Samuel Grushevsky

Employment

2021–2027	Deputy Director	Simons Center for Geometry and Physics
2014–	Professor of Mathematics	Stony Brook University
2009–2014	Associate Professor	Stony Brook University
2005–2010	Assistant Professor	Princeton University
2002–2005	Instructor	Princeton University

Education

2002	Ph.D. in mathematics	Harvard University
	Ph.D. advisor:	Professor Yum-Tong Siu
	Dissertation title:	*Effective Schottky problem*
1998	A.B. in math and physics	Harvard University
1994–1996	undergraduate study	Moscow State University
1993–1996	undergraduate study	Independent U of Moscow
1994	High school diploma	Moscow State 57th school

Research interests

Algebraic and complex geometry, relations with number theory, integrable systems, and mathematical physics. Curves, abelian varieties, and moduli.

Awards

Fellow of the American Mathematical Society, class of 2022
Bessel Research Award from the Humboldt foundation, 2015
Simons Fellowship in Mathematics, 2015–2016
NSF Mathematical Sciences Postdoctoral Research Fellowship, 2002–2006
Clay Liftoff Fellow in Mathematics, Summer 2002
NSF Graduate Research Fellowship, 1998–2001

Grants

PI on NSF Division of Mathematical Sciences (DMS) individual grants continuously since 2006; PI on NSF DMS conference grants for 8th and 7th Iberoamerican Congresses on Geometry, co-PI on AGNES conference grants, at Stony Brook in 2023, 2020 (virtual), 2017, 2014, 2011, and Versatility of Integrability conference at Columbia, 2011.

Personal

Birthdate:	December 5, 1978
Birthplace:	Moscow, Russia
Citizenship:	USA

Ph.D. Students

Xuande Liu, Stony Brook Ph.D. program started 2023

Prabhat Devkota, Stony Brook Ph.D. 05/2026. *Moduli Spaces of Multi-scale Differentials in Genus 0.* Will be a Humboldt Research Fellow at Goethe-Universität Frankfurt starting 09/2026.

Myeongjae Lee, Stony Brook Ph.D. 08/2025. *Connected components of generalized strata of differentials.* Currently Zorn postdoctoral fellow at Indiana University.

Frederik Benirschke, Stony Brook Ph.D. 08/2021. *Complex-linear subvarieties: equations and degenerations.* Currently at a hedge fund after being L.E.Dickson Instructor at University of Chicago.

Xuntao Hu, Stony Brook Ph.D. 08/2019: *Variational formulas and strata of abelian differentials.* Currently data scientist at Attentive.

Anant Atyam, Stony Brook Ph.D. 08/2014: *Affine stratifications and equivariant vector bundles on the moduli of principally polarized abelian varieties.* Currently data scientist at Apple.

Chaya Norton, Stony Brook Ph.D. 08/2014: *Limits of real-normalized differentials on stable curves.* Currently in the data science industry.

Post-docs mentored

Karl Winsor, 2023–: (NSF postdoc sponsoring scientist) Teichmüller dynamics: absolute period foliations and orbit closures.

Benjamin Dozier, 2019–2021: Teichmüller dynamics; currently tenure-track assistant professor at Cornell University.

Dmitry Zakharov, 2010–2013: Chow and homology rings of abelian varieties, their moduli, and compactifications; currently tenured associate professor at Central Michigan University.

Publications

60. (with P. Devkota, with an appendix joint also with D. Chen and M. Moeller), preprint arXiv: 2602.22353, 45pp.
59. (with B. Dozier, with an appendix by M. Lee), *Ends of the strata of differentials*, preprint arXiv: 2504.21756, 16pp.
58. (with Y. Xie), *Integrable systems approach to the Schottky problem and related questions*, preprint arXiv: 2504.20243, 84pp, BIMSA mathematical physics school lecture notes volume, to appear.
57. (with G. Mondello, R. Salvati Manni, J. Tsimerman) *Compact Subvarieties of the Moduli Space of Complex Abelian Varieties*, preprint arXiv: 2404.06009, 48pp.

