

İZZET COŞKUN

CONTACT INFORMATION Department of Mathematics, Statistics, and Computer Science (M/C 249)
University of Illinois at Chicago
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Chicago, IL 60607-7045

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RESEARCH I am an algebraic geometer with broad interests, including combinatorics, complex dynamics, several complex variables and number theory. My research focuses on topological and numerical invariants of moduli spaces of curves and surfaces, rationally connected varieties, the cohomology of homogeneous varieties and Gromov-Witten theory.

EDUCATION **Harvard University**, Department of Mathematics
MA 2001, Ph.D. 2004.

Princeton University, Department of Mathematics
A.B. 2000

APPOINTMENTS **Professor**, University of Illinois at Chicago
2013 –

Associate Professor, University of Illinois at Chicago
2010 – 2013

Assistant Professor, University of Illinois at Chicago
2007 – 2010

C. L. E. Moore Instructor, Massachusetts Institute of Technology
2004 – 2007

Liftoff Fellow, Clay Mathematics Institute
Summer 2004

- PUBLICATIONS
1. I. Coskun, *Degenerations of scrolls and Del Pezzo surfaces and applications to enumerative geometry*. Harvard University Ph.D. Thesis, 2004—under the supervision of Professor Joe Harris.
 2. I. Coskun (with C. Cadman, K. Jabbusch, M. Joyce, S. Kovács, M. Lieblich, F. Sato, M. Szczesny, J. Zhang), *A first glimpse at the minimal model program*, Snowbird lectures in algebraic geometry. Contemp. Math., vol. 388 (2005) p. 17–42.
 3. I. Coskun, *The arithmetic and the geometry of Kobayashi hyperbolicity*, Snowbird lectures in algebraic geometry. Contemp. Math., vol. 388 (2005) p. 77–88.
 4. I. Coskun, *Degenerations of surface scrolls and the Gromov-Witten invariants of Grassmannians*, J. Algebraic Geom., **15** (2006), p. 223–284.
 5. I. Coskun, *Enumerative geometry of Del Pezzo surfaces via degenerations*, Amer. J. Math., **128** no. 3 (2006), p. 751–786.

6. I. Coskun and J. Starr, *Divisors on the space of maps to Grassmannians*, Int. Math. Res. Not., vol. 2006, Article ID 35273, 25 pages, 2006.
7. I. Coskun, *The Gromov-Witten invariants of jumping curves*, Trans. Amer. Math. Soc., **360** (2008), p. 989–1004.
8. I. Coskun, J. Harris and J. Starr, *The effective cone of the Kontsevich moduli space*, Canad. Math. Bull., **51** no. 4 (2008), p. 519–534.
9. I. Coskun, J. Harris and J. Starr, *The ample cone of the Kontsevich moduli space*, Canad. J. Math., **61** no. 1 (2009), p. 109–123.
10. I. Coskun, *A Littlewood-Richardson rule for two-step flag varieties*, Invent. Math., **176** no. 2 (2009), p. 325–395.
11. I. Coskun and R. Vakil, *Geometric positivity and the cohomology of homogeneous spaces and generalized Schubert calculus*, Algebraic Geometry, Proceedings of the Seattle 2005 Conference, vol. 1 (2009), p. 77–124.
12. I. Coskun and J. Starr, *Rational curves on cubic hypersurfaces*, Int. Math. Res. Not., Article RPN102 (2009), 16 pages.
13. D. Chen and I. Coskun, *Stable base locus decompositions for Kontsevich moduli spaces*, Michigan Math. J., **59** no.2 (2010), 435–466.
14. I. Coskun, *The quantum cohomology of flag varieties and the periodicity of the Schubert structure constants*, Math. Ann., **346** no. 2 (2010), 419–447.
15. I. Coskun, *Rigid and non-smoothable Schubert cycles*, J. Differential Geom., **87** no.3 (2011), 493–514.
16. I. Coskun, *Restriction varieties and geometric branching rules*, Adv. Math., **228** no.4 (2011), 2441–2502.
17. D. Chen and I. Coskun, *Towards the Minimal Model Program for the Kontsevich moduli spaces*, (with an appendix with C. Crissman), Amer. J. Math., **133** no.5 (2011), 1389–1419.
18. D. Chen, I. Coskun and S. Nollet, *Hilbert scheme of a pair of codimension two linear subspaces*, Comm. Alg., **39** no.8 (2011), 3021–3043.
19. S. Billey and I. Coskun, *Singularities of generalized Richardson varieties*, Comm. Alg., **40** no. 4 (2012), 1466–1495.
20. R. Abdelkerim and I. Coskun, *Spaces of Schubert varieties contained in hyperplane sections of Grassmannians*, J. Pure Appl. Algebra **216** (2012), 800–810.
21. I. Coskun, *Surfaces of low degree containing a canonical curve*, Contemp. Math., **572** (2012), 57–70.
22. D. Arcara, A. Bertram, I. Coskun and J. Huizenga, *The birational geometry of the Hilbert Scheme of Points on the plane and Bridgeland stability conditions*, Adv. Math., **235** (2013), 580–626.
23. A. Bertram and I. Coskun, *The birational geometry of Hilbert schemes of points on surfaces*, Birational geometry, rational curves and arithmetic, Simons Symposia, Springer 2013, 15–55.
24. I. Coskun, *Symplectic restriction varieties and geometric branching rules*, Clay Mathematics Proceedings, **18** (2013), 205–239.
25. I. Coskun and C. Robles, *Flexibility of Schubert classes*, Differ. Geom. Appl., **31** no. 6 (2013), 759–774.
26. I. Coskun, *Rigidity of Schubert classes in orthogonal Grassmannians*, Israel J. Math., **200** no. 1, (2014), 85–126.
27. I. Coskun and A. Prendergast-Smith, *Fano manifolds of index $n - 1$ and the cone conjecture*, Int. Math. Res. Not. (2014), 2401–2439.

