Pacific Institute for the Mathematical Sciences

PIMS MONTHLY CONNECTION | **FEBRUARY 2023**

Hello from PIMS

February is here and we continue to enjoy the new year and all the events taking place across our member networks. If you have not downloaded our **2023 Event Highlights Calendar**, please be sure to do so and see all events occurring throughout this spring and summer.

This month in our PDF Seminar series, we have presentations from Nabarun Deb**,** Mahsa Shirazi**,** and Cintia Pacchiano. The seminars are an excellent opportunity to connect with current PIMS postdoctoral scholars as they continue their research at our member universities.

PIMS is now accepting nominations for the **2023 Education Prize**. The prize will be awarded to members of the PIMS community who have made significant contributions to education in the mathematical sciences. It is intended to recognize individuals or groups from the PIMS universities, or other educational institutions in Alberta, British Columbia, Manitoba, Saskatchewan, and Washington who have played a major role in encouraging activities that have enhanced public awareness and appreciation of the mathematical sciences, as well as fostering communication among various groups and organizations concerned with mathematical training at all levels.

Applications for support of **educational activities** are still ongoing. These activities should be aimed at creating opportunities for students to learn, and for teachers to improve their knowledge of mathematics, statistics, and computer science. Be sure to have your applications in before the deadline, **February 28, 2023**.

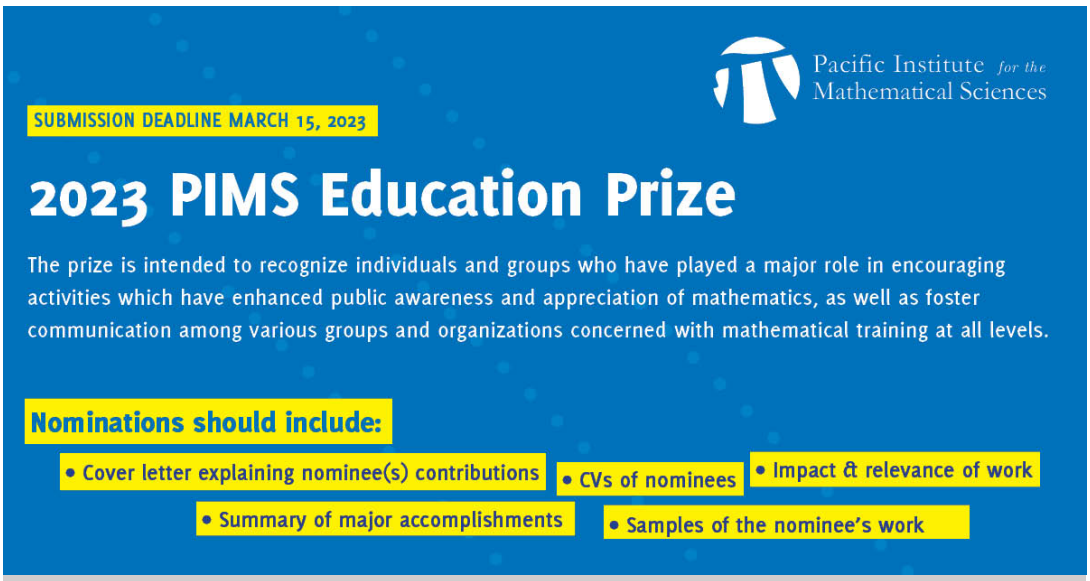
UPCOMING DEADLINES

- **February 1** - Deadline for Minisymposia proposals for the Computational and Mathematical Population Dynamics Conference
- **February 28** - Applications for Education Activities
- **February 28** - Callysto Applications
- **March 15** - Nomination Deadline for the PIMS Education Prize
- **March 30** - Applications due for Team Up! Pathways to Inclusive Research
- **April 10** - Application for admission to the Summer School on Forecasting and Mathematical Modeling for Renewable Energy
- **April 25** - Abstract submission deadline for the Western Canada Linear Algebra Meeting

See below for more details on this month's news, featured events, and publications.

Sincerely,
The PIMS Team

Nominations Open for the 2023 PIMS Education Prize.



Every year the Pacific Institute for the Mathematical Sciences accepts nominations for the PIMS Education Prize. The prize is $1,000 CAD.

The prize will be awarded to members of the PIMS community who have made significant contributions to education in the mathematical sciences. Generally, the award criteria focus on contributions at a broader level with an impact beyond the nominee's institutions. This prize is intended to recognize individuals or groups from the PIMS universities, or other educational institutions in Alberta, British Columbia, Manitoba, Saskatchewan, and Washington who have played a major role in encouraging activities that have enhanced public awareness and appreciation of the mathematical sciences, as well as fostering communication among various groups and organizations concerned with mathematical training at all levels.

Nominations close on March 15 at 11:59 PM Pacific.

