

# Fei Ye

## Curriculum Vitae

Dept. of Math. and Comp. Sci.  
QCC-CUNY  
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### Education

**Ph.D.**, *University of Illinois at Chicago, USA, Mathematics*

**Ph.D.**, *East China Normal University, China, Mathematics*

**B.S.**, *Guangzhou University, China, Mathematics*

### Professional Experiences

2022-Present **Associate Professor**, *Department of Mathematics and Computer Science, Queensborough Community College-CUNY, New York*

2015-2022 **Assistant Professor**, *Department of Mathematics and Computer Science, Queensborough Community College-CUNY, New York*

2012-2015 **IMR Postdoc Fellow**, *Department of Mathematics, The University of Hong Kong, Hong Kong*  
Advisor: Ngaiming Mok

2011-2012 **ENI Postdoc Fellow**, *Emmy Noether Research Institute for Mathematics, Bar-Ilan University, Israel*  
Advisor: Mina Teicher

### Research Interests

Algebraic Geometry, Complex Geometry, Commutative Algebra

### Papers

#### Accepted/Published

- 1 Symplectic Lie groups and Double Geometry. (with David Pham) *Acta Mathematica Universitatis Comenianae*, 91(2), 161-190, 2022
- 2 On Fujita's Freeness Conjecture in Dimension 5. (with Zhixian Zhu), *Advances in Mathematics*, Vol.371 1-56, 2020.
- 3 Sakai's theorem for  $\mathbb{Q}$ -divisors on surfaces and applications. (with Tong Zhang and Zhixian Zhu), *Asian Journal of Mathematics*, Vol. 22 (4), 761-786, 2018
- 4 Global Generation of Adjoint Line Bundles on Projective 5-folds (with Zhixian Zhu), *Manuscripta Mathematica*, Vol. 153 (3-4), 545-562, 2017.
- 5 On Lower Bounds of Slopes of Totally Ramified Triple Cover Fibrations, (with Pan Liu and Jun Lu), *Asian Journal of Mathematics*, Vol. 21 (5), 981 – 994, 2017.

- 6 Combinatorial symmetry of line arrangements and applications (with Meirav Amram, Moshe Cohen, Hao Sun, Mina Teicher, Anna Zarkh), *Topology and Its Applications*, Vol. 193, 226-247, 2015.
- 7 Several Splitting Criteria for Vector Bundles and Reflexive Sheaves (with Stephen S.T. Yau), *Pacific Journal of Mathematics*, Vol.266 (2), 449-456, 2013.
- 8 Classification of Moduli Spaces of Arrangements of 10 Projective Lines with a Quadruple point (with Meirav Amram and Mina Teicher), *Advances in Applied Mathematics* Vol. 51, 392-418, 2013.
- 9 Classification of Moduli Spaces of Arrangements of 9 Projective Lines, *Pacific Journal of Mathematics*, Vol.265 (1), 243-256, 2013.
- 10 A Note on The Topology of The Complements of Fiber-type Line Arrangements in  $\mathbb{CP}^2$  (with Sheng-Li Tan and Stephen S.T. Yau), *Pacific Journal of Mathematics*, Vol. 251 (1), 207-218, 2011.
- 11 Diffeomorphic Types of Complements of Nice Arrangements in  $\mathbb{CP}^l$  (with Stephen S.T. Yau), *Science in China, Series A: Mathematics*, Vol. 52 (12), 2774-2791, 2009.

#### Preprint

- 1 A Computational Perspective of Higher Jacobian Matrices. (with Tabitha Ramirez and Hao Shen), 2023.
- 2 Left-invariant Hermitian connections on Lie groups with almost Hermitian structures. (with David Pham), (submitted), arXiv.2308.00126, 2023.
- 3 Left Invariant Complex Structures on Double Lie Groups. (with David Pham), Submitted, 2020.
- 4 Moduli Spaces of Ten-line Arrangements with Double and Triple Points (with Meirav Amram, Moshe Cohen and Mina Teicher), arXiv:1306.6105, 2013.

