

IBSB2010

The Tenth Annual International Workshop on Bioinformatics and Systems Biology

Kyoto, Japan, 26-28 July 2010

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The 10th Annual International Workshop on Bioinformatics and Systems Biology is part of a collaborative educational program involving several leading research institutes: Boston University in the United States, Charité - Universitätsmedizin Berlin, Humboldt-Universität zu Berlin in Germany, Kyoto University and the University of Tokyo in Japan. This student-focused event has been held since 2001 to provide doctoral students and young researchers with opportunities to present and discuss their research objectives, approaches and results in the emerging field of genomics, systems biology and bioinformatics.

News

- [Poster preparation page](#) is open. (16 July 2010)
- [Programme \(tentative\) page](#) is open. (25 June 2010)
- [Poster submission site](#) (requires password) is open. (14 May 2010)
- [Accepted papers page](#) is open. (13 May 2010)
- [Confirmed invited speakers page](#) is open. (7 May 2010)
- [Paper submission site](#) (requires password) is open. (17 Mar. 2010)
- [Web page](#) is open. (11 Nov. 2009)

Steering committee:

- Minoru Kanehisa (Kyoto University)
- Edda Klipp (Humboldt-Universität zu Berlin)
- Satoru Miyano (University of Tokyo)
- Scott Mohr (Boston University)
- Thomas Tullius (Boston University)
- Iwona Wallach (Charité - Universitätsmedizin Berlin)

Scientific committee:

- Boston: Gary Benson, Eric Kolaczyk, Daniel Segrè, Avrum Spira and Yu Xia
- Berlin: Martin Falcke, Hanspeter Herzel, Hermann-Georg Holzhütter, Edda Klipp and Ernst-Walter Knapp
- Tokyo/Kyoto: Tatsuya Akutsu (Chair), Susumu Goto, Seiya Imoto,

Minoru Kanehisa, Hiroshi Mamitsuka and Satoru Miyano

Organized by

- [Boston University Graduate Program in Bioinformatics](#)
- [The International Research Training Group \(IRTG\) Genomics and Systems Biology of Molecular Networks](#)
- [International Research and Training Program on Bioinformatics and Systems Biology, Kyoto University Bioinformatics Center](#)
- [Global COE Program - Center of Education and Research for Advanced Genome-Based Medicine, University of Tokyo](#)

Local organizing committee:

- [Tatsuya Akutsu \(Chair\)](#)
- [Susumu Goto](#)
- [Morihiro Hayashida](#)
- [Motoki Shiga](#)
- [Takeyuki Tamura](#)

Supported by

[Institute for Chemical Research, Kyoto University](#)

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<http://sunflower.kuicr.kyoto-u.ac.jp/ibsb2010/>

The Tenth Annual International Workshop on Bioinformatics and Systems Biology

IBSB 2010

Kyoto, Japan, 26-28 July 2010

Scope

The International Workshop on Bioinformatics and Systems Biology (IBSB) is an annual international forum for doctoral students and young researchers to present and discuss their research results and approaches in Bioinformatics and Systems Biology. Since the first workshop in Berlin (2001), the workshop has been held in Boston (2002), Berlin (2003), Kyoto (2004), Berlin (2005), Boston (2006), Tokyo (2007), Berlin (2008), and Boston (2009). In 2010, it is held in Kyoto as part of a collaborative educational program involving the leading institutions.

Organized by

- Boston - Graduate Program in Bioinformatics, Boston University
- Berlin - The International Research Training Group (IRTG) “Genomics and Systems Biology of Molecular Networks”
- Kyoto - JSPS International Training Program (ITP) “International Research and Training Program of Bioinformatics and Systems Biology”
- Tokyo - Global COE Program “Center of Education and Research for Advanced Genome-Based Medicine”

Sponsored by

JSPS International Training Program (ITP) “International Research and Training Program of Bioinformatics and Systems Biology”

Supported by

Institute for Chemical Research, Kyoto University

Steering Committee

Minoru Kanehisa	Kyoto University
Edda Klipp	Humboldt University Berlin
Satoru Miyano	University of Tokyo
Thomas Tullius	Boston University
Iwona Wallach	Charité - Universitätsmedizin Berlin

Local Organizing Committee

Tatsuya Akutsu (Chair)	Kyoto University
Susumu Goto	Kyoto University
Morihiro Hayashida	Kyoto University
Motoki Shiga	Kyoto University
Takeyuki Tamura	Kyoto University

