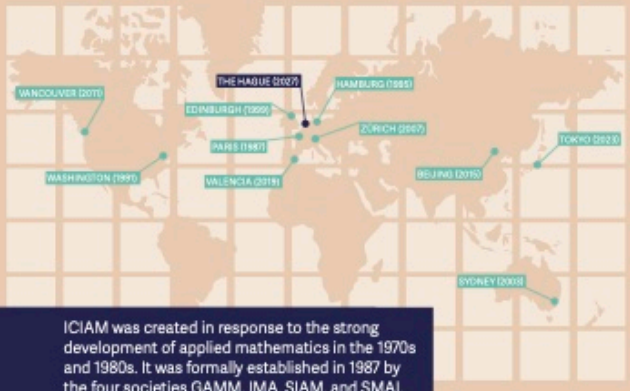
ICIAM

The International Council for Industrial and Applied Mathematics

The International Council for Industrial and Applied Mathematics (ICIAM) is a worldwide organization for professional applied mathematics societies, and for other societies with a significant interest in industrial or applied mathematics. Currently ICIAM has 54 members (see map online).

ICIAM is registered as a charitable organization in the USA. Its main objectives are:

- to promote industrial and applied mathematics internationally;
- to promote interactions between the member societies;
- to promote the goals of these member societies;
- to coordinate planning for periodic international meetings on industrial and applied mathematics.



ICIAM was created in response to the strong development of applied mathematics in the 1970s and 1980s. It was formally established in 1987 by the four societies GAMM, IMA, SIAM, and SMAI. The main activity is the ICIAM Congress which is held every 4 years. The ICIAM conference has already been held in 10 major cities in the world, as shown in the map above. The next congress will take place in The Hague in 2027.

ICIAM scientific prizes

ICIAM awards six major scientific prizes at the opening of the ICIAM Congresses:

- **ICIAM Collatz Prize** to provide international recognition to individual scientists under 42 years of age for outstanding work on industrial and applied mathematics.
- **ICIAM Industry Prize** to provide international recognition to scientists who have made outstanding contributions to innovative mathematical techniques with demonstrated impact in Industry.
- **ICIAM Lagrange Prize** to provide international recognition to individual mathematicians who have made an exceptional contribution to applied mathematics throughout their careers.
- **ICIAM Maxwell Prize** to provide international recognition to a mathematician who has demonstrated originality in applied mathematics.
- **ICIAM Pioneer Prize** for pioneering work introducing applied mathematical methods and scientific computing techniques to an industrial problem area or a new scientific field of applications.
- **ICIAM Su Buchin Prize** to provide international recognition of an outstanding contribution by an individual in the application of mathematics to emerging economies and human development, in particular at the economic and cultural level in developing countries.

ICIAM partnerships

- A scientific partner of the Centre International de Mathématiques Pures et Appliquées (CIMPA) which co-organises and sponsors numerous activities in developing countries, in all continents.
- Provides support for attendance at conferences in/from developing countries.
- A category 1 full member of the International Science Council (ISC).

ICIAM Board

- Wil Schilders, TU Eindhoven, president president@iciam.org
- Ya-xiang Yuan, Chinese Academy of Sciences, past president
- Suzanne Shontz, University of Kansas, secretary, secretary@iciam.org
- Heike Fassbender, TU Braunschweig, treasurer, treasurer@iciam.org

Officers:

- Luis Vega, Basque Center for Applied Mathematics
- Liliane Basso Barichello, Federal University of Rio Grande do Sul
- Yvonne Stokes, University of Adelaide
- Kenji Kajiwara, Kyushu University
- Jose A. Carrillo, University of Oxford
- Weizhu Bao, National University of Singapore

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A forum for exchange of information and news between ICIAM member societies and partner organizations. Published quarterly.

ICIAM

Dianoia: Greek, a term used by Plato for a type of thinking, specifically about mathematical and technical subjects

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International Science Council

News from the International Science Council, October 2024

In early October, Maria Esteban and Yvonne Stokes, as chair and member of ICIAM's ISC Committee, attended the quarterly virtual meeting held by the ISC President, Sir Peter Gluckman. The following is a summary.

