

BLAKE FARMAN

CURRICULUM VITAE

SCHOOL OF SCIENCES
UNIVERSITY OF LOUISIANA AT MONROE
FARMAN@ULM.EDU
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CONTACT INFORMATION

School of Sciences
University of Louisiana at Monroe
700 University Ave.
Monroe, Louisiana 71209
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CITIZENSHIP

Born October 11, 1987 in Burlington, Vermont, United States

RESEARCH INTERESTS

Algebra, (Noncommutative) Algebraic Geometry, Derived Categories, and Category Theory and their applications, especially to Data Science, Cryptography, and Natural Language Processing.

EDUCATION

Doctor of Philosophy, Mathematics May 12, 2018
University of South Carolina, Columbia, SC
Dissertation: Geometry of Derived Categories on Noncommutative Projective Schemes
Advisor: Matthew Ballard

Master of Science, Mathematics May 22, 2011
University of Vermont, Burlington, VT
Major Concentration: Abstract Algebra
Minor Concentration: Algebraic Number Theory

Bachelor of Science, Computer Science May 16, 2009
Rensselaer Polytechnic Institute, Troy, NY
Minors: Applied Mathematics and French

APPOINTMENTS

Assistant Professor of Mathematics August 2020 - Present
University of Louisiana at Monroe, Monroe, LA

Capital One Endowed Professorship in Mathematics August 2020 - May 2023
University of Louisiana at Monroe, Monroe, LA

Visiting Assistant Professor July 2018 - July 2020
Lafayette College, Easton, PA

Graduate Teaching Assistant August 2012 - May 2018
University of South Carolina, Columbia, SC

Graduate Teaching Assistant August 2009 - May 2011
University of Vermont, Burlington, VT

EMPLOYMENT

Associate

August 2011 - August 2012

Princeton Consultants, Inc, Princeton, NJ

Information Technology consultant.

PUBLICATIONS

(with Matthew Ballard) *Kernels for Noncommutative Projective Schemes*.

J. Noncommut. Geom. 15 (2021), 1129-1180. doi: 10.4171/JNCG/427

FUNDING

Student Activity Enhancement Fee

Funded

University of Louisiana at Monroe Student Development. \$2,000

Fourier-Mukai Partners in Noncommutative Algebraic Geometry (FY 23)

Not Funded

Louisiana Board of Regents Support Fund, Research Competitiveness Subprogram. \$113,918.

Fourier-Mukai Partners in Noncommutative Algebraic Geometry (FY 23)

Not Funded

Louisiana Board of Regents Support Fund, Research Competitiveness Subprogram. \$142,041.

Derived Categories in Noncommutative Projective Algebraic Geometry (2018)

Not Funded

Proposed NSF Mathematical Sciences Post Doctoral Research Fellowship originally with Ragnar Buchweitz (University of Toronto), later revised to work with Michael Weems (University of Glasgow) \$210,000.

Dean's Dissertation Fellowship Nominee (2016)

Not Funded

Nominated by the Department of Mathematics at the University of South Carolina for a fellowship from the College of Arts and Sciences to spend a year in residence at the Institute of Advanced Study in Princeton, NJ. \$25,000.

AWARDS AND HONORS

*Project NExT (New **E**xperiences In **T**eaching) Fellow*

Red '22

The Mathematical Association of America's (MAA) Project NExT aims to build a cohort amongst early career faculty, providing guidance on building a successful academic career and positioning fellows to become leaders within the mathematics community. The fellowship consists of three week-long meetings at MathFest in August 2022, the Joint Math Meetings (JMM) in January 2023, and the MathFest in August 2023.

Rensselaer Medalist

2004

Scholarship to Rensselaer Polytechnic Institute. \$60,000.

UNDERGRADUATE MENTORING AND RESEARCH SUPERVISION

Emerging Scholars Program (ULM)

Spring 2024

Riya Shrestha

Knot Theory research project focused on identifying a family of knots for which there is a winning strategy in the Region Unknot Game.

The Entrepreneurship Pelican Cup

Spring 2023

Immerse AR

Served as faculty advisor for one of six finalists in the Pelican Cup Entrepreneurship Pelican Cup business competition.

Emerging Scholars Program (ULM)

Spring 2021

Sagar Bhetuwal

Number Theory research project focused on providing a formal verification of the proof of the Prime Number Theorem using the Lean proof assistant.

