

David Gonzalez

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EDUCATION

- 5/2025 (expected) PhD **University of California, Berkeley, CA**
PhD candidate in Mathematics
Advisor: Antonio Montalbán
- 6/2019 B.S **Stanford University, Palo Alto, CA**
Mathematics Major GPA: 4.0
Graduated with Distinction
- 5/2015 H.S **Miami Country Day School, Miami, FL**
Valedictorian

ACADEMIC AWARDS

- 3/2022 **Outstanding Graduate Student Instructor Award**
Honored for outstanding work in teaching on the Berkeley campus.
Criteria included overall effectiveness as an instructor and ability to
create inclusive learning environments.
- 8/2019-6/2021 **The Berkeley Fellowship**
Awarded to outstanding PhD applicants in all fields. Nominated by
the math department and selected from a pool of candidates from
all fields by a central committee. Provided two academic years of
funding.
- 6/2016 **Phi Beta Kappa**
Awarded to undergraduate students who have demonstrated
exceptional academic breadth and width along with a good moral
character.

PUBLISHED WORK AND PREPRINTS

D. Gonzalez, Hybrid Maximal Filter Spaces. To appear in *Lecture Notes in Computer Science*.

U. Andrews, D. Gonzalez, S. Lempp, D. Rossegger and H. Zhu, The Borel Complexity of the Class of Models of First-Order Theories. Submitted for publication.

D. Cenzer, W. Calvert, D. Gonzalez and V Harizanov, Densely Computable Linear Orderings. Submitted for publication.

D. Gonzalez and D. Rossegger, The Scott Sentence Complexity of Linear Orders. Submitted for publication.

D. Gonzalez and A. Montalbán, The omega Vaught's conjecture. To appear in *Trans. Amer. Math. Soc.*

D. Gonzalez, X. He, and H. Zheng, An upper bound for the restricted online Ramsey number. *Discr. Math.* **9** (2019), 2564-2569.

UPCOMING INVITED TALKS

The Scott Sentence Complexity of Linear Orders, ASL North American meeting, Ames, IA. May 2024

Semi-periodic Functions and the Scott Analysis of Linear Orderings, Iowa Colloquium on Information, Complexity, and Logic, Des Moines, IA. May 2024

Semi-periodic Functions and the Scott Analysis of Linear Orderings, ASL Logic Colloquium Special Session on Computable Model Theory, Gothenburg, Sweden, June 2024

Hybrid Maximal Filter Spaces, Leeds Computability Days: Computability, Reverse Mathematics, and Topology, Leeds, United Kingdom. July 2024

Hybrid Maximal Filter Spaces, Computability in Europe Special Session on Computable Structure Theory, Amsterdam, The Netherlands. July 2024.

Semi-periodic Functions and the Scott Analysis of Linear Orderings, Computable Structure Theory and Interaction, Vienna, Austria. July 2024.

INVITED TALKS

Semi-periodic Functions and the Scott Analysis of Linear Orderings, UCLA Logic Colloquium, University of California, Los Angeles, April 2024

Generically Computable Linear Orderings, AMS Spring 2024 Central Sectional, The University of Wisconsin-Milwaukee, April 2024

Generically Computable Linear Orderings, AMS Sectional Meeting Special Session on Computability, Complexity, and Algebraic Structures, Washington DC, April 2024

Generically Computable Linear Orderings, The Online Logic Seminar, hosted in Carbondale, IL. Feb 2024

The Scott Sentence Complexity of Linear Orders, Joint Mathematics Meeting
AMS Special Session “Computable Mathematics: A Special Session Dedicated
to Martin D. Davis”, San Francisco, CA. Jan 2024.

The Scott Sentence Complexity of Linear Orders, Louise Hay Logic Seminar,
University of Illinois Chicago, Chicago, IL, Nov 2023

The Omega Vaught’s Conjecture, Midwest Computability Seminar, San
Francisco, CA. Nov 2023.

The Scott Sentence Complexity of Linear Orders, The University of
Wisconsin-Madison Logic Seminar, Madison, WI. Nov 2023

The Omega Vaught’s Conjecture, University of Michigan Logic Seminar, Ann
Arbor, MI. Mar 2023.

CONTRIBUTED TALKS

The Omega Vaught’s Conjecture, ASL Logic Colloquium, Milan, Italy. June 2023.

The Omega Vaught’s Conjecture, ASL North American Annual Meeting, Irvine,
CA. Mar 2023.

CLASS LIST AS GRADUATE STUDENT INSTRUCTOR (GSI) AT UC BERKELEY:

Spring 2024 Multivariable Calculus, MATH 53 with Prof. Canic (serving as Head
Graduate Student Instructor)

Fall 2023 Multivariable Calculus, MATH 53 with Prof. Zworski

Spring 2023 Calculus II, MATH 1B with Prof. Stankova (served as Head
Graduate Student Instructor)

Fall 2022 Multivariable Calculus, MATH 53 with Prof. Sheu

Spring 2022 Multivariable Calculus, MATH 53 with Prof. Stankova

Fall 2021 Multivariable Calculus, MATH 53 with Prof. Canic

RELEVANT EMPLOYMENT EXPERIENCE

2023

Head Graduate Student Instructor (Berkeley, CA)

Led a group of 25 graduate student instructors for a 1,400 person
class (MATH 1B). Was responsible for organizing exam logistics
and worked closely with the Disabled Students Program to provide
equitable testing conditions for students.

2021-Present

Graduate Student Instructor (Berkeley, CA)

Led discussion sections, conducted office hours and graded student work for about 50 students a semester learning multivariable calculus (MATH 53). Received an average 6.7/7 rating from students (department average is 5.6/7). Invited to speak on a panel to new GSIs and gave advice on best practices.

Summer 2022-23

MathLy Apprentice Instructor (Bryn Mawr, PA)

Monitored student collaboration during class, led and planned classes, wrote problems and assessed student writing. Classes were inquiry based and composed of around 15 advanced high school students.

Summer 2021

Graduate Student Researcher (Berkeley, CA)

Edited the book *Computable Structure Theory: Beyond the Arithmetic* by Antonio Montalban soon to be published by Cambridge University press.

Summer 2018

Stanford Undergraduate Research Institute in Mathematics (Stanford, CA)

Researched topics in Ramsey theory with a graduate mentor and research group. Presented research in a seminar environment.

2017-2019

Stanford University Office of Accessible Education Mentor (Stanford, CA)

Tutored Stanford students with learning differences in multivariable calculus, linear algebra and theoretical computer science.

April 2016

MindMath Conference (Stanford, CA)

Coordinated and developed math activities aimed at developing positive mindsets towards math for a diverse audience.

OTHER ACTIVITIES

Referee: Journal of Symbolic Logic, Archive for Mathematical Logic