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, Arnoldo 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 Zewt.

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, Arnoldo  University of Oslo
George, Edward I.  University of Pennsylvania
Glad, Ingrid K.  University of Oslo
We thank the Norwegian Mathematical Society for nominating our application and the Board for the Niels Henrik Abel Memorial Fund for deciding to support it.
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 Rorbuhotellduring 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.

Oslo, Norway  
Zürich, Switzerland  
Oslo, Norway,  
Trondheim, Norway  
Cambridge, UK  
Houston, TX, USA  
October 2015  

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Peter Bühlmann  
Ingrid K. Glad  
Mette Langaas  
Sylvia Richardson  
Marina Vannucci
Statistical Analysis for High-Dimensional Data
The Abel Symposium 2014
Frigessi, A.; Bühlmann, P.; Glad, I.K.; Langaas, M.; Richardson, S.; Vannucci, M. (Eds.)
2016, XII, 306 p. 65 illus., 46 illus. in color., Hardcover
ISBN: 978-3-319-27097-5