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

Wei Ho, associate professor of mathematics, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of mathematics, with tenure, College of Literature, Science, and the Arts.

<u>Academic Degrees:</u>

Ph.D.	2009	Princeton University
Cert. of Adv. Study	2004	Cambridge University
A.M.	2003	Harvard University

<u>Professional Record:</u>

2022–present	Director of Women and Mathematics Program and Visiting Professor, Institute for Advanced Study, Princeton University
2022–present	Research Scholar and Lecturer (with rank of professor), Princeton University
2019–present	Associate Professor, Department of Mathematics, University of Michigan
2014–2019	Assistant Professor, Department of Mathematics, University of Michigan
2010–2014	Joseph Fels Ritt Assistant Professor, Department of Mathematics, Columbia University
2012–2013	NSF Post-doctoral Visiting Fellow, Department of Mathematics, Princeton University
2009–2010	NSF Post-doctoral Fellow, Department of Mathematics, Harvard University

<u>Summary of Evaluation:</u>

<u>Teaching</u>: Professor Ho has engaged in diverse teaching activities that range from classroom instruction here at UM to the development of several graduate-level instructional workshops that engage students both here at her home institution and at other Midwest universities. Professor Ho's classroom teaching has been at the undergraduate and graduate levels and has been highly rated by her students. Professor Ho has advised two graduate students, one who earned their Ph.D. in 2022 and another who earned their M.S. degree in 2023. She has also informally advised four additional Ph.D. students, been on dissertation committees of four Ph.D. students, and has been the primary advisor to six postdoctoral fellows in the department.

<u>Research</u>: Professor Ho's work has been continuously supported by the NSF (2014-2024)—including a CAREER grant (2019-2024)—and by a Sloan Fellowship (2017-2021). She is a co-PI of an NSF Research and Training Grant in number theory and representation theory awarded to UM (2019-2024). In 2023, she was elected as a fellow of the American Mathematical Society. This is an unusual honor for an associate professor, as typically mathematicians are not considered eligible until they are quite senior. The award cites her contribution to number theory and algebraic geometry, and her service to the mathematical community. Professor Ho continues to have an extremely active research program in a rapidly developing area of number theory. She is one of the central figures in arithmetic statistics. She has a great breadth of interests and talents. She continues to be a leader and central player in the mathematical community of people working in this cutting-edge area of number theory.

<u>Recent and Significant Publications:</u>

Ho, W. and Lieblich, M. (2021). Splitting Brauer classes using the universal Albanese. *Enseign. Math*, *67*(2), 209–224.

Fisher, T., Ho, W., and Park, J. (2021). Everywhere local solubility for hypersurfaces in products of projective spaces. *Research in Number Theory*, *7*(6), https://doi.org/10.1007/s40993-020-00223-z.

Ho, W. and Satriano, M. (2020). Galois closures of non-commutative rings and an application to Hermitian representations. *International Mathematics Research Notices*, *2020*(21), 7944–7974.

Alpöge, L. and Ho, W. The second moment of the number of integral points on elliptic curves is bounded. preprint, submitted.

Service: Professor Ho has taken on multiple leadership and service roles in her department. The most important were as an elected member of the department's Executive Committee (2016-2018) and as a member of the department Personnel (hiring) Committee (2019-2022). She has also served on the Diversity, Equity, and Inclusion recruiting committee (2019-2022), the graduate admissions committee (2015-2016), and the climate committee (2017-2019), and has organized the departmental research and learning seminars in her research area. Additionally, in 2021, she organized a one-day "Professional Skills Workshop" for UM mathematics graduate students with mini-sessions covering best practices for giving research talks, writing research papers, web presence, etiquette, applying for grants and awards, and other topics. At the national level, Professor Ho has been particularly active in leading activities promoting the role of women in mathematics. She has also organized conferences and workshops aimed at underrepresented groups in mathematics, as well as organized and participated in multiple research mentoring workshops to develop research communities for young mathematicians. Her exceptional service to the mathematical community was formally recognized in her award citation as a fellow of the American Mathematical Society in 2023.

External Reviewers:

Reviewer (A): "[Professor Ho's] research is of the very highest quality, and includes some very long, detailed and definitive papers…The 2018 paper with Varma and Shankar just mentioned (Odd degree number fields with odd class number) is very impressive…the results are outstanding."

Reviewer (B): "To sum up: [Professor Ho] is one of the leaders in a part of number theory which is universally recognized as important. She would without question be voted promotion to professor if her case were being presented here …at this time…She has my enthusiastic support!"

Reviewer (C): "Over the years, I have been struck by the richness of the content of Ho's papers…These extensions of Bhargava's original ideas seem to contain the seeds of deep and important insights, which will very likely have broad applications…"
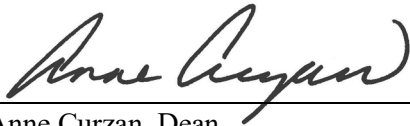
Reviewer (D): "Ho is a solid researcher with contributions in a variety of directions in algebraic geometry and number theory…I still believe, based on these papers, and her other papers (also interesting), that she will continue to be active for many years in a variety of topics in arithmetic geometry."

Reviewer (E): "Compared to other researchers in the area and at a similar career stage, I would say that [Professor Ho's] results are competitive with the best ones in *quality*, and I have no doubt that she will produce more high-quality results in the future."

Reviewer (F): "[Professor Ho] has a distinguished record in the area of arithmetic statistics, and she is internationally recognized as a leader in this area. Her (mostly collaborative) work is known for its depth and splendid detail. Taken in its entirety, I consider her work to be both influential and significant, and its future trajectory is extremely strong."

Summary of Recommendation:
Professor Ho is recognized as a leader in a rapidly developing and impactful research area of number theory, an important branch of pure mathematics. She is an internationally known research leader in arithmetic statistics, a cutting-edge research thread in modern number theory. She has exceptionally strong service to the mathematical community in promoting women and under-represented minorities in mathematics. She is also an energetic leader in creating effective programs to promote women in mathematics at the undergraduate, graduate, and faculty levels. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Wei Ho be promoted to the rank of professor of mathematics, with tenure, College of Literature, Science, and the Arts.

Anne Curzan, Dean
Geneva Smitherman Collegiate Professor of
English Language and Literature, Linguistics,
and Education
Arthur F. Thurnau Professor
College of Literature, Science, and the Arts

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