

CURRICULUM VITAE

BENJAMIN TIGHE

Contact Information

Address	Pacific Lutheran University Department of Mathematics 12180 Park Ave S, Tacoma, WA 98447
Email	btighe@plu.edu
Webpage	https://sites.google.com/view/bentighe-oregon/home

Education

University of Illinois at Chicago, Chicago, Illinois
Ph.D in Mathematics, 2023
Thesis: *The LLV Algebra for Primitive Symplectic Varieties and Applications to the Du Bois Complex*
Advisor: Benjamin Bakker

University of Georgia, Athens, Georgia
M.A. in Mathematics, 2020
Advisor: Benjamin Bakker

University of Washington, Seattle, Washington
B.S. in Mathematics, 2017
Senior Thesis Advisor: Sándor Kovács
Senior Thesis: *The Riemann-Roch Theorem and Resolutions of Singularities for Curves*

Employment

Pacific Lutheran University, Tacoma, Washington.
Visiting Assistant Professor, Department of Mathematics.
Aug 2026-Present.

University of Oregon, Eugene, Oregon.
RTG Postdoc, Department of Mathematics.
Sep. 2023-2026.

Linn-Benton Community College, Albany, Oregon.
Part-time faculty.
Sep. 2025-Present.

University of Illinois at Chicago, Chicago, Illinois.
Teaching and Research Assistant in the Department of Math, Statistics and Computer Sciences.
Aug. 2020-Aug. 2023

Date: August 25, 2026.

Loyola University, Chicago Campus.

Part-Time Instructor in the Department of Computer Sciences.

Aug. 2022-May 2023

University of Georgia, Athens, GA

Teaching and Research Assistant in the Department of Mathematics.

Aug. 2017-May 2022

Research Interests

Algebraic geometry, Hodge theory, singularities and moduli of Calabi-Yau and symplectic varieties, Hodge modules.

Papers

- (1) *Symmetries and vanishing theorems for symplectic varieties*, Submitted.
- (2) *On an Example of Aspinwall, Morrison, and Szendrői*, Submitted.
- (3) *The Holomorphic Extension Property for k -Du Bois Singularities*, Submitted.
- (4) *The LLV Algebra for Primitive Symplectic Varieties with Isolated Singularities*. *Épjournal Géom. Algébrique*, Volume 9 (March 28, 2025) epiga:12186

Seminar and Expository Talks

- *Symmetries and vanishing theorems for symplectic varieties*, Kyushu University, Japan . Dec. 2025
- *Symmetries and vanishing theorems for symplectic varieties*, AG Seminar, UIC Apr. 2025
- *Symmetries and vanishing theorems for symplectic varieties*, AG Seminar, Purdue Apr. 2025
- *Symmetries and vanishing theorems for symplectic varieties*, AMS Sectional, Clemson . Mar. 2025
- *Symmetries and vanishing theorems for symplectic varieties*, Algebra Seminar, UO Mar. 2025
- *Applications of the Du Bois Complex to Symplectic Singularities*, RATCOW Seminar, UO ... May 2024
- *Rational v.s. k -Du Bois Singularities*, AAG Seminar, UW Apr. 2024
- *The LLV Algebra for Singular Symplectic Varieties*, Algebra Seminar, UO Oct. 2023
- *An Algebraic Proof of the LLV Structure Theorem*, GAGS (Lightning Talk), UGA Apr. 2023
- *The LLV Algebra for Singular Symplectic Varieties*, PhD Defense, UIC Mar. 2023
- *An Algebraic Proof of the LLV Structure Theorem*, AG Seminar, Northwestern Jan. 2023
- *Hodge Theory of Singular Symplectic Varieties with Isolated Singularities*, AG Seminar Group, TU Chemnitz (Virtual) Oct. 2022
- *Extending Differential Forms across Higher du Bois Singularities*, AG and Singularities Conference, UW Jun. 2022
- *Isolated Singularities in Algebraic Geometry*, GAGS, UIC Jan. 2022
- *Singularities in Algebraic Geometry*, Graduate Student Colloquium, UIC Jan. 2022
- *Extending Differential Forms across Singularities*, GAGS, UIC Oct. 2021
- *Extending Differential Forms across Singularities*, GOSS Jun. 2021
- *Hodge Theory and Singularities*, Graduate Student Colloquium, UIC Feb. 2021
- *Betti Numbers of Primitive Symplectic Varieties*, ZOOMerFEST Nov. 2020
- *Hodge Theory of Hypersurfaces*, Graduate Student Seminar, UGA Oct. 2020
- *Hodge Theory of Symplectic Varieties*, Graduate Algebraic Geometry Seminar, UIC Oct. 2020
- *Singular Symplectic Varieties*, Graduate Student Summer Conference, UGA Jul. 2020
- *Introduction to o -Minimal Geometry*, Graduate Student Seminar, UGA Apr. 2020
- *Degeneration of Hodge-to-de Rham with p^2 lifting*, CRAAG seminar, UGA Feb. 2020
- *Riemann Surfaces*, SMARTS, UGA Jan. 2020
- *Holomorphic Symplectic Varieties*, Graduate Topology Seminar, UGA Oct. 2019
- *A Brief Introduction to Deformation Theory*, Mock-AMS, UGA Jul. 2019

