

Saraí Hernández-Torres

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RESEARCH INTERESTS

Discrete Probability: uniform spanning forests, loop-erased random walks, growth processes, random walks, random trees, percolation models with long-range correlations, and their scaling limits.

ACADEMIC POSITIONS

- July 2022 –present INVESTIGADORA ASOCIADA C
 Instituto de Matemáticas,
 Universidad Nacional Autónoma de México (UNAM)
 Mexico City, Mexico
- Oct. 2020 –June 2022 POSTDOCTORAL FELLOW
 Technion – Israel Institute of Technology, Haifa, Israel
 Hosts: [Prof. Eviatar Procaccia](#) and [Prof. Ron Rosenthal](#)

EDUCATION

- 2020 Ph.D. in MATHEMATICS
 University of British Columbia, Vancouver, Canada
 Thesis: “A Macroscopic View on Two Discrete Random Processes”
 Supervisors: [Prof. Omer Angel](#) and [Prof. Martin Barlow](#)
- 2016 M.Sc. in MATHEMATICS
 University of British Columbia, Vancouver, Canada
 Essay: “Collisions of Trajectories and Random Walks”
 Supervisor: [Prof. Martin Barlow](#)
- 2014 B.Sc. in MATHEMATICS
 Universidad de Guanajuato -
 Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico
 Thesis: “Introducción a los Espacios de Bergman”
 Supervisor: [Prof. Fernando Galaz Fontes](#)

PUBLICATIONS & PREPRINTS

Published or accepted

1. *Sharp one-point estimates and Minkowski content for the scaling limit of three-dimensional loop-erased random walk*,
S. Hernandez-Torres, X. Li and D. Shiraishi.
To appear in *Annales de l'Institut Henri Poincaré (B) Probability and Statistics* arXiv e-print: [2403.07256](https://arxiv.org/abs/2403.07256). (54 pp.)

2. *Crossing bridges between percolation models and Bienaymé-Galton-Watson trees*,
A. Blancas, M. C. Fittipaldi and S. Hernandez-Torres.
XIV Symposium on Probability and Stochastic Processes. SPSP 2023.
Progress in Probability, Volume 81, 103–132 (30 pp.), Birkhäuser, Cham, 2025.
DOI: [10.1007/978-3-031-96118-2_4](https://doi.org/10.1007/978-3-031-96118-2_4). arXiv e-print: [2411.09621](https://arxiv.org/abs/2411.09621).
3. *Distance-dependent chase-escape on trees*,
S. Hernandez-Torres, M. Junge, N. Ray and N. Ray.
New Zealand Journal of Mathematics, Volume 55, 31–41 (11 pp.), 2024.
DOI: [10.53733/342](https://doi.org/10.53733/342). arXiv e-print: [2209.09876](https://arxiv.org/abs/2209.09876).
4. *The chemical distance in random interacements in the low-intensity regime*,
S. Hernandez-Torres, E. B. Procaccia and R. Rosenthal.
Communications in Mathematical Physics, Volume 400, 1697–1737 (41 pp.),
2023.
DOI: [10.1007/s00220-023-04634-8](https://doi.org/10.1007/s00220-023-04634-8). arXiv e-print: [2112.13390](https://arxiv.org/abs/2112.13390).
5. *Scaling limit of the three-dimensional uniform spanning tree and the associated random walk*,
O. Angel, D. A. Croydon, S. Hernandez-Torres and D. Shiraishi.
Annals of Probability, Volume 49, Number 6 (November), 3032–3105 (74 pp.),
2021
DOI: [10.1214/21-AOP1523](https://doi.org/10.1214/21-AOP1523). arXiv e-print: [2003.09055](https://arxiv.org/abs/2003.09055).
6. *The number of spanning clusters of the uniform spanning tree in three dimensions*,
O. Angel, D. A. Croydon, S. Hernandez-Torres and D. Shiraishi.
Advanced Studies in Pure Mathematics (Stochastic Analysis, Random Fields and Integrable Probability – Fukuoka 2019), Volume 87, 403–414 (12 pp.),
Mathematical Society of Japan, 2021.
DOI: [10.2969/aspm/08710403](https://doi.org/10.2969/aspm/08710403). arXiv e-print: [2003.04548](https://arxiv.org/abs/2003.04548).
7. *Chase-escape with death on trees*,
E. Beckman, K. Cook, N. Eikmeier, S. Hernandez-Torres and M. Junge.
Annals of Probability, Volume 49, Number 5 (September), 2530–2547 (18 pp.),
2021
DOI: [10.1214/21-AOP1514](https://doi.org/10.1214/21-AOP1514). arXiv e-print: [1909.01722](https://arxiv.org/abs/1909.01722).

Preprints

8. *Chase-escape with conversion as a multiple sclerosis lesion model*,
E. Bailey, E. Beckman, S. Hernández-Torres, M. Junge, A. Kumar, A. Lee, D. Li,
A. Raufov, L. Reeves and O. Rondel
arXiv e-print: [2507.21235](https://arxiv.org/abs/2507.21235).
9. *Allele trees for the mother-dependent neutral mutations model and their scaling limits in the rare mutations regime*,
A. Blancas, M. C. Fittipaldi and S. Hernandez-Torres.
arXiv e-print: [2504.20030](https://arxiv.org/abs/2504.20030).

