Contact Information

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Professional History

2020–	• Assistant Professor at University of Michigan
2019–2020	• Visiting Assistant Professor at University of Michigan
2015–2019	• Assistant Professor at Massachusetts Institute of Techonology
2013–2018	• Research fellow for Clay Mathematics Institute
2013–2015	• Visiting postdoctoral fellow at Harvard University

Education

2009–2013	• PhD in Mathematics, Princeton University (advisor: Rahul Pandharipande) Thesis title: *The tautological ring of the moduli space of curves*
2008–2009	• Distinction in Part III of the Math. Tripos at the University of Cambridge
2004–2008	• A.B. in Mathematics *summa cum laude*, Princeton University

Honors/Awards

- NSF Grant DMS-2301506 (PI, 2023–2026, $190,000)
- 2017 Sloan Research Fellow
- Clay Research Fellowship (2013–2018)
- NDSEG and NSF Graduate Research Fellowships
- 2009 AMS/MAA/SIAM Frank and Brennie Morgan Prize for undergraduate research
- Putnam Fellow (top 5) in 2004, 2005 and 2007 in the William Lowell Putnam Mathematical Competition
- Gold Medalist at the International Mathematical Olympiad in 2003 and 2004

Publications

Note: in most areas of mathematics, it is standard to follow the Hardy-Littlewood rule for collaborations – authors are ordered alphabetically and share credit and responsibility for their publications equally. The reason for this is that mathematics researchers do not have differentiated roles: joint research comes from collaborative discussions in which all the authors contribute. This is the case for the following publications, in which authors are always listed alphabetically.

- G. Oberdieck and A. Pixton, *Quantum cohomology of the Hilbert scheme of points on an elliptic surface*, arXiv:2312.13188.
- D. Holmes, S. Molcho, R. Pandharipande, A. Pixton, and J. Schmitt, *Logarithmic double ramification cycles*, arXiv:2207.06778 - submitted for publication.
- J.-W. van Ittersum, G. Oberdieck, and A. Pixton, *Gromov-Witten theory of K3 surfaces and a Kaneko-Zagier equation for Jacobi forms*, Selecta Math. (N.S.) **27** (2021), no. 4, Paper No. 64, 30.
- R. Pandharipande and A. Pixton, *Relations in the tautological ring of the moduli space of curves*, Pure Appl. Math. Q. **17** (2021), no. 2, 717–771.
- F. Janda, R. Pandharipande, A. Pixton, and D. Zvonkine, *Double ramification cycles with target varieties*, J. Topol. **13** (2020), no. 4, 1725–1766.
- D. Holmes, A. Pixton, and J. Schmitt, *Multiplicativity of the double ramification cycle*, Doc. Math. **24** (2019), 545–562.
- G. Oberdieck and A. Pixton, *Gromov-Witten theory of elliptic fibrations: Jacobi forms and holomorphic anomaly equations*, Geom. Topol. **23** (2019), no. 3, 1415–1489.
- R. Pandharipande, A. Pixton, and D. Zvonkine, *Tautological relations via r-spin structures*, J. Algebraic Geom. **28** (2019), no. 3, 439–496.
- F. Janda and A. Pixton, *Socle pairings on tautological rings*, Épijournal Geom. Algébrique **3** (2019), Art. 4, 18.
- G. Oberdieck and A. Pixton, *Holomorphic anomaly equations and the Igusa cusp form conjecture*, Invent. Math. **213** (2018), no. 2, 507–587.
- A. Pixton, *Generalized boundary strata classes*, Geometry of moduli, Abel Symp., vol. 14, Springer, Cham, 2018, pp. 285–293.
- F. Janda, R. Pandharipande, A. Pixton, and D. Zvonkine, *Double ramification cycles on the moduli spaces of curves*, Publ. Math. Inst. Hautes Études Sci. **125** (2017), 221–266.
- A. Marian, D. Oprea, R. Pandharipande, A. Pixton, and D. Zvonkine, *The Chern character of the Verlinde bundle over* $\overline{M}_{g,n}$, J. Reine Angew. Math. **732** (2017), 147–163.
- R. Pandharipande and A. Pixton, *Gromov-Witten/Pairs correspondence for the quintic 3-fold*, J. Amer. Math. Soc. **30** (2017), no. 2, 389–449.
- R. Pandharipande, A. Pixton, and D. Zvonkine, *Relations on* $\overline{M}_{g,n}$ *via 3-spin structures*, J. Amer. Math. Soc. **28** (2015), no. 1, 279–309.
- A. Pixton, *Conjectural relations in the tautological ring of* $\overline{M}_{g,n}$, arXiv:1207.1918v1.