Program Committee

Tatsuya Akutsu	Kyoto University, PC Chair
Gary Benson	Boston University
Martin Falcke	Max-Delbrück Center for Molecular Medicine
Susumu Goto	Kyoto University
Hanspeter Herzel	Humboldt University Berlin
Hermann-Georg Holzhütter	Charité - Universitätsmedizin Berlin
Seiya Imoto	University of Tokyo
Minoru Kanehisa	Kyoto University
Edda Klipp	Humboldt University Berlin
Ernst-Walter Knapp	Free University Berlin
Eric Kolaczyk	Boston University
Hiroshi Mamitsuka	Kyoto University
Satoru Miyano	University of Tokyo
Daniel Segre	Boston University
Avrum Spira	Boston University
Yu Xia	Boston University

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<http://sunflower.kuicr.kyoto-u.ac.jp/ibsb2010/>

Venue

Obaku Plaza, Uji campus, Kyoto University
Gokasho, Uji, Kyoto 611-0011, Japan
Tel./Fax.: +81-774-38-4394/4395
obaku@uji.kyoto-u.ac.jp
<http://www.uji.kyoto-u.ac.jp/campus/facilities.html>

IBSB 2010 Programme

Sunday, 25 July 2010

17:30-19:30 **Reception** at Hybrid space, Obaku Plaza.

Monday, 26 July 2010 (Kihada Hall, Obaku Plaza)

Invited Talk (Chair: *Minoru Kanehisa*)

9:00-10:00 Genome Biology and Chromatin Structure,
David Landsman (National Institutes of Health, USA)

Invited Talk (Chair: *Minoru Kanehisa*)

10:00-11:00 Developing Data Mining Methods and Systems for Predictive
Toxicology and Metabolic Prediction,
Stefan Kramer (Technical University of Munich, Germany)

11:00-11:20 **Break**

Oral Talks (Chair: *Gary Benson*)

11:20-11:40 Phylogenetic Analysis of Lipid Mediator GPCRs,
S. Mizutani, M. Tanaka, C. E. Wheelock, M. Kanehisa and S. Goto
11:40-12:00 Characterizing Common Substructures of Ligands for GPCR Protein
Subfamilies,
B. Erguner, M. Hattori, S. Goto and M. Kanehisa

12:00-14:00 Lunch and **Poster Session 1** (Odd Numbers)

Invited Talk (Chair: *Susumu Goto*)

14:00-15:00 Including Prior Knowledge in Machine Learning for Genomic Data,
Jean-Philippe Vert (Mines ParisTech, France)

Oral Talks (Chair: *Susumu Goto*)

15:00-15:20 G1 and G2 Arrests in Response to Osmotic Shock Are Robust Prop-
erties of the Budding Yeast Cell Cycle,
C. Waltermann, M. Floettmann and E. Klipp

- 15:20-15:40 Robust Gene Network Analysis Reveals Alteration of the STAT5a Network as a Hallmark of Prostate Cancer,
A. Reddy, C. C. Huang, H. Liu, C. DeLisi, M. T. Nevalainen, S. Szalma and G. Bhanot
- 15:40-16:00 Integer Programming-based Method for Completing Signaling Pathways and its Application to Analysis of Colorectal Cancer,
T. Tamura, Y. Yamanishi, M. Tanabe, S. Goto, M. Kanehisa, K. Horimoto and T. Akutsu
- 16:00-16:20 **Break**

Oral Talks (Chair: *Edda Klipp*)

- 16:20-16:40 Comparison of Gene Expression Profiles Produced by Cage, Illumina Microarray and Real Time RT-PCR,
A. Fujita, M. Nagasaki, S. Imoto, A. Saito, E. Ikeda, T. Shimamura, R. Yamaguchi, Y. Hayashizaki and S. Miyano
- 16:40-17:00 openSESAME: A New Tool for Discovering Biologically Relevant Connections in Public Gene Expression Data,
**Adam Gower*
- 17:00-17:20 Discovering Causal Signaling Pathways through Gene Expression Patterns Using SPEED,
**Jignesh Parikh*
- 17:20-17:40 Latent Pathway Identification Analysis: A Computational Method for Predicting Sources of Transcriptional Dysregulation,
**Lisa Pham*
- 17:40-18:00 Collocation-based Sparse Estimation For Constructing Dynamic Gene Networks,
T. Shimamura, S. Imoto, M. Nagasaki, M. Yamauchi, R. Yamaguchi, A. Fujita, Y. Tamada, N. Gotoh and S. Miyano

