

# Antonio J. Torres

---

## Personal Details

- ✉ **Email 1:** atorres@smith.edu
- ✉ **Email 2:** antorres1316@gmail.com
- 📱 **Mobile:** +1 530 9796017
- 🌐 **Web page:** <https://antoniojth.github.io>

## Education

- 2019-2023 **PhD in Mathematics**, Universidad Nacional Autónoma de México (UNAM), Juriquilla, Mexico.  
*Advisor:* Dr. Deborah Oliveros.  
*Thesis:* Ramsey Type Theorems on Simplicial Complex Nerves.
- 2015-2018 **Master in Applied Mathematics**, Universidad Autónoma de San Luis Potosí (UASLP), Mexico.  
*Advisor:* Dr. Gelasio Salazar Anaya.  
*Thesis:* Blowing Circular Sequences to Search for Drawings with Few Crossings.
- 2008-2013 **Bachelor in Applied Mathematics**, Universidad Autónoma de Querétaro (UAQ), Mexico.  
*Advisor:* Dr. Deborah Oliveros.  
*Thesis:* A  $(p, q)$ -problem for Linear and Cyclical Orders.

## Research

- 2023 De Loera, J. A., Jaramillo-Rodriguez, E., Oliveros, D., & **Torres, A. J.** A model for birdwatching and other chronological sampling activities. *The American Mathematical Monthly*, 130(6), 541–558. <https://doi.org/10.1080/00029890.2023.2188036>
- 2025 Oliveros, D., Roldán, E., Soberón, P., & **Torres, A. J.** Tverberg partition graphs. *SIAM Journal on Discrete Mathematics*, 39(2), 863–880. <https://doi.org/10.1137/23M1610938>
- 2025 De Loera, J. A., López-Campos, G., & **Torres, A. J.** On the number of vertices in hyperplane cross-sections of convex polytopes. Preprint available on arXiv: <https://arxiv.org/abs/2412.12419>.
- 2024 Oliveros, D., & **Torres, A. J.** From word-representable graphs to altered Tverberg-type theorems. *Discrete & Computational Geometry*. <https://doi.org/10.1007/s00454-025-00718-5>.
- 2025 A. Brose, J. De Loera, G. López-Campos, & **Torres, A. J.** Computing Lattice Diameters of Convex Polytopes. Accepted for IPCO 2026. Preprint available on arXiv: <https://doi.org/10.48550/arXiv.2508.20009>.

## In Progress

- D. Oliveros, S. G. Gómez-Galicia, and A. J. Torres, *Crossing-Free Partition Graphs*. In preparation.

## Professional Experience

## Postdoctoral Positions

- 2025– **Postdoctoral Researcher**, Smith College, Northampton, MA, USA.  
*Advisor:* Dr. Ileana Streinu.  
Research in discrete and computational geometry; collaboration with the Geometry Group.
- 2023–2025 **Chancellor’s Postdoctoral Fellow**, University of California, Davis, USA.  
*Advisor:* Dr. Jesús A. De Loera.  
Research in combinatorics, discrete geometry, and applications to lattice polytopes.

## Teaching Experience

- 2025– **Teaching Assistant**, Smith College, USA  
*Courses:* Data Structures, Applied Algorithms, Discrete and Computational Geometry.
- 2024-2025 **Instructor**, University of California Davis, USA  
*Courses:* Mathematics and Computers.
- 2022-2024 **Instructor**, Mexican Mathematics Olympiad, Querétaro Delegation.  
*Courses:* Combinatorics, Geometry (high school level).
- 2018-2019 **Instructor**, Universidad Politécnica de Querétaro (UPQ), Mexico.  
*Courses:* Calculus, Mathematical Functions, Linear Algebra.
- 2014 **Instructor**, Universidad Autónoma de Querétaro (UAQ), Mexico.  
*Role:* Advisor for university admission tests.

## Industry Experience

- 2017 - 2018 **Data Analyst**, Out Helping (Recruiting company), Mexico.  
*Role:* Administration and management of the company’s database.

## Visiting Positions

- Oct-Dec 2022 **Max Planck Institute**, Leipzig, Germany.  
*Collaborator:* Dr. Erika Roldan Roa.

