

# Eliana Tolosa Villarreal

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## Curriculum Vitae

### Education

- 2021-Present **PhD in Mathematics and Applications**, *Università degli Studi di Genova, Genova.*
- 2019-2021 **Master of Arts in Mathematics**, *San Francisco State University, San Francisco.*
- 2012-2018 **Bachelor of Mathematics**, *Universidad Nacional de Colombia, Sede Bogotá.*
- 1997-2012 **School Education**, Scientific emphasis, *Colegio Italiano Leonardo Da Vinci, Bogotá.*

### Publications

- 2024 **Preprint**, *Normality, factoriality and strong F-regularity of Lovász-Saks-Schrijver rings*, Eliana Tolosa Villarreal, arXiv:2405.20480.
- 2024 **Preprint**, *The Dual F-Signature of Veronese Rings*, Vinicius Bouça, Eliana Tolosa Villarreal, Kevin Vasconcellos, arXiv:2405.02542.

### Research Experience

- 2021-Present **PhD Research**, *On Lovász-Saks-Schrijver ideals*, Università degli Studi di Genova, Genova.
- 2021 **Master's Thesis**, *Signed Positive Sum Systems and S-Lecture Hall Polytopes*, San Francisco State University, San Francisco.
- 2020 **Research Assistant**, *On an analogue of Positive Sum Systems*, San Francisco State University, San Francisco.
- 2017 **Undergraduate Thesis**, *Hopf Algebras of matroids*, Universidad Nacional de Colombia, Bogotá.

### Teaching Experience

- Spring 2021 **Graduate Teaching Assistant**, *Prelude to Calculus II (MATH 198)*, San Francisco State University, San Francisco, USA.
- Fall 2020/Spring 2021 **Teaching Assistant**, *Calculus II (MATH 227)*, San Francisco State University, San Francisco, USA.
- Fall 2020 **Graduate Teaching Assistant**, *Prelude to Calculus (MATH 199)*, San Francisco State University, San Francisco, USA.
- Spring 2020/Spring 2021 **Teaching Assistant**, *Calculus I (MATH 226)*, San Francisco State University, San Francisco, USA.

- Spring 2020 **Graduate Teaching Assistant**, *Prelude to Calculus I (MATH 197)*, San Francisco State University, San Francisco, USA.
- 2019-2021 **Leader Instructor**, *San Francisco Math Circles*, San Francisco State University, San Francisco, USA.
- 2019 **Teaching Assistant**, *Summer school: Días de Combinatoria*, Universidad del Cauca, Popayán, Colombia.

## Talks and presentations

### Factoriality of Lovász-Saks-Schrijver rings

- 2024 **Invited Speaker**, Graduate Student seminar, commutative algebra program, SLMath, Berkeley, USA).
- 2024 **Invited Speaker**, Algebra, Geometry and Combinatorics seminar, San Francisco State University, San Francisco, USA).

### Some properties of Lovász-Saks-Schrijver ideals

- 2024 **Poster presentation**, Introductory Workshop, commutative algebra program, SLMath, Berkeley, USA).
- 2023 **Poster presentation**, Graduate Student Meeting on Applied Algebra and Combinatorics, Stockholm, Sweden).

### Positive signed sum systems and odd-lecture hall polytopes

- 2022 **Invited Speaker**, JMM AMS Special Session, Latinxs in Combinatorics, virtual meeting(hosted by the American Mathematical Society, Seattle, WA).

### Invariancia de propiedades combinatorias en sistemas de sumas positivas

- 2021 **Invited Speaker**, Seminar: Seminario sabanero de Combinatoria, Universidad de los Andes, Universidad Nacional de Colombia and Universidad Sergio Arboleda, Bogotá, Colombia.
- 2021 **Invited Speaker**, Seminar: Las Mujeres Suman, Universidad Sergio Arboleda, Bogotá, Colombia.

## Conferences attended

- 2024 *Summer School in Algebraic Combinatorics*, Leipzig, Germany.
- 2024 *Graduate International School in Combinatorics (GRADISCO)*, Volterra, Italy.
- 2024 *Advanced topics on commutative algebra*, SLMath, Berkeley, USA.
- 2024 *Introductory workshop on commutative algebra*, SLMath, Berkeley, USA.
- 2023 *GEMS of Combinatorics*, AIM Workshop, San José, USA.
- 2023 *Graduate Student Meeting on Applied Algebra and Combinatorics*, Stockholm, Sweden.
- 2023 *Commutative Algebra TOwards Applications*, Torino, Italy.
- 2023 *PRAGMATIC*, Catania, Italy.
- 2023 *GTM*, Genoa, Italy.

- 2022 *SMC 2022 school on Local Cohomology and related topics*, Stockholms Matematikcentrum, Stockholm, Sweden.
- 2022 *75+80=155 years of commutative algebra*, Universität Osnabrück, Institut für Mathematik, Osnabrück, Germany.
- 2022 *JMM AMS Special Session, Latinxs in Combinatorics, Virtual Conference*, (hosted by the American Mathematical Society, Seattle, WA).
- 2020 *SACNAS 2020*, Virtual Conference.
- 2018 *ECCO: Encuentro Colombiano de Combinatoria*, Universidad del Norte, Barranquilla, Colombia.
- 2017 *Días de Combinatoria*, Universidad Pontificia Bolivariana, Medellín, Colombia.
- 2015 *Geometric, Algebraic and Topological Methods for Quantum Field Theory*, Villa de Leyva, Colombia.

## Other activities

- 2024 **Program Associate** at *Simons Laufer Mathematical Sciences Institute (formerly MSRI)*, Berkeley, USA.
- 2018 **Organizer** of *Círculos matemáticos Colombia Colegio La Giralda*, Bogotá, Colombia.

## Skills

### Computer Skills

- Basic C/C++, MatLab, Sage
- Intermediate R, Macaulay2, CoCoA
- Advanced LATEX

## Languages

- Intermediate French
- Advanced English, Italian
- Native tongue Spanish

## Interests

- Education
- Social Justice
- Art, design and circus arts
- Math communication