SHORT-TERM RESEARCH VISITS

- Jun. 2025 Research Institute for Mathematical Sciences (RIMS), Kyoto University.
Host: David Croydon
- Apr. 2024 City University of New York (CUNY). Host: Matt Junge
- Jun. 2023 Technion – Israel Institute of Technology. Host: Eviatar Procaccia
- Apr. 2023 University of British Columbia. Host: Omer Angel
- Nov. 2022 California Institute of Technology. Host: Tom Hutchcroft

GRANTS AND FUNDING

Projects

- 2026–2028 Principal Investigator, UNAM–DGAPA–PAPIIT IA106126
Geometría y universalidad en árboles aleatorios
- 2024–2025 Research project supported by
L'Oréal–UNESCO–Academia Mexicana de Ciencias (AMC)
Geometría emergente en sistemas estocásticos discretos: transiciones de fase y criticalidad
- 2024–2025 Principal Investigator, UNAM–DGAPA–PAPIIT IA103724
Geometría aleatoria en gráficas

Selected travel grants

- 2025 IMSA Travel Grant Award – Mathematical Congress of the Americas
MCA 2025
Institute of the Mathematical Sciences of the Americas (IMSA)
- 2019–2020 Mathematical Research Communities Program
American Mathematical Society (AMS); support for participation in a research workshop and the Joint Mathematics Meetings (JMM) 2020

HONORS AND AWARDS

Awards

- 2024 L'Oréal–UNESCO–AMC For Women in Science National Fellowship
(Mexico) Beca para Mujeres en la Ciencia L'Oréal–UNESCO–AMC

Scholarships and fellowships

- 2015–2020 Graduate Studies Scholarship
Consejo Nacional de Ciencia y Tecnología (CONACYT)
- 2014 Faculty of Science Graduate Award
University of British Columbia; graduate studies scholarship
- 2009–2014 Undergraduate Studies Scholarship
Centro de Investigación en Matemáticas (CIMAT)
- 2012, 2014 Academic Excellence Scholarship
Secretaría de Educación Pública (SEP)
- 2012 Academic Excellence Scholarship
Universidad de Guanajuato; awarded to the student with the highest GPA in the mathematics degree program in that academic year

High school honors

- 2008 Mathematical Olympiads: Third place (national level)
XXII Olimpiada Mexicana de Matemáticas (Mexican Mathematical Olympiad)

TALKS

Research talks at conferences

29 talks: 3 plenary talks, 21 invited talks, 5 contributed talks

4 video recordings available online

Selected talks

2026

- Seminar on Stochastic Processes, Union College, Schenectady, NY, USA

2025

- International Symposium on Stochastic Processes and Complex Systems, Tohoku Forum for Creativity, Tohoku University, Sendai, Japan (**Plenary talk**)
- Montréal - Guanajuato Workshop on Probability and Machine Learning, CIMAT, Guanajuato, Mexico (**Plenary talk**)
- Connections Workshop: Probability and Statistics of Discrete Structures, SLMath, Berkeley, USA ([video](#))

2024

- Statistical Mechanics Beyond 2D, IPAM, UCLA, USA ([video](#))

2023

- XIV Simposio de Probabilidad y Procesos Estocásticos (**Plenary talk**)

Talks at conferences

2025

- Special Session: “Recent Developments in Interacting Particle Systems and their Applications”, Mathematical Congress of the Americas (MCA), Miami, USA
- Special Session: “Discrete Stochastic Models and Applications”, Mathematical Congress of the Americas (MCA), Miami, USA
- Invited Session: “Geometry of Random Walks”, 44th Conference on Stochastic Processes and their Applications (SPA), Wroclaw, Poland

2024

- Scientific Session: “Recent Progress of Stochastic Analysis”, CMS Winter Meeting and Related Fields, Richmond, Canada
- Workshop: Random Walks, Scaling Limits and Criticality, Herrsching am Ammersee, Germany

2023

- Discrete Random Structures, Bedlewo, Polonia
- Potential Theory Workshop, CIMAT, Guanajuato, México
- Invited Session: “Random Geometry”, XVI Latin American Congress of Probability and Mathematical Statistics (CLAPEM), São Paulo, Brazil
- 11th International Conference on Stochastic Analysis and its Applications (ICSAA), Edinburgh, UK
- BUC XXI Meeting. CIMAT, Guanajuato, Mexico

2022

- Analytic and Probabilistic Combinatorics. BIRS, Banff, Canada ([video](#))
 - Special Session: “Random Trees and Graphs”, 42nd SPA Conference, China
- ◇

2021

- LXX Reunión de Comunicaciones Científicas, Reunión Anual de la Unión Matemática Argentina, Argentina ◇

- Special Session: “Interacting Stochastic Systems”, Mathematical Congress of the Americas (MCA), Argentina ◊
- Matemáticos Mexicanos en el Mundo, Casa Matemática Oaxaca, Mexico [\(video\)](#) ◊

2020

- Special Session: “AMS Special Session on Stochastic Spatial Models”, Joint Mathematics Meetings (JMM), Denver, USA

2019

- Special Session: “Recent Advances in Probability and Stochastics”, Canadian Mathematical Society (CMS) Summer Meeting, University of Regina, Canada

2018

- Retreat for Young Researchers in Stochastics, BIRS, Canada *

Contributed talks

2021

- 8th Students Probability Day, Weizmann Institute of Science, Israel *

2019

- XV Latin American Congress of Probability and Mathematical Statistics (CLAPEM), Merida, Mexico *
- 49th Saint-Flour Probability Summer School, Saint-Flour, France *
- 11th Cornell Probability Summer School, Cornell University, USA *

