Quantitative Medicine Forum

Title:
“A Crash Course in Bayesian Statistics: What Medical Researchers Need To Know”

Abstract:
Like it or not, a command of statistics is a necessary skill for medical researchers looking to publish their work or understand the findings of others. Most statistics courses focus on statistical methods labelled alternatively frequentist or classical, but there is growing interest in a rival approach to dealing with uncertainty, called Bayesian statistics, after the historical amateur English mathematician, the Reverend Thomas Bayes. Bayesian analyses are being used more and more in medical research, and the purpose of this talk is to provide you with a crash course in Bayesianism. You won't come out being able to do a Bayesian analysis, but in providing several examples (chiefly from my own research on infectious disease epidemiology) I hope to acquaint you with some of the uses, benefits, and challenges of Bayesian statistics, so that you will be armed to interpret research reports containing them.

Biography:
Cook has been assistant professor in the department of statistics and applied probability at the National University of Singapore since 2008. He read his PhD at a Scottish government-funded research institute, Biomathematics and Statistics Scotland, on plant disease epidemiology (technically, epiphytology), which he followed up with postdoctoral and visiting positions at Heriot-Watt University, Edinburgh, and the University of Cambridge. Since moving to Singapore, he has switched to working on human diseases, such as the recent influenza A H1N1-2009 outbreak. During the influenza pandemic, Cook and colleagues set up a real-time on-line influenza forecast for Singapore, which was covered in the national press, and articles by Reuters and AFP on his latest paper have been syndicated to over 10 000 news outlets worldwide. In the five years since obtaining his PhD, Cook has published around 20 papers, in journals including the New England Journal of Medicine, the Journal of the American Medical Association, the Proceedings of the National Academy of Sciences (USA) and Emerging Infectious Diseases.

All are welcome to attend. No RSVP is required. Light refreshments will be served beginning at 11:45 outside the auditorium.