



Pacific Institute *for the*
Mathematical Sciences

PIMS MONTHLY CONNECTION | **APRIL 2023**



Hello from PIMS

Spring is around us and we are happy to welcome the month of April! Across our sites, there are lots of activities being hosted in person and online. We hope you will have some time to attend the various seminars, talks, and events happening near you.

PIMS is excited to host **Mathemalchemy** - a unique and collaborative art exhibit exploring the beauty of mathematics. The installation will be at the Beaty Biodiversity Museum in Vancouver, from April 1 to October 31, 2023. This installation invites you to let go of preconceptions or classroom experiences about art or math, and to explore with an open mind. Both art and math illuminate and describe our world, and have the power to inspire our imaginations.

Join us on April 20th for the **2023 CRM-Fields-PIMS Prize Lecture**. Christian Genest is one of the leading statisticians in Canada, whose work has had a 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. This lecture will be held in-person at the Fields Institute and streamed online.

Our **PIMS PDF Seminar Series** continues this month with online presentations from [Kumar Roy](#) (UVictoria), [Matthew Rupert](#) (USaskatchewan), [Nicholas Rouse](#) (UBC), and [Jane Shaw Macdonald](#) (SFU). You can also know more about each of our PDFs on our [Medium](#) publication. The seminars are also an excellent opportunity to connect with current PIMS postdoctoral scholars as they continue their research at our member universities.

Please note that the [PIMS-BIRS Team Up!](#) program is accepting proposals until April 15th, 2023. This program provides opportunities for in-person collaboration to teams of mathematical scientists, targeting researchers whose research program may have been disproportionately affected by various obstacles like family obligations, professional isolation, access to funding, and the COVID-19 pandemic.

Lastly, our annual **Year in Review** publication is now available for download [here](#). 2022 was a year of change with lots to celebrate and recognize. We thank you all for being a part of the PIMS community.

UPCOMING DEADLINES

- **April 4** - Early Registration deadline for [CanaDAM](#)
- **April 10** - Application for admission to the [Summer School on Forecasting and Mathematical Modeling for Renewable Energy](#)
- **April 14** - Registration deadline for the [Elementary Math Contest \(ELMACON\)](#).
- **April 15** - Applications due for [Team Up! Pathways to Inclusive Research](#)
- **April 15** - Applications close for new [PIMS Network-wide graduate courses](#)
- **April 20** - Proposals for [PIMS Network Wide Colloquium Speakers](#)
- **April 25** - Abstract submission deadline for the [Western Canada Linear Algebra Meeting](#)
- **May 5** - Registration deadline for the [USaskatchewan - PIMS Data Science Bootcamp](#)

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

NEWS & ANNOUNCEMENTS

2023 - 2024 | PIMS Partner Sites

Pacific Institute *for the*
Mathematical Sciences

PIMS Network-wide Graduate Courses Call for New Courses!



Deadline to
apply:
April 15

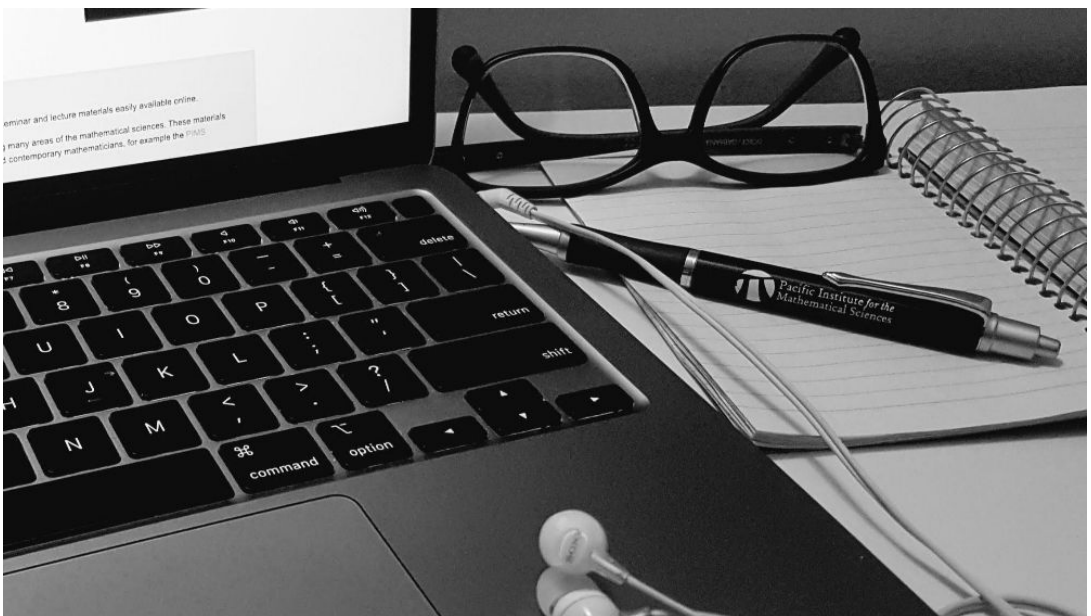
PIMS invites **proposals** for **graduate level courses** in the mathematical sciences to take place in either term of the **2023-2024** academic year. This program is intended to benefit instructors by **reaching a larger audience**, and to benefit students by **offering a deeper variety of courses**.

