Welcome to the April 2023 issue of the Institute of the Mathematical Sciences of the Americas (IMSA) newsletter. We are ex- cited to bring you the latest news, events, and developments from IMSA, including new appointments, cutting-edge lectures, and exciting conferences. In this issue, you will find information about our upcoming Frontiers in Mathematics Lecture Se- ries, featuring top female mathematicians from around Latin America presenting on various fascinating topics. Additionally, there is information about some of the exciting conferences and seminars that have taken place in recent months

CURRENT NEWS

We are pleased to announce that Professor Ludmil Katzarkov has been named Executive Director of IMSA, starting this Spring. Additionally, we are delighted to introduce several new members of IMSA's leadership team and scientific advisory board.

• Dr. Ernesto Lupercio, Senior Executive Liasion for Global Outreach of IMSA
• Dr. Bernardo Uribe, Associate Executive Liaison for Global Outreach of IMSA
• Dr. Gabriela Olmedo, Senior Executive Liaison for Outreach of IMSA
• Dr. Phillip Griffiths, Scientific Advisory Committee Chair of IMSA
• Dr. Oscar Garcia-Prada member of the IMSAC Executive Committee
    • Professor Robert Stephen Cantrell, Chair of the Department of Mathematics, Senior Chief Liaison Officer, and Founding Director of IMSA
• Dr. Mina Teicher, Senior Executive Liaison for Outreach
• Dr. Kenneth L. Baker is a new member of the Scientific Advisory Board

We are delighted to share the new IMSA logo, which embodies the essence of the Americas through a threefold representation. The orange vertical squares represent the North and South American continents in a fully symmetrical relationship, reflecting the harmony and unity that IMSA strives to foster across borders. The logo also draws inspiration from the intricate patterns of Miccosukee textiles, reflecting the rich cultural heritage of Florida and sharing similarities with textile patterns throughout the Americas. Finally, the logo's designs resemble the fractal sandpile group elements, embodying the spirit of pure and applied mathematics IMSA stands for. Together, these three elements create a symbol representing the interdisciplinary nature of IMSA and our commitment to promoting themathematical sciences throughout the Americas.

IMSA'S FRONTIERS IN MATHEMATICS LECTURE SERIES

Carolina Araujo, Professor,
Insituto Nacional de Matematica Pura e Aplicada, Rio de Janeiro, Brazil
The Calabi problem - from a birational geometer's viewpoint I, May 3, 2023
The Calabi problem - from a birational geometer's viewpoint II, Mary 4, 2023

Jacqueline Godoy Mesquita, Professor,
Department of Mathematics, University of Brasilia, Brazil
An introduction to delay differential equations: motivation and applications, March 28, 2023
Linearized instability for neutral functional differential equations with state-dependent delays, March 29, 2023

Maria Amelia Salazar, Assistant Professor,
Departamento de Matematica Aplicada, Universidade Federal Fluminense,
Brazil Fundamentals of Lie Groupoids and Algebroids, January 23, 2023
On Local Integration of Lie Brackets, January 24, 2023

CONFERENCES

Homological Mirror Symmetry, January 23-27, 2023

In recent months, several new results were obtained in Homological Mirror Symmetry. The purpose in this traditional winter conference is to survey these results and open new directions for development and collaboration. The following new results were obtained:
» New Singularity Theory, Maxime Kontsevich
» New Invariants of 3-Manifolds, Sergei Gukov
» Homotopy HMS, Mohamed Abouzaid

Periods, Shafarevich Maps and Applications
January 20-February 3, 2023
Higher Structures in Algebra, Geometry, Topology and Physics February 27-March 2, 2023
Low Dimensional Topology and Circle-valued Morse Functions February 6-10, 2023

SEMINARS

Sinem Onaran, Hacettepe University
 March 8, 2023
Feride Ceren Kose, University of Georgia
 March 1, 2023
Gueo Grantcharov, Florida International University February 23, 2023
Christopher Scaduto, University of Miami
 February 22, 2023
Ya Deng, Universite de Lorraine
 February 16,&17, 2023
Gueo Grantcharov, Florida International University February 16, 2023
Danny Ruberman, Brandeis University
 February 15, 2023
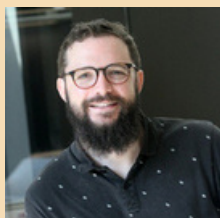Inkyung Ahn, Korea University, Korea
 February 14, 2023
Kenneth L. Baker, University of Miami
 February 1, 2023