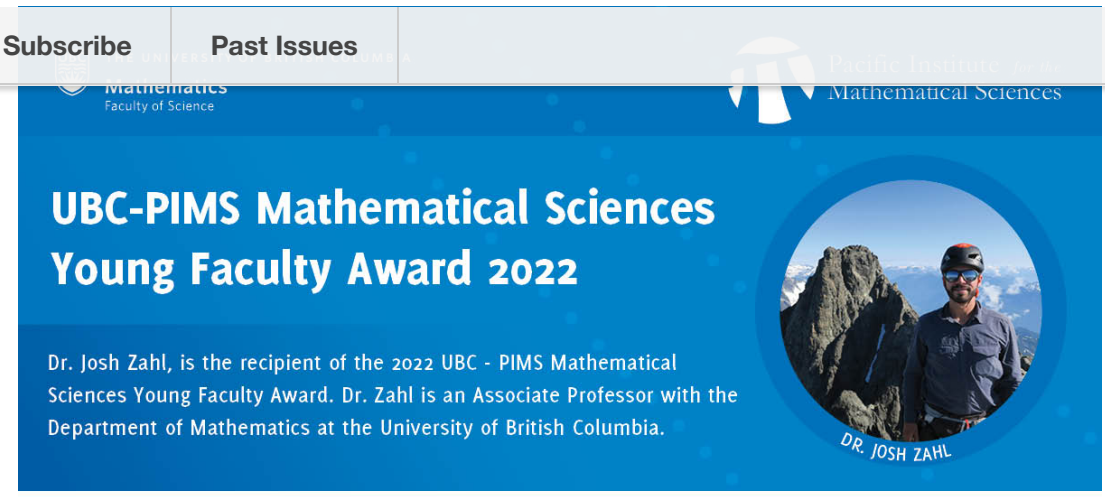
View the Award Criteria and Guidelines

2023 CNRS Postes Rouge: PIMS Winners Announced.

PIMS is pleased to announce that Professors Xi Chen (UAlberta) and Boualem Khouider (UVictoria) were among the PIMS nominations selected by the CNRS for the Postes Rouges Award. This award, given by the Institute of Mathematics of the CNRS (INSMI), is for a three-month research visit by non-French academics to a research lab in France. Chen will visit the Institute of Mathematics of Toulouse, and will be working with Professor Thomas Dedieu, while Khouider will be at the University of Paris, Versailles working with Professor Tahar Boulmezaoud.

Each of the International Research Labs (IRLs) nominates a series of candidates to the Institute of Mathematics of the CNRS (INSMI) for the Postes Rouges Award. The INSMI then reviews and selects the recipients. Congratulations to Professors Chen and Khouider!

Read the Full Announcement



2023 UBC/PIMS Mathematical Sciences Young Faculty Award Goes to Josh Zahl.

PIMS is pleased to announce that Dr. Josh Zahl is the recipient of the 2022 UBC/PIMS Mathematical Sciences Young Faculty Award. Dr. Zahl is an associate professor at UBC and works in several fields of mathematical research: discrete mathematics, harmonic analysis, and geometric measure theory moving effortlessly between these fields. He has made useful and important contributions to the Kakeya problem as well as other problems in combinatorics and analysis.

About the prize: The UBC/PIMS Mathematical Sciences Young Faculty Award was created by two founding donors, Anton Kuipers and Darrell Duffie, to recognize UBC researchers for their leading-edge work in mathematics or its applications in the sciences.

Read the Full Announcement

2023 CRM-Fields-PIMS Prize awarded to Christian Genest.

The Centre de recherches mathématiques (CRM), the Fields Institute and the Pacific Institute for the Mathematical Sciences (PIMS) are pleased to announce that Professor Christian Genest of McGill University has been awarded the 2023 CRM-Fields-PIMS Prize.

Genest is one of the leading statisticians in Canada, whose work has had dual impact on both theory and real-world applications. He is best known for his contributions to multivariate analysis and was a pioneer in the expansive use of copula models in science. Together with a few close collaborators, he combined nonparametric methods and the asymptotic theory of empirical processes to design a broad array of rank-based inference tools for building, selecting, fitting, and validating stochastic models within this class. Additionally, Genest has also contributed to group decision making, prioritization techniques, multivariate extreme-value theory and, most recently, to space-time modeling of rare events in environmental science.

Genest will deliver the CRM-Fields-PIMS Prize Lecture at the Fields Institute (and also online) on **April 20, 2023**.

FEATURE EVENTS

PIMS Emergent Research-PDF Seminar Series

February 1, 8 and 22 2023: Online

PIMS continues to host the Emergent Research PDF Seminar Series. This semester we will host fourteen PIMS scholars from across our member universities. PIMS PDFs are amongst the top young researchers in Canada, and this is an excellent opportunity to learn about them and their work. Visit the PIMS website to learn more about the outstanding young researchers, or visit our Medium blog to learn more about their backgrounds.

More Information on the Seminar Series

The Calgary Math & Philosophy Lectures: Emily Riehl.

February 9, 2023: Hybrid

On the Art of Giving the Same Name to Different Things.

