

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> , to appear.	
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>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	<i>Storrs, CT</i>
<i>University of Connecticut</i>	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” <i>Erwin Schrödinger International Institute for Mathematics and Physics</i> <i>Upcoming on August 4-8</i>	<i>Vienna, Austria</i> <i>Summer 2025</i>
Summer School “Reverse Mathematics: New Paradigms” <i>Erwin Schrödinger International Institute for Mathematics and Physics</i> <i>Upcoming on July 28-August 1</i>	<i>Vienna, Austria</i> <i>Summer 2025</i>
Logicón 2025 <i>Facultad de Ciencias UNAM</i> Presentation title: Computable categoricity relative to a degree (online talk)	<i>México City, México</i> <i>Spring 2025</i>
ASL North American Annual Meeting <i>New Mexico State University</i> Presentation title: Computable categoricity relative to a generic degree	<i>Las Cruces, NM</i> <i>Spring 2025</i>
Dagstuhl Seminar – Weihrauch Complexity: Structuring the Realm of Non-Computability <i>Schloss Dagstuhl</i>	<i>Wadern, Germany</i> <i>Spring 2025</i>
South Eastern Logic Symposium <i>University of Florida</i> Presentation title: Computable categoricity relative to a degree	<i>Gainesville, FL</i> <i>Spring 2025</i>
Graduate Research Forum <i>University of Connecticut</i> Presentation title: Relativizing computable categoricity	<i>Storrs, CT</i> <i>Spring 2025</i>
The New England Recursion and Definability Seminar <i>Dartmouth College</i> Presentation title: Computable categoricity relative to a c.e. degree	<i>Hanover, NH</i> <i>Fall 2024</i>
Computable Structure Theory and Interactions <i>Technische Universität Wien</i> Presentation title: Computable categoricity relative to a degree	<i>Vienna, Austria</i> <i>Summer 2024</i>
Joint Mathematics Meeting – AMS Special Session on Computable Mathematics: A Session Dedicated to Martin D. Davis Presentation title: Computable categoricity relative to a c.e. degree	<i>San Francisco, CA</i> <i>Spring 2024</i>
A Convergence of Computable Structure Theory, Analysis, and Randomness <i>Banff International Research Station</i>	<i>Banff, Alberta, Canada</i> <i>Spring 2023</i>
AMS New England Graduate Student Conference <i>Brown University</i> Presentation title: Priority arguments	<i>Providence, RI</i> <i>Spring 2022</i>

Contributed presentations

ASL North American Annual Meeting <i>Iowa State University</i> Presentation title: Computable categoricity relative to a c.e. degree	<i>Ames, IA</i> <i>Spring 2024</i>
AMS New England Graduate Student Conference	<i>Providence, RI</i>

Brown University *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, Japan*
Nagoya University *Spring 2024*
Presentation title: Computable categoricity relative to a c.e. degree

Conferences and workshops attended

CBMS Conference – Algorithmic Fractal Dimensions *Des Moines, IA*
Drake University *Spring 2024*
Computability and Combinatorics Summer School and Conference *Hartford, CT*
UConn Hartford *Spring 2023*
ASL Winter Meeting at the Joint Mathematics Meeting *Boston, MA*
Spring 2023
IMS Graduate Summer School in Logic *Singapore*
National University of Singapore *Summer 2022*

Seminar presentations

SIGMA Seminar *Storrs, CT*
University of Connecticut *Spring 2025*
Presentation title: The Scott Isomorphism Theorem
Online Logic Seminar *Online*
Southern Illinois University *Fall 2024*
Presentation title: Computable categoricity relative to a degree
SIGMA Seminar *Storrs, CT*
University of Connecticut *Spring 2024*
Presentation title: The Ginsburg–Sands theorem and computability theory
SIGMA Seminar *Storrs, CT*
University of Connecticut *Spring 2024*
Presentation title: Normality and Randomness
SIGMA Seminar *Storrs, CT*
University of Connecticut *Fall 2023*
Presentation title: Randomness and Hausdorff dimension
Connecticut Logic Seminar *Storrs, CT*
University of Connecticut *Fall 2023*
Presentation title: Computable categoricity relative to a c.e. degree
SIGMA Seminar *Storrs, CT*
University of Connecticut *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 *Summer 2024*
\$2,000 USD
Predocctoral Fellowship *Spring 2024*
\$7,805 USD

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