

Nina Juliana White

Curriculum Vitae, October 30, 2024

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Education

- 2012 **Ph.D. Pure Mathematics**, *University of Michigan*, Ann Arbor.
- 2005 **Bachelor of Arts Pure Mathematics**, *The University of California*, Berkeley.

PhD Thesis

- Title *Spectral bounds on closed hyperbolic 3-manifolds*
- Advisor Juan Souto

Current & Recent Employment

Administration

- 2022–Present **Coordinator of Math Instructor Professional Development**, *University of Michigan*, Department of Mathematics.

Teaching

- 2017–Present **Lecturer IV**, *University of Michigan*, Department of Mathematics.
- 2013–2017 **Lecturer III**, *University of Michigan*, Department of Mathematics.
- 2012–2013 **Lecturer I**, *University of Michigan*, Department of Mathematics.
- 2007–2012 **Graduate Student Instructor**, *Department of Mathematics*.

Math Education Research

- 2022 – present **Associate Research Scientist**, *University of Michigan*, Department of Mathematics.
- 2015 – 2022 **Assistant Research Scientist**, *University of Michigan*, Department of Mathematics.
- 2013 – 2016 **Research Consultant**, *Mathematical Association of America*.
Characteristics of Successful Calculus Programs (CPSCC), NSF DRL REESE grant, #0910240, Principal Investigator: David Bressoud. Two-year college team.
- 2012 – 2013 **Post-doctoral Research Associate**, *University of Michigan*, School of Education.
Characteristics of Successful Calculus Programs (CPSCC)

Publications

Peer-Reviewed Research Publications

- 2023 **Understanding Instructors' Beliefs and Obligations within Cultures of Exclusion**
N. White & B. Smith
RUME XXV Conference Proceedings
- 2022 **Investigating Individual and Collective Value within a Network of Communities of Practice**
P. Jakopovic, K. Gomez, & N. White
RUME XXIV Conference Proceedings
- 2021 **Characterizing Aspects of Reform Enacted in Calculus I Lessons**
V. Mesa & N. White
International Journal of Mathematical Education in Science and Technology, 1–20.

- 2021 **A Spectrum of Instructional Variation in One Community College Calculus 1 Program**
N. White & V. Mesa
MathAMTYC Educator, 12(2).
- 2019 **Measuring Mathematics Engagement Anxiety: a MARS-style instrument for an active and interactive classroom**
D. Visscher & N. White (co-first-authorship)
International Journal of Research in Undergraduate Mathematics Education
- 2015 **Improving Calculus I in Community Colleges: It Takes a [Multidisciplinary] Village**
H. Burn, N. White, V. Mesa.
Community College Journal of Research and Practice, 1-4.
- 2015 **Calculus I in Community Colleges: Findings from the National CSPCC Study**,
H. Burn, V. Mesa, N. White.
MathAMTYC Educator 6(3), 34–39.
- 2014 **Describing Cognitive Orientation of Calculus I Tasks Across Different Types of Coursework**,
N. White & V. Mesa.
ZDM: International Journal on Mathematics Education; doi: 10.1007/s11858-014-0588-9
- 2013 **Spectral bounds for closed hyperbolic manifolds.**
J. London Math. Soc.; doi: 10.1112/jlms/jds082
- Book Chapters**
- 2023 **A National Network of Regional Communities of Practice: The COMmunities for Mathematics Inquiry in Teaching (COMMIT) Network**
Kelly Gomez Johnson, Paula Jakopovic, Amy Ksir, Patrick X. Rault, Christine von Renesse, and Nina White.
A chapter in a forthcoming volume in *Transforming Teaching and Learning in Higher Education Series*
- 2015 **Good Teaching of Calculus I**
V. Mesa, H. Burn, N. White.
Chapter 7, *Insights and Recommendations from the MAA National Study of College Calculus*, MAA.
- Instrumentation**
- 2012 **Observation Protocol for CSPCC (Characteristics of Successful Programs in College Calculus)**,
N. White & V. Mesa.
- Practitioner-Facing Publications**
- 2021 **COMMIT Network Toolkit**
N. White & A. Ksir
<https://www.comathinquiry.org/toolkit>, published online Feb. 2021
- 2020 **Selecting GeoGebra Applets For Learning Goals**
J-J. Lo & N. White
The Mathematics Teacher, 113(2).
- 2016 **Semiregular Tilings of the Plane: a topic supporting diverse math practices**
N. White & H. Bennett
MTCircular, American Institute of Mathematics, Summer/Autumn 2016.