Research talks at seminars

40 talks in seminars

5 video recordings available online

2025

- Seminário de Probabilidade, UFRJ, Rio de Janeiro, Brazil ◊
- Seminário de Probabilidade e Mecânica Estatística, Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil [\(video\)](#) ◊
- Seminario de Análisis Matemático y sus Aplicaciones: Análisis, en todas partes, al mismo tiempo, Facultad de Ciencias, UNAM, Mexico City, Mexico
- Kansai Probability Seminar, Kyoto University, Japan
- Modeling, Computation, Nonlinearity, Randomness and Waves Seminar, University of Arizona, Tucson, USA
- Mathematical Physics and Probability Seminar, University of Arizona, Tucson, USA
- Probability Seminar, Duke University, Durham, USA
- Seminario del Departamento de Matemáticas, ITAM, Mexico City, Mexico

2024

- Seminario Aleatorio. ITAM, Mexico City, Mexico
- Seminario Sistemas Complejos y Física Estadística, Instituto de Física, UNAM, Mexico City, Mexico [\(video\)](#)
- Seminario de Matemáticas Aplicadas, UAA, Aguascalientes, Mexico
- CUNY Probability Seminar, CUNY Graduate Center, New York City, USA
- Aleatorias y Normales - online seminar ◊

2023

- Technion Probability Seminar, Technion – IIT, Israel
- LU-UMN Joint Probability Seminar, Lehigh University - University of Minnesota, USA ◊
- UBC Probability Seminar, University of British Columbia, Canada

2022

- Los Angeles Probability Forum, UCLA, USA
- Seminario de Probabilidad y Procesos Estocásticos, UNAM, Mexico City, Mexico
- Seminario de Probabilidad, CIMAT, Guanajuato, Mexico
- Probability Seminar, University of Cambridge, UK
- Probability Seminar, Technische Universität München, Germany
- Percolation Today ([video](#)) ◇
- Probability Seminar, Peking University, China ◇

2021

- GFAP Seminar, Weizmann Institute of Science, Israel
- Technion Probability Seminar, Technion – I.I.T., Israel
- Seminario de Probabilidad Hispanohablante ◇
- Purdue Probability Seminar, Purdue University, USA ◇
- Probability Seminar Essen, Universität Duisburg-Essen, Germany ◇
- Probability Seminar, Cornell University, USA ◇
- Probability and Combinatorics Seminar, Uppsala universitet, Sweden ◇
- Probability Seminar of Americas ◇
- Joint Israeli Probability Seminar, Israel ([video](#)) ◇

2020

- Probability and Related Fields Seminar, Indiana University, USA ◇
- UBC Probability Seminar, University of British Columbia, Canada ([video](#)) ◇
- Probability and Related Fields Seminar, Indiana University, USA ◇
- Seminario de Probabilidad y Estadística, CIMAT, Mexico ◇
- Seminario de Probabilidad y Procesos Estocásticos, UNAM, Mexico ◇
- TAMU Probability Seminar, Texas A&M University, USA

2019

- UBC Probability Seminar, University of British Columbia, Canada
- Dynamics Seminar, University of Victoria, Canada

Colloquia

8 talks at colloquia

3 video recordings available online

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|------|------|--|
| Apr. | 2025 | Coloquio, Departamento de Matemáticas, Cinvestav Zacatenco, Mexico |
| Feb. | 2024 | Coloquio, Instituto de Matemáticas, Unidad Cuernavaca, UNAM, Mexico |
| Dic. | 2023 | Coloquio Interinstitucional de Matemáticas, Universidad de Guadalajara, Universidad Autónoma de Guerrero y Universidad de Sonora, Mexico (video) ◇ |
| May | 2023 | Coloquio, Centro de Ciencias Matemáticas, UNAM, Morelia, Mexico |
| Sep. | 2022 | Coloquio, Instituto de Matemáticas, UNAM, Mexico |
| May | 2022 | Coloquio Queretano, Instituto de Matemáticas, Unidad Juriquilla, UNAM, Mexico ◇ |
| Feb. | 2021 | Coloquio de Exalumnos de CIMAT/DEMAT, CIMAT, Mexico (video) ◇ |
| Nov. | 2020 | Coloquio Oaxaqueño de Matemáticas, IM-UNAM Oaxaca, Mexico (video) ◇ |

Mini-courses

2 mini-courses

- July 2022 *"From random walks to metric spaces"*
Graduate Student Concentration Week on Metric Geometry
Texas A&M Workshop in Analysis and Probability, USA
- July 2022 *"Teoremas de la forma en probabilidad"*
Geometría Prohibida, Universidad Autónoma de San Luis Potosí, Mexico

Expository talks

27 expository talks: 21 for undergraduate and graduate students, 6 for pre-university students