The next formal meeting of the ISC General Assembly will take place in January 2025 in Oman; Maria will represent ICIAM at this meeting. Preparation for this meeting is intense, as this is the first meeting since the re-organization of the ISC following the merger of the science and social science councils and the formulation of new statutes. Significantly, members will be asked to approve the Strategic Plan for the next three years. (A draft will be available shortly.) The claim is that this plan is "of a much higher level, avoiding going into too many details". The basic questions are "Where to be?", "What to do?", "How to be the global voice of science?" and above all, "how not to duplicate what is being done elsewhere?" Five strategic priorities were stated:

- **1: Creating the conditions that allow science to thrive**
- **2: Setting and coordinating science agendas on issues of global importance** (here we find work with UNESCO on sustainability and the IDSSD - international decade on science for sustainable development, international polar year and international oceans year)
- **3: The evolution of science systems** (science publishing, the role of AI, equity, the democratization of science)
- **4: Promoting and assisting science diplomacy, particularly where it advances the common good and addresses global challenges.**
- **5: Articulating and translating scientific knowledge to inform decision-making**

At the meeting there were clarifications of these priorities, and a discussion of a number of other questions, including questions about visas for scientific travel, the relation of ISC to IDSSD, how to restore and increase trust in science, how to enhance communication in and of science, and how to find resources to carry out the mission of ISC.

The recording of this meeting can be found here (https://council.science/events/quarterly-meeting-with-isc-president-oct2024/).

Information on ISC's activities for the year 2023 can be found in the annual report (https://council.science/news/iscs-2023-annual-report-a-year-of-transformation-and-global-impact/)

International Science Council

A Training Opportunity from the International Science Council

The **International Science Council Regional Focal Point for Asia and the Pacific** is providing free on-line social media training to build capability in science communication, improve digital storytelling and use of social media platforms. There are to be 6 training sessions in all. For the full list of training modules see the Media and Communications Training programme page at https://council.science/our-work/media-and-communications-training/ (https://urldefense.com/v3/__https:/council.science/our-work/media-and-communications-training/__;!!KGKeukY!x-T4osXpfIwRS5sGMZ9vqsMrkk-6OBcW_ZZgfjxl7pcqbcA4Co_MqKQ9lj7KwzejVtpXUKSu_wdsGVr9nwJPH4P01T8-k-GdlFgM9Vi2QQ$)

The first module was *“Navigating the social media landscape as a scientist in 2024”*, held 4 September, at which quite a number of social media platforms were briefly described. A recording of the session is available via the above link. The second training module is scheduled for 16 October and is on *“Developing a social media strategy for scientists.”*

The online training sessions were announced to ISC members in the Asia-Pacific region along with early and mid-career researchers. They are open to anyone who registers at the programme page given above.

(Note from the editor: I was at first unsuccessful in accessing the 4 September module. It turned out that I needed to adjust my cookie settings to allow it.)

2024 Congress of the Brazilian Society of Computational and Applied Mathematics

Porto de Galinhas (Brazil), September 24, 2024 - At the conclusion of the 2023 edition, held in Bonito (MS), the Brazilian Society of Applied and Computational Mathematics (SBMAC) (https://www.sbmac.org.br/) knew that the 43rd National Congress of Applied and Computational Mathematics (CNMAC) (https://www.cnmac.org.br/novo/), in Porto de Galinhas (PE), would face even higher expectations. After five days, the event exceeded expectations by bringing together around 700 participants, including researchers, professors, and students from across the country and abroad.

Caption: Participants from all over Brazil and abroad attended CNMAC 2024 in Porto de Galinhas

The rooms and auditoriums of the Armação Resort Convention Center were packed throughout the week, from September 16 to 20. Attendees had the opportunity to enjoy a wide range of activities, from plenary sessions to mini-

courses and mini-symposia, as well as poster sessions showcasing cutting-edge work in Mathematics and Computer Science by Master's, Ph.D., and undergraduate students.

Mathematics Exchange

Paulo Neves is an undergraduate Mathematics student at the Federal Rural University of Pernambuco (UFRPE) (https://www.ufrpe.br/), which is one of the co-organizers of this edition of the event alongside SBMAC, the Federal University of Pernambuco (UFPE) (https://www.ufpe.br/), and the Federal University of Paraíba (UFPB) (https://www.ufpb.br/). After starting his studies in Mechanical Engineering, he found his true passion in Mathematics and attended his first CNMAC in Porto de Galinhas.

