

Dawei Chen

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Education

Ph.D. in Mathematics Harvard University 2008
B.S. in Mathematics Peking University 2003

Appointments

Mathematics Graduate Director	Boston College	2016–
Associate Professor	Boston College	2016–
Assistant Professor	Boston College	2011–2016
Research Assistant Professor	University of Illinois at Chicago	2008–2011
Postdoctoral Fellow	Mathematical Sciences Research Institute	Spring 2009

Awards

- von Neumann Fellow, Institute for Advanced Study, Spring 2019
- National Science Foundation CAREER Award, \$429,359, PI, 2014–2019
- National Science Foundation Research Grant, \$126,013, PI, 2011–2014
- National Science Foundation Conference Grant, \$37,000, Co-PI, 2017–2020
- National Science Foundation Conference Grant, \$33,348, Co-PI, 2014–2017
- National Science Foundation Conference Grant, \$20,000, Subcontractor, 2013–2014
- American Mathematical Society Travel Grant, \$3,700, Summer 2014
- Research Incentive Grant, \$15,000, Boston College, Summer 2014
- Faculty Fellowship, Boston College, Spring 2015
- SQuaRE, American Institute of Mathematics, 2017–2019
- Liftoff Fellow, Clay Mathematics Institute, Summer 2008

Journal Publications

- Tautological ring of strata of differentials, *Manuscripta Mathematica*, accepted.
- Principal boundary of moduli spaces of abelian and quadratic differentials (with Qile Chen), *Annales de l'Institut Fourier*, accepted.
- Strata of k -differentials (with Matt Bainbridge, Quentin Gendron, Samuel Grushevsky, and Martin Möller), *Algebraic Geometry*, accepted.
- Affine geometry of strata of differentials, *Journal of the Institute of Mathematics of Jussieu*, accepted.
- Compactification of strata of abelian differentials (with Matt Bainbridge, Quentin Gendron, Samuel Grushevsky, and Martin Möller), *Duke Mathematical Journal* 167 (2018), no. 12, 2347–2416.
- Quasimodularity and large genus limits of Siegel-Veech constants (with Martin Möller and Don Zagier), *Journal of the American Mathematical Society* 31 (2018), no. 4, 1059–1163.
- Degenerations of Abelian differentials, *Journal of Differential Geometry* 107 (2017), no. 3, 395–453.
- Extremality of loci of hyperelliptic curves with marked Weierstrass points (with Nicola Tarasca), *Algebra & Number Theory* 10 (2016), no. 9, 1935–1948.
- Loci of curves with subcanonical points in low genus (with Nicola Tarasca), *Mathematische Zeitschrift* 284 (2016), no. 3–4, 683–714.
- Extremal effective divisors of Brill-Noether and Gieseker-Petri type in $\overline{\mathcal{M}}_{1,n}$ (with Anand Patel), *Advances in Geometry* 16 (2016), no. 2, 231–242.
- Moduli of generalized line bundles on a ribbon (with Jesse Kass), *Journal of Pure and Applied Algebra* 220 (2016), no. 2, 822–844.
- Extremal higher codimension cycles on moduli spaces of curves (with Izzet Coskun), *Proceedings*

of the *London Mathematical Society* 111 (2015), no. 1, 181–204.

- Extremal effective divisors on $\overline{\mathcal{M}}_{1,n}$ (with Izzet Coskun), *Mathematische Annalen* 359 (2014), no. 3-4, 891–908.
- Quadratic differentials in low genus: exceptional and nonvarying strata (with Martin Möller), *Annales scientifiques de l'École normale supérieure* (4), 47 (2014), no. 2, 309–369.
- Strata of Abelian differentials and the Teichmüller dynamics, *Journal of Modern Dynamics* 7 (2013), no. 1, 135–152.
- Covers of the projective line and the moduli space of quadratic differentials, *Geometriae Dedicata* 163 (2013), no. 1, 105–125.
- Nonvarying sums of Lyapunov exponents of Abelian differentials in low genus (with Martin Möller), *Geometry & Topology* 16 (2012) 2427–2479.
- Detaching embedded points (with Scott Nollet), *Algebra & Number Theory* 6-4 (2012), 731–756.
- Towards Mori's program for the moduli space of stable maps (with Izzet Coskun and an appendix by Charlie Crissman), *American Journal of Mathematics* 133 (2011), 1389–1419.
- Square-tiled surfaces and rigid curves on moduli spaces, *Advances in Mathematics* 228 (2011), no. 2, 1135–1162.
- Hilbert scheme of a pair of codimension two linear subspaces (with Izzet Coskun and Scott Nollet), *Communications in Algebra* 39 (2011), no. 8, 3021–3043.
- Covers of elliptic curves and the moduli space of stable curves, *Journal für die reine und angewandte Mathematik* 649 (2010), 167–205.
- Stable base locus decompositions of Kontsevich moduli spaces (with Izzet Coskun), *Michigan Mathematical Journal* 59 (2010), 435–466.
- Linear series on ribbons, *Proceedings of the American Mathematical Society* 138 (2010), 3797–3805.
- On the dimension of the Hilbert scheme of curves, *Mathematical Research Letters* 16 (2009), no. 6, 941–954.
- Mori's program for the Kontsevich moduli space, *International Mathematics Research Notices* rnn 067 (2008), 17 pp.