3 video recordings available online

Graduate and undergraduate level

- Mar. 2026 XXIV Escuela de Probabilidad y Estadística, CIMAT, Guanajuato, Mexico
- Oct. 2025 Seminario de Matemáticas Intuitivas M.Int, Instituto de Matemáticas, UNAM, Ciudad de México, México
- Aug. 2025 Escuela de Verano en Matemáticas para Estudiantes Mujeres, Instituto de Matemáticas, UNAM, Mexico City, Mexico
- Aug. 2025 Cuarta Escuela de Teoría Geométrica de Grupos, Centro de Ciencias Matemáticas, UNAM, Morelia, Mexico
- Mar. 2025 Día Internacional de las Mujeres en Matemáticas. Instituto de Matemáticas, UNAM, Mexico City, Mexico
- Nov. 2024 EMALCA: Temas recientes en Teoría de las Probabilidades Universidad de la Habana, Cuba
- Aug. 2024 Escuela de Matemáticas de Occidente 2024, Universidad de Guadalajara, Guadalajara, Mexico.
- July 2024 Segunda Escuela Conjunta SLP-CDMX de Dinámica, Combinatoria y Probabilidad, UASLP, San Luis Potosí, Mexico
- Sep. 2023 XVII Congreso de Ciencias Exactas, UAA, Aguascalientes, Mexico
- Aug. 2023 Primera Escuela Conjunta SLP-CDMX de Dinámica, Combinatoria y Probabilidad, Instituto de Matemáticas, UNAM, Mexico City, Mexico
- Jun. 2023 EMALCA 2023, Centro de Ciencias Matemáticas, UNAM, Morelia, Mexico
- Oct. 2022 2do Fin de Semana de la Probabilidad en Cuernavaca, Instituto de Matemáticas, Unidad Cuernavaca, UNAM, Mexico
- Sep. 2022 Hablando de Matemáticas, Instituto de Matemáticas, UNAM, Mexico ([video](#))
- Aug. 2022 Coloquio de Orientación Matemática, Ciencias TV, UNAM, Mexico ([video](#)) ◇
- June 2022 Pizza Seminar, Technion – Israel Institute of Technology, Israel *
- Feb. 2022 Seminario Virtual de Matemáticas, Universidad de Colima, Mexico ◇
- April 2021 XIX Escuela de Probabilidad y Estadística, CIMAT, Mexico ◇
- Dec. 2020 Fest 2020, Independently Organized Conference ◇
- Sep. 2020 Seminario Junior de Estudiantes, Universidad de Guanajuato, Guanajuato, Mexico ◇ *
- Sep. 2020 Lunch & Learn, Trinity Western University, Canada ◇
- Mar. 2019 Graduate Student Seminar, University of British Columbia, Canada

High school and middle school level

- Feb. 2026 “*La vida secreta de los árboles aleatorios*”, Día Internacional de la Mujer y la Niña en la Ciencia, Instituto de Matemáticas, UNAM, Mexico City, México
- Mar. 2025 “*Matemáticas: magia que transforma*”, Día de π , Colegio Isabel la Católica (middle school), San Nicolás de los Garza, Nuevo León, Mexico \diamond
- Nov. 2024 “*Explorando la forma de los ríos*”, Fiesta de las Ciencias y las Humanidades, UNIVERSUM, Mexico City, Mexico *
- Mar. 2023 “*Caminando al azar entre fractales*”, CiENPiés Matemático, Escuela Nacional Preparatoria de la UNAM Plantel 6 “Antonio Caso”, Mexico City, Mexico
- Feb. 2023 “*Caminando al azar entre fractales*”, Ciclo del Día Internacional de la Mujer y la Niña en la Ciencia, Olimpiada de Matemáticas de la Ciudad de México, Mexico ([video](#)) \diamond
- Sep. 2020 “*Qué hace un matemático*”, Preparatoria de Tonalá, Universidad de Guadalajara, Tonalá, Jalisco, México

Panels

6 panel participations

2 video recordings available online

- Mar. 2026 *Participant*. “Panel Discussion for Early Career Researchers”, Seminar on Stochastic Processes, Union College, USA
- Mar. 2026 *Participant*. “Mesa redonda con exalumnos de DEMAT/CIMAT”, XXIV Escuela de Probabilidad y Estadística, CIMAT, Guanajuato, Mexico
- Feb. 2026 *Participant*. “Pregúntale a una Matemática”, Día Internacional de la Mujer y la Niña en la Ciencia, Instituto de Matemáticas, UNAM, Mexico City, Mexico
- Sep. 2025 *Moderator*. “Mario Alberto Díaz Torres como amigo”, In Memoriam: Dr. Mario Alberto Díaz Torres, IIMAS, UNAM, Mexico City, México
- Mar. 2025 *Participant*. “Camino y Desafíos: Mujeres en la Ciencia Hoy”, Instituto de Ciencias de la Atmósfera y Cambio Climático, UNAM, Mexico City, Mexico ([video](#))
- Oct. 2023 *Moderator*. “Las Matemáticas Mexicanas en Norteamérica”, 56 Congreso Nacional de la Sociedad Matemática Mexicana, San Luis Potosí, Mexico ([video](#))

Miscellaneous talks

- Mar. 2025 Navegando Espacios Complejos / Navegando Em Espaços Complexos, XVII CLAPEM, Montevideo, Uruguay (one-hour diversity and inclusion activity together with Laura Eslava and Zoraida F. Rico)
- Jan. 2025 Open Problem Session, The Changing (of) Times. A Conference in Honor of María Emilia Caballero (one-hour joint activity with Laura Eslava)
- Aug. 2024 Lightning talk, Frontiers of Statistical Mechanics and Theoretical Computer Science, BIRS, Banff, Canada
- June 2021 Workshop discussion, SPDEs & friends (15 min. talk) \diamond *

An asterisk (*) indicates a contributed talk.

A diamond (\diamond) indicates a talk online.

The supplemental information shows a comprehensive list of [events attended](#).

