

Java Darleen Villano

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Academic positions

University of Toronto <i>Postdoctoral Fellow</i>	2025-2026
University of Connecticut <i>Graduate Student</i>	2019-2025



Education

University of Connecticut <i>Ph.D. Mathematics</i>	2019-2025
◦ Advisers: Reed Solomon and Damir D. Dzhafarov	
◦ Dissertation Title: Computable Categoricity, and Topology in Reverse Mathematics	
University of California, Berkeley <i>B.A. Mathematics with Logic Minor</i>	2015-2019


Research interests

Computability theory, computable structure theory, reverse mathematics, Weihrauch complexity, and algorithmic randomness.

Publications

Normality, relativization, and randomness	June 2025
Calvert, W., Gruner, E., Mayordomo, E., Turetsky, D., Villano, J.D. <i>Theory of Computing Systems</i> 	
Computable categoricity relative to a c.e. degree	May 2025
Villano, J.D. <i>Notre Dame Journal of Formal Logic</i> , to appear.	
The Ginsburg–Sands theorem and computability theory	May 2024
Benham, H., DeLapo, A., Dzhafarov, D., Solomon, R., Villano, J.D. <i>Advances in Mathematics</i> 	

Preprints

Extensions of categoricity relative to a degree	May 2025
Villano, J.D. arXiv:2505.15706 	

Teaching experience

Primary Instructor	<i>Toronto, ON</i>
<i>University of Toronto</i>	2025-2026
◦ Fall 2025, Winter 2026: MAT133Y (Calculus and Linear Algebra for Commerce), 1 section	
Primary Instructor	<i>Storrs, CT</i>
<i>University of Connecticut</i>	2023-2024
◦ Fall 2024: Math 1071Q (Calculus for Business and Economics), 2 sections	
◦ Spring 2024: Math 1071Q (Calculus for Business and Economics), 1 section	
◦ Fall 2023: Math 1071Q (Calculus for Business and Economics), 2 sections	
◦ Spring 2023: Math 1071Q (Calculus for Business and Economics), 2 sections	

Teacher Assistant
University of Connecticut

Storrs, CT
2019-2022, 2025

- **Spring 2025:** Math 2110Q (Multivariable Calculus), 3 sections
- **Fall 2022:** Math 1132Q (Calculus II), 2 sections
- **Spring 2022:** Math 1132Q (Calculus II), 2 sections
- **Fall 2021:** Math 1131Q (Calculus I), 2 sections
- **Spring 2021:** Math 1132Q (Calculus II), 2 sections
- **Fall 2020:** Math 1132Q (Calculus II), 2 sections
- **Spring 2020:** Math 1132Q (Calculus II), 2 sections
- **Fall 2019:** Math 1131Q (Calculus I), 2 sections

Conference invitations

Workshop “Reverse Mathematics: New Paradigms”
Erwin Schrödinger International Institute for Mathematics and Physics
Presentation title: Relativized computable categoricity

Vienna, Austria
Summer 2025

Summer School “Reverse Mathematics: New Paradigms”
Erwin Schrödinger International Institute for Mathematics and Physics

Vienna, Austria
Summer 2025

Logicón 2025
Facultad de Ciencias UNAM

México City, México
Spring 2025

Presentation title: Computable categoricity relative to a degree (online talk)

ASL North American Annual Meeting
New Mexico State University

Las Cruces, NM
Spring 2025

Presentation title: Computable categoricity relative to a generic degree

Dagstuhl Seminar – Weihrauch Complexity: Structuring the Realm of Non-Computability
Schloss Dagstuhl

Wadern, Germany
Spring 2025

South Eastern Logic Symposium
University of Florida

Gainesville, FL
Spring 2025

Presentation title: Computable categoricity relative to a degree

Graduate Research Forum
University of Connecticut

Storrs, CT
Spring 2025

Presentation title: Relativizing computable categoricity

The New England Recursion and Definability Seminar
Dartmouth College

Hanover, NH
Fall 2024

Presentation title: Computable categoricity relative to a c.e. degree

Computable Structure Theory and Interactions
Technische Universität Wien

Vienna, Austria
Summer 2024

Presentation title: Computable categoricity relative to a degree

Joint Mathematics Meeting – AMS Special Session on Computable Mathematics: A Session Dedicated to Martin D. Davis

San Francisco, CA
Spring 2024

Presentation title: Computable categoricity relative to a c.e. degree

A Convergence of Computable Structure Theory, Analysis, and Randomness
Banff International Research Station

Banff, AB
Spring 2023

AMS New England Graduate Student Conference
Brown University

Providence, RI
Spring 2022

Presentation title: Priority arguments

Contributed presentations

ASL North American Annual Meeting

Iowa State University

Ames, IA

Spring 2024

Presentation title: Computable categoricity relative to a c.e. degree

AMS New England Graduate Student Conference

Brown University

Providence, RI

Spring 2024

Presentation titles: Topology in the Reverse Math Zoo; Computable categoricity relative to a c.e. degree

17th International Conference on Computability, Complexity, and Randomness

Nagoya University

Nagoya, Japan

Spring 2024

Presentation title: Computable categoricity relative to a c.e. degree

Conferences and workshops attended

CBMS Conference – Algorithmic Fractal Dimensions

Drake University

Des Moines, IA

Spring 2024

Computability and Combinatorics Summer School and Conference

UConn Hartford

Hartford, CT

Spring 2023

ASL Winter Meeting at the Joint Mathematics Meeting

Boston, MA

Spring 2023

IMS Graduate Summer School in Logic

National University of Singapore

Singapore

Summer 2022

Seminar presentations

SIGMA Seminar

University of Connecticut

Storrs, CT

Spring 2025

Presentation title: The Scott Isomorphism Theorem

Online Logic Seminar

Southern Illinois University

Online

Fall 2024

Presentation title: Computable categoricity relative to a degree

SIGMA Seminar

University of Connecticut

Storrs, CT

Spring 2024

Presentation title: The Ginsburg–Sands theorem and computability theory

SIGMA Seminar

University of Connecticut

Storrs, CT

Spring 2024

Presentation title: Normality and Randomness

SIGMA Seminar

University of Connecticut

Storrs, CT

Fall 2023

Presentation title: Randomness and Hausdorff dimension

Connecticut Logic Seminar

University of Connecticut

Storrs, CT

Fall 2023

Presentation title: Computable categoricity relative to a c.e. degree

SIGMA Seminar

University of Connecticut

Storrs, CT

Fall 2022

Presentation title: When does the existence of an isomorphism imply the existence of a computable isomorphism?

Grants and funding

Summer Doctoral Dissertation Fellowship

\$2,000 USD

Summer 2024

Predoctoral Fellowship
\$7,805 USD

Spring 2024

Outreach

President of the Association of Women in Mathematics
University of Connecticut

Storrs, CT
2022-2024

Speaker at the Mathematics Continued Conference
University of Connecticut

Storrs, CT
Fall 2022

The Mathematics Continued Conference seeks to give undergraduate students interested in math an opportunity to learn about graduate school and current research done by graduate students and faculty.

Course Tutor for SSS Math Program
University of Connecticut

Storrs, CT
Summer 2020

Student Support Services (SSS) is a federally funded program at UConn which serves incoming students who are first-generation to college and/or come from communities underserved in higher education.

Languages

English
Advanced proficiency in reading, writing, and speaking

Second language learned,
learned in 2003

Tagalog
Intermediate proficiency in reading, writing, and speaking

Native language