

# LUCAS VAN METER

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## EDUCATION

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

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## EMPLOYMENT

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

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## PUBLICATIONS AND PREPRINTS

*Two Hilbert Schemes in Computer Vision* (with Max Lieblich). Accepted for publication in SIAM Journal on Applied Algebra and Geometry, November 2019.  
Preprint available at <https://arxiv.org/abs/1707.09332>  
*Projectivizing SET* (with C. Hsu and J. Ostroff). To appear in Math Horizons.  
*The Essential Variety Revisited* (with Max Lieblich, and Bianca Viray). In preparation.

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## RESEARCH INTERESTS

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

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## 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

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## AWARDS

- 2018    *Excellence in Teaching*, University of Washington

## TEACHING

**LEWIS & CLARK COLLEGE**, Instructor of Record

- 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

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## 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

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## CONFERENCES ATTENDED

- 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