28. I. Coskun and J. Huizenga, *Interpolation, Bridgeland stability and monomial schemes in the plane*, *J. Math. pures app.*, **102** (2014), 930–971.
29. I. Coskun, *Symplectic restriction varieties and geometric branching rules II*, *J. Comb. Theory A*, **125** (2014), 47–97.
30. D. Chen and I. Coskun, *Extremal effective divisors on the moduli space of n pointed genus one curves*, *Math. Ann.*, **359** no. 3 (2014), 891–908.
31. I. Coskun and A. Prendergast-Smith, *Eckardt loci on hypersurfaces*, *Comm. Algebra*, **43** no. 8 (2015), 3083–3101.
32. I. Coskun, J. Huizenga and Matthew Woolf, *The effective cone of the moduli spaces of sheaves on the plane*, *J. Eur. Math. Soc.*, **19** no. 5 (2017), 1421–1467.
33. I. Coskun, M. Hadian and D. Zakharov, *Dense PGL-orbits in products of Grassmannians*, *J. Algebra*, **429** (2015), 75–102.
34. D. Chen and I. Coskun, *Extremal higher codimension cycles on moduli spaces of curves*, *Proc. Lond. Math. Soc.*, **111** no. 1 (2015), 181–204.
35. I. Coskun, *Birational Geometry of Moduli Spaces*, in Algebraic Geometry and Number Theory, CIMPA–CMI–TÜBITAK Summer School, Galatasaray University, Istanbul 2014, Progress in Mathematics, **321** (2017), 29–54.
36. I. Coskun and J. Huizenga, *The ample cone of the moduli spaces of sheaves on the plane*, *Algebraic Geom.*, **3** no. 1 (2016), 106–136.
37. I. Coskun and J. Huizenga, *The birational geometry of the moduli spaces of sheaves on the plane*, Proceedings of the Gökova Geometry-Topology Conference 2014, (2015), 114–155.
38. I. Coskun, L. Costa, J. Huizenga, R.M. Miró-Roig and M. Woolf, *Equivariant Ulrich bundles on flag varieties*, *J. Algebra* **474** (2017), 49–96.
39. I. Coskun and A. Prendergast-Smith, *Fano manifolds of index $n - 2$ and the cone conjecture*, *Math. Proc. Camb. Phil. Soc.*, **166** no. 1 (2019), 1–31.
40. I. Coskun and J. Huizenga, *The nef cone of the moduli spaces of sheaves and strong Bogomolov inequalities*, *Israel J. Math.* **226** no. 1 (2018), 205–236.
41. I. Coskun, J. Lesieutre and J.C. Ottem, *Effective cones of cycles on blow-ups of projective space*, *Algebra Number Theory* **10** no. 9 (2016), 1983–2014.
42. I. Coskun, Donghoon Hyeon and Junyoung Park, *Castelnuovo-Mumford regularity and Bridgeland stability for points in the projective plane*, *Proc. Amer. Math. Soc.*, **145** (2017), 4573–4583.
43. I. Coskun, *Restriction varieties and the rigidity problem, in Schubert varieties, equivariant cohomology and characteristic classes* *Impanga* **15** (2018), 49–96.
44. I. Coskun and L. Jaskowiak, *Ulrich partitions for two-step flag varieties*, *Involve* **3** no. 3 (2017), 531–539.
45. I. Coskun and E. Riedl, *The normal bundles of rational curves in projective space*, *Math. Z.* **288** (2018), 803–827.
46. I. Coskun and J. Huizenga, *Weak Brill-Noether for rational surfaces*, in Local and Global Methods in Algebraic Geometry, *Contemp. Math.* **712** (2018), 81–104.
47. I. Coskun and J. Huizenga, *Brill-Noether theorems and globally generated vector bundles on Hirzebruch surfaces*, *Nagoya J. Math.* **238** (2020), 1–36.
48. I. Coskun and E. Riedl, *Normal bundles of rational curves on complete intersections*, *Communications in Contemporary Math.* **21** no. 2 (2019), (23 pages)
49. I. Coskun and J. Huizenga, *The moduli spaces of sheaves on surfaces, pathologies and Brill-Noether problems*, in Geometry of Moduli, Abel Symposia 14 (2018), 75–106.