Tuesday, 27 July 2010 (Kihada Hall, Obaku Plaza)

Invited Talk (Chair: *Satoru Miyano*)

- 9:00-10:00 Between Systems and Data-driven Modeling for Computational Biology: Target Identification with Gaussian Processes,
Neil Lawrence (University of Manchester, UK)

Invited Talk (Chair: *Satoru Miyano*)

- 10:00-11:00 Using Networks to Elucidate Disease and Drugs,
Roded Sharan (Tel-Aviv University, Israel)

11:00-11:20 **Break**

Oral Talks (Chair: *Ernst-Walter Knapp*)

11:20-11:40 FluxViz - Cytoscape Plug-In for Visualization of Flux Distributions in Networks,

M. König and H.-G. Holzhütter

11:40-12:00 A Dynamic Programming Algorithm to Predict Synthesis Processes of Tree-structured Compounds with Graph Grammar,

Y. Zhao, T. Tamura, M. Hayashida and T. Akutsu

12:00-14:00 Lunch and **Poster Session 2** (Even Numbers)

Oral Talks (Chair: *Tatsuya Akutsu*)

14:00-14:20 On the Performance of Methods for Finding a Switching Mechanism in Gene Expression,

M. Kayano, I. Takigawa, M. Shiga, K. Tsuda and H. Mamitsuka

14:20-14:40 Gene Regulatory Network Clustering for Graph Layout Based on Microarray Gene Expression Data,

K. Kojima, S. Imoto, M. Nagasaki and S. Miyano

14:40-15:00 Analyzing Gene Coexpression Data by an Evolutionary Model,

M. Schütte, M. Mutwil, S. Persson and O. Ebenhöf

15:30-18:30 **Excursion to Kiyomizu Temple**

18:30-20:30 **Banquet at Caffè Ristorante OBLIO**

Wednesday, 28 July 2010 (Kihada Hall, Obaku Plaza)

Invited Talk (Chair: *Hiroshi Mamitsuka*)

9:00-10:00 Leveraging Linkage Disequilibrium Structure in Genome-wide Association Studies,

Eleazar Eskin (University of California, Los Angeles, USA)

Invited Talk (Chair: *Hiroshi Mamitsuka*)

10:00-11:00 Genome-Phenome Association Analysis of Complex Diseases - a Structured Sparse Regression Approach,

Eric P. Xing (Carnegie Mellon University, USA)

11:00-11:20 **Break**

Oral Talks (Chair: *Seiya Imoto*)

- 11:20-11:40 A Systems Biology Approach: Modelling of Aquaporin-2 Trafficking,
M. Fröhlich, P. M. T. Deen and E. Klipp
- 11:40-12:00 Induced Pluripotent Stem Cells: Qualitative Modeling of Direct Re-
programming,
**Max Flottmann*
- 12:00-14:00 Lunch and **Poster Session 3** (All Numbers)

Oral Talks (Chair: *Tom Tullius*)

- 14:00-14:20 Predicting Protein Complex Geometries with Linear Scoring Func-
tions,
O. Demir-Kavuk, F. Krull, M.-H. Chae and E.-W. Knapp
- 14:20-14:40 Kinetic Modelling of DNA Replication Initiation in Budding Yeast,
M. Barberis, T. W. Spiesser and E. Klipp
- 14:40-15:00 Comprehensive Genomic Analysis of Sulfur-relay Pathway Genes,
*M. Kotera, T. Kobayashi, M. Hattori, T. Tokimatsu, S. Goto, H.
Mihara and M. Kanehisa*
- 15:00-15:20 Comparison and Modeling of Gene Regulation Using FACS-data,
**Manuela Benary*
- 15:20-15:40 **Break**

