

Cesar J. Meza

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EDUCATION

Washington University in St. Louis <i>Ph.D. Mathematics</i> Advisors: Dr. Laura Escobar and Dr. John Shareshian	St. Louis, MO Expected: May 2026
San Francisco State University <i>M.A. Mathematics</i> Master's Thesis: Computing the <i>cd</i> -Index of Products of Simplices Advisor: Dr. Federico Ardila	San Francisco, CA Transferred 2021
Pomona College <i>B.A. Mathematics, Minor in Chemistry</i> Thesis: Ethnomathematics Advisors: Dr. Gizem Karaali and Dr. Adolfo Rumbos	Claremont, CA May 2016

EMPLOYMENT

Pomona College Draper Center for Community Partnerships <i>Post-baccalaureate Fellow</i> Supported the director and assistant directors of the center in training student coordinators and maintaining Educational Outreach, Community Engagement, and Community Based Research and Learning programs.	Claremont, CA Jul. 2016–Aug. 2018
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RESEARCH INTERESTS

Algebraic and geometric combinatorics, discrete geometry, algebraic geometry, mathematics education.

PREPRINTS

1. Laura Escobar and Cesar J. Meza. *Complexity of the Zero Set of a Matrix Schubert Ideal*. Sept. 2025. DOI: [10.48550/arXiv.2510.00131](https://doi.org/10.48550/arXiv.2510.00131). arXiv: [2510.00131](https://arxiv.org/abs/2510.00131)

HONORS & AWARDS

Washington University in St. Louis Center for Teaching and Learning Professional Development in Teaching Program <i>Associate Member</i>	Apr. 2025
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Washington University in St. Louis <i>Brian Blank Teaching Award</i>	Apr. 25, 2024
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Washington University in St. Louis Center for Teaching and Learning Professional Development in Teaching Program <i>Community Member</i>	Sept. 2023
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Achievement Rewards for College Scientists Foundation <i>ARCS Scholar, \$10,000</i>	Sept. 2020
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San Francisco State University <i>College of Science & Engineering Advisory Board Scholarship, \$2,500</i>	Sept. 2020
<i>Department of Mathematics Milowski Scholarship, \$2,175</i>	Jun. 2020
<i>University Scholarship, \$500</i>	Jun. 2020

National Alliance for Doctoral Studies in the Mathematical Sciences <i>Math Alliance Scholar</i>	Jun. 2020
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	<i>Math Alliance Scholar</i>	Jun. 2018
PRESENTATIONS	AMS Fall Central Sectional Special Session <i>Interactions between geometry, combinatorics, and flag varieties</i> ams-slu-meeting.github.io/fall2025 <i>Complexity of the Zero Set of a Matrix Schubert Ideal</i>	St. Louis, MO Oct. 2025
	Washington University in St. Louis <i>Combinatorics Seminar</i> <i>The Transition Equation and Schubert Polynomials</i>	St. Louis, MO Apr. 2025
	Graduate Student Combinatorics Conference 2025 <i>Invited Talk</i> <i>Generic Torus Orbit Closures in Matrix Schubert Varieties</i>	Los Angeles, CA Mar. 2025
	LatMath 2025 <i>Poster Presentation</i> <i>Complexity of Generic Torus Orbit Closures in Matrix Schubert Varieties</i>	Los Angeles, CA Mar. 2025
	Washington University in St. Louis <i>Combinatorics Seminar</i> <i>Schubert Cells and Schubert Varieties</i>	St. Louis, MO Feb. 2025
	<i>Topics Course: Lie Algebras and Representation Theory</i> <i>Schubert Varieties and Bruhat Order</i>	Dec. 2024
	Institut des Sciences Mathématiques Discovery School: Advances in Geometric Combinatorics & Representation Theory: Flow Polytopes, Gentle Algebras, and Associated Posets Montréal, CAN <i>Poster Presentation</i> <i>On the Complexity of Matrix Schubert Varieties</i>	May 2024
	<i>Lightning Talk</i> <i>On the Complexity of Matrix Schubert Varieties</i>	May 2024
	Washington University in St. Louis <i>Topics Course: Combinatorics of Polytopes</i> <i>Orbit Polytopes</i>	St. Louis, MO Apr. 2024
	<i>Combinatorics Seminar</i> <i>All but One: On the Complexity of Matrix Schubert Varieties</i>	Apr. 2024
	<i>Combinatorics Seminar</i> <i>Prisms and their Flag f-vector</i>	Apr. 2023
	<i>Szegő Seminar</i> <i>Convex Polytopes and their Flag f-vector</i>	Apr. 2023
	Universidad Nacional Autónoma de México en Oaxaca <i>Polytope Seminar</i> <i>Triangulations of Point Configurations</i>	Remote Apr. 2023

