

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Aaron Pixton, assistant professor of mathematics, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of mathematics, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

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| Ph.D. | 2013 | Princeton University |
| M.A.St. | 2009 | University of Cambridge |
| A.B. | 2008 | Princeton University |

Professional Record:

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| 2020-present | Assistant Professor, Department of Mathematics, University of Michigan |
| 2019-2020 | Visiting Assistant Professor, Department of Mathematics, University of Michigan |
| 2015-2019 | Assistant Professor, Department of Mathematics, Massachusetts Institute of Technology |
| 2013-2018 | Research Fellow, Clay Mathematics Institute |
| 2013-2015 | Visiting Post-doctoral Fellow, Department of Mathematics, Harvard University |

Summary of Evaluation:

Teaching: Professor Pixton has contributed to both the undergraduate and graduate teaching missions of the Department of Mathematics. At the graduate level, he has taught the two-semester sequence of Algebraic Geometry I and II, which are very important courses in the mathematics Ph.D. curriculum. He has also taught specialized graduate courses which provide training to math graduate students in topics of active mathematical research. At the undergraduate level, Professor Pixton has taught the junior-senior level courses which fulfill requirements for the math major and are also taken by math minors. His teaching evaluations are excellent. Professor Pixton has been more active in advising Ph.D. students than typical faculty at the assistant professor level and supervised two students who successfully defended in 2020 and 2022. He is currently advising two more students who have both reached candidacy under his guidance.

Research: Professor Pixton's research has been recognized with a Clay Research Fellowship (2013-2018), a Sloan Research Fellowship (2017-2019), and an invited sectional lecture at the International Congress of Mathematicians (ICM 2022). Professor Pixton is a world leader in enumerative geometry and the foremost leader in the study of the moduli space of algebraic curves, whose work has profoundly influenced and transformed a field of mathematics. In terms of external funding, in early 2020 Professor Pixton inherited two National Science Foundation grants from a faculty member who left the university. He fulfilled the remaining proposed work, and the grants provided him and students with support through Summer 2021. Professor Pixton was recently awarded an individual three-year National Science Foundation grant.

Recent and Significant Publications:

- Holmes, D., Molcho, S., Pandharipande, R., Pixton, A., and J. Schmitt. Logarithmic double ramification cycles. Submitted for publication.
- van Ittersum, J.-W., Oberdieck, G., and Pixton, A. (2021). “Gromov-Witten theory of K3 surfaces and a Kaneko-Zagier equations for Jacobi forms.” *Selecta Mathematica*, 27(64).
- Pandharipande, R., and Pixton, A. (2021). Relations in the tautological ring of the moduli space of curves. *Pure and Applied Mathematics Quarterly*, 17(2), 717-771.
- Janda, F., Pandharipande, R., Pixton, A., and Zvonkine, D. (2020). Double ramification cycles with target varieties. *Journal of Topology*, 13(4), 1725-1766.

Service: Professor Pixton’s departmental service has primarily focused on supporting the department’s undergraduate educational mission. Every year since joining the department, he has served on the Undergraduate Counseling Committee and has chaired the Undergraduate Math Competition Committee. In his capacity as the chair of the Math Competition Committee, he supervises UM students participating in the national William Lowell Putnam Mathematical Competition exam, run by the Mathematical Association of America every December. In 2022 and 2023, the UM teams ranked in the top 20. He additionally creates and administers the exam for the Michigan Undergraduate Mathematics Competition (UMUMC) which is held every Winter semester. Beyond the university, Professor Pixton’s contributes significantly in the exposition of mathematics with numerous seminar, colloquia, and conference lectures.

External Reviewers:

Reviewer (A): “The work is of highest quality, as befits the journals where some of it appears. Pixton is prolific—the works are numerous, 27 papers in a decade is rather significant in our subject – and this is particularly significant given the depth and weight of the work.”

Reviewer (B): “Pixton works in enumerative algebraic geometry and is in my opinion the best of his generation in the subject. His work has had enormous impact in the last decade on a variety of subfields from the classical geometry of the moduli space of curves to the mathematical understanding of the holomorphic anomaly equations...I recommend him in the highest possible terms.”

Reviewer (C): “Pixton’s current research on the moduli spaces of curves and Gromov-Witten theory, is going extremely well; it is not an exaggeration to say that many of his recent achievements constitute breakthroughs, and the originality of his ideas is striking.”

Reviewer (D): “His work is of the highest quality, has profoundly influenced and transformed a field of mathematics, and I am sure will continue to open new avenues of research. He has my strongest possible support for much overdue tenure and promotion.”

Reviewer (E): “Based on his extraordinary scientific achievements, Professor Pixton deserves a tenured position at any top mathematics department in the world. Professor Pixton’s scholarly work and professional achievements certainly meet, and indeed exceed, the requirements for someone being considered for promotion to the rank of associate professor with tenure at my institute.”

Reviewer (F): “Pixton is a mathematician of enormous power and originality. The results he has obtained in the study of moduli spaces in algebraic geometry...are remarkable and have advanced the subject in unexpected ways. I strongly support his promotion to tenure at the Mathematics department of the University of Michigan. I dont [sic] know a more talented person in his generation working on these subjects....Pixton was invited to speak at the ICM in 2022, which is a rare honor for someone so early in his career.”

Summary of Recommendation:

Professor Pixton has transformed the subject of moduli spaces in algebraic geometry. His research prowess and dedication to advising students make him a model citizen for the department. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Aaron Pixton be promoted to the rank of associate professor of mathematics, with tenure, College of Literature, Science, and the Arts.



Anne Curzan, Dean
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