Conference Proceedings

- Moduli of differentials, *Oberwolfach Report*, accepted.
- An extremal effective survey about extremal effective cycles in moduli spaces of curves, *Abel Symposia*, accepted.
- Teichmüller dynamics in the eyes of an algebraic geometer, *Proceedings of Symposia in Pure Mathematics* 95 (2017), 171–197.
- Orbit closures in Teichmüller dynamics and extremal cycles in algebraic geometry, *Oberwolfach Report* 11 (2014), no. 1.
- Effective divisors on moduli spaces of curves and abelian varieties (with Gavril Farkas and Ian Morrison), *Clay Mathematics Proceedings* 18 (2013), 131–170.
- Geometry of Teichmüller curves, *Oberwolfach Report* 8 (2011), no. 2.

Preprints

- Positivity of divisor classes on the strata of differentials, submitted.
- Spin and hyperelliptic structures of log twisted differentials (with Qile Chen), submitted.
- Surfaces with big anticanonical class (with Christian Schnell), preprint.
- Masur-Veech volumes and intersection theory on moduli spaces of Abelian differentials (with Martin Möller, Adrien Sauvaget, and Don Zagier), preprint.

Teaching Experience

- MATH8808: Algebraic Topology, Boston College, Fall 2018, Fall 2016
- MATH8811: Complex Analysis, Boston College, Spring 2018, Spring 2017
- MATH2210: Linear Algebra, Boston College, Spring 2016
- MATH4460: Complex Variables, Boston College, Fall 2015
- MATH8845: Riemann Surfaces, Boston College, Fall 2015

- MT216: Introduction to Abstract Mathematics, Boston College, Fall 2014
- MT845: Intersection Theory and Enumerative Geometry, Boston College, Spring 2014
- MT312: Algebra II, Boston College, Spring 2014
- MT311: Algebra I, Boston College, Fall 2013
- MT845: Algebraic Curves, Boston College, Spring 2013
- MT822: Introduction to Algebraic Geometry, Boston College, Spring 2012
- MT105: Calculus II-AP, Boston College, Fall 2017, Fall 2012, Fall 2011
- Math533: Algebraic Geometry II, University of Illinois at Chicago, Spring 2011, Spring 2010
- Math180: Calculus I, University of Illinois at Chicago, Fall 2010, Spring 2010, Fall 2008
- Math1b: Calculus II, Harvard University, Spring 2007, Fall 2006
- Math1a: Calculus I, Harvard University, Fall 2005

Advising

- Iulia Gheorghita, Ph.D., Boston College, 2017–
- Scott Mullane, Ph.D., Boston College, 2012–2016
- Anand Patel, Postdoctoral Fellow, Boston College, 2013–2016
- Miqiu Ding, Undergraduate Research Fellowship, Boston College, Summer 2017
- Haoyuan Jiang, Undergraduate Research Fellowship, Boston College, Summer 2017
- Daniel Conroy, Undergraduate Independent Study, Boston College, Spring 2017
- Anthony Hernandez, Undergraduate Independent Study, Boston College, Spring 2016
- Zhangyang Wei, Undergraduate Research Fellowship, Boston College, Spring 2016
- César Huerta (co-advising with Joe Harris), Postdoctoral Fellow, Harvard University, 2014–2015
- Matthew Woolf (co-advising with Joe Harris), Ph.D., Harvard University, 2012–2014