50. I. Coskun and E. Riedl, *Algebraic hyperbolicity of the very general quintic surface in \mathbb{P}^3* , *Adv. Math.* **350** (2019), 1314–1323.
51. I. Coskun and J. Huizenga, *Existence of stable sheaves on Hirzebruch surfaces*, to appear in *Adv. Math.* (95 pages)
52. I. Coskun and M. Woolf, *Stabilization of cohomology of moduli spaces of sheaves on surfaces*, to appear *J. Differential Geom.* (36 pages)
53. I. Coskun and E. Riedl, *Effective bounds on ampleness of cotangent bundles*, *Bull. London Math. Soc.*, **52** (2020), 237–243.
54. I. Coskun and J. Huizenga, *Brill-Noether Problems, Ulrich bundles and the cohomology of moduli spaces of sheaves*, Proceedings of the ICM Satellite Conference on Moduli Spaces in Algebraic Geometry and Applications, *Matematica Contemporanea*, **47** (2020), 21–72.
55. I. Coskun, E. Larson and I. Vogt, *Stability of normal bundles of space curves*, submitted (24 pages)
56. I. Coskun, J. Huizenga and J. Kopper, *The cohomology of the tensor product of vector bundles on the projective plane*, submitted, (33 pages)
57. I. Coskun and E. Riedl, *Clustered families and applications to Lang-type conjectures*, submitted (21 pages)
58. I. Coskun, H. Nuer and K. Yoshioka, *Brill-Noether theorems on $K3$ surfaces*, in preparation
59. I. Coskun, *A Littlewood-Richardson rule for partial flag varieties*, submitted (33 pages).
60. I. Coskun, *Intersection theory on moduli spaces*, course notes published on MIT OpenCourseWare (137 pages).
61. I. Coskun, *Birational Geometry of Moduli Spaces*, Lecture notes for Utah VIGRE Summer School (75 pages).
62. I. Coskun and C. Robles, *The Geometry of exceptional homogeneous varieties*, in preparation.
63. I. Coskun, *A Pieri rule for orthogonal flag varieties*, in preparation.
64. I. Coskun, *The geometry of linear spaces on quadrics*, in preparation.

BOOKS

1. *Surveys on recent developments in algebraic geometry*, (coedited with Tommaso de Fernex and Angela Gibney), Proceedings of Symposia in Pure Mathematics **95**, American Mathematical Society, 2017.

HONORS AND AWARDS

- NSF RTG grant, PI, (2021–2026)
- University Scholar, 2019–2022
- Graduate College Mentoring Award 2018
- Fellow of the American Mathematical Society, class of 2018
- NSF FRG grant DMS 1664296, PI, joint with Aaron Bertram, Jack Huizenga, Emanuele Macri (2017–2020)
- NSF grant DMS 1500031, PI (2015–2018)
- Researcher of the Year Award, UIC, 2013
- NSF RTG grant DMS 1246844, co-PI (2013–2017)
- NSF CAREER Grant DMS 0950951535, PI (2010–2015)
- Alfred P. Sloan Foundation Fellowship (2009–2011)
- NSF grant DMS 1045217 (2010–2011), Co-PI, James McKernan, PI
- NSF grant DMS 0737581, PI (2007–2010)

- Kavli Fellow (2010), National Academy of Sciences.
- Jean de Valpin Fellowship, 2004 Harvard University.
- Raphael Salem Fellowship, 2001 Harvard University.
- 2000 Phi Beta Kappa Prize, for highest academic standing in the Class of 2000 at Princeton University.
- 2000 Middleton Miller'29 Prize, for the best senior thesis in mathematics, Princeton University.
- 2000 George B. Covington Prize, highest achievement in the mathematics major, Princeton University.
- 1999 Andrew H. Brown Prize, the highest achieving junior in the Mathematics Department, Princeton University.
- Class of 1939 Princeton Scholar Award, for highest standing at the end of the junior year at Princeton University, shared with Benjamin Sommers.

EDITORIAL

I serve on the editorial boards of the Journal of Pure and Applied Algebra, the European Journal of Mathematics and Advances in Geometry. I served on the editorial board of the Central European Journal of Mathematics, 2009–2014.

TEACHING EXPERIENCE:

I am a recipient of a Certificate of Distinction in Teaching (Fall 2003) awarded by Harvard's Derek Bok Center. I have taught the following courses and attended the following teacher training programs:

- Math 553, Spring 2021, Algebraic Geometry II
- Math 571, Fall 2020, Topics in Algebraic Geometry: K3 surfaces
- Math 417, Fall 2020, Complex Analysis
- Math 553, Spring 2020, Algebraic Geometry II
- Math 554, Fall 2019, Complex Manifolds I
- Math 417, Fall 2019, Complex Analysis
- Math 553, Spring 2019, Algebraic Geometry II
- Math 552, Fall 2017, Algebraic Geometry I
- Math 320, Fall 2017, Linear Algebra
- Math 571, Fall 2015, Topics in Algebraic Geometry: Birational geometry of moduli spaces
- Math 552, Fall 2015, Graduate Algebraic Geometry
- Math 517, Spring 2015, Graduate Algebra II
- Math 516, Fall 2014, Graduate Algebra I
- Math 494, Spring 2014, Undergraduate Algebraic Geometry
- Math 330, Fall 2013: Undergraduate Algebra
- Math 516, Fall 2013: Graduate Algebra I
- Math 571, Fall 2012: Topics in Algebraic Geometry, Intersection theory and birational geometry
- Math 520, Fall 2012: Commutative and Homological Algebra
- Math 517, Spring 2012: Graduate Algebra II
- Math 516, Fall 2011: Graduate Algebra I
- Math 571, Fall 2010: Topics in Algebraic Geometry, Moduli spaces.
- Math 494, Fall 2010: Undergraduate Algebraic Geometry
- Math 320, Spring 2010: Linear Algebra