56. (with S. Cacciatori, A. Voronov) *Tree-Level Superstring Amplitudes: The Neveu-Schwarz Sector*, Journal of High Energy Physics (2024) 8, 32pp.
55. (with S. Casalaina-Martin, K. Hulek) *The birational geometry of moduli of cubic surfaces and cubic surfaces with a line*, Moduli 2, e1 (2025), 1–24.
54. (with R. Salvati Manni) *Moduli of abelian varieties near the locus of products of elliptic curves*, preprint arXiv: 2307.05238, 30pp.
53. (with D. Chen, D. Holmes, M. Möller, J. Schmitt) *A tale of two moduli spaces: logarithmic and multi-scale differentials*, 2212.04704, EpiGA 9 (2025), article 21, 51pp.
52. (with T. Ibukiyama, G. Mondello, R. Salvati Manni) *Differentiating Siegel modular forms, and the moving slope of $\mathcal{A}_g$*, Int. Math. Res. Not. 2024 (4), 3442–3486.
51. (with S. Casalaina-Martin, K. Hulek, R. Laza) *Non-isomorphic smooth compactifications of the moduli space of cubic surfaces*, Nagoya Math. J. 254 (2024), 315–365.
50. (with F. Benirschke, B. Dozier) *Equations of linear subvarieties of strata of differentials.* Geometry and Topology 26 (2022) 6, 2773–2830.
49. (with K. Hulek) *The cone of effective surfaces on $\overline{\mathcal{A}}_3$*, Moscow Math. Journal 22 (2022) 4, 657–703.
48. (with M. Bainbridge, D. Chen, Q. Gendron, M. Möller) *The moduli space of multi-scale differentials*, preprint arXiv: 1910.13492, 138pp.
47. (with S. Casalaina-Martin, K. Hulek, R. Laza) *Cohomology of the moduli space of cubic threefolds and its smooth models*, Memoirs of the AMS 282 (2023) 1395.
46. (with H. Farkas, R. Salvati Manni) *An explicit solution to the weak Schottky problem*, Algebraic Geometry 8 (2021) 3, 358–373.
45. (with I. Krichever, C. Norton) *Real-normalized differentials: limits on stable curves*, Russian Math Surveys 74 (2019) 2, 265–324.
44. (with K. Hulek, O. Tommasi; with an appendix by M. Dutour Sikirić) *Stable Betti numbers of (partial) toroidal compactifications of the moduli space of abelian varieties*, Proceedings in honour of Nigel Hitchin's 70th birthday, Volume II, 581–610 (2018), Oxford University Press.
43. (with M. Bainbridge, D. Chen, Q. Gendron, M. Möller) *Strata of k-differentials*, Algebraic Geometry 6 (2019) 2, 196–233.
42. (with G. Codogni, E. Sernesi) *The degree of the Gauss map for theta divisors*, Algebra and Number Theory 11 (2017), 983–1001.
41. (with E. Clader, F. Janda, D. Zakharov) *Powers of the theta divisor*

and relations in the tautological ring, Int. Math. Res. Not. 2018 (24), 7725–7754.

40. (with M. Bainbridge, D. Chen, Q. Gendron, M. Möller) *Compactification of strata of abelian differentials*, Duke Math. J. 167 (2018) 12, 2347—2416.
39. (with K. Hulek) *The intersection cohomology of the Satake compactification of $\mathcal{A}_g$ for $g \leq 4$*, Math. Annalen 369 (2017) 3-4, 1353–1381.
38. (with S. Casalaina-Martin, K. Hulek, R. Laza) *Complete moduli of cubic threefolds and their intermediate Jacobians*, Proceedings of the London Mathematical Society (new series) 122 (2021) 2, 259–316.
37. (with M. Möller) *Explicit formulas for infinitely many Shimura curves in genus 4*, Asian J. Math. 22 (2018) 2 (special issue dedicated to N. Mok), 381—390.
36. (with F. Dalla Piazza, A. Fiorentino, S. Perna, R. Salvati Manni) *Vector-valued modular forms and the Gauss map*, Doc. Math. 22 (2017), 1063–1080.
35. (with S. Casalaina-Martin, K. Hulek, R. Laza; with an appendix by M. Dutour Sikirić) *Extending the Prym map to toroidal compactifications of $\mathcal{A}_g$*, J. Europ. Math. Soc. 19 (2017) 3, 659–723.
34. (with M. Möller) *Shimura curves in the locus of genus 3 hyperelliptic curves*, Int. Math. Res. Not. 2016 (6), 1603–1639.
33. (with K. Hulek and O. Tommasi) *The stable cohomology of the perfect cone toroidal compactification of the moduli space of abelian varieties*, J. Reine Angew. Math. 741 (2018), 211—254.
32. (with F. Cléry and G. van der Geer; with an appendix by S. Mukai) *Siegel modular forms of genus* 2 *and level* 2, Internat. J. of Math. 26 (2015) 5, 51 pp.
31. (with R. Salvati Manni) *On the Coble quartic*, Amer. J. of Math. 137 (2015) 3, 765–790.
30. (with D. Zakharov) *The zero section of the universal semiabelian variety, and the double ramification cycle*, Duke Math. J. 163 (2014) 5, 953–982.
29. (with D. Zakharov) *The double ramification cycle and the theta divisor*, Proc. AMS 142 (2014) 12, 4053–4064.
28. (with K. Hulek) *Geometry of theta divisors — a survey*, A celebration of algebraic geometry, 361—390 (Volume published on the occasion of Joe Harris' 60th birthday), Clay Math. Proc., 18, Amer. Math. Soc., Providence, RI, 2013.
27. (with G. Farkas, R. Salvati Manni, A. Verra) *Singularities of theta divisors and the geometry of $\mathcal{A}_5$*, J. Europ. Math. Soc. 16 (2014), 1817–

1848.

