

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

Aaron A. King, assistant professor of ecology and evolutionary biology, and assistant professor of mathematics, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of ecology and evolutionary biology, with tenure, and associate professor of mathematics, without tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	1999	University of Arizona
M.A.	1992	University of Hawai'i
B.A.	1989	Rice University

Professional Record:

2008 – present	RAPIDD Research Fellow, Fogarty International Center for Advanced Study in the Health Sciences, National Institutes of Health
2005 – present	Assistant Professor, Department of Ecology and Evolutionary Biology and Department of Mathematics, University of Michigan
2005 – present	Primary Faculty Member, Center for the Study of Complex Systems, University of Michigan
2004 – 2005	Research Assistant Professor, Department of Mathematics, University of Tennessee
2002 – 2005	Assistant Professor, Department of Ecology and Evolutionary Biology, University of Tennessee
2001 – 2002	Visiting Research Assistant Professor, Department of Mathematics, University of California, Davis
2000 – 2002	National Science Foundation Postdoctoral Research Fellow, Department of Environmental Science and Policy, University of California, Davis
1999 – 2000	Postdoctoral Research Associate, Program in Applied Mathematics, University of Arizona

Summary of Evaluation:

Teaching – Professor King is a conscientious and rigorous instructor. He thinks deeply about his teaching and has worked hard to maximize his effectiveness in the classroom. Since his arrival at Michigan, he has taught three courses, two of which are new offerings that he developed and taught. He also co-taught a large undergraduate course in general ecology that is required for all ecology and evolutionary biology concentrators. He was co-principal investigator on a teaching grant from the National Science Foundation entitled SUBMERGE (Supplying Undergraduate Biology and Mathematics Education and Research Group Experience) that helps pair interested students with mentors who can improve their skills to think across disciplines. He has also been an effective graduate student mentor and valued committee member.

Research – Professor King is recognized nationally and internationally as an outstanding theoretical ecologist who is making fundamental contributions to his discipline. His innovative research bridges the challenging gap between mathematical models and empirical data. Since

coming to Michigan, most of his efforts have been directed toward understanding the epidemiology of infectious diseases and developing novel ways of testing epidemiological theory with data. Professor King has been very successful and has published a series of influential papers in the top scientific journals (*Science*, *Nature*, *Proceedings of the National Academy of Sciences*, and others). He has also made important progress in understanding such diseases as whooping cough, measles, and cholera; and in developing novel analytical techniques, now in use throughout the world, for estimating parameters in non-linear models. He is a highly sought-after collaborator within and beyond Michigan with a reputation that is exemplified by invitations to organize working groups under the National Institutes of Health's Research and Policy for Infectious Disease Dynamics (RAPIDD) initiative.

Recent and Significant Publications:

- "Contact network structure explains the changing epidemiology of pertussis," with P. Rohani and X. Zhong, *Science*, November 2010, DOI:10.1126/science.1194134, pp. 982-985.
- "Evolution of acute infections and the invasion-persistence trade-off," with S. Shrestha, et al., *American Naturalist*, 173, 2009, pp. 446-455.
- "Inapparent infections and cholera dynamics," with E. L. Ionides, et al., *Nature*, 454, 2008, pp. 877-880.
- "Inference for nonlinear dynamical systems," with E. L. Ionides and C. Breto, *Proceedings of the National Academy of Sciences of the U.S.A.*, 103, 2006, pp. 18438-18443.

Service – Professor King has a strong service record at Michigan and beyond. He served on the department's Graduate Admissions Committee and the Seminar Committee, and he was recently elected to serve on the Executive Committee. He has been an associate editor of two leading journals and served as a member of the Faculty of 1000 Biology. He has reviewed for numerous scientific publications and granting agencies, and has written and maintained a number of openly accessible software packages that have been adopted internationally for statistical inference and phylogenetic comparative analyses.

External Reviews:

Reviewer (A)

"...Aaron's most important contributions have been combining intelligent modeling...with sophisticated modern methods of parameter estimation. The measles work in the royal Society Interface paper demonstrates the power of these methods, and is perhaps one of the most compelling examples of how biological insight can emerge from sophisticated methods."

Reviewer (B)

"Aaron is exceptionally talented in a number of areas, but what makes him unique is the relatively rare ability to both formulate and solve problems in areas of applied mathematics, and to be able to play a central role in collaborations with biologists. ... I would go out of my way to recruit him and ensure he stays at the institution at which I work."

Reviewer (C)

"...King has shown a consistent strand of thoughtful, original and excellent research...it is most likely that he will continue to contribute excellent research for years to come."

Reviewer (D)

"...King [is] an established star, with a rapidly increasing international reputation at the interface of dynamic modeling with epidemiological and ecological data... I think his world class research in a very important area would make arguing a case for tenure easy in both [my current and my former institutions]."

Reviewer (E)

"...he has an international reputation as a world leader... Personally I think he is a star. ...his quality of publications is simply superb. ... I would offer him a job tomorrow if there is any concern over his promotion."

Reviewer (F)

"...he is a first rate scientist who manages to blend his mathematical skills with a strong understanding of epidemiology and ecology. ... He has worked with some of the best researchers in his field; his involvement in both NCEAS and RAPIDD are clear indicators of his international standing, as is his appointment to the Faculty of 1000."

Reviewer (G)

"The hallmarks of King's work are breadth and originality. ... King is a real gem of a scientist. I believe that he would easily achieve tenure at my institution..."

Summary of Recommendation:

Professor Aaron King is a leading scholar in his field. He is also a dedicated teacher and an excellent colleague. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Aaron A. King be promoted to the rank of associate professor of ecology and evolutionary biology, with tenure, and associate professor of mathematics, without tenure, 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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