

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

Michael E. Zieve, 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.

Academic Degrees:

Ph.D. 1996 University of California, Berkeley
B.A. 1992 Harvard University

Professional Record:

2009 – present Associate Professor, Department of Mathematics, University of Michigan
2008 – 2009 Member, Institute for Advanced Study
2007 – 2008 Visiting Professor, Rutgers University
2000 – 2007 Research Staff, Center for Communications Research, Princeton University
2000 Stieltjes Visiting Professor, Leiden University
1999 Mathematical Sciences Research Institute Postdoctoral Research Fellow
1997 – 1999 Assistant Professor, Department of Mathematics, University of Southern California
1996 – 1999 National Science Foundation Post-doctoral Research Fellow, Brown University (1996-1997) and University of Southern California (1997-1999)

Summary of Evaluation:

Teaching – Professor Zieve has taught courses from the first-year undergraduate level to the advanced graduate level, receiving high student evaluations across the board. He actively draws students, including undergraduates, into his research programs. He has supervised five projects involving a total of seven undergraduate students in the two summers since he came to Michigan. He was the thesis supervisor for two students who have completed their Ph.D. degrees, and he is currently supervising three dissertations. He organized a successful seminar for undergraduate students to present their research.

Research – Professor Zieve has established himself as a world leader in several interrelated areas of algebra. His work combines great technical skill with imaginative viewpoints different from those of others in his research field. Professor Zieve collaborates with top researchers in several fields outside of algebra. His publication rate since 2007 has been exceptionally strong with articles appearing in the top-ranked mathematical journals. He also has an outstanding research program with the potential to change the face of algebraic dynamics.

Recent and Significant Publications:

“Linear relations between polynomial orbits,” with D. Chioca and T. Tucker, *Duke Mathematical Journal*, forthcoming.

“Polynomials with $PSL(2)$ monodromy,” with R. Guralnick, *Annals of Mathematics*, 172, 2010, pp.1321–1365.

“Classes of permutation polynomials based on cyclotomy and an additive analogue,” in Additive Number Theory, D. Chudnovsky and G. Chudnovsky, (eds.), Springer-Verlag, 2010, pp. 355–361.

“Permutation binomials over finite fields,” with A. Masuda, *Transactions of the American Mathematical Society*, 361, 2009, pp. 4169–4180.

Service – Professor Zieve served on important departmental committees. He also served as a counselor for undergraduate students and was faculty advisor of the undergraduate mathematics club. To the broader mathematical community his service included organizing conferences and a semester-long program to be held at Brown University in 2012. He has served on grant review panels for the National Science Foundation and refereed numerous papers.

External Reviews:

Reviewer (A)

“Mike is a very broad mathematician with in-depth knowledge of many different subjects, he is very active in the mentoring of both undergraduate and graduate students, and he is extremely prolific. ...Mike Zieve is one of the best mathematicians in the world working on problems related to algebraic dynamics, functional decompositions, and the arithmetic and geometry of algebraic curves.”

Reviewer (B)

“In Mike Zieve you have exactly what a top department looks for... a world leader in important research who is going to be an active part of the mathematical community, working with students and postdocs and contributing to the mathematical life of the department. We would promote him without hesitation at [my university], and you should do the same.”

Reviewer (C)

“Zieve has become an internationally acclaimed leader in algebraic number theory, as evidenced not only by his exceptional body of work but also by his numerous invitations to deliver lectures in the US and abroad. ... His incredible energy has also been directed to a vigorous program of mentoring undergraduates, graduate students, and postdoctoral fellows. ...[he is] positioned at the forefront of his field.”

Reviewer (D)

“...Zieve has a tremendous curiosity, a capacity for attacking deep problems in an unexpected way and a very original approach to many classical problems. His accomplishments to date certainly indicate that without a doubt he should be promoted to full professor. He is energetic and I am sure interacts with Michigan students very well. He has a very strong record of collaboration and will interact with people from many areas.”

Reviewer (E)

“In his research, he has made significant progress on questions that had not occurred to others, or which others had thought to be hopelessly difficult; and he has often done so by seeing surprising connections that others had not suspected.”

Reviewer (F)

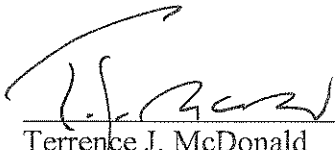
“...As with many of his papers, it is impressive not only in solving problems, but in a deep awareness of surrounding issues and methods from a variety of fields, a sensitivity to examples and to explicit bounds.”

Reviewer (G)

“He is regarded as one of the current leaders in arithmetic dynamics... His recent research in this direction has been particularly impressive. ... In other areas of arithmetic geometry as well, Zieve’s research is very creative. Sometimes it involves answering outstanding problems posed by others... Other times he manages somehow to find natural questions that no one thought of before or that no one had any idea how to approach before.”

Summary of Recommendation:

Professor Zieve has achieved a leading position in his research area. He has contributed significantly to the teaching mission of his department and he has undertaken numerous service activities at Michigan and for the wider mathematical community. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Michael E. Zieve be promoted to the rank of professor of mathematics, with tenure, in the College of Literature, Science, and the Arts.



Terrence J. McDonald
Arthur F. Thurnau Professor,
Professor of History, and Dean
College of Literature, Science, and the Arts

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