Mathematics has developed an increasingly “higher dimensional” point of view of when different things deserve the same name, categorifying the traditional logical notion of equality to isomorphism (from Greek isos “equal” and morphe “form” or “shape”) and equivalence (from Latin aequus “equal” and valere “be well, be worth”). In practice, mathematicians tend to become more flexible in determining when different things deserve the same name as those things become more complicated, as measured by the dimensions of the categories to which they belong. Unfortunately, these pervasive notions of sameness no longer satisfy Leibniz’s identity of indiscernibles — the assertion that two objects are identical just when they share the same properties — essentially because the traditional set theoretical foundations of mathematics make it too easy to formulate “evil” statements. However, in a new proposed foundation system there are common rules that govern the meaning of identity for mathematical objects of any type that allow one to “transport” information along any identification. Moreover, as a consequence of Voevodsky’s univalence axiom, these identity types are faithful to the meanings of sameness that have emerged from centuries of mathematical practice.

Register for the Lecture

PIMS Network Wide Colloquium: Helen Byrne.

February 16, 2023: Online

Understanding form and function in vascular tumours.

The past twenty-five years have heralded an unparalleled increase in understanding of cancer. At the same time, mathematical modelling has emerged as a natural tool for unravelling the complex processes that contribute to the initiation and progression of tumours, for testing hypotheses about experimental and clinical observations, and assisting with the development of new approaches for improving its treatment. In this talk I will reflect on how increased access to experimental data is stimulating the application of new theoretical approaches for studying tumour growth. I will focus on two case studies which illustrate how mathematical approaches can be used to characterise and quantify tumour vascular networks, and to understand how microstructural features of these networks affect tumour blood flow.

Register for the Colloquium

EDUCATION HIGHLIGHTS

2023 PIMS Education Call for Proposals

PIMS welcomes applications to support education activities in the mathematical sciences to occur after April 3, 2023. Applications are open now until the deadline of 3 pm **Pacific Time on February 28, 2023**. We will be awarding grants from $500 up to $5000. This year we have coordinated deadlines with Callysto (see below) and applications with joint mathematical and computational components are encouraged to apply to both programs. Proposals will be reviewed by the PIMS Education Review Panel in early March, with awards announced on March 15th.

See Application Details

Callysto Call for Proposals Open.

If you teach Grades 5-12 students in Canada, Callysto wants to help fund your classroom activities related to **computational thinking, data literacy, and coding**. Callysto is a free, online program that helps Grades 5-12 students and teachers in Canada learn and apply in-demand data science skills — including data literacy, analysis, visualization, coding, and computational thinking — across any subject matter. The theme for this Call for Proposals is **Developing Responsible Digital Citizens**. Read about our past recipients for proposal ideas and inspiration.

This year, the Callysto call for proposals deadline has been coordinated with the PIMS Education Call for Proposals (see above). Applications with both computational and mathematical components are encouraged to apply to both programs. **Applications will be accepted as part of a rolling intake until 4:00 pm Mountain Time on February 28, 2023.**

See Application Details

MEDIA

Missed a Lecture? Go to Mathtube.Org

Since 1996, PIMS has collected and maintained an archive of videos and lecture notes covering many areas of the mathematical sciences. If you missed any of the PIMS PDF Colloquium Lectures, visit www.mathtube.org to see these and other archives.

Read our PIMS PDF features on Medium

PIMS is happy to share our stories and short interviews with members of the PIMS Community. We are currently featuring our 2022 PDF Cohort as they speak at the PDF Seminar Series. Our Feature this week is Guodong Gai, a PIMS CNRS PDF at UBC.

ABOUT PIMS

The Pacific Institute for the Mathematical Sciences (PIMS) was created in 1996 to promote discovery, understanding, and awareness in the mathematical sciences. PIMS has expanded from the mathematics community of Alberta and British Columbia to include Washington State, Saskatchewan, and Manitoba. Our mandate is to promote research in and applications of the mathematical sciences, to facilitate the training of highly qualified personnel, to create an equitable, diverse and inclusive community, to enrich public awareness of and education in the mathematical sciences, and to create mathematical partnerships with similar organizations in other countries in the Pacific Rim. PIMS funds Collaborative Research Groups, Post-Doctoral Fellowships, and individual events on a competitive basis.

We Want to Hear from You

Share your feedback on this month's newsletter and tell us what stories and news you would like to hear more of.

Feedback

Your Support Makes a Difference

PIMS education and outreach programs touch countless educators, students, and Indigenous communities. Some of our activities include summer schools, mathematics contests and meetings for educators Learn more

Donate to PIMS

Follow PIMS and be a part of our community

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We acknowledge with gratitude that PIMS central office is located on the unceded, traditional, and occupied territory of the Coast Salish peoples. This includes the territories of the xwməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and Səl̓ílwətaʔ/Selilwitulh (Tsleil-Waututh) Nations.
www.native-land.ca