26. (with R. Salvati Manni) *The Prym map on divisors, and the slope of $\mathcal{A}_5$ (with an appendix by K. Hulek)*, Int. Math. Res. Not. 2014 (2014) 24, 6645–6660.
25. (with I. Krichever) Real-normalized differentials and the spectral curves of the Calogero-Moser system, in Complex Geometry and Dynamics: the Abel symposium 2013, Springer 2015, 123–138.
24. (with K. Hulek) *The class of the locus of intermediate Jacobians of cubic threefolds*, Invent. Math. 190 (2012), 119–168.
23. (with K. Hulek) *Principally polarized semiabelic varieties of torus rank up to 3, and the Andreotti-Mayer loci*, Pure Appl. Math. Q. (special issue in memory of Eckart Viehweg) 7 (2011), 1309–1360.
22. (with R. Salvati Manni) *The Scorza correspondence in genus 3*, Manuscripta Math. 141 (2013) 1, 111–124.
21. *The Schottky problem*, in Current Developments in Algebraic Geometry, MSRI Publications **59**, Cambridge Univ. Press (2012), 129–164.
20. (with I. Krichever) *The universal Whitham hierarchy and the geometry of the moduli space of pointed Riemann surfaces*, Surv. Differ. Geom. 14 (2010), 111–130.
19. (with R. Salvati Manni) *The superstring cosmological constant and the Schottky form in genus 5*, Amer. J. Math. 133 (2011) 4, 1007–1027. Erratum **134** (2012) 4, 1139-1142.
18. (with R. Salvati Manni) *The vanishing of two-point functions for three-loop superstring scattering amplitudes*, Comm. Math. Phys. 294 (2010) 2, 343–352.
17. (with R. Salvati Manni) *The loci of abelian varieties with points of high multiplicity on the theta divisor*, Geom. Dedicata 139 (2009) 1, 233–247.
16. *A special case of the Γ_{00} conjecture*, in Liaison, Schottky Problem and Invariant Theory: Remembering Federico Gaeta. Progr. Math. 280 (2010), 223–234.
15. *Superstring scattering amplitudes in higher genus*, Comm. Math. Phys. 287 (2009) 2, 749–767.
14. (with C. Erdenberger and K. Hulek) *Some intersection numbers of divisors on toroidal compactifications of $\mathcal{A}_g$*, J. of Alg. Geom. 19 (2010), 99–132.
13. (with I. Krichever) *Integrable discrete Schrödinger equations and a characterization of Prym varieties by a pair of quadrisecants*, Duke Math. J. 152 (2010) 2, 317–371.
12. (with R. Salvati Manni) *Singularities of the theta divisor at points of*

order two, Int. Math. Res. Not. (2007), article ID rnm045, 14pp.

11. *Geometry of $\mathcal{A}_g$ and its compactifications*, in Algebraic Geometry: Seattle 2005, Proc. Sympos. Pure Math. 80, 193–234.
10. (with R. Salvati Manni) *Jacobians with a vanishing theta-null in genus 4*, Israel J. Math. 164 (2008), 303–315.
9. (with D. Lehavi) *Some intersections in the Poincaré bundle, and the universal theta divisor on the moduli space of (semi)abelian varieties*, Int. Math. Res. Not. (2008), article ID rnm129, 19pp.
8. (with C. Erdenberger and K. Hulek) *Intersection theory of toroidal compactifications of $\mathcal{A}_4$*, Bull. London Math. Soc. 38 (2006), 396–400.
7. *Multiplier ideals in algebraic geometry*, in Snowbird lectures in Geometry, Contemp. Math. 388, AMS 2005, 89–106.
6. (with R. Salvati Manni) *Theta functions of arbitrary order and their derivatives*, J. Reine Angew. Math. (Crelle) 590 (2006), 31–43.
5. (with R. Salvati Manni) *Two generalizations of Jacobi's derivative formula*, Math. Res. Lett. 12 (2005) 6, 921-932.
4. (with R. Salvati Manni) *Gradients of odd theta functions*, J. Reine Angew. Math. (Crelle) 573 (2004), 43–59.
3. *Effective algebraic Schottky problem*, math.AG/0403009, 23pp.
2. *Cubic equations for the hyperelliptic locus*, Asian J. Math. 8 (2004) 1, 161–172 (special issue dedicated to Yum-Tong Siu on his 60th birthday). Erratum **9** (2005) 2, 273.
1. *An explicit upper bound for Weil-Petersson volumes of the moduli spaces of punctured Riemann surfaces*, Math. Ann. 321 (2001) 1, 1–13.

Talks

Special Schools and Lecture Series:

13. Amplitudes and Algebraic Geometry, Erwin Schrödinger Institute, Vienna, Austria, 2026;
    4 hours on theta functions and moduli spaces
12. Integrable systems and algebraic geometry, Beijing Institute of Mathematical Sciences and Applications, Beijing, China, 2024;
    7.5 hours on the Riemann-Schottky problem and integrable systems
11. Winter school on algebraic curves, Riemann surfaces, and moduli spaces, Morningside Center for Mathematics, Beijing, China, 2019;
    5 hours on double ramification cycles and strata of differentials
10. Geometry RTG lectures at Northeastern University, Boston, MA, 2018;
    4 hours on Mirzakhani's recursion for Weil-Petersson volumes