TEACHING

Teaching experience

Posgrado en Ciencias Matemáticas, UNAM,
Mexico City, México

<i>Instructor (Graduate level)</i>	2 courses
Probabilidad I (Probability I)	2026-I
Probabilidad en Estructuras Discretas (Probability in Discrete Structures)	2025-II

Facultad de Ciencias (FC), UNAM,
Mexico City, Mexico

<i>Instructor (Undergraduate level)</i>	7 courses
Procesos Estocásticos (Stochastic Processes)	2024-I, 2026-II
Probabilidad II (Probability II)	2023-II, 2025-I
Probabilidad I (Probability I)	2023-I, 2024-II
Probabilidad en Estructuras Discretas (Probability in Discrete Structures)	2024-II

University of British Columbia,
Vancouver, Canada

2019	<i>Workshop facilitator</i> Math 100: Differential Calculus with Applications to Physical Sciences and Engineering (Vantage College) Workshop sessions for international students, 2 hours per week.
2018	<i>Recitation instructor</i> Math 180: Differential Calculus with Physical Applications Workshop sessions with theory and exercises, 2 hours per week.
2017	<i>Course instructor</i> Math 100: Differential Calculus with Applications to Physical Sciences and Engineering Course with 60 students, 3 hours per week.
2014–2020	<i>Teaching assistant</i> Marked assignments and conducted tutorial sessions. Undergraduate courses assisted: Mathematical Game Theory (Math 344), Real Variables I (Math 320), Probability with Physical Applications (Math 318), Introduction to Probability (Math 302), Introduction to Complex Variables (Math 300), Differential Equations (Math 256), Multivariable Calculus (Math 253), Mathematical Proof (Math 220), Differential Calculus with Applications to Life Sciences (Math 102).
2014–2020	Tutor at the Math Learning Centre Drop-in tutorials offered to undergraduate students.

2012–2014	<i>Teaching assistant</i> Marker; conducted tutorial sessions for Modern Algebra I, Complex Variables and Integral and Differential Calculus I & II.
2013	<i>Workshop Instructor</i> X Calculus Problem Solving Workshop Led a group of undergraduates for a week-long problem-solving workshop on calculus.

STUDENTS

Direction of undergraduate honours thesis

- Apr. 2025 Jorge Emiliano Alvarez Gil Leyva
Licenciatura en Matemáticas Aplicadas, Facultad de Ciencias, UNAM
Thesis title: *“Simulación de la evolución de Schramm-Loewner”*
Graduated with honors
- Mar. 2025 Juan Pablo Rodríguez Villagrán
Licenciatura en Matemáticas, Facultad de Ciencias, UNAM
Thesis title: *“Percolación FK en gráficas de Cayley”*
Graduated with honors
- May 2024 Jeremai Reyes Garay
Licenciatura en Actuaría, Facultad de Ciencias, UNAM
Thesis title: *“Exponente de crecimiento en caminatas aleatorias con ciclos borrados”*
- Feb. 2024 Jorge Salvador Martínez Villafan. Co-direction with Dr. Laura Eslava
Licenciatura en Matemáticas Aplicadas, Facultad de Ciencias, UNAM
Thesis title: *“Redes de investigación en probabilidad y estadística en Latinoamérica: desarrollo y análisis estadístico de una base de datos con perspectiva de género”*

Direction of master’s theses and essays in progress

Thesis

- Ana Saraí Dávila Martínez. Co-direction with Dr. José Simental
Posgrado en Ciencias Matemáticas, UNAM

Essay

- Jorge Emiliano Alvarez Gil Leyva
Posgrado en Ciencias Matemáticas, UNAM

Direction of undergraduate theses in progress

- Luis Félix (Ophelia) Olivares Herrera, Licenciatura en Matemáticas Aplicadas, UNAM
- Jimena Montserrat Becerra Ramírez, Licenciatura en Matemáticas, UNAM
- Jorge David López Maldonado, Licenciatura en Matemáticas, UNAM

Academic mentorship of master's students

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| 4. | Hugo Víctor García Martínez, | 2026–in progress |
| 3. | Rodrigo Iván Rodríguez Barrera, | 2026–in progress |
| 2. | Emmanuel Silva Amaya, | 2025–in progress |
| 1. | Jorge Emiliano Alvarez Gil Leyva, | 2024–in progress |

Thesis reading committees

PhD

- | | | |
|------|------|---|
| Oct. | 2025 | Marco Antonio López Ortiz, PhD thesis
Doctorado en Ciencias Matemáticas, UNAM |
| Jan. | 2023 | José Hermenegildo Ramírez González, PhD thesis
Probabilidad & Estadística PhD program, CIMAT |

Master's

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| Oct. | 2025 | Thesis committee member for Alejandro Antonio Estrada Franco
Maestría en Ciencias Matemáticas, UNAM |
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Undergraduate