- Math 210, Fall 2009: Calculus III
- Math 552, Fall 2008, Fall 2009: Algebraic Geometry
- Math 417, Spring 2008, Fall 2008: Complex Analysis
- Math 330, Fall 2007: Abstract Algebra
- 18.726, Spring 2007: Algebraic Geometry, a course based on Hartshorne at M.I.T.
- 18.727, Fall 2006: Topics in Algebraic Geometry, an advanced graduate class on positivity in algebraic geometry at M.I.T.
- 18.727, Spring 2006: Topics in Algebraic Geometry, an advanced graduate class on intersection theory on moduli spaces at M.I.T.
- 18.100B, Fall 2005: Instructor for Analysis I at M.I.T.
- 18.01, Fall 2005: Calculus recitation instructor for two sections.
- 18.03, Spring 2005: Introduction to ordinary differential equations, recitation instructor for three sections.
- 18.781, Fall 2004: Instructor for introduction to number theory at M.I.T.
- Math 21 b, Fall 2003: Teaching fellow for introductory linear algebra at Harvard University.
- Math 25 a and b, 2002-2003: Teaching fellow for introduction to analysis and linear algebra intended for mathematics majors at Harvard University.
- Math 260 a and b, 2001-2002: The course assistant for a year long graduate class Introduction to Algebraic Geometry.
- Tutorial on Special Functions: Applications to Number Theory and Geometry, Summer 2001. Advanced topics tutorial for sophomores and juniors at Harvard University.
- Math Xb, Spring 2001: Teaching fellow for second semester introductory calculus at Harvard University.
- Tutor of the college in mathematics and physics at Princeton University, 1997-2000.
- M.I.T. teacher training seminar Fall 2004.
- Harvard Derek Bok Teacher Training Program Fall 2000.
- Attended semi-annual Derek Bok Center teaching seminars 2000-2004.

POSTDOCS:

Dawei Chen (RAP 2008–2011, currently at Boston College)
 Artie Prendergast-Smith (RAP 2011–2013, currently at Loughborough University)
 Majid Hadian-Jazi (RAP 2012–2014)
 Jack Huizenga (NSF postdoc 2012–2015, currently at Penn State)
 Matthew Woolf (RTG postdoc 2014–2018, currently at Google)
 John Lesieutre (RTG postdoc 2015–2018, currently at Penn State)
 Eric Riedl (RTG postdoc 2015–2018, currently at Notre Dame)
 Howard Nuer (NSF and RTG postdoc 2017–2020, currently at Technion)
 Geoff Smith (RAP 2020–2023)

GRADUATE
STUDENTS:

Rebecca Lehman (co-advised with Jason Starr, graduated 2007, MIT)
Richard Abdelkerim (graduated 2011, UIC)
Cesar Lozano (graduated 2014, UIC)
Charles Staats (graduated 2014, University of Chicago)
Seckin Adali (graduated 2016, UIC),
Tim Ryan (graduated 2016, UIC),
Alex Stathis (graduated 2017, UIC)
Tabes Bridges (graduated 2018, UIC)
John Kopper (graduated 2019, UIC)
Daniel McLaury (seventh year student, on leave)
Sayanta Mandal (graduated 2020, UIC)
See-Hak Seong (graduated 2020, UIC)
Ben Gould (expected 2023, UIC)
Dorian Lee (expected 2023, UIC)
Yuxiang Liu (expected 2023, UIC)
Yeqin Liu (expected 2024, UIC)
Corina Tarnita (Harvard, minor thesis advisor, 2006).
Main examiner on the qualifying exam committees of Brian Lehmann, Craig Desjardins (MIT, Spring 2007).
Examiner on the qualifying exam committee of Fucheng Tan (MIT, Spring 2007).
Thesis reader for Ethan Cotterill (Harvard, Spring 2007), Dawei Chen (Harvard, Spring 2008), Roi Docampo (UIC, 2009), Tuan Pham (UIC, 2011), Wenbo Niu (UIC, 2011), Drew Shulman (UIC, 2011), Jack Huizenga (Harvard, Spring 2012), Yaim Cooper (Princeton, Spring 2013), Luigi Lombardi (UIC, Spring 2013), Holly Krieger (UIC, Spring 2013), Paul Reschke (UIC, Spring 2013), Matthew Wechter (UIC, Spring 2013), Chih-Chi Chou (UIC, Spring 2014), Lei Song (UIC, Spring 2014), Xudong Zhang (UIC, 2016), Shuhang Yang (UIC, Spring 2018), Janet Page (UIC, Spring 2018), Sam Shideler (UIC, Spring 2018) Eun Hye Lee (UIC, Spring 2019), Dylon Chow (UIC, Spring 2019), Fumiaki Suzuki (UIC, Spring 2020), Victor Jatoba (UIC, Spring 2020), Rebeca Saccochi (UIC, 2020), Sybille Rosset (Paris, 2020).

UNDERGRADUATE
STUDENTS:

Yunus Syed, mentor for reading courses, 2017-2019.
Veronica Kalicki, mentor for reading courses, 2017-2018.
Luke Jaskowiak, mentor for undergraduate research, 2015-2016.
Nick Cahill, mentor for undergraduate research, Summer 2012.
Joseph Berner, mentor for undergraduate research, Summer 2011.
Conor Jensen, mentor for undergraduate research, Spring 2010 and Fall 2010.
Nick Spizzirri, mentor for undergraduate research, Fall 2008.
Kai Ho Wong, mentor for summer research, Spring, Summer and Fall 2008.