9. CIMPA-CIMAT-ICTP school on moduli of curves, Guanajuato, Mexico, 2016;
   5 hours on birational geometry and topology of the moduli of curves
8. Moduli spaces in algebraic geometry and physics, Hamburg, Germany, 2013;
   3 hours on moduli of abelian varieties and string scattering
7. École de géométrie algébrique, Roscoff, France, 2012;
   5 hours on moduli of curves for experts in dynamics
6. Géométrie Algébrique en Liberté (GAeL) XX, Grenoble, France, 2012;
   4 hours on moduli of curves and abelian varieties
5. Gauge theory and string theory, Cargèse, France, 2012;
   2 hours on string scattering amplitudes
4. Lectures at Leibniz Universität, Hannover, Germany, 2010;
   5 hours on string scattering amplitudes and modular forms
3. Lectures at KIAS, Seoul, South Korea, 2009;
   8 hours on abelian varieties and integrable systems
2. School on abelian varieties, Mainz, Germany, 2008;
   5 hours on moduli of abelian varieties
1. Conference on algebraic geometry, Zacatecas, Mexico, 2006;
   3 hours on theta functions

Conferences:

91. Moduli of curves and abelian varieties at SwissMAP, Les Diablerets, Switzerland, 2026
90. Abelian Varieties and Their Moduli, Barcelona, Spain, 2026
89. Cycles on Moduli spaces, CIRM, Luminy, France, 2025
88. Geometry of Moduli special session of Summer Research Institute in Algebraic Geometry, For Collins, CO, 2025
87. Complex Geometry and Beyond, in honor of Ngaiming Mok's 70th birthday, Shanghai, China, 2025
86. Holomorphic Differentials, Berlin, Germany, 2024
85. Moduli of Varieties, Salt Lake City, UT, 2024
84. Moduli Spaces and Modular Forms, Schiermonnikoog, the Netherlands, 2024
83. A panorama of moduli spaces, Frankfurt, Germany, 2024
82. Workshop on Complex Geometry, Hong Kong, 2023
81. Combinatorics, Dynamics, and Geometry on Moduli Spaces, Luminy, France, 2022
80. German Math Society (DMV) annual meeting, Berlin, Germany, 2022

79. Algebraic Geometry in Hannover, for Klaus Hulek's 70th birthday, Hannover, Germany, 2022
78. Moduli spaces and logarithmic geometry, Stockholm, Sweden, 2021
77. Universidad de la Frontera: geometry center opening workshop (in zoom), Pucon, Chile, 2020
76. Geometry of algebraic varieties, in honor of Olivier Debarre's 60th birthday, Luminy, France, 2019
75. MSRI special semester on holomorphic differentials in mathematics and physics, Berkeley, CA, 2019
74. MSRI special semester on birational geometry and moduli spaces, Berkeley, CA, 2019
73. Holomorphic differentials in mathematics and physics, Stony Brook, NY, 2019
72. Dynamics and moduli spaces of translation surfaces, Toronto, Canada, 2018
71. Tau Functions of Integrable Systems and Their Applications, Banff, Canada, 2018
70. 14th Weihnachtsworkshop on Geometry and Number Theory, Karlsruhe, Germany, 2016
69. Surface bundles workshop, Oberwolfach, Germany, 2016
68. Complex Geometry Conference, in honor of Ngaiming Mok's 60th birthday, Seoul, South Korea, 2016
67. Cycles on moduli spaces, GIT, and Dynamics, at ICERM, Providence, RI, 2016
66. Integrability, moduli, and dynamics, Institut Mittag-Leffler, Stockholm, Sweden, 2016
65. Modular forms and moduli spaces workshop, Oberwolfach, Germany, 2016
64. Geometry of algebraic varieties, Berlin, Germany, 2015
63. Flat surfaces, CIRM, Luminy, France, 2015
62. Arbeitstagung 2015, Bonn, Germany, 2015
61. Current developments in moduli theory, Boston, MA, 2014
60. Komplexe Analysis workshop, Oberwolfach, Germany, 2014
59. Effective moduli spaces and applications to cryptography, Rennes, France, 2014
58. Flat Surfaces workshop, Oberwolfach, Germany, 2014
57. AGNES, Boston, MA, 2013
56. Cohomology of the moduli space of curves, Zurich, Switzerland, 2013
55. Integrable systems and moduli spaces workshop, Banff, Canada, 2013
54. 10th Abel Symposium: complex geometry, Trondheim, Norway, 2013

