Raúl Figueroa Sierra

Personal Information

Full name:	Raúl Figueroa Sierra
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Education

Universidad de los Andes
Bogotá, Colombia

- Ph.D. in Mathematics (2019–2025)
  Thesis: *Combinatorics of ideals on ω: the Category Dichotomy and the Measure Dichotomy.*
  Advisor: Michael Hrušák. Co-advisor: Carlos Di Prisco.

- M.Sc. in Mathematics (2017–2019)
  Thesis: *Cardinal Quantifiers in Continuous Logic.*
  Advisor: Xavier Caicedo Ferrer.

Universidad Nacional de Colombia
Bogotá, Colombia

- B.Sc. in Mathematics (2012–2017)
  Thesis: *On Some Categorical Notions of Non-Elementary Classes.*
  Advisor: Pedro Zambrano Ramírez.

Teaching Experience and Related Activities

Universidad de los Andes, Departamento de Matemáticas

- **Adjunct Lecturer (Profesor de Cátedra)**   2025-II
  - Teaching load: 12 hours per week.
  - Courses taught:
    * Linear Algebra I y Calculus III
    * Precalculus.
  - Responsibilities included course planning, delivery of lectures, preparation and grading of exams and assignments, and student advising.

- **Graduate Teaching Assistant**   2017-II – 2025-I
  - Teaching load: 6 hours per week.
  - Duties included leading weekly problem-solving sessions, grading exams and homework, and providing academic support to students.

- Courses assisted:
    * Linear Algebra (2017-II, 2018-I).
    * Differential Calculus (2018-II, 2019-I, 2023-I).
    * Integral Calculus and Differential Equations (2019-II, 2021-II, 2023-II).
    * Linear Algebra and Calculus III (2020-I, 2022-I).
    * Integral Calculus and Probability (2020-II, 2021-I, 2025-I).
    * Multivariable Calculus (2024-II).

- **Research Assistant**   June–July 2018, June–July 2019

Universidad Nacional de Colombia, Facultad de Ciencias

- **Teaching Assistant**   2014–2017
  - Assistant Student, Programa de Matemáticas Básicas (March–June 2016; June–July 2016).
  - Assistant Student, Faculty of Sciences (September–December 2014; February–June 2015).
  - Assistant Student, Cursos juveniles de divulgación matemática (March–May 2017).

Publications

- R. Figueroa-Sierra, A. Dow, O. Guzmán, M. Hrušák.
  The Category Dichotomy for Ideals. To appear in *Annals of Pure and Applied Logic.*

- R. Figueroa-Sierra, O. Guzmán, M. Hrušák, A. Kwela.
  Dow Spaces and the Fréchet–Urysohn Property. In preparation.

- R. Figueroa-Sierra, M. Hrušák.
  The Measure Dichotomy for F_σ Ideals. In preparation.

- R. Figueroa-Sierra, D. C. Montoya.
  Pseudointersections and Towers for Singular Cardinals. In preparation.

- X. Caicedo, R. Figueroa-Sierra.
  Generalized Quantifiers on Continuous Logic. In preparation.

Selected Talks

- *Ideales de subconjuntos densos en ninguna parte sobre espacios de Dow.*
  XIII Simposio Nororiental de Matemáticas, Escuela de Matemáticas, Universidad Industrial de Santander, December 1 – 5, 2025.

- *Espacios topológicos y la Dicotomía de Categoría.*
  Taller Mexicano de Topología, Facultad de Ciencias, UNAM, Mexico City, June 15 – 19, 2025.

- *Pathological Lower Semicontinuous Submeasures and F_σ Ideals on ω* (Poster).
  Young Set Theory Workshop, Münster, Germany, May 29 – June 3, 2023.

- *Compact Extensions of Continuous Logic and Partition Properties.*
  XVIII Latin American Symposium on Mathematical Logic, Concepción, Chile, 2019.

- *El décimo problema de Hilbert.*
  VIII Encuentro Nacional de Matemáticas y Estadística, Colombia, 2018.

Last updated: January 7, 2026