

LUCAS VAN METER

Department of Mathematics Swarthmore College
lvanmet1@swarthmore.edu
Swarthmore, PA 19081

Last Updated: August 17, 2020

EDUCATION

- 2019 Ph.D. Mathematics, University of Washington
Advisor: Max Lieblich
- 2012 B.S. Mathematics, Haverford College

EMPLOYMENT

- 2020 – pres. Visiting Assistant Professor, Swarthmore College
- 2019 – 2020 Visiting Lecturer, Lewis & Clark College
- Fall 2019 Instructor, Wayfinding Academy
- 2017 – 2018 Apprentice Instructor, MathIly-Er

PUBLICATIONS AND PREPRINTS

- Two Hilbert Schemes in Computer Vision* (with Max Lieblich). SIAM Journal on Applied Algebra and Geometry, May 2020.
Preprint available at <https://arxiv.org/abs/1707.09332>
- Projectivizing SET* (with C. Hsu and J. Ostroff). Math Horizons, April 2020.
- The Essential Variety Revisited* (with Max Lieblich, and Bianca Viray). In preparation.

RESEARCH INTERESTS

Algebraic geometry, moduli problems, multiview geometry, computer vision, and SET

INVITED TALKS

- Nov. 2019 *The Mathematics of SET and Projective SET*, Math department colloquium, Lewis & Clark College
- Oct. 2019 *A New Construction of the Essential Variety*, SIAM PNW meeting, Univ. of Seattle
- Jun. 2019 *A Geometric Construction of the Essential Variety*, SIAM Conference on Applied Algebraic Geometry, University of Bern, Switzerland
- Apr. 2019 *A Functorial Approach to Multiview Geometry*, Algebra Seminar, Univ. of Washington
- Aug. 2017 *Two Hilbert Schemes in Algebraic Geometry*, SIAM conference on Applied Algebraic Geometry, Georgia Institute of Technology

AWARDS

- 2018 *Excellence in Teaching*, University of Washington

TEACHING**SWARTHMORE COLLEGE**, Visiting Assistant Professor

2020 Math 15: Calculus I (Fall)

LEWIS & CLARK COLLEGE, Instructor

2020 Math 215: Discrete Mathematics (Spring)

Math 490: The Mathematics of Social Choice (Spring)

2019 Math 131: Calculus I (Fall)

Math 132: Calculus II (Fall)

UNIVERSITY OF WASHINGTON, Instructor of Record

2019 Math 324: Advanced Multivariable Calculus (Spring)

2018 Math 324: Advanced Multivariable Calculus (Spring, Fall, Winter)

Math 308: Linear Algebra (Winter)

2017 Math 324: Advanced Multivariable Calculus (Fall, Winter)

2016 Math 309: Linear Analysis (Spring, Summer)

Math 308: Linear Algebra (Winter)

2015 Math 126: Calculus with Analytic Geometry (Summer)

UNIVERSITY OF WASHINGTON, Teaching Assistant

2016 Math 125: Calculus II – Integration (Fall)

2015 Online Math 125: Calculus II – Integration (Fall)

Math 126: Calculus with Analytic Geometry (Spring)

2014 Math 111: Business Calculus I (Summer)

Math 124: Calculus I – Derivatives (Spring)

2013 Math 125: Calculus II – Integration (Fall)

FREEDOM EDUCATION PROJECT PUGET SOUND, Instructor of Record

at the Washington Corrections Center for Women

2018 College Math Prep III (Spring)

College Math Prep II (Winter)

2017 Math in Society – Tacoma Community College accredited (Fall)

WAYFINDING ACADEMY, Instructor

2019 Mathematical Thinking (Fall)

MATHILY-ER SUMMER PROGRAM, Apprentice Instructor

2018 Linear algebra, graph theory, discrete math (Summer)

Math and Politics (Summer)

2017 Linear algebra, graph theory, discrete math (Summer)

Combinatorial Games (Summer)

CURRICULUM DEVELOPMENT

- ◇ *Math in Society (FEPPS)*: created detailed packets of supplementary materials and problems specifically designed to help students thrive within prison
- ◇ *Math Prep II and III (FEPPS)*: designed curriculum covering topics and skills from pre-algebra and algebra in order to prepare students for a college-level course
- ◇ *Math Circle (UW)*: wrote dozens of worksheets, lesson plans, and hands-on activities exploring accessible and beautiful topics in mathematics
- ◇ *MathILy-Er Summer Program*: designed and taught several five-day mini-courses for high school students, including mini-courses on Markov chains, generating functions, the p -adics numbers, symmetric polynomials, and cryptography

SERVICE & COMMUNITY OUTREACH

2015 – 2019 University of Washington Math Circle, Lead Instructor

- ◇ Meet weekly with ten to twenty middle school students to explore and discover beautiful mathematics using a proof-based approach

2018 – 2019 Mentor, Washington Directed Reading Program

- ◇ Mentor and assist an undergraduate with a quarter long reading project

2016 – 2017 Mentor, Washington Experimental Math Laboratory

- ◇ Mentor and assist undergraduate math researchers studying voting theory, non-transitive dice, and their connections

2013 – 2019 Association for Women in Mathematics

- ◇ Participate in AWM events such as undergraduate study halls
- ◇ Support underrepresented groups in mathematics by attending chapter meetings

2017, 2018 Julia Robinson Math Festival

- ◇ One day festival for elementary and middle school students
- ◇ Lead small groups of students through mathematical experiences such as exploring what happens when you cut a Möbius band in half

2009 – 2012 8th Dimension Tutor, Haverford College

- ◇ Work with local elementary, middle, and high school students who need tutoring in math and English

2006 – 2010 Outdoor School Special Needs Volunteer

- ◇ Teach science education in a summer camp setting using a dynamic curriculum that required creativity and lots of hands-on activities
- ◇ Responsible for the safety and well-being of a single special needs student at all times during the week of camp

CONFERENCES ATTENDED

Sept. 2020 Project NExT

Oct. 2019 SIAM PNW meeting, University of Seattle, Seattle, WA

Jun. 2019 SIAM Conference on Applied Algebraic Geometry, University of Bern, Switzerland

Mar. 2017 Arizona Winter School: Perfectoid Spaces, Tucson, AZ

May 2016 AIM workshop: Algebraic Vision, San Jose, CA

Mar. 2015 Arizona Winter School: Arithmetic and Higher-Dimensional Varieties, Tucson, AZ

2015 – 2019 Western Algebraic Geometry Symposium, Regional bi-annual meetings