Conference Presentations

Math Education Research

- November 2021 **Designing graduate instructor training to disrupt dominant, exclusive framing of students, mathematics, and teaching**
Ideas for Research Studies presentation, 5th Northeastern RUME Conference.
- January 2017 **Math Anxiety in an Interactive Mathematics Classroom.**
w/ D. Visscher,
MAA Session on Research in Undergraduate Mathematics Education (RUME),
Joint Math Meetings, Atlanta.
- April 2016 **Persistence, Instruction, and Coordination in the National Study of Calculus**
C. Rasmussen, V. Mesa, H. Burn, J. Ellis, N. White, & E. Hsu.
Research Symposium, NCTM Research Conference, San Francisco.
- April 2016 **Oral Assessments as Learning Opportunities for Preservice Teachers**
N. White & D. Visscher
Discussion Session, NCTM Research Conference, San Francisco.
- November 2015 **Snapshots of Calculus Instruction from 18 Successful Institutions**
V. Mesa, N. White, S. Sobek
Poster Session, Psychology of Mathematics Education–North America, East Lansing.
- August 2015 **Comparing Oral and Traditional Assessments in Math Content Courses for Pre-Service Elementary Teachers**
D. Visscher & N. White
Themed Contributed Paper Session #10, MAA Mathfest, Washington D.C.
- May 2015 **Comparing oral and traditional assessments in math content courses for pre-service elementary teachers,**
D. Visscher & N. White.
Enriching Scholarship 2015 Poster Fair, University of Michigan.
- January 2015 **Comparing oral and traditional assessment in a content course for pre-service elementary school teachers,**
D. Visscher & N. White,
Seminar on Teaching Mathematics, University of Michigan.
- August 2014 **Lessons from Successful Calculus Programs** (Panelist)
J. Ellis, E. Glover, K. Melhuish, & N. White
MAA Mathfest, Portland.
- February 2014 **Characterizing Mathematical Complexity Of Tasks In Calculus I**
N. White & V. Mesa
Preliminary Research Report, Conference on Research in Undergraduate Mathematics Education, Denver.
- February 2014 **Academic and Social Integration Revealed In Characteristics Of Successful Programs In College Calculus Project: The Two-Year College Context**
V. Mesa, N. White, & H. Burn
Contributed Research Report, Conference on Research in Undergraduate Mathematics Education, Denver.
- February 2013 **How pre-service teachers in content courses revise their mathematical justifications.**
Preliminary Research Report, Conference on Research in Undergraduate Mathematics Education, Denver.
- [College Mathematics Pedagogy](#)
- August 2024 **My Journey with Inquiry.** Project NExT Opening Keynote Address.
- August 2022 **Teaching with Inquiry: Growing our Practice, Together.** Project NExT invited session for early-career math faculty.