Committee Service

- Graduate Program Director Committee, Boston College, 2016–2018
- Faculty Grievance Committee, Boston College, 2016–2017
- University Core Renewal Committee, Boston College, 2015–2017
- University Core Development Committee, Boston College, 2014–2015
- Mathematics Graduate Admission Committee, Boston College, 2016–2018
- Mathematics Tenure and Promotion Committee, Boston College, 2018
- Mathematics Tenure-Track Hiring Committee, Boston College, 2011, 2013, 2014, 2015
- Mathematics Department Planning Committee, Boston College, 2011
- Mathematics Distinguished Lecturer Series Committee, Boston College, 2011–2016
- Mathematics Adjunct Faculty Reappointment Committee, Boston College, 2013
- Putnam Competition Committee, Boston College, 2015–2016
- Dissertation Defense Committee: Richard Abdelkerim (University of Illinois at Chicago, 2011), Gabriel Bujokas (Harvard University, 2015), Malick Camara (University Pierre et Marie Curie, 2016), Kiryong Chung (Seoul National University, 2010), Roi Docampo (University of Illinois at Chicago, 2009), Han-Bom Moon (Seoul National University, 2010), Scott Mullane (Boston College, 2016), Anand Patel (Harvard University, 2013), Matthew Woolf (Harvard University, 2014), Adrian Zahariuc (Harvard University, 2016)
- Comprehensive Exam Committee: Iulia Gheorghita (Boston College, 2019), Ross Goluboff (Boston College, 2017), David Hansen (Boston College, 2012), Scott Mullane (Boston College, 2014), Andrew Phillips (Boston College, 2013)

Conference and Seminar Organization

- BIRS Workshop “Moduli Spaces: Birational Geometry and Wall Crossings”, Banff, Canada, October 2018
- The Hamilton Geometry and Topology Workshop, Dublin, Ireland, August 2017
- ICERM Workshop “Cycles on Moduli Spaces, GIT, and Dynamics”, Providence, August 2016
- BC-NEU Algebraic Geometry Conference, Boston, 2015–present
- Birational Geometry and Stability of Moduli Spaces of Curves, Hanoi, Vietnam, January 2014

- Algebraic Geometry Northeastern Series, Boston, October 2013, March 2015
- AMS Special Session “Moduli Spaces in Algebraic Geometry”, Boston, April 2013
- Algebraic Geometry Northeastern Series Poster Session, Providence, October 2012
- AMS Special Session “Birational Geometry and Moduli Spaces”, New Orleans, January 2011
- Algebraic Geometry Seminar, Harvard-MIT, 2013–present
- Mathematics Colloquium, Boston College, 2011–2012
- Number Theory and Algebraic Geometry Seminar, Boston College, 2011–present
- Flat Surface Seminar, Boston College, 2014–2015

Referee Service

- Algebraic Geometry Panelist, National Science Foundation, 2013–2018 (three times)
- Proposal Reviewer, National Security Agency, 2011, 2015
- Proposal Reviewer, French National Research Agency, 2015, 2016
- Proposal Reviewer, Chile National Fund for Scientific and Technological Development, 2011, 2014, 2016
- Reviewer, American Mathematical Society, 2010–present
- Reviewer, European Mathematical Society, 2014–present
- Letter Writer and Reference for 13 undergraduate students and 16 doctoral students
- Journal Reviewer for *Advances in Geometry*, *Advances in Mathematics*, *Algebra & Number Theory*, *Algebraic Geometry*, *American Journal of Mathematics*, *Annals of Mathematics*, *Central European Journal of Mathematics*, *Clay Mathematics Proceedings*, *Communications in Algebra*, *Compositio Mathematica*, *Documenta Mathematica*, *Duke Mathematical Journal*, *European Journal of Mathematics*, *Geometriae Dedicata*, *Geometry & Topology*, *International Mathematics Research Notices*, *Journal of Algebraic Geometry*, *Journal of Differential Geometry*, *Journal of Modern Dynamics*, *Journal of Pure and Applied Algebra*, *Journal of Topology*, *Mathematics of Computation*, *Manuscripta Mathematica*, *Mathematische Nachrichten*, *Michigan Mathematical Journal*, *Pacific Journal of Mathematics*, *Park City Mathematics Series*, *Proceedings of the London Mathematical Society*, *Transactions of the American Mathematical Society*

