

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: Professor Susan Cooper Susan.Cooper@umanitoba.ca
<i>University of Notre Dame</i>	<i>Summer 2024</i>	Postdoctoral Teaching Scholar
		Supervisor: Professor Juan Migliore Juan.C.Migliore.1@nd.edu

VISITING

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

EDUCATION

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

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”

PAPERS 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

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/>

University of Udine 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)
 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 Ardiss 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

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

TEACHING

INSTRUCTOR

<i>Holy Cross College</i>	<i>Fall 2022</i> 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.	
<i>University of Notre Dame</i>	<i>Summer 2024</i> Linear Algebra and Differential Equations
	<i>Summer 2023</i> Linear Algebra and Differential Equations
	<i>Spring 2022</i> Calculus II
	<i>Fall 2021</i> Calculus A

TEACHING ASSISTANT

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

LANGUAGES

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

January 26, 2026