#### In preparation

- 1 Decomposition Structures of Higher Jacobian Ideals
- 2 Syzygies on Abelian Varieties

### Talks

#### Academic

- 1 Lectures on Hodge Theory and Complex Algebraic Geometry, Study Group on Hodge Theory and Complex Algebraic Geometr, CUNY Graduate Center, New York City, Fall 2017 - Spring 2019.
- 2 Fei Ye, Introduction to D-modules, Commutative Algebra and Algebraic Geometry seminar, CUNY Graduate Center, New York City, March 15, 2019.
- 3 A Very Brief Introduction to the Hodge Conjecture, mini-workshop at LaGuardia Community College, October 24, 2018.
- 4 Higher Syzygies on Abelian Threefolds, Workshop on Complex Geometry, University of Hong Kong, Hong Kong, July 20, 2018

- 5 Application of Multiplier Ideals to Geometry and Algebra of Adjoint Line Bundles, Dynamic System and Algebraic Geometry Workshop, Zhejiang University, Hangzhou, China, January 1, 2018
- 6 Multiplier Ideals and Applications to Adjoint Line Bundles, Commutative Algebra & Algebraic Geometry Seminar, CUNY Graduate Center, New York City, October 20, 2017.
- 7 A characterization of big  $\mathbb{Q}$ -divisors on surfaces and its applications, Commutative Algebra & Algebraic Geometry Seminar, CUNY Graduate Center, New York City, March 3, 2017.
- 8 Two lectures on Newton-Okounkov bodies, the seminar on Toric Varieties, CUNY Graduate Center, New York City, Spring 2017.
- 9 A non-vanishing theorem for big divisors on surfaces and its applications, Geometry Seminar, University of Hong Kong, Hong Kong, July 6, 2016.
- 10 On base point freeness of adjoint linear systems on projective 5-folds, Jinan University, Guangzhou, July 1, 2016.
- 11 Okounkov bodies: introduction I & II, Study group on Toric and Spherical Varieties, CUNY Graduate Center, New York, April 4 and 11, 2016
- 12 Fujita's Freeness Conjecture on 5-folds, Workshop on Complex Geometry, University of Hong Kong, Hong Kong, July 23, 2015.
- 13 Rational Curves on CP-Manifolds, Working Seminar on Several complex variables and Complex geometry, University of Hong Kong, March 27, 2015
- 14 Mori Contractions on CP-Manifolds, Working Seminar on Several complex variables and Complex geometry, University of Hong Kong, February 9, 2015
- 15 Mori's Theorems on Rational Curves, Working Seminar on Several complex variables and Complex geometry, University of Hong Kong, January 5, 2015
- 16 Rational Curves on Fano Manifolds with Nef Tangent bundles, Working Seminar on Several complex variables and Complex geometry, University of Hong Kong, February 2, 2015
- 17 Effective Freeness of Adjoint Linear Systems on 5-folds, East China Normal University, Shanghai, September 22, 2014.
- 18 Classification of Arrangements of 10 Lines, Complex Geometry, National University of Singapore, Singapore, July 26, 2013.
- 19 Global Generation of Adjoint Line Bundles, Young Mathematician Workshop on Arithmetic Algebraic Geometry, East China Normal University, Shanghai, July 9, 2013.
- 20 Some Splitting Criteria for Vector Bundles and Reflexive Sheaves, The Hong Kong Mathematical Society Annual General Meeting 2013, Hong Kong, June 8, 2013.
- 21 Mori's existence theorem on rational curves, Working Seminar on Complex Geometry, the University of Hong Kong, Hong Kong, March 5, 2013.
- 22 Hirzebruch's Construction of Ball Quotient Surfaces, Working Seminar on Complex Geometry, the University of Hong Kong, Hong Kong, February 4, 2013.
- 23 Effective Freeness of Adjoint Linear Systems, Mini Workshop on Complex Geometry, the University of Hong Kong, Hong Kong, January 10, 2013.

- 24 Irreducibility of Moduli Spaces of Line Arrangements, Geometry Seminar, The University of Hong Kong, Hong Kong, July 24, 2012.
- 25 Topology of Moduli Spaces of Arrangements of Hyperplanes, Emmy Noether Seminar/Geometry Seminar, Bar-Ilan University, Israel, November 23, 2011.

### Educational

- 1 Introduced Bookdown for Ebook Creation, Brownbag Seminar organized by the College eLearning Committee of QCC, November 27, 2019.
- 2 Rmarkdown and Other Productivity Tools for Math Teachers, Math and CS Departmental Colloquium at QCC, October 23, 2019.
- 3 How to Use LaTeX, a Professional Development Workshop at QCC, Fall 2017.