9 participations

- | | | |
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| Mar. | 2026 | Thesis committee member for Daniela de Jesus Cortes Casasola
Licenciatura en Matemáticas Aplicadas, FC-UNAM |
| Jan. | 2026 | Thesis committee member for Frida Mariela Rosas Calva
Licenciatura en Matemáticas, FC-UNAM |
| Jul. | 2025 | Thesis committee member for Jesús Omar Franco Franco
Licenciatura en Física, FC-UNAM |
| Apr. | 2025 | Thesis committee member for Alejandra Guerrero Arelio
Licenciatura en Matemáticas, FC-UNAM |
| Mar. | 2025 | Thesis committee member for Daniel Fuentes del Río
Licenciatura en Matemáticas Aplicadas, FC-UNAM |
| Sep. | 2024 | Thesis committee member for Marco Fernando Guerrero Nava
Licenciatura en Matemáticas, FC-UNAM |
| Sep. | 2024 | Thesis committee member for Héctor Daniel Alonso Orozco
Licenciatura en Matemáticas, FC-UNAM |
| Sep. | 2023 | Thesis committee member for Hugo Guadalupe Reyna Castañeda
Licenciatura en Actuaría, FC-UNAM |
| Aug. | 2023 | Thesis committee member for Alam Ponce Quiñones
Licenciatura en Matemáticas Aplicadas, FC-UNAM |

PROFESSIONAL DEVELOPMENT COURSES

Teaching accreditation

- | | |
|------|--|
| 2018 | Instructional Skills Workshop (24 hours workshop), UBC |
| 2016 | Math 599: Mathematics Teaching Techniques (33 hours course), UBC |

Continuing education courses

- | | | |
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| Aug. | 2024 | Taller de Introducción a la Divulgación de las Matemáticas. Instituto de Matemáticas, UNAM |
| Jan. | 2023 | Online course: Conceptos básicos para la igualdad de género. UNAM, online course in Coursera |

EVENT ORGANIZATION

Seminar organization

5. **Co-organizer**, Aug. 2022–*present*
[Seminario de Probabilidad y Procesos Estocásticos](#)
(Probability and Stochastic Processes Seminar), UNAM, Mexico
4. **Co-organizer**, Sep. 2022–*present*
Online Seminar for the Research Network of Latin American Women in Probability and Statistics: [Aleatorias y Normales](#)
3. **Co-organizer**, Sep. 2024–Dec. 2024
[Seminario de caminatas aleatorias y álgebras de Hecke](#)
(Random walks and Hecke algebras), IM-UNAM, México
2. **Co-organizer**, July–Nov. 2022
[Coloquio de ex-estudiantes CIMAT-DEMAT](#), Mexico
1. **Co-organizer**, Fall 2016–Spring 2018
UBC Probability Reading Group, University of British Columbia, Canada
Organized schedule and suggested topics

Conference, workshop, and summer school organization

11. **Co-organizer**, 9–14 May 2027
[Frontiers of Statistical Mechanics and Theoretical Computer Science](#)
Casa Matemática Oaxaca (CMO), Oaxaca, Mexico
10. **Lead organizer**, 4–9 Oct. 2026
[Discrete and Continuous Random Trees](#)
Casa Matemática Oaxaca (CMO), Oaxaca, Mexico
9. **Co-organizer**, 28–2 Oct. 2026
[Discrete and Continuous Random Trees - Student Satellite Workshop](#)
Instituto de Matemáticas & IIMAS, UNAM, Mexico City, Mexico
8. **Co-organizer**, 26–30 May 2025
[Mixtures of Probability and Geometry](#)
Casa Matemática Oaxaca (CMO), Oaxaca, Mexico
7. **Co-organizer**, 24–27 Mar. 2025
[Lecture Series: Interactions of Geometry and Probability](#)
Instituto de Matemáticas, UNAM and CINVESTAV, Mexico City, Mexico
6. **Co-organizer**, 5–19 July 2024
[Segunda Escuela Conjunta SLP-CDMX de Dinámica, Combinatoria y Probabilidad](#)
Universidad Autónoma de San Luis Potosí, San Luis Potosí, Mexico
5. **Co-organizer**, 31 July–4 Aug. 2023
[Primera Escuela Conjunta SLP-CDMX de Dinámica, Combinatoria y Probabilidad](#)
Instituto de Matemáticas, UNAM, Mexico City, Mexico
4. **Co-organizer**, July–Aug. 2021
[Open Online Probability School \(OOPS\)](#)
Organizational work for 10 mini-courses
3. **Co-organizer**, 14–18 Dec. 2020
[Fest 2020](#)
Organizational work for 10 talks and 1 mini-course

2. **Co-organizer**, May–Aug. 2020
[Open Online Probability School \(OOPS\)](#)
Event conception and organizational work. 13 mini-courses and 13 talks
1. **Short talks organizer**, 5–30 June 2017
[PIMS-CRM Summer School in Probability 2017](#)
Scheduled 29 short talks during the one-month summer school, assisted in participant communication and social activity organization

Organization of conference activities

3. **Courses coordinator**, 20–24 Oct. 2025
[Scientific Committee](#)
58 Congreso Nacional de la Sociedad Matemática Mexicana
Benemérita Universidad Autónoma de Puebla, México
2. **Co-organizer**, Nov. 29–Dec. 2 2024
[Discrete Probability Session](#)
2024 Canadian Mathematical Society Winter Meeting
Kwantlen Polytechnic University, Richmond Campus, Greater Vancouver Area, Canada
1. **Co-organizer**, Oct. 2022
[Sesión de Probabilidad](#) (Probability session)
55 Congreso Nacional de la Sociedad Matemática Mexicana, CUCEI, Universidad de Guadalajara, Hybrid event, Mexico

Organization of special events

3. **Local representative**, Dec. 2024–Dec. 2025
Local screening of the [Coloquio de la Sociedad Matemática Mexicana](#)
2. **Co-organizer**, 24–26 Sep. 2025
[In Memoriam Dr. Mario Alberto Díaz Torres](#)
IIMAS, UNAM, Mexico City, Mexico
1. **Local coordinator**, Oct. 9, 2024
Special outreach event: [Mathemalchemy: an Artistic and Mathematical Adventure](#)
presented by Ingrid Daubechies, Instituto de Matemáticas, UNAM, Mexico City, Mexico

ACADEMIC SERVICE

Academic committees

- Feb. 2026 Representative of the Instituto de Matemáticas on the
–present Academic Committee of the Licenciatura en Ciencia de Datos, UNAM
- Aug. 2025 Ad hoc committee – faculty position in probability.