- August 2021 **Using (Abbreviated) Japanese Lesson Study to Structure Peer Classroom Observations.** Project NExT invited session presenter for early-career math faculty.
- July 2021 **Providing Students with Opportunities for Revision,** Plenary Speaker for UNY IBL multi-day IBL workshop.
- January 2021 **Starting and Running a Community for Mathematics Inquiry in Teaching**
A. Ksir & N. White
MAA Contributed Paper Session on Inquiry-Based Learning and Teaching
Joint Mathematics Meeting (virtual), Denver.
- October 2020 **Building and Sustaining a Learning Community on Inclusive Teaching in a Mathematics Department**
N. White
The Making of a T1 University, University of Portland (virtual).
- July 2020 **An Introduction to (Online) Inquiry-Based Learning,** MAA Webinar: w/ Matthew Jones and Robin Wilson.
- July 2017 **IBL at University of Michigan**
N. White.
Poster Session, IBL Miniconference, MAA Mathfest, Chicago.
- June 2015 **Comparing oral and traditional assessments in math content courses for pre-service elementary teachers,**
D. Visscher & N. White.
Poster Session, RL Moore Legacy Conference, Austin.
- October 2014 **Scaffolding, Structuring, Encouraging, and Facilitating Student Presentations**
Teaching Mathematics Content Courses, Inaugural Meeting, Ann Arbor.
- June 2014 **Informal Student Presentations in IBL courses: to assess or not assess?**
RL Moore Legacy Conference, Denver.
- January 2014 **Group work and class discussions**
Co-Organizer of Project NExT session at Joint Math Meetings, Baltimore.
- January 2014 **Holistic, diagnostic grading rubric for student presentations in an IBL geometry course.**
Session on Assessing Student Learning: Alternative Approaches, Joint Math Meetings, Baltimore.
- June 2013 **How pre-service teachers in an IBL content course revise their mathematical communication**
RL Moore Legacy Conference, Austin.
- January 2013 **Giving students an active role in creating homework feedback**
Session on Communicating Mathematics, Joint Math Meetings, San Diego.
- [Teacher Education](#)
- March 2021 **Breakout Conversation: Mathematics Content Courses**
N. White
Michigan Association of Mathematics Teacher Educators Conference: Conversations Among Colleagues
University of Michigan, Ann Arbor (virtual).
- March 2019 **Redesigning Elementary Teacher Prep to Meet New MDE Standards**
N. White, N. Cengiz-Phillips, T. Grant
Conversations Among Colleagues, Hope College
- November 2018 **Final Commentary on the Research Lesson**
Detroit Public Schools Professional Development Day.

- June 2018 **Final Commentary on The Research Lesson**
Project REALM Lesson Study Open House at Mackenzie Middle School (with Wayne State University), Detroit.
- April 2016 **TeMaCC Workshop on using GeoGebra Applets with Preservice Teachers**
N. White, J.-J. Lo, & Gabriela Dumistrascu
The Michigan Section of the MAA and MichMATYC 92nd Annual Meeting, Hillsdale.
- October 2015 **Geometric Area Arguments in Courses for Pre-Service Teachers**
Teaching Mathematics Content Courses Conference, Ann Arbor.
- August 2015 **MathTeachers' Circle—Fun, Exploratory, Collaborative Problem-Solving**
Michigan Council of Teachers of Mathematics Annual Conference, Traverse City.
- March 2015 **Collaborating Across Institutions to Improve Tasks in Content Courses**,
N. White, G. Dumistrascu, & D. Zopf.
Conversations Among Colleagues, Detroit.
- November 2014 **Wayne County Math Teachers' Circle Problem Solving Session**,
N. White, S. DeBacker, H. Bass.
Detroit Area Council Teachers of Mathematics Annual Conference, Brownstown.
- Other Presentations**
- January 2017 **Highlighting Contributions to Mathematics Education from Members of Departments of Mathematical Sciences**
Invited Panelist
Joint Math Meetings, Atlanta.

Grant Seeking & Fellowships

- 2023 **Supported Study Groups in Key Second Year STEM Courses**
PI (with Kolby Gadd and Greg Bodwin). Faculty Development Fund, Center for Research on Learning and Teaching (\$10,000).
- 2022 – 2028 **The MaCSS Scholars Program at University of Michigan**
PI. NSF S-STEM Program Proposal (\$1.5 million)
- 2022 **Teaching Beliefs of Novice College Math Instructors Using Active Learning**
UM LSA Summer Research Grant (\$6000)
- 2021 – 2024 **Increasing Gender-based Equity in Mathematics Through Improved Advising**
Co-PI. NSF-DUE #2120929 (\$300K)
- 2021 **Instating a semi-annual "Justice in Math Education" Colloquium with two invited speakers.**
LEO Inclusive-Teaching Professional Development Fund (\$1000).
- 2019 – 2022 **The Inquiry-Based Learning Regional Communities Project**
Co-PI. NSF-DUE #1925188 (\$300K)
- 2019 **Enhancing our Learning Community on Inclusive Teaching by Learning from Dr. Luis Leyva (Vanderbilt)**
LEO Inclusive-Teaching Professional Development Fund, (\$1000).
- 2019 **Exploring Regional IBL Communities**
PI. Seed grant, Mathematics Learning through Inquiry (\$4000)
- 2018 **Project REALM 2.0: Realizing Equity and Achievement for Learning Mathematics**
Mathematician in Residence. Michigan Department of Education Grant awarded to Detroit Public Schools Community District and the Archdiocese of Detroit and Wayne State University