HIGHSCHOOL
STUDENTS:

Kevin He, IMSA, mentor for student inquiry and research, 2012-2013.
James Tao, IMSA, mentor for student inquiry and research, 2013-2014
Karen Ge, 2016-2018
Shivansh Gupta, 2017-2019

SERVICE

- Scientific Advisory Board, Matematik Dünyası, 2021–
- Panelist, GROW, September 2020
- Organizer FRG workshop on Moduli and Stability December 2020 on zoom
- Organizer of special session on Moduli Spaces at the Mathematical Congress of the Americas 2021
- Reviewer for Deutsche Forschungsgemeinschaft

- Organizer of FRG Workshop on Stability, moduli spaces and applications at UIC (December 2019)
- Scientific advisory committee, IMPANGA 2020, Banach, International Mathematical Center, Poland
- Reviewer for Austrian Science Fund (2019)
- Organizer of Moduli spaces of sheaves on surfaces and Bridgeland stability at UIC (December 2018)
- Co-organizer of Moduli of Sheaves and Strange Duality at Penn State (December 2017)
- NSF Panel (October 2017)
- Advisory Committee (2017–2019)
- Organizer of Workshop on Combinatorics and Moduli at the Fields Institute (December 2016)
- Chair of the RAP hiring committee (2015–2016)
- NSF panel (2015)
- Scientific Advisory Committee, Conference on ACM bundles, 2015 ODTU, Ankara, Turkey.
- Scientific Advisory Committee, Turkish National Mathematics Symposium 2014.
- Chair of the organizing committee for the graduate student boot camp for the 10 year algebraic geometry meeting, July 2015 in Salt Lake City, Utah.
- Faculty advisor for Midwest Algebraic Geometry Graduate Conference, UIC February 2014.
- Chair of postdoc hiring committee, member of graduate admission committee.
- NSF Panel (2014)
- Scientific Advisory Committee member, configuration spaces and moduli spaces, Morocco 2014.
- Co-organizer workshop on birational geometry and moduli spaces, Vietnam 2014.
- Co-organizer, Workshop on moduli and birational geometry, August 2013, Pohang, Korea.
- Reviewer for the Simons Foundation grants (2013, 2014)
- Organizer, Summer school in algebraic geometry in Istanbul Turkey, June 17-21, 2013.
- Chair of the organizing committee, Graduate student workshop on Bridgeland stability and moduli spaces, UIC, March 23-25, 2013.
- Tenure-track hiring committee, graduate student admissions committee, chair of the visitors' fund committee, undergraduate advising committee (2012-2013).
- On the Scientific Committee for the third Birational Geometry and Moduli Spaces Workshop in Busan, Korea.
- On the Scientific Committee for the 25th National Turkish Mathematics Symposium.
- Reviewer for the National Research Council of Romania (2012).
- Reviewer for CONICYT, Chile (2012) (The Chilean National Commission for Scientific and Technological Investigations).
- Reviewer for NSA grants (2011, 2012, 2013).
- Served on NSF Panel (Dec 2011).
- Served on the RAP Hiring Committee, Graduate Student Admission Committee and I was the coordinator for 400-500 level courses (2011-2012).
- Served on the RAP Hiring Committee (2010-2011).
- Co-organizer of Departmental Colloquium (Fall 2009–2011).
- Reviewer for the Sedat Simavi Science Awards (2010).

- Served on the 300 Level Curriculum Committee (2010-2011), the Undergraduate Committee (2008-2009), Graduate Curriculum Committee (2007-2008).
- Chair of the organizing committee for Algebraic Geometry: A Conference in honor of Joe Harris' 60th birthday, August 2011 at Harvard University.
- Co-organizer Ohio State-Michigan-UIC Algebraic Geometry Workshop, October 2010.
- Co-organizer of Snowbird MRC Conference: Birational Geometry and Moduli Spaces, June 2010.
- Served on the Tenure Track Hiring Committee (2009-2010).
- Served on NSF Panel (November 2009).
- Co-organizer of Algebraic Geometry: A conference in honor of Anatoly Libgober's 60th birthday, October 2009 at UIC.
- Chair of the organizing committee for the workshop on moduli theory during MSRI 2009 jumbo semester.
- Co-organizer of special session in algebraic geometry in the joint AMS/SBM meeting in Rio de Janeiro.
- Co-organizer of Algebraic Geometry and Commutative Algebra, in honor of Robin Hartshorne's 70th birthday to take place April 11-13, 2008 at UIC.
- Co-organizer of Midwest Number Theory Days March 7-8, 2008 at UIC.
- Co-organizer of UIC Algebraic geometry seminar, Fall 2007-present.
- Co-organizer of UIC Graduate student algebraic geometry seminar, 2007-2008.
- Organizer of The Seminar on MMP, a graduate student seminar on MMP culminating in a Clay workshop, Spring 2007.
- Co-organizer of the Harvard-MIT Algebraic Geometry Seminar. Fall 2005-Spring 2007.
- Organizer of BAGS, a Boston area graduate student algebraic geometry seminar. Fall 2005-Spring 2007.
- Designed web page, with complete course notes, for OpenCourseWare on intersection theory on moduli spaces.
- Referee for over fifty articles for journals including Acta Mathematica, Advances in Mathematics, Proceedings of the AMS, Transactions of AMS, IMRN, Experimental Mathematics, Mathematische Annalen, Journal of Algebraic Geometry, Michigan Journal of Mathematics, American Journal of Mathematics, Geometry and Topology, Surveys in Differential Geometry, Journal of AMS and Annals of Mathematics.