TEACHING & MENTORING	Washington University in St. Louis <i>Topics Course: Toric Varieties</i> <i>Introduction to Polytopes</i>	St. Louis, MO Mar. 2022
	Encuentro Politopal Colombo-Californiano <i>Invited Presentation</i> <i>On the cd-index of the product of simplices</i>	Remote Dec. 2020
	Achievement Rewards for College Scientists <i>Invited Research Presentation</i> <i>Polyhedral Combinatorics</i>	Remote Dec. 2020
	California State University, Los Angeles <i>Invited Presentation</i> <i>Best Practices for Teaching Precalculus in Synchronous Online Instruction</i>	Remote Nov. 2020
	Joint Mathematics Meetings <i>Invited Poster Presenter</i> <i>Graphs of Minimum Order with Dicyclic Automorphism Group</i> Cadwallader, L., Graves, S., Huston, P., and Meza, C.	Seattle, WA Jan. 2016
	Washington University in St. Louis <i>Assistant in Instruction</i> Math 131: Calculus I	St. Louis, MO Fall 2024
	<i>Guest lecture on related rates</i> Math 131: Calculus I	Fall 2024
	<i>Assistant in Instruction</i> Math 132: Calculus II	Spring 2024
	<i>Assistant in Instruction</i> Math 233: Calculus III	Fall 2023
	<i>Guest lecture on the Funtamental Theorem of Calculus part II</i> Math 131: Calculus I	Fall 2023
	<i>Guest lecture on the Fundamental Theorem of Calculus part I</i> Math 131: Calculus I	Fall 2023
	<i>Directed Reading Program Instructor</i> Introduction to Graph Theory	Fall 2023
	<i>Grader</i> Math 429: Linear Algebra	Spring 2023
	<i>Grader</i> Math 407: Introduction to Differential Geometry	Spring 2023
	<i>Assistant in Instruction</i> Math 131: Calculus I	Fall 2022

Pomona College Academy for Youth Success (PAYS)	Claremont, CA
<i>Mathematics Instructor</i>	Jun.–Jul. 2024
Rising Sophomore Math	
<i>Mathematics Instructor</i>	Jun.–Jul. 2023
Rising Sophomore Math	
<i>Mathematics Instructor</i>	Jun.–Jul. 2022
Rising Sophomore Math	
San Francisco State University	San Francisco, CA
<i>Instructor of Record</i>	Spring 2021
Math 199: Precalculus	
<i>Instructor of Record</i>	Spring 2021
Math 122: Mathematics for Statistical Quantitative Reasoning	
<i>Instructor of Record</i>	Fall 2020
Math 199: Precalculus	
<i>Graduate Teaching Assistant</i>	Fall 2020
Math 226: Calculus I	
<i>Instructor of Record</i>	Spring 2020
Math 107: Business Calculus	
<i>Graduate Teaching Assistant</i>	Spring 2020
Math 226: Calculus I	
<i>Instructor of Record</i>	Fall 2019
Math 107: Business Calculus	
<i>Graduate Teaching Assistant</i>	Fall 2019
Math 226: Calculus I	
Moreno Valley College	
Department of Mathematics	Moreno Valley, CA
<i>Academic Consultant</i>	May 2018
Advised faculty on culturally relevant pedagogy, service learning courses, and ethnomathematics curriculum to increase recruitment, retention, and success of Black and Latinx mathematics students.	
Pomona College Scholars in Mathematics	Claremont, CA
<i>Inaugural Mentor</i>	Aug. 2014–May 2016
Fostered mathematical community among cohort of 20 underrepresented first-year students by co-leading weekly group meetings, facilitating community building activities, and conducting individual meetings.	
Pomona College Draper Center for Community Partnerships	Claremont, CA
<i>Student Coordinator</i>	Aug. 2013–May 2016

Coordinated mentorship program to prepare underrepresented high school students for the college application and selection process.

Pomona College Department of Mathematics Claremont, CA
Mathematics Mentor Jan. 2015–May 2015

Organized weekly tutoring sessions for section of Calculus I to improve comprehension, prepare for exams, and establish a collaborative learning community.