TEACHING EXPERIENCE

UNIVERSITY OF LOUISIANA AT MONROE

Course Number	Course Name	Section
Math 4007	History of Mathematics	44692 (F22)
Math 3086	Modern Algebra	44367 (F21), 63395 (S23)
Math 3080	Real Analysis	64863 (S22), 44174 (F23)
Math 3073	Numerical Methods	45407 (F23)
Math 3040	Introduction to Algebra and Analysis	64086 (S24)
Math 2040	Foundations of Mathematics	65041 (S23)
Math 2032	Calculus III	44879 (F22), 44879 (F24)
Math 2002	Applied Linear Algebra	41001 (S21), 64042 (F21), 64042 (S23)
Math 1032	Calculus II	40999 (F24)
Math 1031	Calculus I	63789 (S24), 40997 (F24)
Math 1018	Contemporary Mathematics	40992, 40994 (F21), 60847, 62225 (S22)
Math 1011	College Algebra	42181, 43002, 43013 (F20), 62690, 62691 (S21), 63057, 63167 (S24)
Math 1007	Contemporary Mathematics	45282, 45288 (F22), 64979 (S23), 45282, 45288 (F23)

LAFAYETTE COLLEGE

Course Number	Course Name	Sections
Math 272	Linear Algebra with Applications	01 (S20)
Math 162	Calculus II	06, 07 (S19), 01, 03 (F19)
Math 161	Calculus I	01, 04 (F18), 04 (F19), 01, 02 (S20)
Math 161	Summer Program to Advance Leadership	SPAL (Su19)

UNIVERSITY OF SOUTH CAROLINA

Course Number	Course Name	Sections
Math 170	Finite Mathematics	007 (S14), 007 (S16)
Math 142	Calculus II	004 (Su14), 020 (S18)
Math 122	Calculus for Business Administration and Social Sciences	E01 (S17)
Math 116	Brief Precalculus Mathematics	E1B, E2B (F13), E1B, E2B (F15), E1B, E2B (F16)
Math 115	Precalculus Mathematics	011 (F14)
Math 111	Basic College Mathematics	M13 (Su13), 006 (S15), 006 (F17)

UNIVERSITY OF VERMONT

Course Number	Course Name	Sections
Math 019	Fundamentals of Calculus I	S, W(F10)
Math 017	Applications of Finite Math	G (F09), A (S10), Z2 (Su10)

PRESENTATIONS

Algebra, Geometry, and Categories, Oh My!
Louisiana Tech University
Ruston, LA

May 11, 2023

<i>Implementing Standards Based Grading in STEM</i> University of Louisiana System For our Future Conference 2023 Lake Charles, LA	March 28, 2023
<i>Algebra, Geometry, and Categories, Oh My!</i> Department Seminar, Lafayette College, Easton, PA	March 11, 2020
<i>A Little Abstract Nonsense</i> Lafayette College, Easton, PA	May 21, 2018
<i>Abstract Nonsense: Grokking Category Theory</i> Wilkes University, Wilkes-Barre, PA	May 17, 2018
<i>Kernels for Noncommutative Projective Schemes</i> Graduate Colloquium University of South Carolina, Columbia, SC	November 28, 2017
<i>Kernels for Noncommutative Projective Schemes</i> Algebra Seminar University of New Brunswick, Fredericton, NB, CA	October 12, 2017
<i>Kernels for Noncommutative Projective Schemes</i> Algebra Seminar Temple University, Philadelphia, PA	October 9, 2017
<i>Kernels for Noncommutative Projective Schemes</i> Algebraic Geometry Seminar University of South Carolina, Columbia, SC	August 28, 2017
<i>Noncommutative Projective Schemes</i> Temple Graduate Student Conference in Algebra, Geometry, and Topology Temple University, Philadelphia, PA	May 13, 2016
<i>Noncommutative Projective Schemes</i> Student Algebra/Number Theory Seminar University of South Carolina, Columbia, SC	May 14, 2016
<i>Fully Faithful Abstract Nonsense:</i> <i>Representable Functors and The Yoneda Embedding</i> Graduate Colloquium University of South Carolina, Columbia, SC	November 2015
<i>Fully Faithful Abstract Nonsense:</i> <i>Representable Functors and The Yoneda Embedding</i> Graduate Student Algebraic Geometry, Commutative Algebra, and Number Theory Seminar University of South Carolina, Columbia, SC	July 2015

CONFERENCES AND WORKSHOPS

Funding for PANTS, GAGS, and regional workshops provided by federal funding agencies supporting the meetings. Funding from the Capital One Endowed Professorship in Mathematics provided for travel to BIRS and participation in Project NExT (MathFest 2022, JMM 2023, and MathFest 2023). Funding for participation in the Mathematics Research Community provided by the American Mathematical Society.

