

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

Andrew Snowden, 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.	2009	Princeton University
B.A.	2004	University of Maryland

Professional Record:

2016 – present	Associate Professor, Department of Mathematics, University of Michigan
2013 – 2016	Assistant Professor, Department of Mathematics, University of Michigan
2012 – 2013	NSF Post-doctoral Fellow, Massachusetts Institute of Technology
2010 – 2012	C.L.E. Moore Instructor, Massachusetts Institute of Technology
2009 – 2010	NSF Post-doctoral Fellow, Stanford University

Summary of Evaluation:

Teaching – Professor Snowden’s classroom teaching has been outstanding. Student evaluations of his courses, particularly his median scores for “The instructor is an excellent teacher,” have ranged from 4.75 to 5.00 on a five-point scale. Since his promotion to tenure in 2016, he has supervised four students in the Research Experiences for Undergraduates program. He is currently supervising two doctoral students and four post-doctoral researchers.

Research – Professor Snowden is a very broad researcher, whose work has had an important impact in algebraic geometry, commutative algebra, representation theory, and arithmetic geometry. The main thrust of his work is in the new field of representation stability, of which he is one of the founders. His work with Steven Sam built foundations for this area, and at the same time, used this theory to solve important problems in other fields. Representation stability has become an important field of research, with Professor Snowden one of the clear leaders. Over the past few years, together with his collaborators, he has been developing the theory both in depth and in new directions, while at the same time finding surprising new applications. He has had continuous support through National Science Foundation (NSF) personal grants. In addition, he was awarded a prestigious Sloan Research Fellowship and an NSF Career Grant.

Recent and Significant Publication:

“Gröbner methods for representations of combinatorial categories,” with S. Sam, *Journal of the American Mathematical Society*, 30, 2017, pp. 159–203.

“Counting elliptic curves with prescribed torsion,” with R. Harron, *Journal für die Reine und Angewandte Mathematik*, 729, 2017, pp. 151–170.

“Noetherianity of some degree two twisted commutative algebras,” R. Nagpal and S. Sam, *Selecta Mathematica, New Series*, 22, 2016, pp. 913–937.

“Proof of Stembridge’s conjecture on stability of Kronecker coefficients,” joint with S. Sam, *Journal of Algebraic Combinatorics*, 43, 2016, pp. 1–10.

Service – Professor Snowden has continuously served as a co-organizer of the Undergraduate Math Club since his arrival at Michigan. He is serving in his fourth consecutive year on the Department of Mathematics' Honors Committee, including two years as its chair. He also served twice on the Qualifying Review Exam Committee. Outside the university, he was one of the organizers of a 2016 American Institute of Mathematics workshop on representation stability.

External Reviews:

Reviewer (A)

"Let me say at the outset that I consider this a 'slam dunk.' I have rarely ever seen such a strong dossier. The research contributions of the candidate are deep, very original, and highly significant. Indeed, the candidate is at the very top of his generation of researchers in mathematics."

Reviewer (B)

"Snowden has demonstrated throughout his career the ability to work effectively on a wide range of problems from algebra to geometry to arithmetic. He impresses with his combination of breadth, technical expertise, and originality. Michigan is a department with a very strong tradition in commutative algebra, but even holding him to that high standard, I strongly recommend that Snowden be promoted to full professor."

Reviewer (C)

"Snowden has firmly established himself as one of the leading researchers [representation stability]... ...[his] current and future projects provide a vast array of interesting and natural questions to work on for many years to come. ...I can appreciate the depth and novelty of his accomplishments."

Reviewer (D)

"I consider Snowden's work on stability questions in commutative algebra and representation theory the core of his work. His oeuvre is already very impressive... ...I value his work very, very highly. I am confident that we will learn much more from him!"

Reviewer (E)

"As for his national and international visibility: he is well-known around the world, his paper on the Schwartz conjecture with Putman and Sam was the subject of a Bourbaki talk, he was one of the invited speakers at the 2015 decadal 'gathering of the tribe' in algebraic geometry, and I would expect him to be a future ICM speaker. ... He's the kind of mathematician who makes any department much more interesting. He should unquestionably be promoted."

Reviewer (F)

"...Snowden's work continues to show his deep understanding of both classical results, the latest developments, and the connections between the two. His theory invented and developed with Steven Sam continues to grow and become more useful, connecting to more and more topics. ... He is definitely someone you want to keep around at Michigan. I therefore think the case for promoting him to Full Professor is quite a strong one."

Reviewer (G)

“...I don’t see any clear upper bound to what he could accomplish in the future. ...the department can be proud that it has been able to retain him. Certainly he’s more than ready to be a Full Professor, and I am pleased to support the promotion in the strongest possible terms.”

Reviewer (H)

“...I think very highly of Snowden’s work (and indeed, I have only scratched the surface of it...). He is one of the leading figures in representation stability, to which he has contributed both a visionary program and many important results. What is more, his rate of production in the last year or so seems to be accelerating (and he was already very productive). I think the case for promoting him to full professor is an absolute slam dunk.”

Reviewer (I)

“One of the strongest aspects of Andrew Snowden’s scholarship is his breadth. He has deep results with impact in classical algebraic geometry, category theory, combinatorial representation theory, commutative algebra, and arithmetic number theory. His knowledge is so extensive that he can really perform as an insider in each of these communities – a feat that very few ever attempt, not to mention, succeed at.”

Summary of Recommendation:

Professor Snowden has made valuable research contributions to a number of areas of mathematics. He is one of the leaders of the rather new field of representation stability, contributing both to its foundations and to its applications. He is an excellent classroom teacher, and he has supervised the research of undergraduates, doctoral students, and post-doctoral scholars. He has carried out numerous service tasks, both within his department and outside the university. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Andrew Snowden be promoted to the rank of professor of mathematics, with tenure, College of Literature, Science, and the Arts.



Andrew D. Martin, Dean
Professor of Political Science and Statistics
College of Literature, Science, and the Arts

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