Call for PIMS Network-Wide Courses: 2023-2024.

We invite proposals for graduate courses in the mathematical sciences to take place in either term of the 2023-2024 academic year. This program benefits instructors by reaching a larger potential audience and students by offering a broader variety of courses. Students may be eligible for course credit through the Western Deans Agreement, and Instructors may be eligible for support on some course-related expenses. These courses will be designated as PIMS Network-wide graduate courses, and will be advertised and promoted throughout the PIMS network. If you are interested in participating as an instructor, please complete the instructor application form on the PIMS courses website **by April 15, 2023**.

[Application Details](#)

Call for Speakers: 2023/24 PIMS Network-Wide Colloquium Series



PIMS will continue to sponsor the network-wide colloquium series for the 2023-2024 academic year. High-quality colloquia by distinguished speakers will be given on a monthly basis (likely delivered virtually) for an audience spread across the 10 PIMS member universities. Suggestions for speakers are now being considered by the PIMS Colloquium Committee, and should be sent to Anthony Quas (aquas@uvic.ca) by **April 20th, 2023**.

These will be evaluated based on:

- distinction of speaker;
- equity, diversity and inclusivity considerations;
- breadth of topics in the series;
- suitability for a colloquium-style lecture.

A proposal should include:


- A statement, if applicable, giving details of ways in which this nominee would contribute to PIMS' goals of promoting under-represented groups in mathematics;
- If possible, a statement addressing the proposed speaker's ability to give a broadly accessible engaging talk.


It is not necessary to contact the proposed speaker in advance of submitting the nomination.

FEATURE EVENTS

PIMS-UBC Math Distinguished Colloquium


| 3pm Pacific | ESB 2012





March 31
INGRID DAUBECHIES
Duke University

Discovering low-dimensional manifolds in high-dimensional data sets



For more information and session details, visit
<https://www.pims.math.ca/scientific-event/230331-umdcid>

www.pims.math.ca
[@pimsmath](https://twitter.com/pimsmath)
facebook.com/pimsmath
www.math.ubc.org

UBC Math Distinguished Colloquium: Ingrid Daubechies.

March 31, 2023: University of British Columbia

Discovering low-dimensional manifolds in high-dimensional data sets

Diffusion methods help understand and denoise data sets; when there is additional structure (as is often the case), one can use (and get additional benefit from) a fiber bundle model.

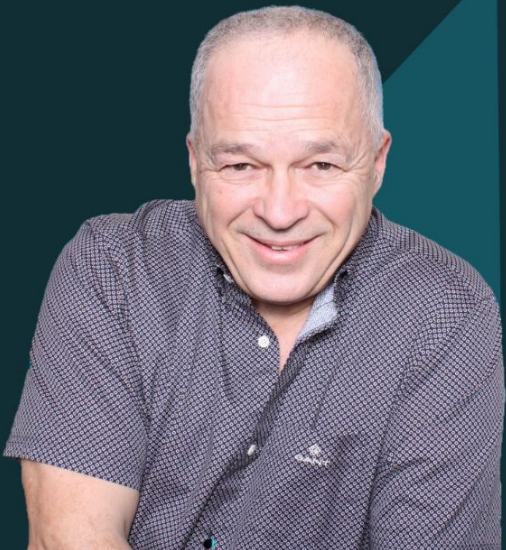
This talk reviews diffusion methods to identify low-dimensional manifolds underlying high-dimensional datasets, and illustrates that by pinpointing additional mathematical structure, improved results can be obtained. Much of the talk draws on a case study from a collaboration with biological morphologists, who compare different phenotypical structures to study relationships of living or extinct animals with their surroundings and each other. This is typically done from carefully defined anatomical correspondence points (landmarks) on e.g. bones; such landmarking draws on highly specialized knowledge. To make possible more extensive use of large (and growing) databases, algorithms are required for automatic morphological correspondence maps, without any preliminary marking of special features or landmarks by the user.

[Colloquium Details](#)

2023 CRM-Fields-PIMS Prize: Christian Genest.

2023 CRM-FIELDS-PIMS PRIZE

Recognizing exceptional achievement in the mathematical sciences.



CONGRATULATIONS TO

Christian Genest

April 20, 2023: The Fields Institute

This hybrid lecture will be delivered at the Fields Institute on April 20, 2023, and will be broadcasted across the PIMS network. For UBC participants, the lecture will also be screened at

About the prize:

The CRM-Fields-PIMS prize is the premier Canadian award for research achievements in the mathematical sciences. It is jointly awarded by the three largest Canadian mathematics institutes: the Centre de recherches mathématiques (CRM) in Montréal, the Fields Institute in Toronto, and the Pacific Institute for the Mathematical Sciences (PIMS) in Vancouver. This annual prize comes with a monetary award.