- 2018 **Engaged Mathematics Teaching: Building A Video Library for Instructor Training Across Programs**
PI (with Fernando Carreón). Faculty Development Fund, Center For Research on Learning and Teaching (\$10,000)
- 2017 (Not funded) **Uncovering the lasting effects of Inquiry-Based Learning mathematics instruction on K-12 teachers**
Small Grant, Spencer Foundation (\$50K)
- 2016 **The Statistical Education of Future Teachers at the University of Michigan**
PI (with Brenda Gunderson). Faculty Development Fund, Center For Research on Learning and Teaching (\$10,000)
- 2015 **Sustainable Instructor Training for Inquiry-Based Learning**
PI. Third Century Initiative Quick Wins / Discovery grant (\$50,000)
- 2015 **AIM Seed Grant for Math Circles** (\$2000)
- 2014 **MSRI Seed Grant for Math Circles** (\$2000)
- 2014 – 2015 **Comparing Oral and Traditional Assessments in Math Content Courses for Pre-Service Teachers**
PI (with Daniel Visscher). Investigating Student Learning (ISL) grant, Center for Research on Learning and Teaching (CRLT) (\$4000).
- 2013 **Project NExT Fellow, Brown '13**
- 2013 **Novice Instructor Small Grant**
Academy of Inquiry Based Learning (\$2000)
- 2005 – 2006 **German Academic Exchange Service (DAAD) Study Fellowship**

Service

Faculty Development

- Summer 2024 **UM Math Introductory Training (Lead)**. Organized weeklong summer training of 25 graduate student instructors.
- Summer 2023 **UM Math Introductory Training (Lead)**. Organized weeklong summer training of 30 graduate student instructors and 29 post-doctoral assistant professors
- Summer 2022 **Facilitator: "Inclusion and Inquiry: Fostering Student Belonging and Ownership" 3-week workshop**, MAA OPEN Math, NSF DUE-2111273 & NSF DUE-2111260
- 2015 – 2023 **Organizer, Designer and Facilitator of annual 3-day IBL Workshop for University of Michigan Math Department and surrounding insititutions**. Co-facilitators: Alejandro Uribe (2015), Brian Katz (2016), Diana Hubbard (2017), Danielle Champney (2018), Kyle Peterson (2019), Amy Ksir (2020), Robin Wilson (2021).
- June 2020 **Facilitator: National 3-week Virtual Workshop on IBL Teaching for College Math Instructors**, (PRODUCT NSF DUE-1525058)
- May 2020 **Facilitator, 1-day IBL Workshop**, (PRODUCT NSF DUE-1525058), University of Nebraska, Omaha. Virtual.
- April 2020 **Facilitator, 1-day IBL Workshop**, (PRODUCT NSF DUE-1525058 & AMATYC), Santa Fe College. *Canceled due to pandemic.*
- June 2019 **Facilitator: MAA NCA Workshop on IBL Teaching for College Math instructors**, (PRODUCT NSF DUE-1525058), St. Thomas University.
- April 2019 **Facilitator: MI-MAA section meeting special IBL workshop**, University of Detroit Mercy.
- June 2018 **Facilitator: National Workshop on IBL Teaching for College Math instructors**, (PRODUCT NSF DUE-1525058), DePaul University.

- 2018 – present **Director: Learning Community on Inclusive Teaching.** University of Michigan, Department of Mathematics.
- March 2016 **Facilitator.** IBL workshop for Canada/USA Mathcamp faculty, MIT.
- August 2015 & 2017 **GSI Training, University of Michigan.** Developed and ran a session on asking questions for new instructors (w/ D. Visscher).
- Winter 2015 & Fall 2019 **Teaching Apprentice Mentor** for Ph.D student in Univ. of Michigan School of Education.

