

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

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

2011 – present	Associate Professor, Department of Ecology and Evolutionary Biology and Department of Mathematics, University of Michigan
2008 – present	RAPIDD Research Fellow, Fogarty International Center for Advanced Study in the Health Sciences, National Institutes of Health
2005 – 2011	Assistant Professor, Department of Ecology and Evolutionary Biology and Department of Mathematics
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 Post-doctoral Research Fellow, Department of Environmental Science and Policy, University of California, Davis.
1999 – 2000	Post-doctoral Research Associate, Program in Applied Mathematics, University of Arizona

Teaching – Professor King is a serious and dedicated teacher who has taught four different courses, including a lower-level introductory ecology class for undergraduate students as well as classes in mathematical ecology and in statistical inference for advanced undergraduate and graduate students. Recently, Professor King developed an exciting new course for undergraduate biology majors entitled “Mathematics of Life” that is aimed at students who are interested in quantitative perspectives on biology. He has mentored a significant number of undergraduate and graduate students, and post-doctoral scholars, and he has taught a large number of national and international short courses and workshops.

Research – Professor King is a highly influential theoretical/mathematical ecologist whose research is internationally regarded for his development of powerful new statistical tools that enable us to better understand complex ecological dynamics. He is among the leaders in a growing group of mathematical ecologists who realize that the quality and quantity of disease incidence data, over both time and space, provides a wealth of empirical data with which to test

fundamental ecological theories. Professor King has successfully applied these novel statistical tools to yield important new insights into the disease ecology of major human pathogens such as Poliovirus, pertussis bacteria, and Ebola virus. It is expected that his already high research profile will receive a quantum increase as the innovative new statistical methodologies he and his collaborators have developed become widely adopted throughout his field.

Recent and Significant Publications:

- “Statistical inference for partially observed Markov processes via the R package pomp,” D. Nguyen and E. L. Ionides, *Journal of Statistical Software*, in press.
- “Inference for dynamic and latent variable models via iterated, perturbed Bayes maps,” with E. L. Ionides, et al., *Proceedings of the National Academy of Sciences of the U.S.A.*, 112, 2015, pp. 719–724.
- “Avoidable errors in the modeling of outbreaks of emerging pathogens, with special reference to Ebola,” with M. Domenech de Cellès, et al., *Proceedings of the Royal Society of London, Series B*, 282, 2015, p. 20150347.
- “Unraveling the transmission ecology of polio,” with P. Rohani, *PLoS Biology*, 13, 2015, e1002172.

Service – Professor King has an excellent record of service within his department, at the university, and in the international science community. Since his last promotion, he has served on four important departmental committees, chairing one of them, and on a college advisory committee. Externally, he has organized several important scientific meetings and serves on the steering committee of a National Science Foundation Research Coordination Network. Professor King has served as an associate editor for two top journals in his field and has been a prolific reviewer, evaluating manuscripts for >30 scientific journals. Professor King’s service to the scientific community includes developing and maintaining five software packages that are widely used across his discipline. He is internationally regarded as a good citizen who is generous in sharing his mathematical skill sets for the greater good of the field.

External Reviewers:

Reviewer (A)

“I clearly identify him as one of the world leaders in the development of statistical methods to analyze epidemic time series (and I am sure this sentiment will be shared by many colleagues in the community). ...Dr[.] King’s contribution is far from being limited to methodological aspects. He made important contributions to the understanding of epidemic dynamics for a number of pathogens such as cholera...pertussis...or polio...”

Reviewer (B)

“...whenever I mention Aaron to any of his peers, I have not met a single person who hesitates to evoke massive admiration: both for the mind and the warm and generous personality.”

Reviewer (C)

“...I think Aaron’s clarity, depth and above all – appreciation of the Biology – means his work goes further than the current leaders in this field and to my mind he has achieved stature in this field. He is an exceptional speaker and very much liked by his colleagues...”

Reviewer (D)

"...King is an outstanding scientist who has established himself as a leader in a dynamic field upon which he has placed his own stamp. Having similarly followed the progress of over 100 investigators roughly in his cohort, I can say with confidence that he is in the top 5% overall. I expect that his stature will continue to rise nationally and internationally over the coming years."

Reviewer (E)

"The results of his work on infectious diseases have important policy implications. He is recognized as an important scholar in the field, both nationally and internationally, as testified by the impressive publication list, the many grants from different governmental agencies, the prestigious invitations to speak and teach..."

Reviewer (F)

"This program of research is ambitious, with an increasing number of research groups working in this area around the world. It seems clear that Dr. King's contribution is substantial, influential, and is growing over time."

Reviewer (G)

"...I think that he's an established star, with an international reputation as a leader at the interface of dynamic modeling with epidemiological and ecological data. I very strongly recommend him for promotion."

Reviewer (H)

"...Aaron plays a very active role on the international stage of infectious disease modelling and it is widely recognised that he is among the most talented and creative of his generation."

Summary of Recommendation:

Professor King is a leading scholar in theoretical ecology and is internationally recognized for the fundamental contributions he has made to integrating theoretical models with data. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Aaron A. King be promoted to the rank of professor of ecology and evolutionary biology, with tenure, and professor of mathematics, without 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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