Conference and Colloquium Lectures

- Mathematics Colloquium, Rutgers University Newark, March 2019
- Strata of Abelian Differentials and Effective r -Spin Structures, Ann Arbor, February 2019
- Holomorphic Differentials in Mathematics and Physics, Simons Center, February 2019
- Flat Surfaces and Algebraic Curves, Oberwolfach, Germany, September 2018
- Tsinghua University Summer Lecture Series, Beijing, China, July 2018
- KAIST Lecture Series on Moduli of Differentials, Daejeon, Korea, July 2018
- Teichmüller Dynamics, Mapping Class Groups and Applications, Grenoble, France, June 2018
- AMS-CMS Special Session “Algebraic Geometry”, Shanghai, China, June 2018
- AMS Special Session “Geometry of Moduli Spaces”, Boston, April 2018
- Mathematics Colloquium, University of Arizona, September 2017
- The Abel Symposium, Lofoten, Norway, August 2017
- Geometry of Moduli Spaces, San Diego, May 2017
- Teichmüller Space, Polygonal Billiard, Interval Exchanges, CIRM, France, February 2017
- Moduli and Birational Geometry, Jeju, Korea, December 2016
- Geometry at the ANU, Canberra, Australia, August 2016
- Tsinghua University Summer Lecture Series, Beijing, China, July 2016
- Flat Surfaces and Dynamics of Moduli Space, BIRS, Mexico, May 2016
- Moduli Spaces of Holomorphic Differentials, Berlin, Germany, February 2016
- Computational Approaches to GIT and Moduli Theory, Daejeon, Korea, August 2015
- Algebraic Geometry Summer Research Institute Bootcamp, Salt Lake City, July 2015
- Moduli Spaces and Enumerative Geometry, Rio de Janeiro, Brazil, April 2015
- KAIST Lecture Series on Teichmüller Dynamics, Daejeon, Korea, March 2015
- Hyperbolicity in Algebraic Geometry, Ilhabela, Brazil, January 2015

- Mathematics Colloquium, University of Utah, November 2014
- POSTECH Lecture Series on Teichmüller Dynamics, Pohang, Korea, August 2014
- Tsinghua University Summer Lecture Series, Beijing, China, July 2014
- Flat Surfaces and Dynamics on Moduli Space, Oberwolfach, Germany, March 2014
- AMS Special Session “Geometry of Algebraic Varieties”, Philadelphia, October 2013
- Moduli and Birational Geometry, Pohang, Korea, August 2013
- Young Mathematician Forum, Beijing, China, June 2013
- AMS Special Session “Singularities in Algebraic Geometry”, San Diego, January 2013
- Tsinghua University Lecture Series on Teichmüller Dynamics, Beijing, China, December 2012
- AMS Special Session “Geometry of Algebraic Varieties”, Akron, October 2012
- Algebraic and Arithmetic Geometry, Beijing, China, August 2012
- Moduli and Birational Geometry, Busan, Korea, July 2012
- Tsinghua University Summer Lecture Series, Beijing, China, July 2012
- Algebraic Geometry Northeastern Series, Stony Brook, October 2011
- PCMI Summer Program, Park City, July 2011
- Billiards, Flat Surfaces, and Dynamics on Moduli Spaces, Oberwolfach, Germany, May 2011
- Mathematics Colloquium, Purdue University, January 2011
- Mathematics Colloquium, The Chinese University of Hong Kong, China, January 2011
- Mathematics Colloquium, Ohio State University, January 2011
- Mathematics Colloquium, University of California Irvine, January 2011
- Mathematics Colloquium, Boston College, December 2010
- International Congress of Chinese Mathematicians, Beijing, China, December 2010
- Mathematics Colloquium, Kansas State University, November 2010
- Algebra, Geometry and Combinatorics Day, Urbana-Champaign, October 2010
- Birational Geometry and Moduli Spaces, Pohang, Korea, August 2010
- AIM Workshop “Components of Hilbert Schemes”, Palo Alto, July 2010
- Algebraic Geometry on Varieties and Manifolds, Shanghai, China, May 2010
- Moduli and Birational Geometry, Seoul, Korea, December 2009
- AMS-KMS Special Session “Algebraic Geometry”, Seoul, Korea, December 2009
- AMS-KMS Special Session “Geometry, Syzygies and Computations”, Seoul, Korea, December 2009
- Mathematics Colloquium, Texas Christian University, November 2008
- GAeL Spring School in Algebraic Geometry, Poznan, Poland, March 2006