53. Complex Geometry Conference, Seoul, South Korea, 2013
52. Deformation and moduli in complex geometry, Seoul, South Korea, 2013
51. Moduli workshop, Oberwolfach, Germany, 2013
50. Algebraic geometry, modular forms and applications to physics workshop, Edinburgh, 2012
49. Heilbronn Institute lecture, Edinburgh, 2012
48. Texas Geometry and Topology Conference, Houston, 2012
47. Algebraic and complex geometry conference, dedicated to Klaus Hulek's 60th birthday, Hannover, Germany, 2012
46. Komplexe Analysis workshop, Oberwolfach, Germany, 2012
45. Georgia algebraic geometry symposium, in honor of Robert Varley, Athens, GA, 2012
44. Arithmetic, motives, and moduli spaces, Paris, France, 2012
43. Moduli spaces and modular forms, CIRM, Luminy, France, 2011
42. SIAM conference on applied algebraic geometry, Raleigh, NC, 2011
41. KIAS workshop on periods and moduli, Seoul, South Korea, 2011
40. Park City mathematics institute, Park City, UT, 2011
39. NoGAGS (Northern Germany Algebraic Geometry Seminar), Berlin, Germany, 2011
38. V Iberoamerican congress on complex geometry, Pucon, Chile, 2010
37. Komplexe Analysis workshop, Oberwolfach, Germany, 2010
36. Geometry and Dynamics of Teichmüller space, Bonn, Germany, 2010
35. Moduli workshop, Oberwolfach, Germany, 2010
34. Moduli, Berlin, Germany, 2009
33. Moduli and Discrete Groups, RIMS, Kyoto, Japan, 2009
32. Classical Algebraic Geometry Today, MSRI, Berkeley, CA, 2009
31. Arithmetic Algebraic Geometry Related to Moduli Spaces, Tokyo, Japan, 2009
30. Komplexe Analysis workshop, Oberwolfach, Germany, 2008
29. Moduli workshop, Symposium on Algebraic Geometry, Warwick, UK, 2008
28. Algebraic Geometry satellite conference of the ECM, Leiden, the Netherlands, 2008
27. Joint International AMS/SBM meeting, Rio de Janeiro, Brazil, 2008
26. Clay workshop on automorphic forms in moduli problems of Schottky and Brill-Noether type, Cambridge, MA, 2008
25. IV Iberoamerican conference on complex geometry, Ouro Preto, Brazil, 2007
24. The geometry of holomorphic and algebraic curves in complex alge-

braic varieties, Montreal, QC, 2007

23. Curves, abelian varieties and their interactions on the occasion of the 65th birthday of Roy Smith, Athens, GA, 2007
22. Program on moduli spaces, Institut Mittag-Leffler, Djursholm, Sweden, 2007
21. Berkeley-Stanford algebraic geometry colloquium, Stanford, CA, 2006
20. Modular forms, Schiermonnikoog, the Netherlands, 2006
19. Workshop on abelian varieties, Amsterdam, the Netherlands, 2006
18. Recent developments in higher-dimensional algebraic geometry, Banff, Canada, 2006
17. KIAS workshop on complex geometry, Seoul, South Korea, 2005
16. Modular forms and related moduli spaces, Rome, Italy, 2005
15. AMS summer institute in algebraic geometry, Seattle, WA, 2005
14. University of Michigan/Ohio State University algebraic geometry workshop, Columbus, OH, 2005
13. Birational geometry of moduli spaces (at AIM), Palo Alto, CA, 2004
12. Komplexe Analysis workshop, Oberwolfach, Germany, 2004
11. AMS summer research conference in algebraic geometry, Snowbird, UT, 2004
10. III Iberoamerican congress on geometry, Salamanca, Spain, 2004
9. Recent Developments in Several Complex Variables, CR geometry, and Complex Algebraic Geometry, celebrating Yum-Tong Siu's 60th birthday, Hong Kong, 2003
8. VBAC (Vector bundles on algebraic curves) 2003, Porto, Portugal, 2003
7. Geometry of Moduli Spaces, Lille, France, 2003
6. Perspectives in Classification and Moduli Theory, Cortona, Italy, 2002
5. Komplexe Analysis workshop, Oberwolfach, Germany, 2002
4. ICM 2002 satellite conference on complex analysis, Kyoto, Japan, and Shanghai, China, 2002
3. Moduli of Curves, Ann Arbor, MI, 2002
2. AMS Eastern sectional meeting, session on abelian varieties, Williamstown, MA, 2001
1. AMS Eastern sectional meeting, special session on enumerative methods in algebraic geometry, Lowell, MA, 2000
0. Workshop on Riemann Surfaces in honor of Hershel Farkas's 60th birthday, Jerusalem, Israel, 1999

Seminars and Colloquia: (total: 136)

Algebraic geometry: Bar Ilan, Ben Gurion (×3), Boston College, Caltech, U

of Chicago (×2), U of Illinois at Chicago (×5), Columbia (×4), Courant (×3), Duke, Essen, U of Georgia, Göttingen, Leibniz Universität Hannover (×6), Harvard-MIT (×5), Humboldt Universität Berlin (×4), Johns Hopkins (×2), Köln, Northwestern (×2), Ohio State (×2), Paris VI (Jussieu), Princeton (×2), Purdue, Stanford (×3), Stony Brook (×3), Tel Aviv, U Wisconsin-Madison, UC Berkeley (×2), UC Davis, UC San Diego, Yale (× 2), ZAG (zoom)

Algebra: Copenhagen, IMPA, MPIS, Roma "La Sapienza" (×4), UCLA, U of Pennsylvania

Analysis: Michigan State, Princeton

Colloquium: Ben Gurion, Berlin (×2), U of Colorado, Cornell, Hebrew U (×2), U of Maryland College Park, Penn State, Rice, Rutgers, Rutgers-Newark, U of Southern California, Stony Brook (×2), U of Utah

