


EMANUELA MARANGONE

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RESEARCH INTERESTS

My research interests lie in Commutative Algebra and Algebraic Geometry. In particular, topics related to the Weak and Strong Lefschetz Properties. I am also interested in questions regarding the cohomology of line bundles over flag varieties in positive characteristics and related questions.

EMPLOYMENT

<i>University of Manitoba</i>	<i>09/24-present</i>	PIMS Postdoctoral Fellow Sponsor: <i>Professor Susan Cooper</i> Susan.Cooper@umanitoba.ca
<i>University of Notre Dame</i>	<i>Summer 2024</i>	Postdoctoral Teaching Scholar Supervisor: <i>Professor Juan Migliore</i> Juan.C.Migliore.1@nd.edu

VISITING

<i>Fields Institute</i>	<i>Spring 2025</i>	Visiting Researcher Thematic Program in Commutative Algebra and Applications
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EDUCATION

<i>University of Notre Dame</i>	<i>05/18/2024</i>	Ph.D. in Mathematics Advisor: <i>Professor Juan Migliore</i>
<i>University of Udine</i>	<i>03/13/2019</i>	Master in Mathematics Advisors: <i>Professor Pietro De Poi and Professor Juan Migliore</i> Grade: <i>110 cum Laude</i>
<i>University of Udine</i>	<i>10/19/2016</i>	Bachelor of Science in Mathematics Grade: <i>110 cum Laude</i>

PAPERS

<i>Preprint</i>	<i>2025</i>	Computing the cohomology of line bundles on the incidence correspondence and related invariants with Claudiu Raicu, Ethan Reed, and Annet Kyomuhangi
<i>Preprint</i>	<i>2024</i>	Cohomology on the incidence correspondence and related questions with Claudiu Raicu, Ethan Reed, and Annet Kyomuhangi
<i>Preprint</i>	<i>2024</i>	The non-Lefschetz locus of conics
<i>Journal of Algebra</i>	<i>2023</i>	The non-Lefschetz locus of vector bundles of rank 2 on \mathbb{P}^2
<i>Journal of Algebra</i>	<i>2023</i>	Some notes and corrections of the paper “The Non-Lefschetz locus”

PARERS IN PREPARATION

<i>In Preparation</i>	2026+	Geometric vertex decomposable star configurations with Susan M. Cooper, Elena Maria Guardo, and Adam Van Tuyl
<i>In Preparation</i>	2026+	Weighted Veronese Rings with Alexandra Seceleanu, Thai Nguyen, Thiago de Holleben, Bek Chase, Luca Fiorindo, Srishti Singh, and Sankhaneel Bisui

SOFTWARE

<i>M2 Package</i>	2025	IncidenceCorrespondenceCohomology Package for the computer algebra system Macaulay2 with Claudiu Raicu, Ethan Reed, and Annet Kyomuhangi
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INVITED TALKS

<i>Joint Mathematics Meetings, D.C.</i>	01/04/2026	JMM 2026 Special Session: "Recent advances in commutative algebra" Title: <i>Lefschetz Properties for Monomial Complete Intersections in Positive Characteristic</i> Special Session: "Algebra in Tensor Categories Over Fields of Small Characteristics" Title: <i>Cohomology on the incidence correspondence and Han-Monsky representation ring</i>
<i>CMS Winter Meeting 2025</i>	12/06/2025	Canadian Mathematical Society meeting in Toronto Session: "Commutative Algebra" Title: <i>Weighted Veronese Rings</i>
<i>AMS Spring Western Sectional Meeting</i>	05/03/2025	AMS meeting at California Polytechnic State University, San Luis Obispo, California. Special Session: "Syzygies and Free Resolutions" Title: <i>Cohomology of line bundles on the incidence correspondence</i>
<i>Stockholm University and KTH (Online)</i>	04/15/2025	Problem-solving seminar in commutative algebra Title: <i>Lefschetz Properties for Artinian Complete Intersections</i>
<i>University of Notre Dame</i>	03/17/2025	Algebraic Geometry and Commutative Algebra Seminar Title: <i>Cohomology of line bundles on the incidence correspondence</i>
<i>AMS Fall Central Sectional Meeting</i>	09/14/2024	AMS meeting at University of Texas, San Antonio Special Session: "Commutative Algebra and connections to combinatorics" Title: <i>Lefschetz Properties and non-Lefschetz locus</i>
<i>AMS Spring Central Sectional Meeting</i>	04/21/2024	AMS meeting at University of Wisconsin-Milwaukee Special Session: "Ramification in Algebraic and Arithmetic Geometry" Title: <i>Lefschetz Properties and non-Lefschetz locus</i>
<i>AMS Fall Central Sectional Meeting</i>	10/07/2023	AMS meeting in Omaha Special Session: "Varieties with Unexpected Hypersurfaces, Geproci Sets and their Interactions" Title: <i>The non-Lefschetz locus for lines and for conics</i>
<i>University of Illinois Chicago</i>	09/18/2023	UIC Algebraic Geometry Seminar Title: <i>The non-Lefschetz locus, jumping lines and conics</i>
<i>University of Nebraska-Lincoln</i>	05/07/2023	URiCA 2023 Annual conference for upcoming researchers in Commutative Algebra Title: <i>Non-Lefschetz locus for first cohomology module of rank 2 vector bundles on \mathbb{P}^2</i>