Seminar Talks

- Geometry and Physics Seminar, University of Michigan, February 2019
- Algebraic Geometry Seminar, Stony Brook University, February 2019
- Algebraic Geometry Seminar, Tsinghua University, Beijing, China, December 2018
- Front Range Algebra, Geometry and Number Theory Seminar, Boulder, April 2018
- Algebraic Geometry Seminar, University of Georgia, March 2018
- Algebraic Geometry Seminar, Fudan University, Shanghai, China, July 2017
- Teichmüller Dynamics Seminar, Zhejiang University, Hangzhou, China, July 2017
- Geometry and Topology Seminar, Stanford University, May 2017
- Dynamics and Geometry Seminar, Harvard University, March 2017
- Algebraic Geometry Seminar, Stony Brook University, March 2017
- Algebraic Geometry and Number Theory Seminar, Rice University, November 2016
- Algebraic Geometry Seminar, Princeton University, October 2016
- Geometry and Physics Seminar, Boston University, September 2016
- Geometry, Algebra, Singularities, and Combinatorics, Northeastern University, March 2016
- Algebraic Geometry Seminar, Courant Institute, November 2015
- Algebraic Geometry Seminar, Federal Fluminense University, Niterói, Brazil, April 2015
- Algebraic Geometry Seminar, University of Illinois at Chicago, February 2015
- Algebraic Geometry Seminar, University of Chicago, February 2015
- Algebraic Geometry Seminar, Yale University, January 2015
- Algebraic Geometry Seminar, University of Utah, November 2014

- Algebraic Geometry Seminar, Johns Hopkins University, October 2014
- Algebraic Geometry Seminar, Ohio State University, October 2014
- Front Range Algebra, Geometry and Number Theory Seminar, Boulder, March 2014
- Algebraic Geometry Seminar, University of Illinois at Chicago, November 2013
- Algebraic Geometry Seminar, University of Chicago, May 2013
- Algebra and Geometry Seminar, Tufts University, April 2013
- Geometry Seminar, Hong Kong University, China, March 2013
- Pure Mathematics Seminar, Hong Kong University of Science and Technology, China, March 2013
- Algebraic Geometry Seminar, Chinese Academy of Sciences, Beijing, China, January 2013
- Algebraic Geometry Seminar, University of Illinois Urbana-Champaign, December 2012
- Algebraic Geometry Seminar, Duke University, November 2012
- Geometry Seminar, Boston University, February 2012
- Number Theory Seminar, Boston College, November 2011
- Algebraic Geometry Seminar, Harvard University, October 2011
- Algebraic Geometry Seminar, Seoul National University, Korea, June 2011
- Algebraic Geometry Seminar, Humboldt University, Berlin, Germany, May 2011
- Front Range Algebra, Geometry and Number Theory Seminar, Boulder, February 2011
- Algebraic Geometry Seminar, Stanford University, February 2011
- Algebraic Geometry Seminar, University of Arizona, December 2010
- Algebraic Geometry Seminar, Ohio State University, November 2010
- Algebraic Geometry Seminar, University of Wisconsin, October 2010
- Algebraic Geometry Seminar, Harvard University, September 2010
- Algebraic Geometry Seminar, Rice University, September 2010
- Algebraic Geometry Seminar, Columbia University, September 2010
- Algebraic Geometry Seminar, University of Illinois at Chicago, September 2010
- Algebraic Geometry Seminar, University of Illinois Urbana-Champaign, March 2010
- Algebraic Geometry Seminar, University of Georgia, September 2009
- Algebraic Geometry Seminar, University of Illinois at Chicago, September 2009
- MSRI Research Seminar, Berkeley, February 2009
- Algebraic Geometry Seminar, University of Illinois at Chicago, September 2008
- Geometry, Representation Theory and Moduli Seminar, Princeton University, April 2008
- Algebra and Algebraic Geometry Seminar, Brown University, February 2008
- Algebraic Geometry Seminar, University of Michigan, January 2008
- Algebraic Geometry and Ergodic Theory Seminar, Rice University, January 2008
- Algebraic Geometry Seminar, University of Illinois at Chicago, November 2007
- Algebraic Geometry Seminar, Queen's University, Kingston, Canada, November 2007
- Algebraic Geometry Seminar, MIT, October 2007
- Algebra, Geometry and Physics Seminar, Stony Brook University, October 2007
- Combinatorics Seminar, MIT, April 2007
- Algebraic Geometry Seminar, MIT, March 2007