Pomona College Academy for Youth Success (PAYS) Claremont, CA
Teaching Assistant June–July ‘13, ‘14, ‘16

Supported academic progress of class of 20 high-achieving underrepresented high school students by grading mathematics and critical inquiry assignments and facilitating collaborative study sessions.

Instructor Jun.–Jul. 2016

Designed and taught month-long course.

Revolutions and Interventions in Latin America.

Instructor Jun.–Jul. 2014

Designed and taught two sections of two-week-long course.

STEAM: Bridging the Gap Between Math and Art.

Instructor Jun.–Jul. 2013

Designed and taught month-long course.

Scientific Literacy and Finding Minority Role-Models in Math & Science.

SERVICE **Washington University in St. Louis** St. Louis, MO

Department of Mathematics Diversity Committee Member Fall 2023–Present

WashU Math Club Panelist Nov. 19, 2025

Panel on the graduate school experience and application process.

Sonia Kovalevsky Day Volunteer Apr. 12, 2025

Co-led an activity on the mathematics of Eulerian embroidery.

Sonia Kovalevsky Day Volunteer Apr. 6, 2024

Co-led an activity on games mathematically equivalent to Tic-Tac-Toe.

Math Chats Co-Founder & Co-Organizer Fall 2022–Spring 2024

Encuentro Colombiano de Combinatoria (ECCO) Bogotá, Colombia
Panel Chair Jun. 2022

Pomona College Claremont, CA

Sonia Kovalevsky Day Volunteer Feb. 10, 2018

Led activity on the geometry of the Möbius strip.

WORKSHOPS **SLMath Workshop on Graphical Models in Algebraic Combinatorics**

Berkeley, CA

Student Participant Jun. 23–Jul. 3, 2025

slmath.org/workshops/1121

IPAM Workshop on Computational Interactions between Algebra, Combinatorics, and Discrete Geometry Los Angeles, CA
Student Participant Feb. 10–14, 2025
[ipam.ucla.edu/programs/workshops/computational-interactions-between-algebra-c
ombinatorics-and-discrete-geometry/](http://ipam.ucla.edu/programs/workshops/computational-interactions-between-algebra-combinatorics-and-discrete-geometry/)

ISM Discovery School on Flow Polytopes, Gentle Algebras, and Associated Posets Montréal, CAN
Student Participant May 2024
<https://ism.uqam.ca/flow/en/index.html>

Schubert Summer School Urbana-Champaign, IL
Student Participant Jun. 12–22, 2023
sites.google.com/view/schubertsummerschool2023/home

Encuentro Colombiano de Combinatoria (ECCO) Bogotá, Colombia
Student Participant Jun. 14–25, 2022
<https://ecco2022.combinatoria.co/home-english>

KCAL 9/CBS 2 News Aug. 2023
 “Pomona College give high schoolers chance to take classes, live on campus as part of youth program”
[cbsnews.com/losangeles/video/pomona-college-give-high-schoolers-chance-to-tak
e-classes-live-on-campus-as-part-of-youth-program](https://cbsnews.com/losangeles/video/pomona-college-give-high-schoolers-chance-to-take-classes-live-on-campus-as-part-of-youth-program)

Spectrum 1 News Jul. 2023
 “PAYS program prepares underserved students for college”
[spectrumnews1.com/ca/la-east/inside-the-issues/2023/07/21/pays-program-prepa
res-underserved-students-for-college](https://spectrumnews1.com/ca/la-east/inside-the-issues/2023/07/21/pays-program-prepares-underserved-students-for-college)

Telemundo 52 Jul. 2023
 “Programa gratuito ayuda a los estudiantes de preparatoria a llegar a la universidad”
[telemundo52.com/fotosyvideos-2/programa-gratuito-ayuda-a-los-estudiantes-de-p
reparatoria-a-llegar-a-la-universidad/2451315/?amp=1](https://telemundo52.com/fotosyvideos-2/programa-gratuito-ayuda-a-los-estudiantes-de-preparatoria-a-llegar-a-la-universidad/2451315/?amp=1)

Pomona College Jun. 2023
 “Once-Skeptical Student Becomes Teacher in Pomona College Academy for Youth Success”
[pomona.edu/news/2023/06/08/once-skeptical-student-becomes-teacher-pomona-c
ollege-academy-youth-success](https://pomona.edu/news/2023/06/08/once-skeptical-student-becomes-teacher-pomona-college-academy-youth-success)