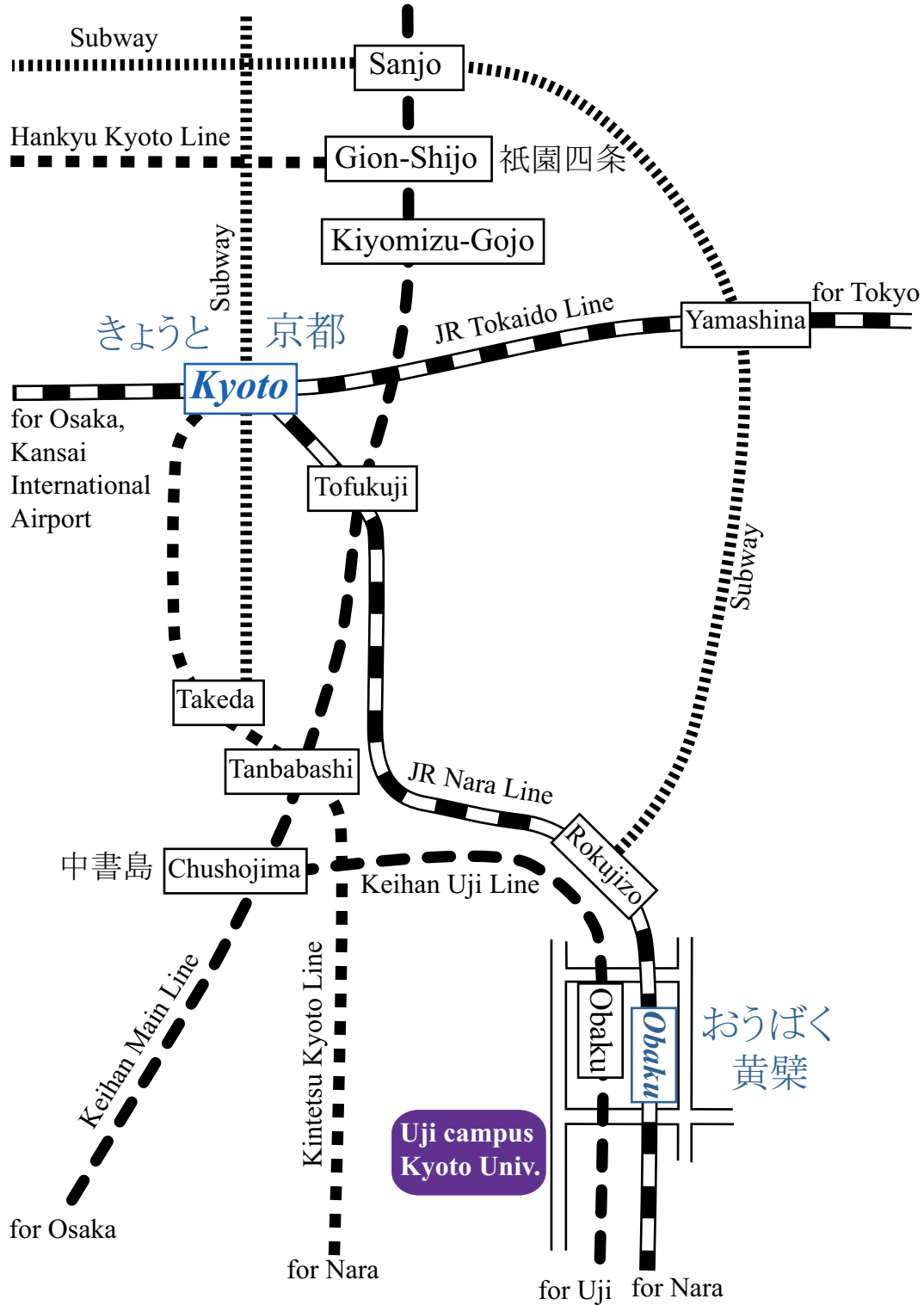
Oral Talks (Chair: *Gyan Bhanot*)