## Professional Service and Community Outreach

- Reviewer for *SIAM Journal on Discrete Mathematics*.
  - Reviewer for *Discrete Applied Mathematics*.
  - Reviewer for articles submitted to the volume *Women in Mathematics Latin America*, to appear in the Springer-Birkhäuser *Trends in Mathematics* series.
- 2022-2024 Volunteer to prepare participants from the state of Querétaro for the Mexican Mathematics Olympiad.
- 2019-2023 Participant in various outreach events and fairs organized by the National Autonomous University of Mexico (UNAM).
- 2016-2023 Volunteer work to assist senior citizens in obtaining their high school diplomas.
- 2014 Volunteer teaching students of all levels in the community of Loma Bonita, Oaxaca, Mexico, during the teachers’ strike.

## Awards

- 2023-2025 Chancellor’s Fellow Award.
- 2019-2023 National Scholarship for Graduate Studies, CONAHCYT.
- 2025 Winner of the academic poster presentation competition in the Latinx in the Mathematical Sciences Conference, Los Angeles, USA

## Conferences and Workshops

### Contributions to Event Organization

Sept 2023 **XII Latin-American Algorithms, Graphs and Optimization Symposium**, Huatulco, México.

### Invited Research Conferences

Jul 2025 **Discrete, Convex, and Combinatorial Geometry Fest**, Calgary, Alberta, Canada

Nov 2024 **Canadian Mathematical Society Winter Meeting**, Kwantlen Polytechnic University, Richmond, British Columbia, Canada

Jun 2023 **New Trends from Classical Theorems in Geometry**, CMO Oaxaca and Banff International Research Station, Oaxaca, Mexico

Jun 2023 **Interplay Between Geometric Analysis and Discrete Geometry**, CMO Oaxaca and Banff International Research Station, Oaxaca, Mexico

Oct 2019 **Helly and Tverberg Type Theorems, workshop**, CMO Oaxaca and Banff International Research Station, Oaxaca, Mexico

### Speaker

May 2025 **AMS Spring Western Sectional Meeting**, San Luis Obispo, USA

Mar 2025 **Latinx in the Mathematical Sciences Conference**, UCLA, Los Angeles, USA

Dec 2024 **Bay Area Discrete Math Conference**, UC Berkeley, Berkeley, USA

Jul 2024 **9th Postdoctoral Research Symposium**, UC Davis, Davis, USA

Apr 2023 **AMS Spring Central Sectional Meeting**, Ohio, USA

Jul 2022 **Latinx in the Mathematical Sciences Conference**, session chair, Los Angeles, USA

Oct 2019 **LII National Congress of the Mexican Mathematical Society**, Monterrey, Mexico

Mar 2018 **XXXIII Víctor Neumann-Lara Colloquium on Graph Theory**, Havana, Cuba

Oct 2013 **XLV National Congress of the Mexican Mathematical Society**, Mérida, Mexico

Oct 2012 **XLV National Congress of the Mexican Mathematical Society**, Mexico

### Participant

Jun 2024 **Recent Progress on Optimal Point Distributions**, ICERM, Providence, USA

Apr 2022 **XXXVI Víctor Neumann-Lara Colloquium on Graph Theory**, online

Aug 2021 **Encuentro Nacional de Computación 2021**, online

Jun 2021 **Latinx Mathematicians Research Community (LMRC)**, online

Mar 2017 **XXXIII Víctor Neumann-Lara Colloquium on Graph Theory**, San Luis Potosí, Mexico

Oct 2016 **XLV National Congress of the Mexican Mathematical Society**, Aguascalientes, Mexico

Nov 2016 **II Winter School in Mathematics**, Oaxaca, Mexico

Jun 2016 **III Summer School in Combinatorics**, Juriquilla, Querétaro, Mexico

Oct 2015 **XLV National Congress of the Mexican Mathematical Society**, Hermosillo, Mexico

Mar 2015 **XXVIII Víctor Neumann-Lara Colloquium on Graph Theory**, Oaxaca, Mexico

Mar 2013 **XXVIII Víctor Neumann-Lara Colloquium on Graph Theory**, Morelia, Michoacán, Mexico

Mar 2012 **XXVII Víctor Neumann-Lara Colloquium on Graph Theory**, Tlaxcala, Mexico

Oct 2011 **XLIV National Congress of the Mexican Mathematical Society**, San Luis Potosí, Mexico

Mar 2011 **XXVI Víctor Neumann-Lara Colloquium on Graph Theory**, Pachuca, Mexico

Oct 2009 **XLII National Congress of the Mexican Mathematical Society**, Zacatecas, Mexico

## — Technical Skills

Programming: Python, R, Mathematica, Java

Math editors: LaTeX

O.S: Windows, Linux, macOS

AI tools: ChatGPT, Claude, DeepSeek, Copilot, Gemini (primarily for coding, project structuring, and mathematical visualization)

## — Languages

- Spanish
- English