INVITED LECTURE
SERIES

1. Utah VIGRE Summer School on Birational Geometry and Moduli Spaces, June 2010, Salt Lake City, Utah (5 lectures)
2. Geometry of Homogeneous Varieties, February 2011, Rio de Janeiro, Brazil (12 hours of lectures)
3. Summer School on Algebraic Geometry, June 2012, Yangyang, Korea (4 lectures)
4. Graduate workshop in Algebraic Geometry, June 2013, Istanbul, Turkey (8 hours of lectures)
5. School in Algebraic Geometry, July 2013, Morelia, Mexico (4 lectures)
6. Graduate workshop on the geometry of Hilbert schemes, Simons Center, Stony Brook, NY (2 90-minute lectures)
7. Lectures in the Banach Center, December 2013, Warsaw, Poland (16 lectures)
8. CIMPA/TUBITAK/GSU Summer School in algebraic geometry and number theory, June 2014, Galatasaray University, Istanbul, Turkey (2 hour long lectures)

9. Algebraic Geometry Summer School, July 2014, Calouste Gulbenkian Foundation, Lisbon, Portugal (5 hour long lectures)
10. Cones and Positivity Summer School, August 2015 (4 hour and a half long lectures)
11. Universita Roma Tre, April 2016, Rome, Italy (3 two hour lectures)
12. Stability conditions on triangulated categories and geometric applications, Nordfjordeid, Norway, June 2016 (7 lectures)
13. Jornadas de geometria algebraica en Oaxaca, UNAM Oaxaca, March 2019 (3 hour and a half lectures)
14. 5th Geometry and Topology Summer School, Istanbul Center for Mahemathical Sciences, July 2020 (4 hour and a half lectures)

INVITED
CONFERENCE TALKS

1. Oberwolfach Mathematics Institute, The geometry of Grassmannians and flag varieties, June 2004
2. Snowbird Conference, The geometry and arithmetic of Kobayashi hyperbolicity, June 2004
3. AMS Special Session on Schubert Calculus, The geometry of Grassmannians and flag varieties, Oct. 2004
4. Banff Research Center, The ample and effective cones of Kontsevich moduli spaces, Banff, Canada, Oct. 2005
5. University of Michigan-Ohio State University joint workshop, The ample and effective cones of Kontsevich moduli spaces, Dec. 2005
6. TMS/AMS Joint Conference, The ample and effective cones of Kontsevich moduli spaces, Dec. 2005
7. Banff International Research Center, Banff, Canada, Mar. 2007
8. AMS Special Session on Combinatorial Algebraic Geometry, Apr. 2007
9. Western Algebraic Geometry Seminar, Seattle, Apr. 2007
10. AMS Meeting De Paul University, Fall 2007
11. Clay Mathematics Institute workshop on rational connectivity, Fall 2007
12. AMS Meeting in NYC, March 2008
13. AMS/SBM Joint meeting, Rio de Janeiro, Brazil, Hour lecture, June 2008
14. University of Arizona Tucson, Colloquium, September 2008
15. MSRI, Combinatorial, Enumerative and Toric Geometry Workshop, March 2009
16. The Show-Me Algebraic Geometry Workshop, St. Louis, MO, May 2009
17. XI. Antalya Algebra Days, Antalya, Turkey, May 2009
18. FRG Conference on Eigenvalue and Saturation Problem for reductive groups, UNC, May 2009
19. FRG Conference on Spaces of curves and their interaction with diophantine problems, Columbia University, June 2009
20. 1st PRIMA Congress, University of New South Wales, Sydney, Australia, July 2009
21. Moduli Konferenz, Humboldt University, Berlin, Germany, August 2009
22. XXIII National Mathematics Symposium, invited speaker, (2 lectures), Kayseri, Turkey, August 2010.
23. Poster presentation, National Academy of Sciences, 22nd Kavli Symposium, November 2010
24. Special Session in computational algebraic geometry of low dimensional varieties, AMS Joint Meeting, January 2011
25. Special Session in the birational geometry of moduli spaces, AMS Joint Meeting, January 2011

26. Workshop on the Birational Geometry of Moduli Spaces, Gyeongju, Korea, July 2011
27. A Celebration of Algebraic Geometry, Harvard University, August 2011
28. Simons Symposium, Virgin Islands, February 2012
29. Ohio State-Michigan-UIC Algebraic Geometry Workshop, March 2012
30. The first Georgia Algebraic Geometry Symposium, UGA, Athens, Georgia May 2012
31. Workshop on Moduli and Birational Geometry, Busan, Korea, July 2012
32. Workshop on birational geometry of moduli spaces, AIM, Palo Alto, December 2013
33. Southern California Algebraic Geometry Seminar, UC San Diego, April 2013
34. Complex Algebraic Geometry, Singapore, July-August 2013
35. Conference on birational geometry of moduli spaces, Pohang, Korea, August 2013
36. FRG meeting on geometry and arithmetic of rational curves, Rice University, Houston, Texas, September 2013
37. Second Georgia Algebraic Geometry Symposium, Athens, Georgia, October 2013
38. VIASM workshop on birational geometry of the moduli spaces of curves, Hanoi, Vietnam, January 2014
39. 21st Gokova Conference in Geometry and Topology, Gokova Turkey, May 2014
40. Workshop on Bridgeland stability conditions, RIMS, Kyoto, Japan, June 2014
41. Oberwolfach Workshop on Classical Algebraic Geometry, Oberwolfach, Germany, July 2014
42. Novos Talentos em Matematica, National Meeting, Gulbenkian Foundation, Lisbon, Portugal, July 2014.
43. Current developments in moduli theory, Boston, October 2014
44. Workshop on new developments in moduli and geometric invariant theory, Chapel Hill, November 2015.
45. New Methods in Birational Geometry, Université Paul Sabatier, Toulouse, France, June 2016
46. Higher codimension cycles, AIM, San Jose, CA, August 2016.
47. Geometry at the ANU: Conference, Canberra, Australia, August 2016.
48. Hyperkähler varieties and derived categories, Simons Center, Stony Brook, NY, September 2016
49. Stability and moduli, AIM, San Jose, CA, January 2017
50. Sheaves, curves and K3 surfaces, Humboldt University, Berlin, Germany, February 2017
51. Abel symposium, Svolvær, Norway, August 2017
52. Combinatorial Algebraic Geometry Retrospective Workshop, Fields Institute, Toronto, June 2018
53. ICM Sattelite Conference on Moduli Spaces in Algebraic Geometry and applications, Campinas, Brazil, July 2018
54. Moduli Spaces: Birational Geometry and Wall Crossings, BIRS, Banff, Canada, October 2018.
55. AGNES, Boston College, September 2019
56. 8. Bahar Konusmalari, October 2020, zoom
57. BIRS Conference on Derived Birational and Categorical Algebraic Geometry, November 2020, zoom
58. AMS Special Session on Algebraic and Arithmetic Geometry, Joint Meetings, January 2021, zoom

