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Bonnie Berger (Ed.)

# Research in Computational Molecular Biology

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Lisbon, Portugal, April 25-28, 2010  
Proceedings



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# Preface

This volume contains the papers presented at RECOMB 2010: the 14th Annual International Conference on Research in Computational Molecular Biology held in Lisbon, Portugal, during April 25–28, 2010. The RECOMB conference series was started in 1997 by Sorin Istrail, Pavel Pevzner, and Michael Waterman. RECOMB 2010 was hosted by INESC-ID and Instituto Superior Tecnico, organized by a committee chaired by Arlindo Oliveira and took place at the International Fair of Lisbon Meeting Centre.

This year, 36 papers were accepted for presentation out of 176 submissions. The papers presented were selected by the Program Committee (PC) assisted by a number of external reviewers. Each paper was reviewed by three members of the PC, or by external reviewers, and there was an extensive Web-based discussion over a period of two weeks, leading to the final decisions. RECOMB 2010 also introduced a Highlights Track, in which six additional presentations by senior authors were chosen from papers published in 2009. The RECOMB conference series is closely associated with the *Journal of Computational Biology*, which traditionally publishes special issues devoted to presenting full versions of selected conference papers.

RECOMB 2010 invited several distinguished speakers as keynotes and for special sessions on Genomics in Medicine and Regulatory RNAs. Invited speakers included Cecilia Arraiano (Instituto de Tecnologia Química e Biológica Universidade Nova de Lisboa), Chris Bakal (Institute of Cancer Research), David Bartel (MIT, Whitehead Institute and Howard Hughes Medical Institute), Jan Gorodkin (University of Copenhagen), Simon Kasif (Boston University), Isaac Kohane (Harvard Medical School), Doron Lancet (Weizmann Institute), Klaus Lindpainter (Roche Genetics), Patrice Milos (Helicos BioSciences Corporation), Norbert Perrimon (Harvard Medical School and Howard Hughes Medical Institute), Eitan Rubin (Ben Gurion University), and Mona Singh (Princeton University).

RECOMB 2010 was only possible through the dedication and hard work of many individuals and organizations. Special thanks go to the PC and external reviewers for helping to form a high-quality conference program, and the Organizing Committee, coordinated by Ana Teresa Freitas, for hosting the conference and providing the administrative, logistic, and financial support. We also thank our sponsors, including ISCB, FCT and FLAD. Without them the conference would not have been financially viable. We thank the RECOMB Steering Committee, chaired by Martin Vingron, for accepting the challenge of organizing this meeting in Lisbon. Finally, we thank all the authors who contributed papers and posters, as well as the attendees of the conference for their enthusiastic participation.

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## Previous RECOMB Meetings

| Dates                                       | Hosting Institution                                | Program Chair      | Conference Chair                |
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| January 20-23, 1997, Santa Fe, NM, USA      | Sandia National Lab                                | Michael Waterman   | Sorin Istrail                   |
| March 22-25, 1998 New York, NY, USA         | Mt. Sinai School of Medicine                       | Pavel Pevzner      | Gary Benson                     |
| April 22-25, 1999 Lyon, France              | INRIA  | Sorin Istrail      | Mireille Regnier                |
| April 8-11, 2000 Tokyo, Japan               | University of Tokyo                                | Ron Shamir         | Satoru Miyano                   |
| April 22-25, 2001 Montreal, Canada          | Université de Montreal                             | Thomas Lengauer    | David Sankoff                   |
| April 18-21, 2002 Washington, DC, USA       | Celera   | Gene Myers         | Sridhar Hannenhalli             |
| April 10-13, 2003 Berlin, Germany           | German Federal Ministry for Education and Research | Webb Miller        | Martin Vingron                  |
| March 27-31, 2004 San Diego, USA            | University of California, San Diego                | Dan Gusfield       | Philip E. Bourne                |
| May 14-18, 2005 Boston, MA, USA             | Broad Institute of MIT and Harvard                 | Satoru Miyano      | Jill P. Mesirov and Simon Kasif |
| April 2-5, 2006 Venice, Italy               | University of Padova                               | Alberto Apostolico | Concettina Guerra               |
| April 21-25, 2007 San Francisco, CA, USA    | QB3  | Terry Speed        | Sandrine Dudoit                 |
| March 30-April 2, 2008 Singapore, Singapore | National University of Singapore                   | Martin Vingron     | Limsoon Wong                    |
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