CONSORTIUM DISTINGUISHED LECTURE SERIES (IMSAC)

Andres Navas
• Arc-Connectedness of the Space of 1-Dimensional Commuting Diffeomorphisms
• Khajuraho's Magic Square is a Hypercube
January 17, 2023

SPECIAL LECTURE SERIES ON NUMERICAL GEOMETRY
Tristan Collins, MIT, January 20, 2023

JOINT EVENTS

Higher Structures in Algebra, Geometry, Topology and Physics
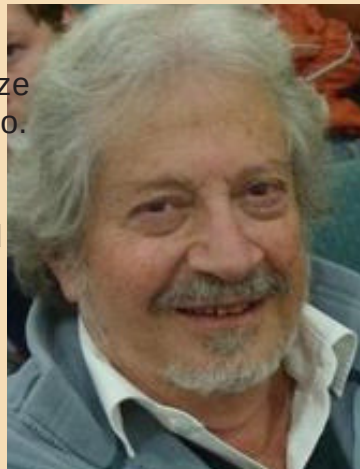

February 27-March 2, 2023
Universidad del Norte
Barranquilla, Colombia

The "2nd Workshop on Higher Structures in Algebra, Geometry, Topology and Physics" took place in the last week of February of 2023, at the IMSAC partner institution the Universidad del Norte in Barranquilla, Colombia. The aim of the workshop was to share and disseminate the latest developments in the use and applications of higher structures in the different areas of mathematics and physics. Special attention was put to the interplay between to- pological and geometrical invariants with the classification of crystals in condensed matter physics. Professors and students in mathematics and physics from the Universidad de los Andes, Universidad Nacional de Colombia, Universidad del Norte and Universidad Javeriana from Colombia, and University of Miami, University of Greifswald in Germany and Pontificia Universidad Católica de Chile, took part in the event. The event was part of the IMSAC initiative of IMSA, as well as part of the Sponsorship granted by the Alexander Von Humboldt Foundation to Kon- rad Waldorf from Greifswald and Bernardo Uribe from Universidad del Norte. This was the second workshop of this kind, the first one also organized in Barranquilla in 2023.

Conference on Complex Geometry in Merida - Alberto 80

IMSA and the Franco-Mexican Laboratory Solomon Lefschetz recently organized a conference on complex geometry to energize the collaboration between France and Mexico. The event, held at the UADY Building in Merida, January 9 - 13, 2023 Yucatan, paid tribute to Alberto Verjovsky, who Universidad Autónoma contributed significantly to the mathematical de Yucatán exchanges between the two countries. The Mérida, Yucatan, Mexico conference featured lectures on various topics, including the moduli spaces of holomorphic foliations,

commuting diffeomorphisms of 1-manifolds, knot groups representations, and the Hausdorff dimension of dynamically defined wild knots. Laurent Meersseman discussed how stack theory can be used in complex analytic geometry to deal with global moduli problems, while Eleonora Di Nezza delved into the study of families of singular Kähler-Einstein metrics. The conference was supported by LaSol, UNAM México, Universidad Autónoma de Yucatán (UADY), Cinvestav, and the Institute for the Mathematical Sciences of the Americas. The organizers plan to periodically organize mathematical events of modest size in Mexico to foster collaboration after the pandemic. The conference facilitated a dynamic exchange of ideas between mathematicians across the Americas and the French mathematics community.

Advancing Women in Mathematics

"Girls are for STEM" is a module of WIMSA (Advancing Women in Mathematics Across the Americas) dedicated to provide math talented high school girls from the Miami-Dade County, year long classes in conceptual mathematics (this year it was in Group Theory and in probability), that grant them 3 college credits, with the aim to attract those girls to enroll in College in a math major track, and continue to a research based career.

IMSA *Upcoming Events*

Gauge Theory and Low Dimensional Topology Conference
April 17-21, 2023
Quantum Toric and Generalized Geometries and O Minimality
Conference May 1-5, 2023
Higher Invariants in Equivariant and Geometric Topology
Conference
May 24-27, 2023

Consortium Distinguished
Lecturer Series
Michael R. Douglas
June 29-30, 2023

Geometry Conference:
50 years of
Hitchin Mathematics
and the Americas
December 11-16, 2023

Supported by the Simons Foundation and University of Miami