Publications (continued)

- R. Pandharipande and A. Pixton, *Gromov-Witten/Pairs descendent correspondence for toric 3-folds*, Geom. Topol. **18** (2014), no. 5, 2747–2821.
- A. Pixton, *A non-boundary nef divisor on* $\overline{M}_{0,12}$, Geom. Topol. **17** (2013), no. 3, 1317–1324.
- R. Pandharipande and A. Pixton, *Descendent theory for stable pairs on toric 3-folds*, J. Math. Soc. Japan **65** (2013), no. 4, 1337–1372.
- R. Pandharipande and A. Pixton, *Descendents on local curves: Stationary theory*, Geometry and arithmetic, EMS Ser. Congr. Rep., Eur. Math. Soc., Zürich, 2012, pp. 283–307.
- R. Pandharipande and A. Pixton, *Descendents on local curves: Rationality*, Compos. Math. **149** (2013), no. 1, 81–124.
- D. Maulik, R. Pandharipande, and R. P. Thomas, *Curves on* $K3$ *surfaces and modular forms*, J. Topol. **3** (2010), no. 4, 937–996. With an appendix by A. Pixton.
- E. Delucchi, A. Pixton, and L. Sabalka, *Face vectors of subdivided simplicial complexes*, Discrete Math. **312** (2012), no. 2, 248 - 257.
- T. Church and A. Pixton, *Separating twists and the Magnus representation of the Torelli group*, Geom. Dedicata **155** (2011), 177–190.
- A. Miller and A. Pixton, *Arithmetic traces of non-holomorphic modular invariants*, Int. J. Number Theory **6** (2010), no. 1, 69–87.
- A. Pixton, *Sequences with small subsum sets*, J. Number Theory **129** (2009), no. 4, 806–817.
- A. Pixton, *Alternators in the Cayley-Dickson algebras*, Forum Math. **21** (2009), no. 5, 853–869.
- C. Erickson, A. Miller, and A. Pixton, *Orders at infinity of modular forms with Heegner divisors*, Proc. Amer. Math. Soc. **135** (2007), 3115–3126.

Lecture Series and Minicourses

- Advanced School on Moduli Spaces, Mirror Symmetry and Enumerative Geometry, ICTP Trieste, *Tautological rings of moduli spaces of curves*, August 2016
- Algebraic Geometry Summer Research Institute Bootcamp, University of Utah, *Tautological ring of* M_g, July 2015
- RTG Lecture Series, University of Michigan, *Tautological relations and the double ramification cycle*, November 2014
- Summer School in Gromov-Witten Theory, Pingree Park, Colorado State University, *The tautological ring and cohomological field theories*, June 2014
- Workshop on "Conformal blocks, vector bundles on curves and moduli of curves", Universita Sapienza, Rome, *Intersection theory on the moduli space of curves*, September 2013

Conferences, Workshops, and Colloquia

- AMS Special Session on Combinatorial Perspectives on Algebraic Curves and their Moduli, JMM, San Francisco, *Piecewise polynomial formulas for tautological classes*, January 2024
- Mid-Atlantic Algebra, Geometry, and Combinatorics Workshop, Virginia Commonwealth University, *Tautological rings and competing conjectures*, December 2023
- Stacks Project Workshop, University of Michigan, *Torelli pullbacks and boundary vanishing*, August 2023
- Helvetic Algebraic Geometry Seminar, Les Diablerets, *Primitive tautological relations*, June 2023
- Conference on Derived Categories, Moduli Spaces, and Hyperkähler Varieties, University of Michigan, *Double-double ramification cycles*, August 2022
- International Congress of Mathematicians 2022, ETH Zurich (and virtually), *The double ramification cycle*, July 2022
- Colloquium, University of Michigan, *The double ramification cycle formula*, April 2022
- Workshop on Double Ramification Cycles and Integrable Systems, American Institute of Mathematics, *The double ramification cycle via the tautological ring*, October 2019
- Colloquium, Stanford University, *The tautological ring of the moduli space of curves*, January 2019
- Complex Algebraic Geometry Conference, University of California, San Diego, *From tautological relations to tautological formulas*, January 2019
- AMS Special Session on From Hyperelliptic to Superelliptic Curves, University of Michigan, *The homogeneous double ramification cycle*, October 2018
- Workshop on Moduli Spaces: Birational Geometry and Wall Crossings, Banff International Research Station, *Cohomological field theories and derivations*, October 2018
- Yamabe Memorial Symposium, University of Minnesota, *Gromov-Witten theory of elliptic fibrations*, September 2018
- Workshop on Flat Surfaces and Algebraic Curves, Oberwolfach, *Around enumerative aspects of moduli of curves and the double ramification cycle*, September 2018
- From Algebraic Geometry to Vision and AI: A Symposium Celebrating the Mathematical Work of David Mumford, Harvard University, *The tautological ring*, August 2018
- Combinatorial Algebraic Geometry Retrospective Workshop, The Fields Institute, Toronto, *Generalized boundary strata classes*, June 2018
- Georgia Topology Conference, University of Georgia, *Quasimodularity of the Gromov-Witten theory of an elliptic curve*, June 2018
- Abel Symposium, Svolvær, Norway, *Polynomiality of the double ramification cycle*, August 2017
- Conference on Mirror Symmetry for Young Researchers, University of Michigan, *The cycle-valued Gromov-Witten theory of an elliptic curve*, May 2017
- Workshop on Enumerative Geometry, Institut Henri Poincare, Paris, *Cycle-quasimodularity of elliptic curve invariants*, March 2017
- Colloquium, University of Michigan, *The tautological ring of the moduli space of curves*, February 2017