Evaluation committees

- 2025 Referee for the evaluation of PAPIIT research proposals (Call 2026)
- 2023 Referee for CONAHCYT, Becas al Extranjero para Estudios de Posgrado 2023 (scholarships for graduate studies abroad)

Committees of scientific societies

Nov. 2025 Institute of Mathematical Statistics – Committee on Equality
–Aug. 2028 and Diversity
Representative for early-career researchers; appointed to the committee by invitation of the IMS President

Referee for:

ALEA - Latin American Journal of Probability and Mathematical Statistics
Annals of Applied Probability
Boletín de la Sociedad Matemática Mexicana
Communications in Mathematical Physics
Electronic Communications in Probability
Electronic Journal of Probability
Journal of Applied Probability
Journal of Theoretical Probability
Physical Review E. Statistical, Nonlinear, and Soft Matter Physics
Probability and Mathematical Physics
Probability Theory and Related Fields
Random Structures & Algorithms
Stochastic Processes and their Applications

OUTREACH

Mathematical olympiads

June 2024 Tutor of the Mexico City team at the Third National Women's Competition of the Mexican Mathematical Olympiad
Jan. 2010 Coach in the Guanajuato state team for the Mexican Mathematical
–Nov. 2012 Olympiad

Bilingual math outreach

May 2021 Teaching assistant, [Mathematics Sin Fronteras](#)
Brown University
Supported the mini-course "An introduction to error correcting codes"

LANGUAGES

SPANISH: Native
ENGLISH: Fluent

PROFESSIONAL AFFILIATIONS

[Sociedad Matemática Mexicana](#) (SMM)
[Sociedad Latinoamericana de Probabilidad y Estadística Matemática](#) (SLAPEM)
[Bernoulli Society](#) (BS)
[Institute of Mathematical Statistics](#) (IMS)
[International Statistical Institute](#) (ISI)

Supplemental information

EVENTS

Workshops

- May 2025 [Mixtures of Probability and Geometry](#)
Casa Matemática Oaxaca, Oaxaca, Mexico
- Mar 2025 [CUWB-IV: Frontiers in Statistics and Probability](#)
IIMAS, UNAM, Mexico City, Mexico
- Feb. 2025 [Montréal - Guanajuato Workshop on Probability and Machine Learning](#)
CIMAT, Guanajuato, Mexico
- Aug. 2024 [Frontiers of Statistical Mechanics and Theoretical Computer Science](#)
Banff International Research Station (BIRS), Banff, Canada
- May 2024 [Workshop: Random Walks, Scaling Limits and Criticality](#)
Herrsching am Ammersee, Germany
- May 2024 [Statistical Mechanics Beyond 2D](#)
IPAM at UCLA, USA
- Jan. 2024 [CUWB-II Probability-on-Sea](#)
Playa del Carmen, Mexico
- Sep. 2023 [Potential Theory Workshop](#)
CIMAT, Guanajuato, Mexico
- Jan. 2023 [XXI Bath-UNAM-CIMAT \(BUC\)](#)
CIMAT, Guanajuato, México
- Nov. 2022 [Analytic and Probabilistic Combinatorics](#)
Banff International Research Station (BIRS), Banff, Canada
- July 2022 [TAMU Workshop in Analysis and Probability](#)
Texas A&M, College Station, USA
- June 2022 [Workshop: Challenges in Probability and Statistical Mechanics](#)
Technion – IIT, Haifa, Israel
- May 2022 [Latin American and Caribbean Workshop on Mathematics and Gender](#)
Hybrid event hosted at Casa Matemática Oaxaca in Mexico
- June 2021 [SPDEs & friends](#)
3-day online workshop organized in Berlin, Germany
- June 2019 [Mathematical Research Communities: Stochastic Spatial Models](#)
Rhode Island, USA
- June 2018 [Challenges in Probability and Mathematical Physics](#)
Centre de Recherches Mathématiques (CRM), Montreal, Canada

Conferences and Meetings

- Mar. 2026 [Seminar on Stochastic Processes](#)
Union College, Schenectady, NY, USA
- Mar. 2026 [XVII Congreso Latinoamericano de Probabilidad y Estadística Matemática](#)
Montevideo, Uruguay
- Oct. 2025 [58 Congreso Nacional de la Sociedad Matemática Mexicana](#)
Benemérita Universidad Autónoma de Puebla, Puebla, Mexico
- Sep. 2025 [In Memoriam: Dr. Mario Alberto Díaz Torres](#)
IIMAS, UNAM, Mexico City, Mexico
- Aug. 2025 [International Symposium on Stochastic Processes and Complex Systems](#)
Tohoku Forum for Creativity, Tohoku University, Sendai, Japan

