Computational and Mathematical Methods in Medicine

Hindawi

Special Issue on

Computational Advances in Cardiovascular Health

CALL FOR PAPERS

Cardiovascular disease is the world's top mortality cause, accounting for 1 in 3 deaths and 1 in 5 dollars of the American healthcare system. Health inequities, omics, and social determinants of health including diet, exercise, and smoking as behaviors embedded within individuals' larger social networks are increasingly promising comprehensive targets of population health management and precision medicine. Computational advances driven by machine learning and next generation analytics are showing increasing potential to unite these two movements to ultimately improve clinical, cost, and equity outcomes. Such advances are helping accelerate translational omics including genomics and epigenetics, geographic information system (GIS) heat mapping, social network mapping, prior-to-launch social innovation simulations, and health system redesign based on predictive models of patient demand and market dynamics. Yet there are no widely accepted evidence-based standards in these computational advances, nor how to optimally apply them to help reverse the cardiovascular disease epidemic.

The aim of this special issue is to combine multidisciplinary research on computational advances that have immediate applications to the cardiovascular disease epidemic as either novel applications of those advances to this epidemic or theoretical developments that can be applied to it. This issue especially welcomes research articles that demonstrate such new computational advances (including novel machine learning algorithms, statistical, and/or mapping methodologies) on this topic. Review articles are also encouraged that could summarize the state-of-the-art methods and algorithms and their applications in this field.

Potential topics include but are not limited to the following:

- Population health management
- Precision medicine
- Social innovation
- Social determinants of health
- Social networks
- Cost effectiveness
- Health system redesign
- Machine learning
- Causal inference statistics
- Geographic information system heat mapping
- Bayesian adaptive trials and other novel study design advances

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/cmmm/cacv/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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