Dynamics: BiSTRO (zoom), CUNY graduate center, Institut Henri Poincaré

Geometry / Differential Geometry: UC Berkeley, Boston U, U of Colorado (×2, Fragment), Columbia, Essen, Hebrew U (×3), Hong Kong U (×2), Skolkovo Center for Advanced Studies (zoom), U of Maryland College Park, U of Massachusetts at Amherst (Valley), Osaka, Princeton (×3), Roma Tre (×5), Rutgers, Stony Brook, U of Texas at Austin

Math/physics: CRM Montreal, Stony Brook, U of Pennsylvania

Number theory: Joint Columbia-CUNY-NYU, Stanford, UCLA

Special series: Hebrew U (×4), Michigan State

Topology: CUNY, U of Chicago

Invited Visits

Leibniz Universität Hannover, Germany: Feb 2026, Mar 2024, Aug 2018, Jun 2017, Jun 2016, Apr 2016, Sep 2015, Jun 2014, Jan 2010, Aug 2008, Sep 2006, ...

Weizmann Institute of Science, Rehovot, Israel: Feb-Jun 2022

Moduli spaces and logarithmic geometry, Institut Mittag-Leffler, Stockholm, Sweden: Nov 2021

Dynamics: Topology and Numbers, Hausdorff Center, Bonn, Germany: Jan 2020

MSRI holomorphic differentials in mathematics and physics program, Berkeley, CA: Aug and Nov 2019

American Institute of Mathematics SQuaRE, San Jose, CA: Oct 2019, Dec 2018, Sep 2017

MSRI birational geometry and moduli spaces program, Berkeley, CA: May 2019

Max Planck Institut für Mathematik, Bonn, Germany: Jun-Jul 2018

Humboldt Universität Berlin, Germany: Jul 2017, Oct 2015, Jan 2010, Aug 2008, ...

Columbia University, New York, NY: Jan-Mar 2016

Università Roma La Sapienza, Italy: Oct 2023, Jul 2023, Dec 2015, Mar 2015, Mar 2014, May 2008, ...

Institute for Advanced Studies, Princeton, NJ: Jan, Feb, and Apr 2015

Université Paris VII professeur invité, France: Jun 2014

Hebrew University, Jerusalem, Israel: May 2010, Apr 2007

Osaka University, Japan: Jun 2009

MSRI algebraic geometry semester, Berkeley, CA: Jan-Feb 2009

IMPA, Rio de Janeiro, Brazil: Jun 2008

Universität Duisburg-Essen, Germany: Apr 2008

University of Copenhagen, Denmark: Oct 2007

Institut Mittag-Leffler, program on moduli spaces, Stockholm, Sweden: Feb and Jun 2007

Conferences and schools co-organized

Recent outcomes in birational complex algebraic geometry (for Rob Lazarsfeld's retirement), Stony Brook, Oct 2026

Abelian varieties, modular forms and moduli, Rome, Italy, Sep 2026

Geometry of Moduli – special session at Summer Research Institute in Algebraic Geometry, Fort Collins, CO, Jul 2025

Hodge Theory and Algebraic Geometry (on the occasion of Mark de Cataldo's 60th birthday), Stony Brook, May 2025

Riemann Surfaces: Random, Flat, and Hyperbolic Geometry, Oberwolfach, Germany, Sep 2024

2nd annual Simons math summer workshop: Moduli, Simons Center, Stony Brook, Jul 2024

Program and workshop on Geometric, algebraic, and physical structures around the moduli of meromorphic quadratic differentials, Simons Center, Stony Brook, May-Jun 2024

Member of the scientific committee for 8^{th} Iberoamerican Congress on Geometry, Pucon, Chile, Dec 2023

Program and workshop on supergeometry and supermoduli, Simons Center, Stony Brook, Mar-May 2023

AGNES (Algebraic Geometry Northeastern Series) conference, Stony Brook, Apr 2023

Workshop on supergeometry and supermoduli, Simons Center, Stony Brook, Mar 2023

Algebraic Geometry, Mathematical Physics, and Solitons — celebrating the work of Igor Krichever, New York, Oct 2022

Enumerative geometry of surfaces workshop, Oberwolfach, Germany, Jun 2021

Virtual AGNES (Algebraic Geometry Northeastern Series) conference, Stony Brook, Oct 2020

Graduate school on geometry and dynamics on Teichmüller spaces, Simons Center, Stony Brook, Apr 2019

Workshop on flat surfaces and algebraic curves, Oberwolfach, Germany, Sep 2018

Member of the scientific committee for 7^{th} Iberoamerican Congress on Geometry, Valladolid, Spain, Jan 2018

AGNES (Algebraic Geometry Northeastern Series) conference, Stony Brook, Apr 2017

6^{th} Stony Brook mini-school in geometry: singular metrics and direct images, Stony Brook, Apr 2017

Supermoduli workshop, Simons Center, Stony Brook, May 2015

4^{th} Stony Brook mini-school in geometry: birational geometry and derived categories, Stony Brook, Apr 2015

3^{rd} Stony Brook mini-school in geometry: invitation to Gromov-Witten theory, Stony Brook, Jan 2015