Joint Mathematics
Meetings, Boston

01/06/2023 JMM 2023

Special Session: "The combinatorics and geometry of Jordan type and Lefschetz properties"
Title: *The non-Lefschetz locus for vector bundles of rank 2 on \mathbb{P}^2*

University of Udine

06/14/2022 Algebraic Geometry Seminar

Title: *Non-Lefschetz locus per fibrati vettoriali di rango 2 su \mathbb{P}^2*

CONTRIBUTED TALKS

University of Calgary

04/28/2025 2025 PIMS Postdoctoral Summit

Title: *From the Lefschetz property to the Incidence Correspondence*

Fields Institute,
Toronto

03/11/2025 Women in Commutative Algebra Conference

Title: *Lefschetz Properties for Artinian Complete Intersections*

Fields Institute,
Toronto

02/27/2025 Commutative Algebra and Applications Seminar

Title: *Cohomology of line bundles on the incidence correspondence*

Pacific Institute for the
Mathematical Sciences
(Online)

01/29/2025 PIMS Emergent Research Seminar

Title: *Lefschetz Properties for Artinian Complete Intersections*

University of Arizona

05/04/2024 CAAGTUS 2024

Commutative Algebra and Algebraic Geometry Conference in Tucson

Title: *Lefschetz Properties and non-Lefschetz locus*

Arizona State
University

11/05/2023 Algebra Days at Arizona State

Research event in commutative algebra and related fields

Title: *The non-Lefschetz locus, jumping lines and conics*

Fields Institute,
Toronto

05/16/2023 Workshop on Lefschetz Properties

Title: *The non-Lefschetz locus for lines and for conics*

University of
Notre Dame

12/07/2021 AGCA Seminar

Title: *The non-Lefschetz locus for vector bundle of rank 2 on \mathbb{P}^2*

GRANTS AND AWARDS

University of
Notre Dame

2024 · The Richard Sady Dissertation Prize

<https://math.nd.edu/about/awards/graduate/the-richard-sady-dissertation-prize/>

2024 · AMS Graduate Student Travel Grants (relative to the AMS Section in Milwaukee)

2024 · Joint Mathematics Meetings Travel Grant (relative to the JMM in San Francisco)

University of Udine

2020 · BCC Bank of Basiliano Merit Prize for master's degree students

2018 · Recipient of the grant for thesis research aboard, University of Udine

2017 · BCC Bank of Basiliano Merit Prize for undergraduate students

2015 · Award "Best Student" in the first year of studies in Mathematics, University of Udine

2013 · Recipient of the Ardis scholarship, renewed each year from fall 2013 to spring 2018

SEMINARS ORGANIZED

Fields Institute,
Toronto

Spring 2025 Commutative Algebra and Applications Seminar

Part of the Thematic Program in Commutative Algebra and Applications

University of
Notre Dame

Spring 2023 Graduate Student Algebra Seminar

Spring 2023 Mini-course: Cohen-Macaulay rings, Gorenstein rings,
and local cohomology

WORKSHOPS AND SUMMER SCHOOLS ATTENDED

BIRS, Banff	10/2025 · Workshop "Notions of Singularity in Different Characteristics"
Università di Genova	07/2025 · CoCoA School 2025
Field Institute, Toronto	05/2025 · "Workshop on the Applications of Commutative Algebra"
Field Institute, Toronto	01/2025 · "Apprenticeship Program in Commutative Algebra"
University of Bielefeld	09/2023 · Workshop "Betti numbers in commutative algebra and equivariant homotopy theory"
Università di Catania	06/2023 · PRAGMATIC 2023 Summer School
UIC, Chicago	04/2023 · Workshop "Syzygies and Regularity"
CIMAT, Guanajuato	06/2022 · PASCA 2022 Summer School

TEACHING

INSTRUCTOR

Holy Cross College	Fall 2022	Linear Algebra	Teaching Linear Algebra to incarcerated students with the Moreau College Initiative, an academic collaboration between Holy Cross College and the University of Notre Dame, in partnership with the Indiana Department of Corrections.
University of Notre Dame	Summer 2024	Linear Algebra and Differential Equations	
	Summer 2023	Linear Algebra and Differential Equations	
	Spring 2022	Calculus II	
	Fall 2021	Calculus A	

TEACHING ASSISTANT

University of Notre Dame	Spring 2024 · Calculus II
	Spring 2023 · Calculus III
	Fall 2022 · Linear Algebra and Differential Equations
	Spring 2021 · Linear Algebra and Differential Equations
	Fall 2020 · Calculus A
University of Udine	Spring 2018 · Undergraduate Algebra (Algebra 1)
	Spring 2018 · Linear Algebra (Geometria 1)
	Spring 2017 · Undergraduate Algebra (Algebra 1)
	Spring 2017 · Linear Algebra (Geometria 1)

LANGUAGES

ENGLISH	· Fluent
SPANISH	· Conversational
ITALIAN	· Native
FRIULAN	· Native

January 26, 2026