

Contact Department of Mathematics, University of Oregon, Office: McArthur 111
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Online [Website](#)

Mathematical Interests I'm interested in Higher Category Theory and its connections with K -theory and Algebraic Topology.

Employment [Universidad de Antioquia](#), Medellín, Colombia.

- Part Time Instructor. Spring 2012 and Spring 2015 - Spring 2018

Education [University of Oregon](#), Eugene, OR.
 Ph.D. in Pure Mathematics September 2018 - Expected 2024

- Advisors: [Angélica Osorno](#) and [Dan Dugger](#).
- Orals: [Cohomology operations](#), [Model Categories](#) and ∞ -categories.
- Qualifying Exams: [Analysis](#) and [Algebraic topology](#).

[Universidad Nacional de Colombia](#), Bogotá, Colombia.

M.Sc. in Mathematics 2016

- Thesis: *Logic of sheaves of structures on a locale*.
- Awards: Meritory mention.
- Areas: Logic, Category Theory.
- Advisor: [Fernando Zalamea](#)

[Universidad de Antioquia](#), Medellín, Colombia.

B.Sc. in Mathematics: 2012

- Thesis: [Chaitin's \$\Omega\$ numbers, Solovay Machines and Incompleteness](#) (in Spanish).
- Areas: Logic, Algorithmic Information Theory.
- Advisor: [Carlos Mario Parra](#).

Research Papers and Preprints
 1. **D. Manco** "[A coherence theorem for pseudo symmetric multifunctors](#)", (2023) Submitted.

Teaching [GE, University of Oregon](#) Fall 2016 - Present
 Instructor of record. My duties were teaching class 4 hours per week, holding office hours, designing and grading of exams, quizzes and homework assignments.

- Calculus I Winter 2020, Winter 2021, Spring 2021, Fall 2023, Winter 2023
- Calculus II Spring 2023
- Elementary functions Spring 2020, Fall 2020, Fall 2022, Fall 2021 (2 sections)
- Discrete Math I Summer 2020, Summer 2022
- University Math I Summer 2021
- College Algebra Fall 2018

Part Time Instructor, Universidad de Antioquia 2012-I and 2015-I to 2018-II
 Instructor of record. My responsibilities were teaching 4 hours per week, designing and grading exam and homework assignments and holding office hours. This university holds a 2 semester per year schedule and since Colombia is a tropical country, semesters are numbered using Latin numerals.

- Calculus III (For Engineering) 2018-I
- Linear Algebra (For Physics) 2018-I
- Introduction to Mathematics 2018-I
- Category Theory 2016-II
- Basic Math 2016-I
- Mathematical Logic II (Completeness and Incompleteness) 2015-II
- Mathematical Logic (Discrete Math) 2012-I, 2015-I
- Business Calculus II 2016-II, 2017-I
- Fundamentals of Mathematics (Discrete Math) 2017-I
- Linear Algebra 2012-I, 2018-I
- Transfinite numbers 2015-I

TA'ing

GE, University of Oregon January 2018 - June 2023
 Teaching assistant. I ran 4 discussion sessions of one hour per week, held office hours, gave input to the main instructor, and graded quizzes and exams.

- Elementary functions Fall 2019

Mentoring

Project mentored through UO DRP. Winter-Spring 2023
 • Andrew Rehmann: Completeness for Propositional Logic Spring 2023
Mentor for Incoming International Phd Students Summer 2019- Present
 • Juntao Lu (China). AY 23-24

Past and upcoming Talks

Research talks (●) are listed above expository talks (★).
 • *Joint Mathematics Meetings JMM* (San Francisco, USA)
AMS special session on Homotopy Theory I
 Pseudo symmetric multifunctors and applications to K -theory. January 2024
 • *Topology seminar* (University of Virginia , USA) November 2023
 • *Topology seminar* (Johns Hopkins University, USA) November 2023
 • *Topology seminar* (University of Washington, USA) October 2023
 • *Topology seminar* (University of Oregon, USA) October 2023
 • *17th Latin American Symposium on Mathematical Logic* (BUAP, Mexico)
 Sheaves of structures on a Locale. June 2017
 ★ *Summer School on Scissors Congruence, Algebraic K-theory and Trace methods*
 (University of Indiana, USA)
 Quillen's Theorems A and B. October 2023
 ★ Student topology seminar (University of Oregon, USA) Fall 2019 -present
 Roughly one talk per term after Qualls. Some of the talks include:

Model Categories.
 Reedy Model Structures.
 Homotopy Colimits.
 Dwyer-Kan Simplicial localizations.
 Mapping spaces in Quasicategories.
 Operads and iterated loop spaces.
 Segal's infinite loop space machine.
 $S^{-1}S$ construction.

Past and upcoming Conferences

- *Joint Mathematics Meetings (JMM)*
 San Francisco, USA January 2024
 - *Summer School on Scissors Congruence, Algebraic K-theory and Trace methods*
 University of Indiana, USA June 2023
 - *Homotopy theory in honor of Paul Goerss*
 Northwestern University, USA March 2023
 - *Barcelona Conference on Higher Structures*
 Universitat de Barcelona, Spain June 2022
 - *Workshop on Derived Geometry*
 Universitat Autònoma de Barcelona, Spain June 2022
 - *17th Latin American Symposium on Mathematical Logic*
 Benemérita Universidad Autónoma de Puebla, Mexico June 2017
 - *XVIII Congreso Colombiano de Matemáticas*
 Universidad Industrial de Santander, Colombia June 2011
 - *XVIII Congreso Colombiano de Matemáticas*
 Universidad del Valle, Colombia June 2009
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Service

- **Directed Reading program at UO** Fall 2024 - Spring 2024
 Organizer
 - **AMS Grad Chapter at UO** Fall 2023 - Spring 2024
 Diversity Chair for the Academic Year 2023-2024.
 - **Eugene Youth Math Fest** February 2023
 Volunteer
 - **Climate committee, Department of Mathematics at UO** 2020 - 2021
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Awards

- Anderson Mathematics Ph.D. Student Research Award, awarded by the Department of Mathematics at the University of Oregon. Summer 2023
 - Fulbright-COLCIENCIAS scholarship awarded by the Colombian Fulbright Commission and COLCIENCIAS. Fall 2018-Summer2022
 - Honorary Mention for a Master's thesis awarded by the Universidad Nacional de Colombia. June 2016
 - Best advanced student by program: Mathematics. Awarded by the Universidad de Antioquia. 2009-2011
 - Best GPA by cohort during 9 out of 10 semesters. Tuition fee waiver awarded by the Universidad de Antioquia. 2005-2012
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Programming Languages

- Coq
 - MATLAB
- Software Programs**
- L^AT_EX
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Languages

- Spanish (native)
 - English (fluent)
 - French (competent)
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Last Update: October 31, 2023