Graduate workshop on moduli of curves, Simons Center, Stony Brook, Jul 2014

AGNES (Algebraic Geometry Northeastern Series) conference, Stony Brook, Apr 2014

2^{nd} Stony Brook mini-school in geometry: complex dynamics and algebraic surfaces, Stony Brook, Apr 2014

1^{st} Stony Brook mini-school in geometry: K-stability, Stony Brook, Dec 2013

Workshop on deformations and moduli in complex geometry, KIAS, Seoul, Mar 2013

AGNES (Algebraic Geometry Northeastern Series) conference, Stony Brook, Oct 2011

"The Versatility of Integrability", a conference on integrable systems in algebra, geometry, and physics, dedicated to Igor Krichever's 60th birthday, Columbia University, May 2011

Service

2023–: member of the editorial board of the *Moduli* journal

2009–: member of the standing organizing committee of biannual AGNES (Algebraic Geometry Northeastern Series) workshops

2009–: co-organizer of the weekly Stony Brook algebraic geometry (previously algebra, geometry, and physics) seminar

2009–: member of the Stony Brook math hiring committee (as are all tenure-track faculty members)

2018–2021: Stony Brook mathematics graduate program director

2016–2021: Stony Brook math department/Simons Center liaison

2017–2018: Stony Brook mathematics associate graduate director

Feb 2016–Jan 2018: American Mathematical Society Eastern Section Program Committee

2016–2017: Stony Brook math department course scheduling director

2013–2015: member of the Stony Brook math search committee

2013–2014: member of the Stony Brook math graduate committee

2009–2013: co-organizer of Stony Brook math department colloquium

2006–2009: Princeton math department undergraduate placement officer

2006–2009: co-organizer of Princeton algebraic geometry seminar

2005–2008: co-organizer of Princeton math department colloquium

Served on numerous Ph.D. defense committees at Stony Brook and Princeton, and also served on committees or reported on dissertations at Columbia University, Goether Universität Frankfurt, Hebrew University of Jerusalem, Leibniz Universität Hannover, Humboldt Universität Berlin, Université de Bourgogne, and Stony Brook Physics Department.

Served on numerous Ph.D. oral exams at Stony Brook and Princeton.

Teaching

Stony Brook University:

Fall 2021: MAT 656 — Topics in Dynamical Systems (Teichmüller Dynamics): an advanced graduate course.

Spring 2021: MAT 615 — Topics in Algebraic Geometry (Moduli of Curves): an advanced graduate course on the construction and geometry of the moduli of complex curves.

Spring 2020: MAT 127 — Calculus C: series and differential equations (2 sections, course coordinator).

Fall 2018: MAT 320 — Introduction to Analysis: advanced introduction to rigorous analysis with proofs.

Fall 2018: MAT 598 — Graduate teaching practicum.

Fall 2017: MAT 319 — Foundation of Analysis: introduction to rigorous analysis with proofs.

Fall 2017: MAT 670 — Topics in Complex Analysis (Teichmüller Dynamics): an advanced graduate courses, from the definition of the Teichmüller flow to the recent applications of Hodge theory to orbit classification.

Spring 2017: MAT 536 — Complex Analysis I: an introductory graduate course on complex analysis.

Fall 2016: MAT 626 — Topics in Complex Analysis (Teichmüller Theory): a graduate course, starting from the definition of the Teichmüller space and ending with Mirzakhani's recursions for Weil-Petersson volumes and intersection numbers on moduli.

Spring 2015: MAT 615 — Topics in Algebraic Geometry (Abelian Varieties): an advanced graduate course, from the basics of abelian varieties, to the Kodaira dimension of their moduli space.

Fall 2014: MAT 319 — Foundation of Analysis: introduction to rigorous analysis with proofs.

Fall 2014: MAT 590 — Preparation course for the graduate comprehensive examination.

Spring 2014: MAT 614 — Topics in Algebra (Introduction to Algebraic Geometry): an introductory graduate course.

Fall 2013: MAT 536 — Algebra III (commutative algebra): a second-year graduate course on commutative algebra with a view towards algebraic geometry.

Fall 2013: MAT 320 — Introduction to Analysis: advanced introduction to rigorous analysis with proofs.

Spring 2013: MAT 531 — Geometry/Topology II: introductory graduate course on smooth manifolds.

Fall 2012: MAT 626 — Topics in Complex analysis (Teichmüller Theory): an advanced graduate course, from the basics of the theory, towards hyperbolic geometry and intersection theory.

Fall 2012: MAT 319 — Foundation of Analysis: introduction to rigorous analysis with proofs.

Spring 2012: MAT 615 — Topics in Algebra (Introduction to Algebraic Geometry): an introductory graduate course for students with some familiarity with complex manifolds or algebraic varieties, covering sheaves and schemes.

Fall 2011: MAT 545 — Complex Geometry: an intermediate graduate courses introducing the basic notions and concepts of complex manifolds and Kähler geometry, following the beginning chapters of Griffiths-Harris.

Fall 2011: MAT 260 — Problem solving: a course for undergraduate students interested in sharpening their problem-solving skills in mathematics, quickly going over different mathematical ideas and problems that

can be solved using them.