[Event Details](#)


PIMS Emergent Research-PDF Seminar Series.

April 5, 12, 19, and 26, 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.

Emergent Research:
The PIMS Postdoctoral Fellow Seminar
Apr 05, 2023 | 9:30am Pacific


Using data-driven stochastic lattice models to improve the representation of convection and clouds in Climate Models



Kumar Roy
University of Victoria

Emergent Research:
The PIMS Postdoctoral Fellow Seminar
Apr 12, 2023 | 9:30am Pacific


Equivalences of Categories of Modules Over Quantum Groups and Vertex Algebras



Matthew Rupert
University of Saskatchewan

Emergent Research:
The PIMS Postdoctoral Fellow Seminar
Apr 19, 2023 | 9:30am Pacific

Quaternion algebras for surgeries on knots



Nicholas Rouse
University of British Columbia

Emergent Research:
The PIMS Postdoctoral Fellow Seminar
Apr 26, 2023 | 9:30am Pacific

The impact of accelerating and fluctuating speeds of climate change on a population



Jane Shaw Macdonald
Simon Fraser University

Visit the PIMS website to learn more about the outstanding young researchers, or visit our [Medium](#) blog to learn more about their backgrounds. Our features in March are [Fatma Çiçek](#) (University of Northern British Columbia) and [Jyoti Bhadana](#) (University of Alberta).

[More Information on the Seminar Series](#)

View our calendars for more meetings and events

[Scientific Events](#)

EDUCATION HIGHLIGHTS



Opening Day!

Welcome to the wonderland of **Mathemalchemy**, where math is transforming.

Conceived as a brainchild of Duke University mathematician **Ingrid Daubechies** and fiber artist **Dominique Ehrmann**, the **Mathemalchemy** project is an exciting collaborative exhibit developed by a core team of driven and enthusiastic 24 artistic mathematicians and mathematical artists. Both art and math illuminate and describe our world, and have the power to inspire our imaginations. This installation invites you to let go of preconceptions or classroom experiences about art or math, and to explore with an open mind. Feel free to wander, observe, and enjoy.

Photo Credit: Kevin Allen

RSVP at: <https://www.pims.math.ca/educational-event/230401-mcwmmwt>

APRIL 1: EXHIBITION OPENING

MAKING MATHEMALCHEMY

Beaty Museum, UBC Vancouver Campus

- Tour - 1.30 pm
- Talk - 2.30 pm
- Reception - 3.45 pm

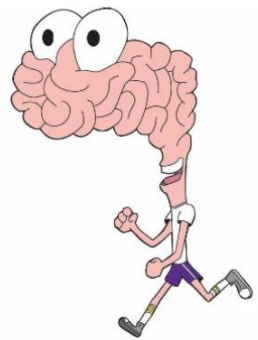
Mathemalchemy Exhibition: Welcome to the wonderland of Mathemalchemy, where math is transforming.

Mathemalchemy is a unique and collaborative art exhibit exploring the beauty of mathematics. Listen to the art and science behind the exhibit with mathematician Ingrid Daubechies and artist Dominique Ehrmann. Both art and math illuminate and describe our world, and have the power to inspire our imaginations. This installation invites you to let go of preconceptions or classroom experiences about art or math, and to explore with an open mind. Feel free to wander, observe, and enjoy.

The Mathemalchemy exhibit **opens on April 1** with a **tour at 1.30pm**, **talk at 2.30pm**, and a **reception starting at 3.45pm**. Seating for the opening talk is limited; pre-registration is required. This exhibit is made possible through the support of the Beaty Biodiversity Museum and the UBC Faculty of Sciences.

[Exhibition Details](#)

elmacon



Join us on **Saturday, April 29, 2023**
At the University of British Columbia

ELMACON is Vancouver's **elementary math contest** for grades **5 - 7**, which gives students the opportunity to experience math as an **exciting sport!** Prizes include: electronics, gadgets, games, and more!

For registration and more details visit <https://elmacon.org>.
Questions? elmacon@pims.math.ca or (604) 822-3922

Deadline: April 14 2023
Fee: \$30
Location: UBC Earth Sciences Building, 2207 Main Mall, Vancouver

APRIL

ELMACON is funded and run by Pacific Institute for the Mathematical Sciences

ELMACON 2023: Registration is still open!

ELMACON returns for 2023, and it will take place on **Saturday April 29, 2023** at the UBC Vancouver campus in the Earth Sciences (ESB) Building. Registration is now open and will

Subscribe

Past Issues

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Canada

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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 Səlílwətaʔ/Selilwitulh (Tsleil-Waututh) Nations.

www.native-land.ca