- *Maximal Families of Calabi-Yau 3-Folds*, Oral Exam Presentation, U. Georgia May 2019
- *Maximal Families of Calabi-Yau 3-Folds*, Graduate Algebraic Geometry Seminar, UGA Apr. 2019
- *Intersection Theory on Surfaces*, Graduate Algebraic Geometry Seminar, UGA Jan. 2019
- *Algebraic Geometry for Non- Algebraic Geometers*, SMARTS, UGA Nov. 2018
- *Complex Surfaces*, Graduate Student Topology Seminar, UGA Nov. 2018
- *Transcendental Methods in Algebraic Geometry*, Graduate Student Seminar, UGA Oct. 2018
- *Period Mappings and Period Domains*, Grad Student Summer Conference, UGA Jul. 2018
- *Complex Surfaces of Kodaira Dimension $-\infty$* , Rational Points Reading Group, UGA .. Apr. 2018
- *K3 and Abelian Surfaces of Maximal Picard Rank*, Topics Course, UGA Mar. 2018
- *Bounds on the Number of PVHS's*, Hodge Theory VRG, UGA Jan. 2018
- *The Casas-Alvero Conjecture*, Graduate Student Seminar, UGA Sep. 2017
- *Bruhat Intervals and Coxeter Arrangements*, Topics Course, UW Mar. 2017

Teaching

- Instructor of Record:
 - (1) Business Calculus (Math 241z), LBCC Spring 2026
 - (2) Intro. to LaTeX (Math 131), LBCC Winter 2026
 - (3) Introduction to Differential Equations (Math 256), UO Winter 2026
 - (4) Calculus I (Math 251z), LBCC Fall 2025
 - (5) Calculus I (Math 251z), UO (2 Sections) Fall 2025
 - (6) Introduction to Differential Equations (Math 256), UO Winter 2025
 - (7) Calculus I (Math 251), UO (2 sections) Fall 2024
 - (8) Discrete Mathematics (Math 231), UO Winter 2024
 - (9) Calculus I (Math 251), UO (2 sections) Fall 2023
 - (10) Discrete Structures (COMP 163), Loyola University Spring 2023
 - (11) Discrete Structures (COMP 163), Loyola University Fall 2022
 - (12) Intermediate Algebra (Math 090), UIC Fall 2022
 - (13) Intermediate Algebra (Math 090), UIC Fall 2021
 - (14) Precalculus (Math 1113), UGA (2 sections) Spring 2020
 - (15) Precalculus (Math 1113), UGA Fall 2019
- Teaching Assistant:
 - (1) Finite Mathematics for Business Students (Math 160), UIC Spring 2022
 - (2) Linear Algebra I (Math 320), UIC Fall 2021
 - (3) Mathematical Reasoning (Math 118), UIC Fall 2020
 - (4) Complex Analysis (Math 4150), UGA Fall 2019
 - (5) Sequences and Series (Math 3100), UGA Fall 2018
 - (6) Applied Linear Algebra (Math 3300), UGA Fall 2017
 - (7) Introductory Real Analysis I (Math 327), UW Spring 2017
 - (8) Introductory Real Analysis I (Math 327), UW Winter 2017
 - (9) Introductory Real Analysis I (Math 327), UW Fall 2016
 - (10) Modern Algebra (Math 402), UW Summer 2016
 - (11) Introductory Real Analysis I (Math 327), UW Summer 2016
 - (12) Introductory Real Analysis II (Math 328), UW Summer 2016
 - (13) Introductory Real Analysis II (Math 328), UW Spring 2016
 - (14) Introductory Real Analysis II (Math 328), UW Winter 2016
 - (15) Intro to Mathematical Reasoning (Math 300), UW Fall 2015
 - (16) Linear Analysis (Math 309), UW Fall 2015
 - (17) Linear Analysis (Math 309), UW Spring 2015
 - (18) Linear Analysis (Math 309), UW Winter 2015
- Tutoring:
 - (1) Math and Science Learning Center, UIC 2020-2023

- (2) Study Hall, UGA 2017-2018
- (3) Division of Academic Enhancement, UGA Spring 2018
- (4) Center for Learning and Undergraduate Enrichment, UW 2016-2017

Academic Service

- Organization:
 - (1) Organizer for the Algebra Seminar, UO 2024-2025
 - (2) Co-organizer for MAGGC, UIC Summer 2022
 - (3) Co-organizer for the Graduate Student Summer Conference, UGA Summer 2020
 - (4) Organizer for Modular and Shimura Curves Seminar, UGA Fall 2019
 - (5) Organizer for the Graduate Algebraic Geometry Seminar, UGA Spring 2019
- Undergraduate Advising/Directed Reading Programs
 - (1) Sophie Fern, UO 2025
 - (2) Angela Mehta, UO 2025
 - (3) Luke Allen, UGA Spring 2020
 - (4) Xinyu Shi, UGA Fall 2018
 - (5) Hank Morris, UGA Spring 2018
- Referee for: *Beiträge zur Algebra und Geometrie*
- Other:
 - (1) Reading course on Hodge theory (graduate students) Winter 2025
 - (2) Math Festival at the University of Oregon Winter 2024/2025
 - (3) Instructor for *SAIL* Summer 2024
 - (4) Grader for UGA's High School Math Tournament 2017, 2018
 - (5) Undergraduate Panel Speaker, UW Math Day Spring 2016