

Saraí Hernández-Torres

June 2021
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RESEARCH INTERESTS

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

EMPLOYMENT

Oct. 2020 POSTDOCTORAL FELLOW
-present **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

2021	<i>Scaling limit of the three-dimensional dimensional uniform spanning tree and the associated random walk</i> , with O. Angel, D. A. Croydon and D. Shiraishi. <i>To appear in Ann. Probab.</i> arXiv e-prints 2003.09055
	<i>Chase-escape with death on trees</i> , with E. Beckman, K. Cook, N. Eikmeier and M. Junge. <i>To appear in Ann. Probab.</i> arXiv e-prints 1909.01722
2020	<i>The number of spanning clusters of the uniform spanning tree in three dimensions</i> , with O. Angel, D. A. Croydon and D. Shiraishi. <i>To appear in Adv. Stud. Pure Math.</i> Proceedings of “The 12th Mathematical Society of Japan, Seasonal Institute (MSJ-SI) Stochastic Analysis, Random Fields and Integrable Probability.” arXiv e-prints 2003.04548

TALKS

Research talks

- July 2021 Special Session on Interacting Stochastic Systems, MCA, Argentina ◇*
- June 2021 Probability Seminar Essen, Universität Duisburg-Essen, Germany ◇
- May 2021 8th Students Probability Day, Weizmann Institute of Science, Israel
- May 2021 Probability Seminar, Cornell University, USA ◇
- April 2021 Probability and Combinatorics Seminar, Uppsala universitet, Sweden ◇
- Mar. 2021 Probability Seminar of Americas ◇
- Feb. 2021 Coloquio de Exalumnos de CIMAT/DEMAT, CIMAT, Mexico ◇
- Jan. 2021 Joint Israeli Probability Seminar, Israel ◇
- Nov. 2020 Coloquio Oaxaqueño de Matemáticas, IM-UNAM Oaxaca, Mexico ◇
- Oct. 2020 Probability and Related Fields Seminar, Indiana University, USA ◇
- Sep. 2020 UBC Probability Seminar, University of British Columbia, Canada ◇
- Sep. 2020 Probability and Related Fields Seminar, Indiana University, USA ◇
- May 2020 Seminario de Probabilidad y Estadística, CIMAT, Mexico ◇
- April 2020 Seminario de Probabilidad y Procesos Estocásticos, UNAM, Mexico ◇
- Jan. 2020 TAMU Probability Seminar, Texas A&M University, USA
- Jan. 2020 AMS Special Session on Stochastic Spatial Models, JMM, Denver, USA *
- Dec. 2019 Latin American Congress of Probability and Mathematical Statistics, Merida, Mexico
- Nov. 2019 UBC Probability Seminar, University of British Columbia, Canada
- Oct. 2019 Dynamics Seminar, University of Victoria, Canada
- July 2019 49th Saint-Flour Probability Summer School, Saint-Flour, France
- June 2019 11th Cornell Probability Summer School, Cornell University, USA
- June 2019 CMS Summer Meeting, University of Regina, Canada *
- Oct. 2018 Retreat for Young Researchers in Stochastics, BIRS, Canada *

Expository talks

- 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, Mexico ◇
- Sep. 2020 Lunch & Learn, Trinity Western University, Canada ◇
- Mar. 2019 Graduate Student Seminar, UBC, Canada

Miscellaneous

- June 2021 Workshop discussion, SPDEs & friends (15 min. talk) ◇ *

An asterisk (*) indicates an invited talk at a conference or summer school.

A diamond (◇) indicates a talk online.

A comprehensive list of events attended is [available below](#).

SCHOLARSHIPS AND AWARDS

- 2015–2020 Scholarship for Graduate Studies
Consejo Nacional de Ciencia y Tecnología (CONACYT)
- 2019 Stanley M. Grant Scholarship in Mathematics
Travel award, University of British Columbia
- 2014 Faculty of Science Graduate Award
Scholarship for graduate studies, University of British Columbia
- 2009–2014 Scholarship for Undergraduate Studies
Centro de Investigación en Matemáticas (CIMAT)
- 2012, 2014 Academic Excellence Scholarship
Secretaría de Educación Pública (Secretariat of Public Education, SEP)

- 2012 Academic Excellence Scholarship
Universidad de Guanajuato
- 2008 Bronze Medal
XXII Olimpiada Mexicana de Matemáticas (Mexican Mathematical Olympiad)

TEACHING

Teaching Experience

University of British Columbia,
Vancouver, Canada

- | | |
|---------------|--|
| 2019 | <i>Recitation instructor</i>
Math 100: Differential Calculus with Applications to Physical Sciences and Engineering (Vantage College) |
| 2018 | Math 180: Differential Calculus with Physical Applications |
| 2017 | <i>Course instructor</i>
Math 100: Differential Calculus with Applications to Physical Sciences and Engineering |
| 2014–
2020 | <i>Teaching assistant</i>
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)

Tutor at the Math Learning Centre |

Universidad de Guanajuato / Centro de Investigación en Matemáticas (CIMAT),
Guanajuato, Mexico

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| 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 week-long problem solving workshop on calculus for undergraduates |

Teaching Accreditation

- 2018 Instructional Skills Workshop, UBC
2016 Math 599: Mathematics Teaching Techniques Course, UBC

SERVICE

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|----------------|---|
| July-Aug. 2021 | Co-organizer , Online Open Probability School |
| May 2021 | Teaching assistant , Mathematics Sin Fronteras |
| Dec. 2020 | Co-organizer , Fest 2020 – una semana de conferencias para celebrar las matemáticas en español |
| May-Aug. 2020 | Co-organizer , Online Open Probability School |
| June 2017 | Small talks organizer , PIMS-CRM Summer School in Probability |
| 2016 – 2018 | Organizer , UBC Probability Reading Group |

LANGUAGES

SPANISH: Native
ENGLISH: Fluent

PROFESSIONAL AFFILIATIONS

Sociedad Matemática Mexicana (SMM)
Sociedad Latinoamericana de Probabilidad y Estadística Matemática (SLAPEM)

Supplemental information

EVENTS

Workshops and Summer Schools

- May-June 2021 [CRM-PIMS Summer School in Probability](#)
Centre de Recherches Mathématique, Montreal, Canada ◊
- June 2021 [SPDEs & friends](#)
3-day online workshop. Organized in Berlin, Germany ◊
- July 2019 [49th Saint-Flour Probability Summer School](#)
Saint-Flour, France
- June 2019 [11th Cornell Probability Summer School](#)
Cornell University. Ithaca, USA
- 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
- 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-July 2015 [CRM-PIMS Summer School in Probability](#)
McGill University. Montreal, Canada
- Mar. 2014 [XII School in Probability and Statistics](#)
Centro de Investigación en Matemáticas (CIMAT). Guanajuato, 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

Conferences and Meetings

- July 2021 [Mathematical Congress of the Americas](#)
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. Querétaro, Mexico

A diamond (◊) indicates an online event.