Spring 2011: MAT 615 — Topics in Algebra (Multiplier Ideal Sheaves): an advanced graduate course on the algebraic and analytic construction of multiplier ideal sheaves, proving Nadel vanishing from both viewpoints, and culminating in a proof of invariance of plurigenera for varieties of general type.

Fall 2010: MAT 401 — Undergraduate seminar: a seminar for advanced undergraduate students on representation theory, mostly of finite groups.

Fall 2010: MAT 200 — Logic, Language and Proof: a course introducing rigorous proofs and rigorous mathematical tools, preparing the students for higher-level mathematics courses.

Spring 2010: MAT 615 — Topics in Algebraic Geometry (Moduli of Curves): an advanced graduate course on the construction of the moduli stack of curves.

Fall 2009: MAT 126 — Calculus (2 sections): second semester calculus, i.e. integration, areas, volumes.

Princeton University:

Fall 2008: MAT 553 — Algebraic Geometry: an advanced graduate class on multiplier ideals. Positivity of line bundles; algebraic and analytic definitions and basic properties of multiplier ideals; vanishing theorems; invariance of plurigenera for varieties of general type.

Fall 2007: MAT 104 — Calculus (2 sections): second semester calculus, i.e. limits, series, integration.

Fall 2006: MAT 326 — Algebraic Topology: an advanced course covering differential forms, de Rham homology, Poincaré duality.

Fall 2006: MAT 553 — Algebraic Geometry: an advanced graduate class on the theory of complex abelian varieties, starting from the basic definitions and leading up to the results of Pareschi and Popa on M-regularity.

Spring 2006: MAT 104 — Calculus (2 sections): second semester calculus, i.e. limits, series, integration.

Fall 2005: MAT 516 — Introduction to Algebraic Geometry: an introductory graduate class, covering affine and projective varieties, tangent spaces, divisors, cohomology.

Fall 2005: MAT 314 — Introduction to Real Analysis: an advanced course covering analysis in $\mathbb{R}^n$, Lebesque measure and Lebesque integral, and Fourier series.

Spring 2005: Junior seminar: a seminar on Riemann surfaces for mathematics juniors, instructing the students on their independent reading projects and presentations on the subject.

Fall 2004: MAT 519 — Teichmüller theory: an advanced graduate class, starting from the basics of Teichmüller theory, and leading up to study of the curvature of the moduli space, Mirzakhani's proof of Witten-Kontsevich formula for intersection numbers on $\mathcal{M}_g$, and holography.

Spring 2004: MAT 104 — Calculus (2 sections): second semester calculus, i.e. limits, series, integration.

Harvard University:

Fall 2001: Calculus teaching fellow (Math 1b): second semester calculus.

1997-1998: Mathematics Course Assistant: holding problem sessions and grading homework for advanced math classes. Awarded Harvard University Certificate of Distinction in Teaching.

Refereeing

Journals: Acta Mathematica, Annals of Mathematics, Cambridge Journal of Mathematics, Duke Mathematical Journal, Forum of Mathematics Pi, Inventiones Mathematicae, Journal of the AMS, Publications Mathématiques de l'IHÉS, and

Acta Mathematica Vietnamica, Advances in Mathematics, Algebra and Number Theory, Algebraic and Geometric Topology, Algebraic Geometry, Algebraic Geometry and Physics, Algebra and Number Theory, American Journal of Mathematics, Annales scientifiques de l'École normale supérieure, Annali di Matematica Pura ed Applicata, Annali di Scuola Normale Superiore, Bulletin of the LMS, Central European Journal of Mathematics, Commentarii Mathematici Helvetici, Communications in Algebra and Geometry, Communications in Mathematical Physics, Communications of the AMS, Compositio Mathematica, Contemporary Mathematics, Discrete Mathematics, Documenta Mathematica, Functional Analysis and Applications, Geometriae Dedicata, GAFA, Geometry and Topology, Houston Journal of Mathematics, Indiana University Mathematics Journal, International Journal of Mathematics, International Mathematics Research Notices, Israel Journal of Mathematics, Journal of Algebra, Journal of Algebraic Geometry, Journal d'Analyse Mathematique, Journal de l'École Polytechnique, Journal de Maths pures et appliquées, Journal für die reine und angewandte Mathematik (Crelle), Journal of Differential Geometry, Journal of Geometry and Physics, Journal of Modern Dynamics, Journal of the EMS, Journal of the Institute of Mathematics of Juisseu, Journal of the LMS, Letters in Mathematical Physics, Manuscripta Mathematica, Mathematics Research Letters, Mathematical Reviews, Mathematische Annalen, Mathematische Nachrichten, Mathematische Zeitschrift, Memoirs of the AMS, Michigan Mathematical Journal, Moscow Mathematical Journal, Nuclear Physics

B, Proceedings of the AMS, Proceedings of the LMS, Revista Matematica Iberoamericana, Selecta Mathematica, SIGMA (Symmetry, Integrability and Geometry: Methods and Applications), Springer Monographs, Transactions of the AMS.

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