



## Special issue of the Journal of Mathematical Biology to honor Alan Hastings' 65th birthday

Odo Diekmann<sup>1</sup> · Sergey Gavrilets<sup>2,3</sup> · Mats Gyllenberg<sup>4</sup> · Simon Levin<sup>5</sup> ·  
Mark Lewis<sup>6,7</sup>

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One of the greatest pleasures in a scientific career is to honor someone who has occupied a special place in one's life, and someone who has had a major impact on one's field through his own work, his mentorship, and his contributions to the scientific community. Alan Hastings is such a person, and one who has enriched our lives and careers and those of so many others for more than 45 years, from the time he was an undergraduate at Cornell University through graduate work and a brilliant career. Alan is noted not only for his exceptional and original contributions to ecology and evolutionary biology, contributions that have earned him numerous honors including election to the National Academy of Sciences and the American Academy of Arts and Sciences; he has also been a superb and generous mentor, beloved by his students, and a leader in scientific societies and the editorship of leading journals. Indeed, it is particularly satisfying to be able to honor our friend and colleague Alan Hastings on the occasion of his 65th birthday this year through this special issue of *Journal of Mathematical Biology*, which Alan edited for many years. Of course, in so doing, we had to bypass Alan and go directly to his many students, postdocs and colleagues, and invite them to contribute; the details of the contributors will thus come as a surprise to Alan.

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✉ Mark Lewis  
mark.lewis@ualberta.ca

<sup>1</sup> Mathematical Institute, Utrecht University, Utrecht, The Netherlands

<sup>2</sup> Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN, USA

<sup>3</sup> Department of Mathematics, University of Tennessee, Knoxville, TN, USA

<sup>4</sup> Department of Mathematics and Statistics, University of Helsinki, Helsinki, Finland

<sup>5</sup> Department of Ecology and Evolutionary Biology, Princeton University, Princeton, NJ, USA

<sup>6</sup> Department of Mathematical and Statistical Sciences, University of Alberta, Edmonton, AB, Canada

<sup>7</sup> Department of Biological Sciences, University of Alberta, Edmonton, AB, Canada

This issue is not the only gift that our community is providing to thank Alan; a companion issue of *Theoretical Ecology*, which Alan founded and remains Editor of, has recently been published. Indeed, because of the overlap in the group of editors involved for both issues, the plan was to use essentially the same introduction for both issues; hence, the text for this introduction shares most of its content with the one we wrote for the special issue in *Theoretical Ecology*. Alan was not only editor of those two journals, but also co-editor of the *Encyclopedia of Theoretical Ecology*, the author of one of the most successful textbooks of theoretical ecology, and a very successful and popular department chair at U. C. Davis.

Hastings has been a leading force in theoretical ecology for decades, and has helped lay the foundation for scientifically-based agriculture and resource management. Increasingly, from the core disciplines such as entomology to agricultural economics, ecological principles are playing a fundamental role. In large part, this is because of people like Alan Hastings, whose work spans so many disciplines, and reaches from the very basic to the very applied. Alan is distinguished for his research, as well as for his commitment to advancing the basic ecological sciences and their management implications.

The scope of Hastings's work has been remarkable, across the spectrum of ecology and evolution. His productivity has been exceptional, but most important have been his cornerstone papers on population dynamics in stochastic environments, and the role of patchiness....these have led to major advances in theory, and also deeply influenced practice in the conservation of species. His theoretical work has ranged from spatial dynamics to population cycles, with applications to pest outbreaks and exploited resource populations. His mathematical work is rigorous and brilliantly original, but he has also demonstrated the ability to work closely with empiricists and managers.

Hastings has produced a superb and daunting set of publications that make him one of the most respected theoretical ecologists in the world. With over 30,000 citations (Google Scholar, Nov 2019), he is among the elite in the subject. He has published fundamental papers in population genetics and ecology, made important contributions to metapopulation theory and conservation biology, and brought the full power of sophisticated advances to bear on the solution of applied problems. He has trained numerous outstanding young scientists, and all speak warmly of his influence.

Alan Hastings's research shows a lifetime of commitment to the betterment of society. It is our honor and privilege to have put this special issue together. Happy Birthday, Alan.

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