- INVITED COLLOQUIA
1. Rice University, The geometry of Grassmannians and flag varieties, Colloquium, Sep. 2004
 2. University of Illinois at Chicago, Colloquium, Nov. 2006
 3. University of Illinois at Urbana-Champaign, Colloquium, Dec. 2006
 4. Texas AM, Colloquium, Dec. 2006
 5. UC Irvine, Colloquium, Jan. 2007
 6. University of Pittsburgh, Colloquium, Jan. 2007
 7. UC Santa Cruz, Colloquium, Jan. 2007
 8. UC Santa Barbara, Colloquium, Jan. 2007
 9. The Ohio State University, Colloquium, Jan. 2007
 10. Rutgers University, Colloquium, Jan. 2007
 11. The Georgia Institute of Technology, Colloquium, Jan. 2007
 12. Brandeis University, Colloquium, Feb. 2007
 13. UC Riverside, Colloquium, Feb. 2007
 14. University of Massachusetts Amherst, Colloquium, Feb. 2007
 15. SUNY Stony Brook, Colloquium, Feb. 2007
 16. Bogazici University, Colloquium, Istanbul, Turkey, May 2008
 17. UFMG, Belo Horizonte, Brazil, Colloquium, June 2008
 18. Colloquium, Bogazici University, Istanbul, Turkey, December 2009
 19. Boston College, Colloquium, October 2011
 20. Boston College, Colloquium, January 2012
 21. University of British Columbia, Colloquium, January 2012
 22. Purdue University, Colloquium, February 2013
 23. POSTECH, Colloquium, Pohang, Korea, March 2014
 24. Caltech, Colloquium, January 2015
 25. University of Madison, Wisconsin, Colloquium, September 2015
 26. University of Texas, Austin, Colloquium, February 2018
 27. Penn State, Colloquium, April 2019
 28. Bogazici University, Colloquium, August 2019
 29. Ohio State, Colloquium, February 2021

- INVITED SEMINAR TALKS
1. Harvard University, Abelian differentials and dynamics, Dec. 2002
 2. M.I.T., Characteristic numbers of surfaces, Feb. 2003
 3. Bogazici University, Characteristic numbers of surfaces, Mar. 2003
 4. Rice University, Characteristic numbers of scrolls, Sep. 2003
 5. Rice University, Characteristic numbers of Del Pezzo surfaces, Sep. 2003
 6. University of Michigan, Characteristic numbers of surfaces, Dec. 2003
 7. Northwestern University, Characteristic numbers of surfaces, Jan. 2004
 8. Brandeis University, Characteristic numbers of surfaces, Feb. 2004
 9. Harvard University, The NEF cone of the moduli space of curves and the F-conjecture, May 2004
 10. Brown University, Characteristic numbers of surfaces, Fall 2004