For him, connecting with many prominent Brazilian and international figures in the field is an experience that will not only enrich his resume but also provide valuable experience for his future career as a teacher.

“Participating in this first event is incredible. You get to see how the various fields of Applied Mathematics work, how professors conduct their research, and how researchers actually apply Mathematics. I had never seen that before. I always had questions about how the fields of Applied and Pure Mathematics research worked, and this event helped clear up many of my doubts. I made friends with several people here, including from other countries. So, it's constant learning, not only in Mathema tics but also in terms of networking. It's an amazing and indescribable experience,” said Paulo, who also helped with the event organization as an usher and technical staff at CNMAC 2024.

Caption: Dozens of posters were presented at CNMAC 2024 by students from all over Brazil and Latin America

From Rio de Janeiro, Wellington Silva represented the graduate program of the School of Applied Mathematics at Fundação Getulio Vargas (FGV EMAp) (https://emap.fgv.br/). Attending his first CNMAC, the student was impressed by the diversity of related topics and appreciated the exchange of knowledge with other research fields, which will benefit his future projects.

“It’s a very inspiring event where you can present your work to people outside your university circle, new ideas emerge, and you have the opportunity to showcase your work while observing others and the topics they cover. CNMAC is very rich in content. I had contact with people from all over Brazil, with more experienced and renowned researchers. You interact about what you are working on and receive feedback from people with more experience in the field. I would say that this diversity is something that greatly helps research,” the student commented.

Gabriela Piffer de Oliveira is an undergraduate Mathematics student at Unesp in Rio Claro (https://www.rc.unesp.br/) and aims to shine in her academic career. For this reason, she made a point of strengthening ties with renowned professors across the country and exploring topics that will help expand her mathematical knowledge.

Caption: Gabriela Piffer de Oliveira, a student from Unesp in Rio Claro, was very pleased with the knowledge exchange at CNMAC 2024

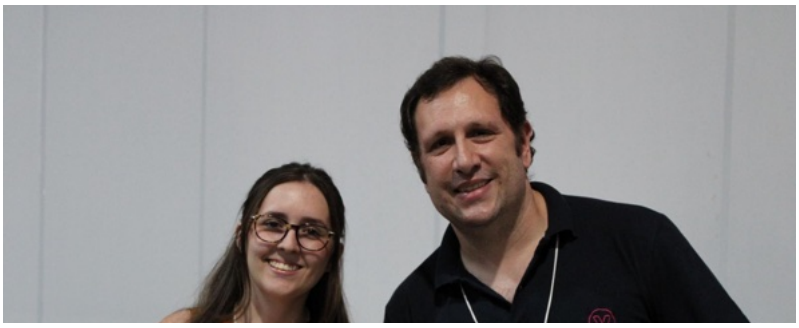
“For it being my first time at a CNMAC, it was very productive, and I’m leaving with a lot of great ideas. It’s important to build these connections with professors because I want to pursue an academic career. It’s also crucial to get to know other amazing projects that can contribute to my own work. In the technical sessions, I saw people applying a lot in Modeling, which is a field I really enjoy. I saw people using it in games for children, bringing Mathematics in a more playful way. I found that idea incredible—bringing the interdisciplinarity of Modeling, which is part of education, together with Applied Mathematics,” Gabriela approved.

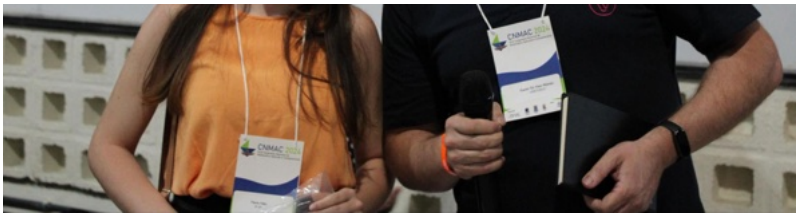
Bridging Research and the Market

Present in 2023, Venturus Institute (https://www.venturus.org.br/) once again stood out at CNMAC in Porto de Galinhas. On the third day of the event, the technology, development, and innovation company evaluated 30 research posters in subject areas aligned with the projects developed at the Institute. Three of them received awards and will soon have the opportunity to incorporate their ideas into Venturus' initiatives.