- July 2025 [Mathematical Congress of the Americas \(MCA\) 2025](#)
Miami, USA
- Jul. 2025 [44th Conference on Stochastic Processes and their Applications \(SPA\)](#)
Wroclaw, Poland
- Mar. 2025 [Lecture Series: Interactions of Geometry and Probability](#)
Instituto de Matemática, UNAM & Departamento de Matemáticas, Cinvestav, Mexico City, Mexico
- Jan. 2025 [Connections Workshop: Probability and Statistics of Discrete Structures](#)
SLMath, Berkeley, USA
- Jan. 2025 [The Changing of Times: A Conference in Honor of María Emilia Caballero](#)
Universidad Autónoma de Yucatán, Mérida, Mexico
- Nov. 2024 [2024 CMS Winter Meeting](#)
Kwantlen Polytechnic University, Richmond, Canada
- Oct. 2023 [56 Congreso Nacional de la Sociedad Matemática Mexicana](#)
Universidad Autónoma de San Luis Potosí, San Luis Potosí, Mexico
- Oct. 2023 [Discrete Random Structures](#)
Bedlewo, Poland
- July 2023 [XVI CLAPEM](#)
USP, São Paulo, Brazil
- June 2023 [11th International Conference on Stochastic Analysis and its Applications](#)
ICSAA, Edinburgh, UK
- Nov. 2022 [55 Congreso Nacional de la Sociedad Matemática Mexicana](#)
Hybrid event hosted by Universidad de Guadalajara, Guadalajara, Mexico
- Oct. 2022 [2do Fin de Semana de la Probabilidad en Cuernavaca](#)
Instituto de Matemáticas, Unidad Cuernavaca, UNAM, Mexico
- June 2022 [42nd SPA Conference](#)
Hybrid event hosted in Wuhan, China
- Dec. 2021 [Matemáticos Mexicanos en el Mundo](#)
Hybrid event hosted at Casa Matemática Oaxaca in Mexico
- July 2021 [Mathematical Congress of the Americas](#)
Online conference organized in Argentina
- May 2021 [Students Probability Day VIII. In memory of Oded Schramm](#)
Weizmann Institute of Science, Rehovot, Israel
- Jan. 2020 [Joint Mathematics Meetings](#)
Denver, USA
- Dec. 2019 [Latin American Congress of Probability and Mathematical Statistics](#)
Merida, Mexico
- June 2019 [CMS Summer Meeting](#)
University of Regina, Regina, Canada
- Oct. 2018 [Retreat for Young Researchers in Stochastics](#)
Banff International Research Station (BIRS), Banff, Canada
- July 2018 [XIX International Congress on Mathematical Physics](#)
Centre Mont-Royal, Montreal, Canada
- July 2018 [Young Researchers Symposium](#)
McGill University, Montreal, Canada
- July 2017 [Mathematical Congress of the Americas](#)
Centre Mont-Royal and McGill University, Montreal, Canada
- Aug. 2013 [Mathematical Congress of the Americas](#)
Guanajuato, Mexico
- Oct. 2012 [XLV National Congress of the Mexican Mathematical Society](#)
Universidad Autónoma de Querétaro, Queretaro, Mexico

Summer Schools

- Mar. 2026 [XXIV Escuela de Probabilidad y Estadística](#)
CIMAT, Guanajuato, Mexico
- Aug. 2025 [Escuela de Verano en Matemáticas para Estudiantes Mujeres](#)
Instituto de Matemáticas, UNAM, Mexico City, Mexico
- Nov. 2024 [EMALCA: Temas recientes en Teoría de las Probabilidades](#)
Universidad de La Habana, La Habana, Cuba
- July 2024 [Segunda Escuela Conjunta SLP-CDMX de Dinámica, Combinatoria y Probabilidad](#)
UASLP, San Luis Potosi, Mexico
- Aug. 2023 [Primera Escuela Conjunta SLP-CDMX de Dinámica, Combinatoria y Probabilidad](#)
Instituto de Matemáticas, UNAM, Mexico City, Mexico
Universidad Autónoma de San Luis Potosí, Mexico
- June 2023 [EMALCA 2023](#)
Centro de Ciencias Matemáticas, UNAM, Morelia, Mexico
- Aug. 2022 [X Escuela de Verano de Probabilidad y Procesos Estocásticos](#)
Instituto de Matemáticas, UNAM, Mexico
- June 2022 [Summer school: Geometría Prohibida](#)
- May 2021 [CRM-PIMS Summer School in Probability](#)
- June Online summer school organized in Canada
- July 2019 [49th Saint-Flour Probability Summer School](#)
Saint-Flour, France
- June 2019 [11th Cornell Probability Summer School](#)
Cornell University, Ithaca, USA
- Aug. 2017 [Summer School in Graph Limits, Groups and Stochastic Processes](#)
MTA Alfréd Rényi Institute of Mathematics, Budapest, Hungary
- June 2017 [PIMS-CRM Summer School in Probability](#)
University of British Columbia, Vancouver, Canada
- June 2015 [CRM-PIMS Summer School in Probability](#)
- July McGill University, Montreal, Canada
- Mar. 2014 [XII Escuela de Probabilidad y Estadística](#)
Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico
- June 2013 [X Escuela de Verano en Matemáticas](#)
Instituto de Matemáticas, Unidad Cuernavaca, UNAM, Mexico
- July 2011 [IV Summer Program in Probability and Statistics](#)
Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico
Research internship with [Prof. José Alfredo López-Mimbela](#)