

# Java Darleen Villano

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## Academic positions

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

## Education

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

<b>Computable categoricity relative to a c.e. degree</b>	May 2025
Villano, J.D.	
<i>Notre Dame Journal of Formal Logic</i> , to appear.	
<b>The Ginsburg–Sands theorem and computability theory</b>	May 2024
Benham, H., DeLapo, A., Dzhafarov, D., Solomon, R., Villano, J.D.	
<i>Advances in Mathematics</i> <a href="#">🔗</a>	

## Preprints

<b>Extensions of categoricity relative to a degree</b>	May 2025
Villano, J.D.	
<a href="#">arXiv:2505.15706</a> <a href="#">🔗</a>	
<b>Normality, Relativization, and Randomness</b>	December 2023
Calvert, W., Gruner, E., Mayordomo, E., Turetsky, D., Villano, J.D.	
<a href="#">arXiv:2312.10204</a> <a href="#">🔗</a>	

## Teaching experience

<b>Primary Instructor</b>	<i>Storrs, CT</i>
<i>University of Connecticut</i>	2023-2024
◦ <b>Fall 2024:</b> Math 1071Q (Calculus for Business and Economics), 2 sections	
◦ <b>Spring 2024:</b> Math 1071Q (Calculus for Business and Economics), 1 section	
◦ <b>Fall 2023:</b> Math 1071Q (Calculus for Business and Economics), 2 sections	
◦ <b>Spring 2023:</b> Math 1071Q (Calculus for Business and Economics), 2 sections	
<b>Teacher Assistant</b>	<i>Storrs, CT</i>
<i>University of Connecticut</i>	2019-2022, 2025
◦ <b>Spring 2025:</b> Math 2110Q (Multivariable Calculus), 3 sections	
◦ <b>Fall 2022:</b> Math 1132Q (Calculus II), 2 sections	
◦ <b>Spring 2022:</b> 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

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

## Contributed presentations

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

*Nagoya University*

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

## Conferences and workshops attended

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**CBMS Conference – Algorithmic Fractal Dimensions**

*Des Moines, IA  
Spring 2024*

*Drake University*

**Computability and Combinatorics Summer School and Conference**

*Hartford, CT  
Spring 2023*

*UConn Hartford*

**ASL Winter Meeting at the Joint Mathematics Meeting**

*Boston, MA  
Spring 2023*

**IMS Graduate Summer School in Logic**

*Singapore  
Summer 2022*

*National University of Singapore*

## Seminar presentations

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**SIGMA Seminar**

*Storrs, CT  
Spring 2025*

*University of Connecticut*

**Presentation title:** The Scott Isomorphism Theorem

**Online Logic Seminar**

*Online  
Fall 2024*

*Southern Illinois University*

**Presentation title:** Computable categoricity relative to a degree

**SIGMA Seminar**

*Storrs, CT  
Spring 2024*

*University of Connecticut*

**Presentation title:** The Ginsburg–Sands theorem and computability theory

**SIGMA Seminar**

*Storrs, CT  
Spring 2024*

*University of Connecticut*

**Presentation title:** Normality and Randomness

**SIGMA Seminar**

*Storrs, CT  
Fall 2023*

*University of Connecticut*

**Presentation title:** Randomness and Hausdorff dimension

**Connecticut Logic Seminar**

*Storrs, CT  
Fall 2023*

*University of Connecticut*

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

**SIGMA Seminar**

*Storrs, CT  
Fall 2022*

*University of Connecticut*

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

## Grants and funding

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**Summer Doctoral Dissertation Fellowship**

*Summer 2024*

*\$2,000 USD*

**Predocctoral Fellowship**

*Spring 2024*

*\$7,805 USD*

## Outreach

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**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

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**English**  
*Advanced proficiency in reading, writing, and speaking*

*Second language learned,*  
*learned in 2003*

**Tagalog**  
*Intermediate proficiency in reading, writing, and speaking*

*Native language*