“Venturus’ relationship with SBMAC has grown to the point where we’ve created a center of excellence in quantum computing, bringing in more academic experts to put this research into practice, ‘package’ it, and bring it to market. This model has been very successful, and Venturus is positioning itself as an international research reference due to its partnership with the academic sector,” explained Daniel de Haro Moraes, Head of Emerging Technologies at Venturus.

“That’s why we decided to offer this award at CNMAC 2024—to encourage people working on projects applied to problems aligned with Venturus. In other words, these are solutions that could be integrated into our day-to-day operations. I evaluated 30 projects, all of very high quality, and it was tough to choose just three. But very soon, we’d like to talk to everyone and, in some way, incorporate these research lines into products we have on the market. If successful, we’ll have an even greater collaboration between researchers and Venturus,” added Moraes.





Caption: Taízia Félix Torres' work was recognized by Venturus

One of the winners was Taízia Félix Torres, with a project that explored the mathematical concept of the Fibonacci Sequence and how it can be applied to the financial market, under the supervision of professors Lucas Antônio Caritá and Marcos William da Silva Oliveira from the Federal Institute of Education, Science, and Technology of São Paulo (IFSP).

The idea was to develop an algorithm that uses a technique derived from this sequence to help predict the best times to buy or sell stocks in the market. Attending her first CNMAC, Taízia appreciated both the award and the event as a whole.

“It was an incredible feeling. CNMAC gathered many high-quality projects, and being recognized by Venturus among so many research efforts was a great honor. I was extremely happy, especially because this project was a joint effort with my advisors, and seeing this recognition is very gratifying,” she said.

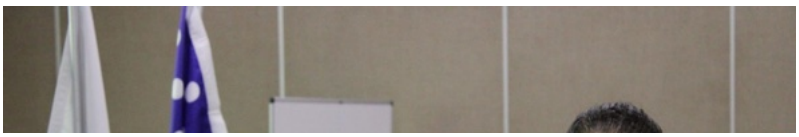
As Moraes hinted, Taízia now has the opportunity to continue her project within the institute, which excites her even more. “I received a partnership proposal from Venturus, which left me extremely excited about the potential of this collaboration. I plan to discuss the proposal with my advisors and carefully assess the conditions to ensure that the project is expanded in the best way possible. I’m very motivated by this opportunity and eager to explore how this partnership can turn our work into a practical application in the financial market,” she said.

In 2024, the event had the honor to receive the ICIAM Conference Support for Applied and Industrial Mathematics in Developing Countries. With this support, the organizers launched two calls for ICIAM Fellowships aimed at Brazilian students and Latin American researchers, respectively. The fellowships provided some financial support to cover part of the expenses for attending the conference. There were 129 applications, from which 21 were selected by the organizing committee based on the CVs, an application letter, and diversity criteria. Students from most regions of Brazil and researchers from Paraguay and Peru benefited from the support.

Anja Buggenthin, a Civil Engineering undergraduate student at Taiwan-Paraguay Polytechnic, was one of the recipients of the grant. She highlighted the organization of the CNMAC: “This event is very special for mathematicians. It is related to our research topics. In my case, the field of Civil Engineering. And I know that it is also a good opportunity to showcase results, meet more people and make new connections. Being part of this conference makes me want to investigate more, learn more about this, see all this research, learn more about the world, because I want to work in the field.”

High-Level and Interdisciplinary Work

Helenice Florentino (https://www.sbmac.org.br/2023/05/helenice-mulher-negra-estudante-docente-tudo-que-ela-quiser/), a professor at the Institute of Biosciences (IB) at Unesp (https://www.ibb.unesp.br/) in Botucatu, was one of the key speakers in the plenary sessions at CNMAC 2024. She presented projects related to Biosystems, Renewable Energy, Sustainable Agriculture, and Waste Management, revealing results of new computational techniques linked to the control of COVID-19 and dengue.



