

# Linus Setiabrata

setia@mit.edu

<http://math.mit.edu/~setia/>

## Interests

Algebraic combinatorics: Schubert calculus, polytopes, link homology;  
Geometric representation theory: symplectic duality.

## Employment

2025 – 2028 **C.L.E. Moore Instructor**, Massachusetts Institute of Technology.

## Education

2020 – 2025 **Ph.D. Mathematics**, University of Chicago.

Advisor: Victor Ginzburg

2016 – 2020 **B.A. Mathematics**, Cornell University, *summa cum laude*.

## Honors

2024 Lawrence and Josephine Graves Teaching Prize, University of Chicago.

2020 Benjamin A. Blander Prize in Mathematics, University of Chicago.

2020 Harry S. Kieval Prize in Mathematics, Cornell University.

## Preprints and publications

14. Jack Chen-An Chou, Linus Setiabrata, *Asymptotically maximal Schubert polytopes*. [arXiv:2512.04053](#).
13. Jack Chen-An Chou, Linus Setiabrata, *Newton polytopes of fireworks Grothendieck polynomials*. [arXiv:2508.09107](#).
12. Linus Setiabrata, *Hikita surjectivity for  $\mathcal{N} \parallel T$* . [arXiv:2410.16217](#).
11. Linus Setiabrata, Avery St. Dizier, *Double orthodontia formulas and Lascoux positivity*. [arXiv:2410.08038](#).
10. Elena S. Hafner, Karola Mészáros, Linus Setiabrata, Avery St. Dizier, *M-convexity of vexillary Grothendieck polynomials via bubbling*. *SIAM J. Disc. Math.*, **38** (2024), no. 3: 2194–2225.
9. Karola Mészáros, Linus Setiabrata, Avery St. Dizier, *On the support of Grothendieck polynomials*. *Ann. Comb.*, **29** (2025), no. 2: 541–562.
8. Karola Mészáros, Linus Setiabrata, Avery St. Dizier, *An orthodontia formula for Grothendieck polynomials*. *Trans. Amer. Math. Soc.*, **375** (2022), no. 2: 1281–1303.
7. Linus Setiabrata, *Faces of root polytopes*. *SIAM J. Disc. Math.*, **35** (2021), no. 3: 2093–2114.
6. Karola Mészáros, Linus Setiabrata, *Lorentzian polynomials from polytope projections*. *Algebr. Comb.*, **4** (2021), no. 4: 723–739.
5. Sergey Fomin, Linus Setiabrata, *Heronian friezes*. *Int. Math. Res. Not. IMRN*, **1** (2021), no. 1: 648–694.
4. Kabir Kapoor, Karola Mészáros, Linus Setiabrata, *Counting integer points of flow polytopes*. *Disc. Comput. Geom.*, **66** (2021), no. 2: 723–736.
3. Alexander Black, Sabri Cetin, Florian Frick, Alexander Pacun, Linus Setiabrata, *Fair splittings by independent sets in sparse graphs*. *Israel J. Math.*, **236** (2020), no. 2: 603–627.

2. Jai Aslam, Shujian Chen, Florian Frick, Sam Saloff-Coste, Linus Setiabrata, Hugh Thomas, *Splitting loops and necklaces: Variants of the square peg problem*. Forum Math. Sigma, **8** (2020): e5.
1. Jai Aslam, Shuli Chen, Ethan Coldren, Florian Frick, Linus Setiabrata, *On the generalized Erdős–Kneser conjecture: proofs and reductions*. J. Combin. Theory, Ser. B, **135** (2019): 227–237.

### Invited seminar talks

10. UMass Amherst, Discrete Mathematics seminar, Nov 2025. [[Website](#)]
9. MIT, Richard P. Stanley Seminar in Combinatorics, Apr 2025. [[Website](#)]
8. UIUC, Algebra-Geometry-Combinatorics seminar, Feb 2025. [[Website](#)]
7. LACIM seminar, Feb 2025. [[Website](#)]
6. Fields Institute, Algebraic Combinatorics Seminar, Feb 2025. [[Website](#)]
5. Michigan State, Combinatorics and Graph Theory Seminar, Oct 2024. [[Website](#)]
4. Ohio State, Algebraic Geometry Seminar, Oct 2024. [[Website](#)]
3. University of Michigan, Combinatorics Seminar, Oct 2024. [[Website](#)]
2. Cornell, Discrete Geometry and Combinatorics Seminar, Sep 2024. [[Website](#)]
1. Cornell, Discrete Geometry and Combinatorics Seminar, Jan 2020. [[Website](#)]

### Invited conference talks

3. AlGeCom XXVI, Nov 2025. [[Website](#)]
2. AMS Fall Southeastern Sectional, Special Session on emerging interactions between representation theory, geometry, and combinatorics, Oct 2025.
1. AMS Spring Central Sectional, Special Session on Combinatorics and Lie Theory, Mar 2025.

### Student seminar talks

8. Toric varieties reading group, Sept 2025.
7. Logic and Combinatorics student seminar, Apr 2025.
6. Cluster algebras and recurrence relations, Geometry and QFT junior seminar, UT Austin, Apr 2024. ([slides](#))
5. Richardson varieties and Khovanov–Rozansky homology (4 talks), Knot homology learning seminar, University of Chicago, Feb 2024. ([notes](#))
4. Springer fibers and irreps of the symmetric group, Farb and Friends student seminar, University of Chicago, Jan 2024.
3. Braids, links, and Khovanov–Rozansky homology, Knot homology learning seminar, University of Chicago, Oct 2023.
2. Fair division and peg problems, Farb and Friends student seminar, University of Chicago, Feb 2023.
1. The  $n!$  and  $(n+1)^{n-1}$  conjectures, Representation Theory student seminar, University of Chicago, Oct 2021.

## Professional service

Quick opinion for: Selecta Mathematica

Referee for: Combinatorial Theory, Bulletin of the London Math Society, International Mathematics Research Notices, Selecta Mathematica, Electronic Journal of Combinatorics, Formal Power Series and Algebraic Combinatorics, Proceedings of the American Mathematical Society, Algebraic Combinatorics, Annals of Combinatorics, Collectanea Mathematica.

## Teaching

### MIT:

Fall 2025 TA for 18.03 – Differential Equations

### UChicago:

|             |                                                           |
|-------------|-----------------------------------------------------------|
| Fall 2024   | Instructor for MATH 15100 – Calculus I                    |
| Winter 2024 | Instructor for MATH 15300 – Calculus III                  |
| Fall 2023   | Instructor for MATH 15200 – Calculus II                   |
| Spring 2023 | Instructor for MATH 15300 – Calculus III                  |
| Winter 2023 | Instructor for MATH 15200 – Calculus II                   |
| Fall 2022   | Instructor for MATH 15100 – Calculus I                    |
| Spring 2022 | College Fellow for MATH 16310 – Honors Calculus III (IBL) |
| Winter 2022 | College Fellow for MATH 25500 – Basic Algebra II          |
| Fall 2021   | Grader for MATH 32500 – Graduate Algebra I                |
| Fall 2021   | College Fellow for MATH 25400 – Basic Algebra I           |

### Cornell:

|                       |                                                                                  |
|-----------------------|----------------------------------------------------------------------------------|
| Fall 2018 – Fall 2019 | Math Tutor at the Math Support Center.                                           |
| Spring 2018           | Grader for MATH 2240 - Theoretical Linear Algebra and Multivariable Calculus II. |
| Fall 2017             | Grader for MATH 2230 - Theoretical Linear Algebra and Multivariable Calculus I.  |

(Last updated December 4, 2025.)