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Introduction

The Statistics Consortium at the University of Maryland, College Park, hosted a two-day workshop on Bayesian Methods that Frequentists Should Know during April 30–May 1, 2008. The event was co-sponsored by the Institute of Mathematical Statistics (IMS), Office of Research and Methodology, National Center for Health Statistics, Survey Research Methods Section (SRMS) of the American Statistical Association, and Washington Statistical Society. The workshop was intended to bring out the positive features of Bayesian statistics in solving real-life problems, including complex problems in sample surveys and production of high-quality official statistics.

The workshop consisted of six invited sessions, plus a poster session held in the evening of April 30 where ten posters were displayed and discussed in an informal setting. The average attendance in the sessions was about 100. The invited sessions and the poster session together covered a wide range of topics, including Bayesian methods in public policy, missing data problems, objective prior selection, small area estimation, sample surveys, relationship between parametric bootstrap and Bayesian methods, and accurate approximation to posterior densities. In keeping with the title of the workshop, the audience included many attendees who did not classify themselves as Bayesian statisticians, and the speakers took pains to explain the attractiveness of Bayesian methods to non-Bayesians.

Shortly after the workshop, we discussed the possibility of publishing a special issue of *Statistical Science* with David Madigan, the Executive Editor of *Statistical Science*. We agreed that a special issue containing a few review papers around the main theme of the workshop along with formal discussions and rejoinders would be of great interest to *Statistical Science* readers. The intent was not to publish a workshop proceedings but to provide an overview of materials presented in the workshop from the perspective of a few experts in the field.

We believe that the five authoritative review papers contained in this issue, along with their discussions and rejoinders, provide an excellent overview of the assessment of the current state of the Bayesian methodology. This issue will certainly be a valuable resource for researchers, and will be of interest also to a general statistical audience. We would like to thank all the authors, discussants and referees for their hard work in meeting the high standard of the journal. Finally, we would like to thank David Madigan for his encouragement and patience during the entire editorial process.

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