

# 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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## PUBLICAITON AND PREPRINTS

- Jul. 2018 *Two Hilbert Schemes in Computer Vision* (with Max Lieblich). Submitted. Preprint available at <https://arxiv.org/abs/1707.09332>  
*The Essential Variety Revisited* (with Ben Antiou, Max Lieblich, and Bianca Viray). In progress.

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## RESEARCH INTERESTS

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

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## INVITED TALKS

- 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

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## TEACHING

### LEWIS & CLARK COLLEGE

- 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)

**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)

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## 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
- ◇ *Multivariable Calculus (UW)*: developed an extensive Canvas course webpage which included daily reading quizzes and online homework submissions designed to complement a model in which students focus on problem solving in class.
- ◇ *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, First Year Instructor

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

2018 – 2019 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

- 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