## Grant Awards

- 2020 PSC-CUNY Research Award Cycle 52, coPI (with David Pham)
- 2019 PSC-CUNY Research Award Cycle 50, PI
- 2018-2021 Recruitment and Mentoring in Mathematics Program (NSF), Senior Personnel
- 2018 PSC-CUNY Research Award Cycle 49, PI
- 2017 PSC-CUNY Research Award Cycle 48, PI
- 2016 PSC-CUNY Research Award Cycle 47, PI
- 2015 HKU Small Project Fund, PI

## Professional Service

### Seminars and Workshops

- Fall 2020 - **Commutative Algebra and Algebraic Geometry**, *CUNY Graduate Center*, co-organized with Professors Hans Schoutens and Laura Ghezzi
- Fall 2021 **Symplectic Geometry Study Group**, *CUNY Graduate Center*, co-organized with Professors Bart Van Steirteghem and David Pham
- Spring 2020 - **Study Group on Symplectic and Kähler Manifolds**, *CUNY Graduate Center*, co-organized with Professors Bart Van Steirteghem and David Pham
- Fall 2020 - **Study Group on Hodge Theory and Complex Algebraic Geometry**, *CUNY Graduate Center*, co-organized with Professor Bart Van Steirteghem
- Fall 2017 - **Study Group on Hodge Theory and Complex Algebraic Geometry**, *CUNY Graduate Center*, co-organized with Professor Bart Van Steirteghem
- Spring 2019 **Department Colloquium**, *QCC-CUNY Mathematics and Computer Science*, co-organized with Colleagues
- Fall 2020 - **Department Colloquium**, *QCC-CUNY Mathematics and Computer Science*, co-organized with Colleagues
- Fall 2018 - **Department Colloquium**, *QCC-CUNY Mathematics and Computer Science*, co-organized with Colleagues
- Spring 2019 **Department Colloquium**, *QCC-CUNY Mathematics and Computer Science*, co-organized with Colleagues
- July 20-22, 2015 **Workshop on Complex Geometry**, *University of Hong Kong*, co-organized with Professor Ngaiming Mok
- January 22, 2015 **Mini Workshop on Algebraic Geometry**, *University of Hong Kong*, co-organized with Professor Ngaiming Mok
- 2011-2012 **Emmy Noether Seminar / Geometry Seminar**, *Bar-Ilan University*, co-organized with Dr. Moshe Cohen and Professor Mina Teicher

Spring 2012 **Emmy Noether Institute Graduate Seminar**, *Bar-Ilan University*, co-organized with Dr. Moshe Cohen, Professor Mina Teacher and Ms. Anna Zarkh

#### Mathematical Reviewing

2022 Reviewer for PSC-CUNY Research Grants  
2021 Reviewer for PSC-CUNY Research Grants  
2018 Reviewer for CUNY Community College Research Grant  
2017 Reviewer for CUNY Summer Collaborative Research Opportunity Grant  
2012-Present Reviewer for Zentralblatt MATH  
2011-Present Reviewer for Mathematical Reviews

#### Mentorship

Summer 2023 RAMMP Summer Research Program Mentor: mentored Tabitha Ramirez and Hao Shen on higher Jacobian ideals and applications  
Spring 2020 UR (Undergraduate Research) Mentor: mentored Siying Li on minimal log discrepancy of rational surface singularity  
Fall 2019 ASAP Mentor: mentored Jiefang Wu on effective thinking in mathematics  
Spring 2018 ASAP Mentor: mentored Jiayao Sun on effective thinking in mathematics

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### Administrative Service

#### College Committees

2021-present **eLearnig**  
2018-2020 **Course and Standing**, Chaired in the academic year 2019-2020

#### Department Committees

2023-Present **Department P&B**, *Department Elected member*  
2020-Present **Internal Grant Steering**  
2019-2022 **Curriculum**, *Department Elected member*  
2018-2020 **Webmaster**  
2017-2018 **Technology And E-Resources**, *Secretary*  
2017-present **WebWork**, *Administrator*  
2015-2018, 2020-present **Professional Development (Department Colloquium)**, *(Chaired in the academic year 2016-2017)*

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### Teaching

#### Certificate

- 1 ACUE Effective Online Teaching Practices (Fall 2021)
- 2 ACUE Promoting Active Learning Online (Spring 2021)

#### Selected OER Creations

- 1 A concise workbook on college algebra ([https://academicworks.cuny.edu/qb\\_oers/45/](https://academicworks.cuny.edu/qb_oers/45/))

- 2 Trigonometry: A Brief Conversation (<https://academicworks.cuny.edu/qboers/33/>)

#### Courses Taught

- 1 Linear Algebra, QCC-CUNY
- 2 Differential Equations, QCC-CUNY
- 3 Calculus II, QCC-CUNY
- 4 Calculus I, QCC-CUNY
- 5 Statistics, QCC-CUNY
- 6 College Algebra, QCC-CUNY
- 7 Mathematics in Contemporary Society, QCC-CUNY
- 8 Trigonometry, QCC-CUNY
- 9 Elementary Algebra, QCC-CUNY
- 10 Analysis II, University of Hong Kong
- 11 Complex Manifolds, University of Hong Kong
- 12 Algebraic Surfaces, University of Hong Kong
- 13 Undergraduate Study, University of Hong Kong
- 14 Calculus I, II, & III, University of Illinois at Chicago