Caption: Professor Helenice Florentino from Unesp was one of the plenary speakers during CNMAC

For Helenice, the CNMAC in Porto de Galinhas met all requirements and allowed hundreds of students to explore many topics within Applied and Computational Mathematics.

“The CNMAC was a success, as the lectures and technical presentations were of high quality. The number of participants was quite significant, providing everyone the opportunity to showcase their research results. New researchers had the chance to learn new techniques to expand their collaboration network, gain experience, and acquire information from more experienced researchers,” observed Helenice, who was part of the SBMAC Council from 2011 to 2017.

The Differentiators of CNMAC 2024

As the Local Coordinator of CNMAC 2024, Professor Pablo Martín Rodríguez emphasized the significance of hosting the event for the first time in Pernambuco. The number of submitted works for the Porto de Galinhas edition surpassed that of the 2023 edition, and the number of representatives from the Northeast region was also significant.

“In this edition, we were very pleased because it far exceeded our expectations. We had international speakers for the plenaries. There were over 700 registered for the event, with 200 more submissions than last year, and we saw much greater representation from the Northeast region, which was our goal. We had 20% of participants from the Northeast, and I also noticed groups from the interior, students coming from rural areas to present their work,” said the professor from UFPE.

The President of SBMAC, Carlos Hoppen, highlighted the presence of several international researchers at CNMAC in Porto de Galinhas, which enriched the event with knowledge and cultural diversity.

“We managed to hold the event in a more attractive location from a tourism perspective, which attracted a large number of participants. We had many foreigners attending; our semi-plenary sessions were largely made up of international participants, and there were mini-symposia with foreign guests, which certainly enriches the event for the Brazilian community. It allows students to interact with more people to expand their opportunities in the research field. Additionally, it also creates a need or opportunity to use a foreign language, which is crucial in Science,” stated the professor from the Federal University of Rio Grande do Sul (UFRGS).

Caption: Carlos Hoppen, President of SBMAC, emphasized the number of foreign researchers at the 2024 event

In Rodríguez's view, one of the activities in the event's program that has gained more participation is CNMACquinho (https://www.cnmac.org.br/novo/index.php/CNMAC/conteudo/2023/64/132), which consists of workshops and playful activities designed for children to stimulate curiosity and interest in Science. These activities were highlighted in the program from Monday to Friday, in both morning and afternoon sessions, and brought together nearly 30 little ones.

For Hoppen, the 2024 edition was important for integrating CNMACquinho into the annual program of the event.

“We are increasingly gaining experience regarding this. The Local Committee organized several activities and encouraged parents to include CNMACquinho in their calendars, as it provides the advantage of having a space where they can leave their children for a while. It is, particularly, a very rich space with fun and constructive games. It’s a part of the event that has been a great success and has been growing each year,” he added.

Caption: CNMACquinho brought joy to the children, like Arthur Richardson, with playful activities related to Mathematics

Arthur Richardson, an 11-year-old from Imperatriz (MA), has loved Mathematics since childhood, always receiving support from his parents at home. At CNMACquinho, he was particularly drawn to the activities related to games.

“I love Mathematics. This is my first time participating in CNMACquinho, and I enjoyed it a lot. Not only do the adults learn, but the children also take the opportunity to learn many things. There were various games that I liked; it's really cool to learn Mathematics this way,” said Arthur, who is in the 5th grade of elementary school.

SBMAC has already defined the locations for the 2025 and 2026 editions. The organization has confirmed that the XLIV CNMAC will be held at the Faculty of Applied Mathematics of Fundação Getulio Vargas (FGV EMAp) in Rio de Janeiro. In 2026, the event will celebrate its 45th edition at UNESP in Presidente Prudente.

Leonardo Zacarin

Leonardo Zacarin holds a degree in Journalism and works in the field of science communication. His company, Start Communications, specializes in news articles and other activities aimed at disseminating science to the broader community.

Coming Soon: The First NZMS-AustMS-AMS Meeting

There will be a joint meeting of three mathematical societies: The American Mathematical Society, the Australian Mathematical Society and the New Zealand Mathematical Society at the University of Auckland, December 9-13, 2024.

The meeting includes as special session on industrial mathematics.

For more information, see the conference website (https://ms-meet-2024.blogs.auckland.ac.nz/)

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