Conferences, Workshops, and Colloquia (continued)

- RTG Conference on Witten's r-spin class, University of Michigan, *Quasimodularity of elliptic curve invariants via the double ramification cycle*, January 2017
- Algebraic Geometry Northeastern Series, University of Massachusetts Amherst, *Graph-counting relations in the tautological ring*, November 2016
- Workshop on Moduli Spaces, Mirror Symmetry and Enumerative Geometry, ICTP Trieste, *Holomorphic differentials and Witten's r-spin class*, August 2016
- Algebra and Number Theory Day, Johns Hopkins University, *The tautological ring of the moduli space of curves*, April 2016
- Moduli spaces of holomorphic differentials conference, Humboldt University, Berlin, *Conjectural formulas for strata closures*, February 2016
- AMS Special Session on Moduli Spaces in Algebraic Geometry, Seattle JMM, *Families of tautological relations*, January 2016
- Georgia Algebraic Geometry Symposium, Emory University, *Double ramification cycles*, October 2015
- AMS Summer Institute in Algebraic Geometry, University of Utah, Salt Lake City, *Ranks of tautological rings*, July 2015
- Workshop on Current Developments in Moduli Theory, Northeastern University, *A conjectural formula for the double ramification cycle*, October 2014
- Workshop on Pixton's conjectures: DR cycles, cohomology relations, and spin curves, ETH Zurich, *A conjectural formula for the double ramification cycle*, September 2014
- Colloquium, Rice University, *The tautological ring of the moduli space of stable curves*, December 2013
- Western Algebraic Geometry Symposium, University of California, San Diego, *The tautological ring of the moduli space of stable curves*, November 2013
- Workshop on Cohomology of the Moduli Space of Curves, ETH Zurich, *Tautological relations on* $\overline{M}_{g,n}$, October 2013
- AMS Special Session on Moduli Spaces in Algebraic Geometry, Boston College, *The tautological ring of the moduli space of stable curves*, April 2013
- Workshop on Moduli Spaces in Algebraic Geometry, Oberwolfach, *Tautological relations on* $\overline{M}_{g,n}$, February 2013
- Conference on Geometry and Topology of Moduli, Humboldt University, Berlin, *Tautological relations of Faber-Zagier type*, October 2012
- Workshop on the Moduli Space of Curves, KTH Stockholm, *Conjectural tautological relations on the moduli space of stable curves*, April 2012
- Workshop on the Moduli Space of Curves, KTH Stockholm, *Divisors on the moduli space of stable n-pointed curves of genus 0*, April 2012
- Conference on Gromov-Witten Theory, Institut Fourier, Université de Grenoble, *The stable pairs equivariant descendent vertex*, July 2011
- Derived Categories pre-workshop week, Newton Institute, Cambridge, *The stable pairs theory of local curves with stationary descendents*, April 2011
- Conference on Intersection Theory on Moduli Spaces, Humboldt University, Berlin, *Relations in the tautological ring*, October 2010

Teaching Activities

Winter 2024	• Explorations in Mathematics (Math 389) at University of Michigan
Fall 2023	• Algebraic Geometry I (Math 631) at University of Michigan
Winter 2023	• Explorations in Mathematics (Math 389) at University of Michigan
	• Algebraic Geometry II (Math 632) at University of Michigan
Fall 2022	• Algebraic Geometry I (Math 631) at University of Michigan
	• Moduli of Curves and Tropical Geometry (Math 697) at University of Michigan
Winter 2022	• Elementary Number Theory (Math 475) at University of Michigan
Fall 2021	• Introduction to Combinatorics (Math 465) at University of Michigan
Winter 2021	• Algebraic Geometry II (Math 632) at University of Michigan
Fall 2020	• Algebraic Geometry I (Math 631) at University of Michigan
Winter 2020	• Moduli of Curves (Math 636) at University of Michigan
Spring 2019	• Algebraic Geometry II (18.726) at MIT
Fall 2018	• Algebraic Geometry I (18.725) at MIT
Fall 2017	• Commutative Algebra (18.705) at MIT
Fall 2016	• Algebraic Geometry I (18.725) at MIT
Fall 2015	• Calculus with Theory (18.014) at MIT

Graduate Students Advised

Current	• Michael Mueller, University of Michigan
	• Qiusheng Zhao, University of Michigan
2022	• Nawaz Sultani, University of Michigan (joint advisor with F. Janda and Y. Ruan)
2020	• Rachel Webb, University of Michigan (joint advisor with Y. Ruan)

Service

2020-2024	• Putnam Competition/Undergrad Math Competition Committee Chair: coordinated and ran undergraduate math competitions
2020-2024	• Undergraduate Counseling Committee: held Math Department undergraduate advising appointments
2022-2023	• QR Exam Committee: wrote/graded qualifying exams in topology for math graduate students