

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

Approved by the Regents
May 14, 2009

Harm Derksen, 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.	1997	University of Basel
M.A.	1993	University of Nijmegen

Professional Record:

2004 – present	Associate Professor, Department of Mathematics, University of Michigan
2000 – 2004	Assistant Professor, Department of Mathematics, University of Michigan
1998 – 2000	C. L. E. Moore Instructor of Mathematics, Massachusetts Institute of Technology
1997 – 1998	Research Scholar, Mathematics Department, Northeastern University

Summary of Evaluation:

Teaching — Professor Derksen’s classroom teaching includes courses at all levels, from a first-year undergraduate course that he co- developed to advanced graduate courses. His teaching evaluations are good. He supervised one doctoral student, co-supervised another, and is currently supervising three. He is mentoring a postdoctoral scholar, temporarily mentoring another, and previously mentored a third. He has supervised four summer research projects in the Research Experiences for Undergraduates program.

Research — Professor Derksen is a creative scholar who has made major contributions to several branches of algebra by remarkably innovative methods. He also discovered a surprising new result in number theory, and he has applied some of his algebra work to an engineering problem about data clustering. His research is ranked very highly, even in comparison with more senior mathematicians. He publishes in first-rate journals, including *Inventiones Mathematicae*, which is considered to be one of the two best mathematics journals.

Recent and Significant Publications:

“Quivers with potentials,” with J. Weyman, *Selecta Mathematica, New Series* 14, 2008, pp. 59–119.

“Computing invariants of algebraic groups in arbitrary characteristic,” with G. Kemper, *Advances in Mathematics*, 217, 2008, pp. 2089–2129.

“A Skolem-Mahler-Lech theorem in finite characteristic and finite automata,” *Inventiones Mathematicae*, 168, 2007, pp. 175–224.

“Hilbert series of subspace arrangements,” *Journal of Pure and Applied Algebra*, 209, 2007, pp. 91–98.

Service — Professor Derksen has had several major committee assignments. He is in the second year of a two-year term on the department’s Executive Committee. Previously, he served on the

doctoral committee, which oversees the progress and academic status of all doctoral students in mathematics. He served on the honors committee, which oversees the honors undergraduate program in mathematics and counsels honors students. Outside the university, he serves as an editor of the *Journal of Algebra* and of *Applicable Algebra in Engineering, Communication and Computing*. He has served on two National Science Foundation panels and has done refereeing and reviewing for various journals and agencies.

External Reviews:

Reviewer (A)

“Derksen has a broad field of expertise concerning various domains of commutative algebra and algebraic geometry... In my opinion, these results establish Derksen as a leading expert in computational invariant theory and in quiver representations; for me, the best in his generation.”

Reviewer (B)

“I want to say right off that I cannot imagine an academic institution that would not promote Professor Derksen as considered here. He is a top-notch researcher who is well known internationally and universally considered one of the best researchers in mathematics. His productivity, both in terms of depth and breadth is simply amazing.”

Reviewer (C)

“Here’s my evaluation of Harm Derksen: he’s terrific! And certainly deserves promotion at this point on the basis of his research.”

Reviewer (D)

“I hold Dr. Derksen in high regard. He is energetic and inventive, and technically very strong. He has made several impressive contributions to invariant theory. I would place him among the leaders of his generation in invariant theory and related areas.”

Reviewer (E)

“...Derksen has an international reputation and is well recognized as a researcher. To me he belongs to the most talented and most original researchers [of his generation], with a very deep understanding of what he is doing. He is a fully established mathematician and is ready to take over full responsibility in a leading department of mathematics, like yours.”

Reviewer (F)

“...the guy is *fantastic*. ...Derksen’s promotion is a no-brainer from my viewpoint. He is a leader in quiver representations, invariant theory, and applications to representation theory and combinatorics. He has extremely high standards, and regularly produces first-rate and surprising results. He enjoys an absolutely outstanding reputation worldwide.”

Reviewer (G)

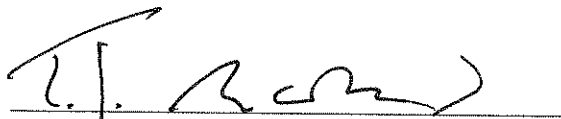
“...Derksen’s main topic has been invariant theory, an area with a long tradition in algebra. Here he has done impo[r]tant and influential work, in particular on computational aspects.”

Reviewer (H)

“...his list of publications is really exciting and one also has to stress the wide range of his contributions... I hope that these remarks convince you that the work of Derksen is of eminent interest and that his contributions are deep and very timely.”

Summary of Recommendation:

Professor Derksen has produced research of depth, breadth, and impact. He has made significant contributions to the departmental teaching mission and has capably performed numerous service assignments. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Harm Derksen 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

May 2009