11. Harvard University, The geometry of Grassmannians and flag varieties, Nov. 2004
12. Ohio State University, The geometry of Grassmannians and flag varieties, Nov. 2004
13. Boston University, The geometry of Grassmannians and flag varieties, Nov. 2004
14. Columbia University, Characteristic numbers of surfaces, Jan. 2005
15. Princeton University, The geometry of Grassmannians and flag varieties, Feb. 2005
16. University of Chicago, The geometry of Grassmannians and flag varieties, Feb. 2005
17. Harvard University, Coble sextics and holomorphic actions of lattices on \mathbb{P}^1 , May 2005
18. Stanford University, Counting jumping curves of vector bundles, May 2005
19. Harvard University, The ample and effective cones of Kontsevich moduli spaces, Sep. 2005
20. Johns Hopkins University, The ample and effective cones of Kontsevich moduli spaces, Oct. 2005
21. Texas A&M University, The ample and effective cones of Kontsevich moduli spaces, Oct. 2005
22. Northeastern University, The geometry of Grassmannians and flag varieties, Nov. 2005
23. Stanford University, Rational curves on hypersurfaces, Jan. 2006
24. Stanford University, Density of sections for pencils of Calabi-Yau hypersurfaces, Jan. 2006
25. Stanford University, The ample and effective cones of Kontsevich moduli spaces, Jan. 2006
26. UC Berkeley, The ample and effective cones of Kontsevich moduli spaces, Jan. 2006
27. University of Minnesota, The geometry of flag varieties, April 2006
28. University of Illinois at Urbana-Champaign, The ample and effective cones of Kontsevich moduli spaces, May 2006
29. M.I.T., Positivity in the Cohomology of homogeneous varieties, Sep. 2006
30. University of Illinois at Chicago, The ample and effective cones of Kontsevich moduli spaces, Oct. 2006
31. University of Chicago, The ample and effective cones of Kontsevich moduli spaces, Nov. 2006
32. UMass. Amherst, The geometry of Grassmannians and flag varieties, Dec. 2006
33. University of Maryland, Fall 2007
34. Princeton University, Algebraic Geometry Seminar, March 2008
35. IMPA, Rio de Janeiro, Brazil, Algebraic Geometry Seminar, June 2008
36. Park City, Utah, July 2008
37. UIUC, Algebraic Geometry Seminar, September 2008
38. University of Arizona Tucson, Algebraic Geometry Seminar, September 2008
39. University of Notre Dame, Algebraic Geometry Seminar, October 2008
40. UIC, Number Theory Seminar, October 2008
41. SUNY Stony Brook, Algebraic Geometry Seminar, November 2008
42. MSRI, Emphasis Period Seminar, March 2009
43. Koc University, Istanbul, Turkey, Mathematics Seminar, May 2009
44. Undergraduate Math Club, UIC, October 2009
45. Graduate Math Club, Bogazici University, Istanbul, Turkey, December 2009
46. Bilkent-ODTU Algebraic Geometry Seminar, Ankara, Turkey, December 2009
47. Algebraic Geometry Seminar, Bar-Ilan University, Bar-Ilan, Israel, December 2009
48. Algebraic Geometry and Representation Theory Seminar, Ben Gurion University, Beer Sheva, Israel, December 2009

49. Algebraic Geometry Seminar, Ohio State, January 2010
50. Algebraic Geometry Seminar, Stanford University, May 2010
51. Seminar, Yeditepe Universitesi, Istanbul, Turkey, August 2010
52. Algebraic Geometry Seminar, SUNY Stony Brook, September 2010
53. Algebraic Geometry Seminar, University of Wisconsin Madison, December 2010
54. Algebraic Geometry Seminar, Princeton University, December 2010
55. Algebraic Geometry Seminar, Tulane University, January 2011
56. UIC Undergraduate Math Club, January 2011
57. Algebraic Geometry Seminar, KIAS, Seoul, Korea, July 2011
58. University of Houston, Complex Geometry Seminar, September 2011
59. Texas AM, Algebraic Geometry Seminar, September 2011
60. Northwestern University Student Seminar, November 2011
61. Northwestern University Geometry and Physics Seminar, November 2011
62. University of British Columbia, Algebraic Geometry Seminar, January 2012
63. Harvard University, Harvard-MIT Algebraic Geometry Seminar, April 2012
64. UIUC, Algebraic Geometry Seminar, November 2012
65. Stony Brook, Algebraic Geometry Seminar, January 2013
66. Columbia University, Algebraic Geometry Seminar, January 2013
67. University of Chicago, Geometry and Topology Seminar, April 2013
68. University of Utah, Algebraic Geometry Seminar, February 2014
69. POSTECH, Algebraic Geometry Seminar, Pohang Korea, March 2014 (2 talks)
70. Boston College, Algebraic Geometry Seminar, May 2014
71. Universidade de Coimbra, Algebraic geometry and combinatorics seminar, Coimbra, Portugal, July 2014
72. Texas A & M, Geometry seminar, November 2014
73. Caltech, Algebraic Geometry seminar, January 2015
74. Penn State, Algebra and Number Theory Seminar, February 2016
75. Stanford, Algebraic Geometry Seminar, April 2016
76. University of Georgia, March 2017
77. Tel Aviv University, Tel Aviv, Israel, April 2017
78. Rice University, Algebraic geometry and number theory seminar, October 2017
79. Stanford, Algebraic Geometry Seminar, January 2018
80. UIC, Algebraic Geometry Seminar, February 2018
81. University of Chicago, Algebraic Geometry Seminar, November 2018
82. Notre Dame, Algebraic Geometry and Commutative Algebra Seminar, November 2018
83. University of Chicago, Geometry and Topology Seminar, January 2019
84. UIC Algebraic Geometry Seminar, January 2019
85. Columbia University, Algebraic Geometry Seminar, February 2019
86. Duke University, Algebraic Geometry Seminar, April 2019
87. Penn State, Algebraic Geometry Seminar, April 2019
88. Northwestern University, Number Theory Seminar, May 2019

89. UIC, Algebraic topology and K-theory Seminar, September 2019
90. Stanford Algebraic Geometry Seminar, January 2020
91. ETH Zoominar, Algebraic Geometry and Moduli, April 2020
92. ZAG Zoominar, Algebraic Geometry, June 2020
93. Ucgcn, Algebraic Geometry Zoominar, December 2020
94. Stanford Algebraic Geometry Seminar, February 2021

REFERENCES

- Joe Harris, Harvard University (thesis advisor)
- Mihnea Popa, Harvard University
- Ravi Vakil, Stanford University
- Jason Starr, SUNY Stony Brook
- Brendan Hassett, Brown University
- Lawrence Ein, UIC