

Curriculum Vitae
Carlos M. Nicolás

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Education

Ph.D. in Mathematics, 2008.
University of Kentucky
Advisor: Dr. Carl W. Lee
B.S. in Mathematics, 2000.
Universidad Simón Bolívar (Venezuela)

Employment

August 2019 – present: Instructor of Mathematics, Virginia Tech.
August 2018 – May 2019: Associate Professor of Mathematics, Ferrum College.
August 2012 – May 2018: Assistant Professor of Mathematics, Ferrum College.
August 2008 – July 2012: Assistant Professor, University of North Carolina Greensboro.
August 2004 – May 2008: Teaching/Research Assistant at the University of Kentucky.

Teaching Experience at Virginia Tech

Calculus I (MATH 1225), Calculus II (MATH 1226), Intro. Multivariable Calculus (MATH 2204), Intro. Linear Algebra (MATH 2114), Applied Combinatorics (MATH 3134).

Teaching Experience (in previous institutions)

Intermediate Algebra, Introductory Finite Math, Precalculus I, Precalculus II, Introduction to Statistics, Calculus I, Calculus II, Multivariable Calculus, Mathematical Reasoning, Introduction to Number Theory, College Geometry, Graph Theory, Linear Algebra I and II, Discrete Mathematics I and II, Abstract Algebra, Axiomatic Set Theory, Senior Seminar, Graduate-level Graph Theory.

Research Interests

Combinatorial and computational geometry, discrete geometry, polytope theory.

Publications

- J. García and C. M. Nicolás, Planar point sets with large minimum convex decompositions, *Graphs and Combinatorics*. 29 (2013), 1347–1353.
- C. M. Nicolás, A stronger bijection between 2-triangulations and pairs of non-crossing Dyck paths. 21st International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2009), *Discrete Math. and Theor. Comput. Sci. Proceedings*, AK (2009), 697–708.
- M. Abellanas, P. Bose, J. García, F. Hurtado, C. M. Nicolás and P. Ramos, Higher-order Delaunay triangulations, *Internat. J. of Computational Geom. and Applications*. 19 (2009), no. 6, 595–615.
- C. M. Nicolás, The empty hexagon theorem, *Discrete and Computational Geometry*. 38 (2007), 389–397.

Invited Talks

- Teaching combinatorial convexity applications in an undergraduate Linear Algebra class.* 2017 conference of the International Linear Algebra Society, Ames, Iowa, July, 2017.
- A superlinear bound for the number of empty pentagons in planar point sets.* Southeastern Section Meeting of the American Mathematical Society, Athens, Georgia, March 2016.
- What should be the content of a developmental algebra class?* Mathematical Association of America MathFest, Washington D.C., August 2015.
- Bounds on the number of relatively convex subsets of a planar point set.* Southeastern Section Meeting of the American Mathematical Society, Greensboro, North Carolina, November 2014.
- What is Combinatorial Geometry?* Seminar of the School of Natural Sciences and Mathematics, Ferrum College, March 2014.
- Interval decomposition of k -edges.* Southeastern Section Meeting of the American Mathematical Society, Richmond, Virginia, November 2010.
- A stronger bijection between 2-triangulations and pairs of non-crossing Dyck paths* (poster presentation), International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC), Hagenberg, Austria, July 2009.
- Defining k -triangulations for points in general position.* AMS Southeastern Section Meeting, Raleigh, North Carolina, April 2009.
- Upper bounds for the minimum convex subdivisions of points in the plane,* Fall 2007 AMS Southeastern Sectional Meeting, November 2007.

Contributed Talks

- Lower and upper bounds on the size of minimum convex partitions,* SouthEast Regional Meeting on Numbers (SERMON) April 2010, Davidson, NC.
- k -Splitters and k -Triangulations,* SouthEast Regional Meeting on Numbers (SERMON) April 2009, Greensboro, NC.
- Structural and enumerative properties of k -triangulations of the n -gon,* UNCG Mathematics Colloquium, October 2008.
- Some results in geometric discrepancy theory,* University of Kentucky Graduate Student Colloquium, November, 2007.
- The empty hexagon theorem,* Graduate Student Combinatorics Conference, Seattle, March 2007.
- Lower and upper bounds for the minimum convex subdivision of points in the plane,* Seminar on Algebraic Combinatorics, University of Kentucky, November 2006.
- Kruskal's tree theorem and the ordinal Γ_0 ,* University of Kentucky Graduate Student Colloquium, March 2006.
- Empty convex hexagons in planar point sets,* Seminar on Algebraic Combinatorics, University of Kentucky, October 2005.

Service and Professional Activities

Judge, Virginia Science Fair 2014, 2015, 2019.

Coordinator of the Mathematics Program at Ferrum College, 2014–2016.

Served on multiple Departmental and School committees at Ferrum College, including the Academic Standards Committee, the Professional Development Advisory Committee, the Teacher Education Committee, the Information Services Advisory Committee and various search committees.

Reviewer for *Computational Geometry: Theory and Applications*.

Co-organizer (with J. Cooper, K. Millan and C. Smyth) of the special session on *New Developments in Graph Theory*. AMS Section Meeting, Winston-Salem, North Carolina, September 2011.

Organizer of the special session on *Discrete Mathematics*. MAA Southeastern Section Conference, Tuscaloosa, Alabama, April 2011.

Co-organizer (with J. Rychtar) of the special session on *Applied and Combinatorial Mathematics*. MAA Southeastern Section Conference, Elon, North Carolina, March 2010.

Grants and Fellowships

Multiple internal grants (professional development grants) from Ferrum College to travel and present at conferences.

Section NExT (New Experiences in Teaching) Fellow of the MAA VA-DC-MD section, 2012–2014.

From the University of Kentucky:

Presidential Fellowship, 2007–2008.

Max Steckler Fellowship, Summer 2007.

Kentucky Opportunity Fellowship, 2006–2007.

Simón Bolívar University:

Excellence Award, 1999.

Excellence Award, 1998.

Memberships

Member of the American Mathematical Society.

Residence Status and Citizenship

U.S. permanent resident.

Citizen of Spain and Venezuela.