



Applications of Information Theory to Epidemiology

Guest Editor:

Prof. Dr. Gareth Hughes

Scotland's Rural College, Crop
and Soil Systems Research
Group, Edinburgh, UK

Deadline for manuscript
submissions:

closed (30 September 2020)

Message from the Guest Editor

Epidemiological applications of information theory can be traced back at least as far as the 1970s. The work of W.I. Card (collaborating with I.J. Good) on diagnostic decision-making in terms of entropy reduction and the work of C.E. Metz and colleagues on an information theoretic approach to the interpretation of receiver operating characteristic (ROC) curve data are examples of early applications. Almost half a century on, these examples still typify the way that information theory has been used by many epidemiologists and diagnosticians to gain insight into our understanding of disease risk and our decision-making in relation to the management of risk. At the same time, new applications are appearing, not least in the pages of *Entropy*.

In this Special Issue, we seek both to review existing successful contributions of information theory to aspects of epidemiology, and also to look forward to novel applications, especially in the areas of:

- Medical epidemiology
- Botanical epidemiology
- Social geography
- Disease risk factors
- Calibration and validation of risk algorithms
- Diagnostic decision-making





entropy



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Kevin H. Knuth

Department of Physics, University
at Albany, 1400 Washington
Avenue, Albany, NY 12222, USA

Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

Entropy is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

Author Benefits

Open Access: free for readers, with [article processing charges \(APC\)](#) paid by authors or their institutions.

High Visibility: indexed within [Scopus](#), [SCIE \(Web of Science\)](#), [Inspec](#), [PubMed](#), [PMC](#), [Astrophysics Data System](#), and [other databases](#).

Journal Rank: JCR - Q2 (*Physics, Multidisciplinary*) / CiteScore - Q1 (Mathematical Physics)

Contact Us

Entropy Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/entropy
entropy@mdpi.com
[X@Entropy_MDPI](https://twitter.com/Entropy_MDPI)