Departmental and Institutional Committees

- 2013–2016, 2022–present **Undergraduate Counseling Committee** (Departmental)
- 2021 – present **DEI Outreach K–12 Committee** (Departmental)
- 2019 – 2021 **Climate Committee** (Departmental)
- 2019 – 2023 **IBL Committee** (Departmental)
- 2018 – 2022 **CRLT Faculty Advisory Board**, University of Michigan.
- 2016 – 2022 **Summer Honors Math Advising for incoming freshman**, LSA Honors College and Department of Mathematics
- October 2015 **LPDF Grant Selection Committee**, CRLT.
- 2014 – 2022 **Math Education Liaison Committee** (Departmental)

Conference/Workshop Organizing and Leadership Positions

- May 2023 **COMMIT Network Facilitators Training Workshop**, Omaha, NE.
- January 2022 **AMS Special Session Organizer:** “Inquiry-based Teaching and Learning” Joint Mathematics Meeting, Seattle.
- Summer 2021 **Logistical Organizer** for AMiIBL (www.amiibl.org) summer virtual workshops
- August 2021 **MAA Mathfest Themed Contributed Paper Session Lead Organizer:** “Using Inquiry and Collaboration in Faculty Professional Development during the Pandemic and Beyond”
- March 2020 **Organizer: MI-AMTE Annual Conference / Conversations Among Colleagues.** Virtual due to pandemic.
- 2018 – present **Founder and Chair: Alliance for Michigan IBL (AMIIBL),** www.amiibl.org
- March 2018 **Organizer: Lesson Study Open House** at Wayne State University
- 2014 – 2016 **Teaching Mathematics Content Courses (TeMaCC).** Annual Conference Organizer
- 2015 – 2019 **Chair of MI-AMTE special interest group: TeMaCC**

K–12 Teaching and Outreach

- 2021 **Michigan Math and Science Scholars Program**, Geometric Constructions.
- August 2017 **Instructor: Teaching Track** at the seminal *Geometry of Redistricting* conference at Tufts University.
- 2014 – 2022 **Wayne County Math Teachers’ Circle (WCMTC).** Director.
- 2007 – 2013 **Canada/USA Mathcamp**, Mentor 2007–2009, Academic Coordinator 2013.
- 2009 **Michigan Math and Science Scholars Program**, Combinatorial Game Theory (Teaching Assistant).

Undergraduate Research Mentoring

- 2019 – 20 **UROP Mentor.** *Teaching Beliefs of College Math Instructors*
- 2015 – 16 **UROP Mentor** (w/ D. Visscher). *Oral Assessments and Learning Opportunities*
- 2013 – 2014 **UROP Mentor** (w/ V. Mesa) *Teaching of Mathematics at Community Colleges*

Awards

2023 **Michigan Section of the MAA 2023 Distinguished Service Award**

Teaching

Courses Coordinated

- Fall 2024 Math 105: Data, Functions, and Graphs—30 sections
- Winter 2024 Math 105: Data, Functions, and Graphs—8 sections
- Fall 2023 Math 105: Data, Functions, and Graphs—30 sections
- Winter 2023 Math 105: Data, Functions, and Graphs—8 sections

Semester-Long Courses Developed

Pedagogy Seminar(for Graduate Student Instructors in Mathematics)
Numbers and Operations for Pre-Service Elementary Teachers
Geometry for Pre-Service Elementary Teachers
Topics for Pre-Service Middle School Teachers
Geometry for Pre-Service Secondary Teachers
Middle School Mathematics—a study of curriculum and content

Courses Taught

Data, Functions, and Graphs: Summer 2019, Fall 2021, Winter 2022, Winter 2023, Winter 2024.
Concepts in Number and Algebra for Pre-service Secondary Teachers: Winter 2016.
Numbers and Operations for Pre-Service Elementary Teachers: Fall 2012, 2013, 2015, 2020
Geometry for Pre-Service Elementary Teachers: Winter 2013–2016, 2018, 2020, 2021
Topics for Pre-Service Middle School Teachers: Fall 2014, 2017, 2019, 2021
Geometry for Pre-Service Secondary Teachers: Fall 2013–2015, 2017, 2019–2021
Calculus I, 2007–2011, Fall 2022, Fall 2024 (partial)

References

Sandra Laursen, Director of Ethnography & Evaluation Research (E&ER), CU Boulder.
Stephen DeBacker, smdbackr@umich.edu, Professor and Undergraduate Program Director, Department of Mathematics, University of Michigan.
Vilma Mesa, vmesa@umich.edu. Associate Professor, School of Education, University of Michigan.
Ralf Spatzier, spatzier@umich.edu, Professor and the Director for the Center for Inquiry-Based Learning, Department of Mathematics, University of Michigan.
Gavin LaRose, glarose@umich.edu, Lecturer IV, Department of Mathematics, University of Michigan.