<i>LA/MS Sectional Meeting</i> Mathematical Association of America New Orleans, LA	February 29 - March 2, 2024
<i>High School Math Teacher and Faculty Collaboration</i> Louisiana Department of Education Baton Rouge, LA	November 30, 2023
<i>Math Corequisite Academy Workshop</i> Louisiana Board of Regents Baton Rouge, LA	November 7, 2023
<i>Mathematical Association of America MathFest</i> Tampa, FL	August 1 - 6, 2023
<i>Mathematics Research Community</i> Derived Categories, Arithmetic and Geometry, Bridgeland Stability Group Beaver Hollow Conference Center, Java, NY	June 4 - 10, 2023
<i>Joint Mathematics Meetings</i> Boston, MA	January 3 - 7, 2023
<i>Mathematical Association of America MathFest</i> Philadelphia, PA	August 3 - 6, 2022
<i>Mathematical Association of America Project NExT (New Experiences in Teaching)</i> Philadelphia, PA	August 1 - 3, 2022
<i>Series on Exploring Combinatorics and Number Theory (SECANT) IV</i> Cedar Crest College, Allentown, PA (Online)	January 15 - 16, 2022
<i>Derived, Birational, and Categorical Algebraic Geometry</i> Invited Participant Banff International Research Station, Banff, Alberta, CA	November 14 - 19, 2021
<i>Series on Exploring Combinatorics and Number Theory (SECANT) III</i> Cedar Crest College, Allentown, PA (Online)	January 15 - 16, 2021
<i>Derived, Birational, and Categorical Algebraic Geometry</i> Invited Participant Banff International Research Station, Banff, Alberta, CA (Online)	November 2 - 6, 2020
<i>Joint Mathematics Meetings</i> Denver, CO	January 15-17, 2020
<i>Series on Exploring Combinatorics and Number Theory (SECANT) II</i> Cedar Crest College, Allentown, PA	October 12-13, 2019
<i>Joint Mathematics Meetings</i> Baltimore, MD	January 16-19, 2019
<i>Series on Exploring Combinatorics and Number Theory (SECANT)</i> Cedar Crest College, Allentown, PA	November 17-18, 2018

<i>Georgia Algebraic Geometry Symposium</i> Georgia Institute of Technology, Atlanta, GA	February 23-25, 2018
<i>Workshop on Topics in Algebraic Geometry</i> The University of North Carolina at Chapel Hill, Chapel Hill, NC	November 3-5, 2017
<i>Palmetto Number Theory Series (PANTS) XXVIII</i> University of Tennessee, Knoxville, TN	September 16-17, 2017
<i>Georgia Algebraic Geometry Symposium</i> University of Georgia, Athens, GA	March 3-5, 2017
<i>Workshop on Symplectic Varieties and Geometric Representation Theory</i> The University of North Carolina at Chapel Hill, Chapel Hill, NC	October 28-30, 2016
<i>UGA-SWAG: Summer Workshop in Algebraic Geometry</i> University of Georgia, Athens, GA	August 26-29, 2016
<i>Temple Graduate Student Conference in Algebra, Geometry, and Topology</i> Temple University, Philadelphia, PA	May 14-15, 2016
<i>Georgia Algebraic Geometry Symposium</i> Emory University, Atlanta, GA	October 2015
<i>AMS Summer Institute on Algebraic Geometry</i> University of Utah, Salt Lake City, UT	July 27 - 31, 2015
<i>Georgia Algebraic Geometry Symposium</i> University of Georgia, Athens, GA	October 2014
<i>Arizona Winter School</i> University of Arizona, Tucson, AZ	March 2014
<i>Palmetto Number Theory Series (PANTS) XXI</i> Clemson University, Clemson, SC	December 2013
<i>Palmetto Number Theory Series (PANTS) XX</i> Davidson College, Davidson, NC	September 2013
<i>Algebraic Geometry Northeastern Series (AGNES)</i> Yale University, New Haven, CT	April 2013
<i>AMS Spring Western Sectional Meeting</i> University of Colorado, Boulder, CO	April 2013
<i>Palmetto Number Theory Series (PANTS) XIX</i> University of South Carolina, Columbia, SC	December 2012
<i>Palmetto Number Theory Series (PANTS) XVIII</i> Wake Forest University, Winston-Salem, NC	September 2012

PROFESSIONAL MEMBERSHIP

American Mathematical Society, Member

SERVICE

<i>Mindset Meauxtimator</i> Louisiana Board of Regents	Fall 2024 - Spring 2025
<i>Director</i> Friends of Black Bayou Black Bayou National Wildlife Refuge Monroe, LA	January 2024 - Present
<i>Browse on the Bayou</i> Mathematics program representative for ULM's Spring on-campus recruiting event. University of Louisiana at Monroe	September 30, 2022
<i>Mathematics Hiring Committee Chair</i> University of Louisiana at Monroe	Fall 2023
<i>Mathematics Hiring Committee Member</i> University of Louisiana at Monroe	Fall 2022 - Spring 2023
<i>Co-Requisite Course Design</i> Contemporary Mathematics University of Louisiana at Monroe	Spring 2022
<i>Browse on the Bayou</i> Mathematics program representative for ULM's Spring on-campus recruiting event. University of Louisiana at Monroe	March 21, 2022
<i>Investiture Ceremony Marshal</i> University of Louisiana at Monroe	October 1, 2021
<i>University Curriculum Committee Member</i> University of Louisiana at Monroe	2021-Present
<i>Louisiana Math Forward Committee Member</i> University of Louisiana at Monroe	2021
<i>Mathematics Hiring Committee Member</i> University of Louisiana at Monroe	Spring 2021
<i>High School Math Contest Proctor</i> University of South Carolina	2013-2015

ORGANIZER

<i>Student Algebra/Number Theory Seminar</i> University of South Carolina	Summer 2016
<i>Student Algebraic Geometry, Commutative Algebra, and Number Theory Seminar</i> University of South Carolina	Summer 2015
<i>Student Algebraic Geometry Seminar</i> University of South Carolina	Spring 2015

