Preface

The 11th Abel Symposium on “Statistical Analysis for High-Dimensional Data” was held at Nyvågar Rorbuhotell, near the village of Kabelvåg, in the Lofoten archipelago, Norway, from Monday, May 5, to Friday, May 9, 2014. This Abel Symposium Proceedings contains a selection of papers within this field.

There were 53 participants, and participation was by invitation only. The scientific committee for the symposium consisted of the editors of this Abel Symposium volume: Peter Bühlmann, Arnoldo Frigessi, Ingrid K. Glad, Mette Langaas, Sylvia Richardson, and Marina Vannucci.

The symposium had 23 invited talks:

- Yoav Benjamini: Addressing statistical woes affecting replicability
- Peter J. Bickel: Asymptotic analysis of unlabeled networks and an application
- Leonardo Bottolo: Bayesian hierarchical mixture models
- Tony Cai: Sparse PCA: optimal rates, adaptive estimation, and computational challenges
- Mathias Drton: Ising model selection with Bayesian information criteria
- Edward I. George: Spike-and-slab variable selection
- Jelle J. Goeman: A global × global test for association between two high-dimensional data sets
- Chris Hans: From a conditional Lindley’s paradox to poly-hyper-g priors in Bayesian regression
- Trevor Hastie: Sparse models and coordinate descent
- Nicolai Meinshausen: Maximin effects for heterogeneous large-scale data
- Xiao-Li Meng: The potential and perils of preprocessing: building new foundations
- Sach Mukherjee: High-dimensional approaches for investigating disease heterogeneity
Peter Müller  A Bayesian feature allocation model for tumor heterogeneity
Susan A. Murphy  Micro-randomized trials and off-policy reinforcement learning
Judith Rousseau  Asymptotic properties of empirical Bayes procedures in parametric and nonparametric models
Richard Samworth  Independent component analysis via nonparametric maximum likelihood estimation
Terence P. Speed  Removing unwanted variation for prediction
Sara van de Geer  Confidence sets for the graphical lasso
Martin J. Wainwright  Randomized sketches of high-dimensional convex programs: practical schemes and sharp rates
Mike West  Dynamic sparsity modeling
Bin Yu  Relating developmental transcription factors (TFs) based on *Drosophila* embryonic gene expression images

The participants not giving invited talks had the possibility to give a short presentation of their work. Contributed talks were given by Magne T. Aldrin, Bettina Kulle Andreassen, Elja Arjas, Lamiae Azizi, Linn Cecilie Bergersen, Peter Bühlmann, Jan Christoph Ernest, Arnolo Frigessi, Ingrid K. Glad, Clara-Cecilie Günther, Kari K. Halle, Kristoffer H. Hellton, Eric B. Laber, Mette Langaas, Tonje G. Lien, Ole Christian Lingjærde, Keli Liu, Edgar A. Muro Jimenez, Christian M. Page, Andrea I. Riebler, Sylvia Richardson, Daniel P. Simpson, Nicolas Städler, Øystein Sørensen, Marina Vannucci, Valeria Vitelli, Verena Zuber, and Erik W. van Zwet.

The full list of participants follows:

Aldrin, Magne T.  Norwegian Computing Center
Andreassen, Bettina Kulle  University of Oslo
Arjas, Elja  University of Oslo
Azizi, Lamiae  University of Cambridge
Benjamini, Yoav  Tel Aviv University
Bergersen, Linn Cecilie  University of Oslo
Bickel, Peter J.  University of California at Berkeley
Bottolo, Leonardo  Imperial College London
Bühlmann, Peter  ETH Zürich
Cai, Tony  University of Pennsylvania
Drton, Mathias  University of Washington
Ernest, Jan Christoph  ETH Zürich
Frigessi, Arnolo  University of Oslo
George, Edward I.  University of Pennsylvania
Glad, Ingrid K.  University of Oslo
Goeman, Jelle J. Leiden University
Günther, Clara-Cecilie Norwegian Computing Center
Halle, Kari K. Norwegian University of Science and Technology
Hans, Chris Ohio State University
Hastie, Trevor Stanford University
Hellton, Kristoffer H. University of Oslo
Hjort, Nils Lid University of Oslo
Laber, Eric B. North Carolina State University
Langaas, Mette Norwegian University of Science and Technology
Lien, Tonje G. University of Oslo
Lingjærde, Ole Christian University of Oslo
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Meinshausen, Nicolai ETH Zürich
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Muro Jimenez, Edgar A. ETH Zürich
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We also thank the organizing committee, consisting of the participants Magne T. Aldrin, Bettina Kulle Andreassen, Arnoldo Frigessi, Ingrid K. Glad, Clara-Cecilie Günther, Kristoffer H. Hellton, Mette Langaas, Tonje G. Lien, Christian M. Page, Øystein Sørensen, and in addition Elisabeth H. Seland. Further, we would like to acknowledge the excellent service we received from the staff at the Nyvågar Rorbuhotel during our stay.

Special thanks goes to the contributors to this volume and to the participants and the speakers for their part toward the success of the symposium. Finally, we would like to thank Springer and Ruth Allewelt, for great patience and service during the preparation of this volume.

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Zürich, Switzerland  
Oslo, Norway,  
Trondheim, Norway  
Cambridge, UK  
Houston, TX, USA  
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