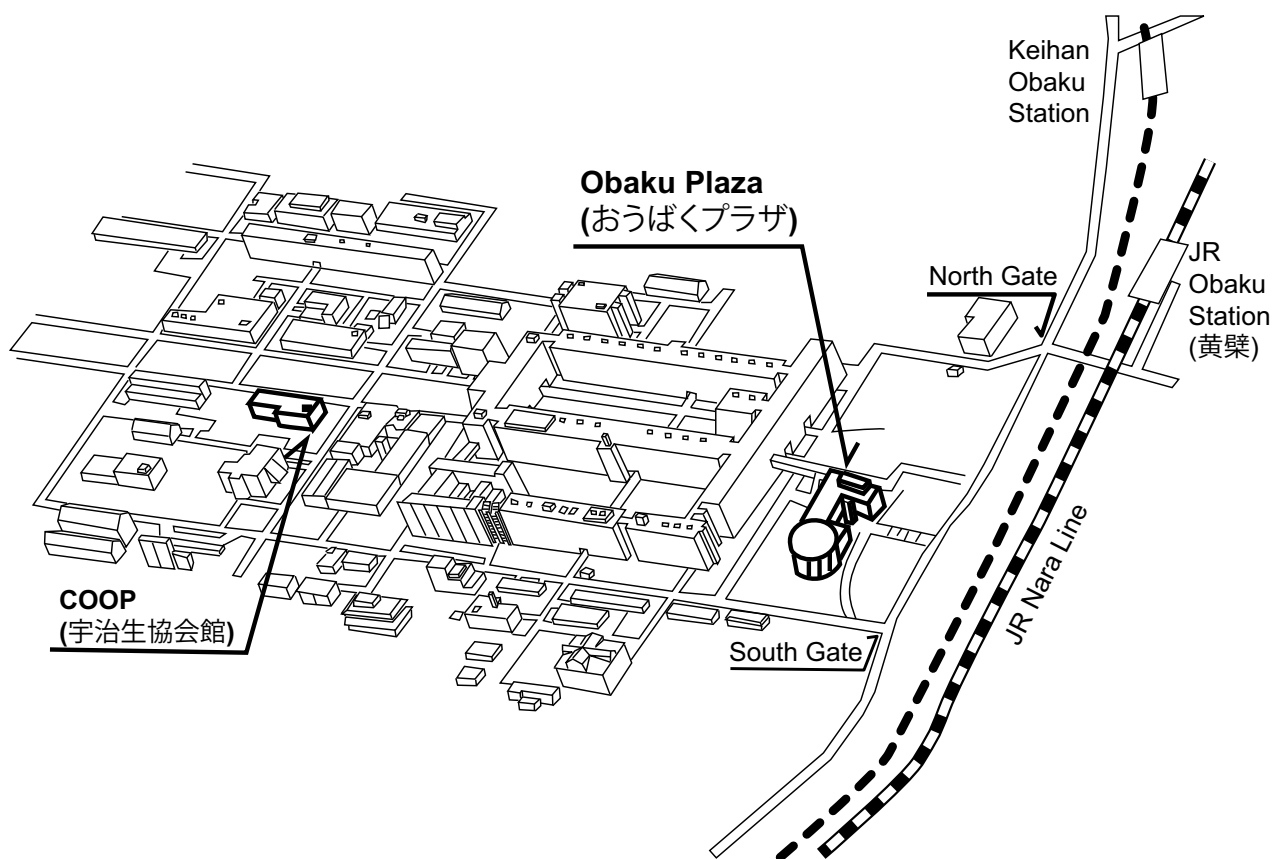
- 15:40-16:00 Next Generation Sequencing of MicroRNA in the Human Airway
Epithelium for Discovery of Novel Biomarkers of Tobacco-smoke Ex-
posure and Lung Cancer,
**Joseph Gerrein*
- 16:00-16:20 Genome-wide Analysis of Plant UGT Family Based on Sequence and
Substrate Information,
Y. Nishimura, T. Tokimatsu, M. Kotera, S. Goto and M. Kanehisa
- 16:20-16:40 Different Groups of Metabolic Genes Cluster around Early and Late
Firing Origins of Replication in Budding Yeast,
T. W. Spiesser and E. Klipp
- 16:40-17:00 The Role of Promoter Methylation in Regulating the Expression of
Genes Associated with COPD Progression,
**John Brothers*
- 17:00-17:20 Integrated Assessment of Genomic Correlates of Protein Evolution-
ary Rate,
**Eric Franzosa*
- 17:45-19:45 **Closing Dinner at COOP**

(* means talk without a paper)

Conference Venue

(Kihada Hall, Obaku Plaza, Uji campus, Kyoto University)





Uji campus, Kyoto University

(Address: Gokasho, Uji, Kyoto 611-0011, Japan, Tel: +81-774-38-3016/3020)

Poster Session (12:00-14:00)

26 July 2010 (Odd Numbers)

27 July 2010 (Even Numbers)

28 July 2010 (All Numbers)

NOTE: Posters should be put by 12:00, 26 July 2010, and must be removed by 17:30, 28 July 2010.