

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

Wei Ho, 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:

Ph.D.	2009	Princeton University
C.A.S.	2004	Cambridge University
A.M.	2003	Harvard University
A.B.	2003	Harvard University

Professional Record:

2014 – present	Assistant Professor, Department of Mathematics, University of Michigan
2012 – 2013	National Science Foundation Visiting Post-doctoral Fellow, Princeton University
2010 – 2014	Joseph Fels Ritt Assistant Professor, Columbia University
2009 – 2010	National Science Foundation Post-doctoral Fellow, Harvard University

Summary of Evaluation:

Teaching – Professor Ho’s classroom teaching is of high quality. Since joining the faculty in the Department of Mathematics, she has taught eight classes ranging from an undergraduate service course to graduate courses in her area of specialization. Student evaluations of her teaching have been very strong, especially on the “excellent instructor” question. Professor Ho has also been active in teaching outside the classroom. She supervises a Ph.D. candidate and a post-doctoral scholar, and she is serving as an unofficial adviser to another post-doctoral scholar.

Research – Professor Ho has earned an international reputation as a leader in arithmetic geometry. In addition to considerably advancing the research program initiated by her thesis adviser, she has branched out into other areas of algebraic geometry and number theory. External reviewers praise her research as impressive and an outstanding achievement. She will surely build on these successes with further major contributions to her growing field of research.

Recent and Significant Publications:

- “Odd degree number fields with odd class number,” with A. Shankar and I. Varma, *Duke Mathematical Journal*, 167(5), 2018, pp. 995-1047.
- “Orbit parametrizations for K3 surfaces,” with M. Bhargava and A. Kumar, *Forum of Mathematics Sigma*, 4, 2016, e18 (86 pages).
- “Coregular spaces and genus one curves,” with M. Bhargava, *Cambridge Journal of Mathematics*, 4(1), 2016, pp. 1-119.
- “Databases of elliptic curves ordered by height and distributions of ranks and Selmer groups,” with J. Balakrishnan, et al., *LMS Journal of Computation and Mathematics*, 19(A), 2016, pp. 351-370.

Service – Professor Ho has undertaken more service work than is ordinarily expected of an untenured faculty member. She served two years on the departmental Executive Committee, and one year on the Graduate Admissions Committee. She has been a faculty advisor for both the undergraduate Math Club and the Women in Mathematics program. She has been an organizer of three conferences since coming to Michigan. She also served as a reviewer for many journals and for the National Science Foundation.

External Reviews:

Reviewer (A)

“Wei Ho is one of the leading authorities and researchers on Bhargava-style arithmetic geometry, and she has both an impressive publication record and a robust research program. ... Aside from her research, Wei Ho also appears to be doing a terrific job at outreach and mentoring. Her CV is quite impressive in this regard.”

Reviewer (B)

“The range in co-authors and variation in topics on which she publishes shows she has gone beyond her thesis topic and has branched out to establish an independent research portfolio.”

Reviewer (C)

“I would be very happy to have her here at [my institution]. I would most definitely recommend Wei for tenure here. Moreover, in view of past experience, I believe that her publication record which includes several excellent journals and her continued NSF grant support would guarantee the smoothness of her tenuring process [at my institution]....”

Reviewer (D)

“Wei is one of the world’s leaders in the burgeoning field of *arithmetic statistics*... Reading these papers, I am struck by their depth and their astonishing interweaving of the concrete with the esoteric. These are important papers in the field, and the techniques are sure to have a continuing impact for years. (An example: Wei, together with Bhargava and Kumar, have already started applying these techniques in higher dimension in the paper ‘Orbit parametrizations for K3 surfaces,’ producing many new automorphisms with positive entropy, among other things.)”

Reviewer (E)

“...Professor Ho has an exceptional research program. She is a leader in the field of arithmetic geometry and analytic number theory, as evidenced by her numerous grants from the National Science Foundation and National Security Agency. ... She has a well-established track record of papers in excellent journals (Duke, Compositio), some of which are the lengths of short books (*Forum of Math Sigma* at 86 pages and *Cambridge J Math* at 119 pages).”

Reviewer (E)

“Professor Ho is at the forefront of research in arithmetic geometry, representation theory, and analytic number theory. She is a mathematician of technical research strength and intellectual maturity. University of Michigan is fortunate to have Professor Ho on the mathematics faculty and I recommend her for promotion and tenure in the strongest possible terms.”

Reviewer (F)

“Ho’s research lies in the intersection of the areas of arithmetic geometry and number theory, representation theory, and algebraic statistics. Ho has made impressive use of leveraging these areas to make impressive observations and contributions, both in the statistical behavior of arithmetic objects, as well as in neighboring areas. Ho has produced compelling results and is well poised in the area to make further significant progress.”

Reviewer (G)

“...[Ho’s] conference presentations are very well prepared and delivered, with due attention to her specific audience, and [I] would expect her to be a conscientious and effective teacher and colle[a]gue. ...I believe very strongly that Wei Ho should receive tenure and promotion to associate professor status at the University of Michigan.”

Summary of Recommendation:

Professor Ho has established herself as a world-wide leader in her research field of arithmetic geometry. She has contributed to the teaching mission of the Department of Mathematics from the undergraduate to the post-doctoral level. She has undertaken relatively heavy responsibilities in leadership, governance, and service. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Wei Ho be promoted to the rank of associate professor of mathematics, with tenure, College of Literature, Science, and the Arts.



Elizabeth R. Cole, Interim Dean
Professor of Women’s Studies, Psychology,
and Afroamerican and African Studies
College of Literature, Science, and the Arts

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