CBI-KSBSB JOINT CONFERENCE

BioInfo 2009

The 10th International Conference

Date: 4(Wed)~6(Fri) November 2009
Venue: Haeundae Grand Hotel, Busan, Korea

Co-organizers: **The Korean Society for Bioinformatics and Systems Biology (KSBSB)**
Chem-Bio Informatics Society (CBI)
Korea Research Institute of Bioscience & Biotechnology (KRIBB)

Machine Learning and Applications in Biology

10th CBI-KSBSB International Joint Conference*

Hyunjung (Helen) Shin

Department of Industrial & Information Systems Engineering,
Ajou University, Korea,
`shin@ajou.ac.kr`

November 4th–6th 2009

Abstract

The emergence of the fields of computational biology and bioinformatics has alleviated the burden of solving many biological problems, saving the time and cost required for experiments and also providing predictions that guide new experiments. Within computational biology, machine learning algorithms have played a central role in dealing with the flood of biological data. The goal of this tutorial is to raise awareness and comprehension of machine learning so that biologists can properly match the task at hand to the corresponding analytical approach. We start by categorizing biological problem settings and introduce the general machine learning schemes that fit best to each or these categories. We then explore representative models in further detail, from traditional statistical models to recent kernel models, presenting several up-to-date research projects in bioinfomatics to exemplify how biological questions can benefit from a machine learning approach. Finally, we discuss how cooperation between biologists and machine learners might be made smoother.

Conference Committee

- **General Chairs**

  Jang Ryul Liu (President of the Korea Research Institute of Bioscience & Biotechnology, Korea)

  Takatoshi Kawai (President of the Chem-Bio Informatics Society, Japan)

- **Organizing Chairs**

  Sangsoo Kim (Soongsil Univ., Korea)

  Masahiro Okamoto (Kyushu Univ., Japan)

- **Organizing Committee**

  Sangsoo Kim (Soongsil Univ., Korea)

  Kyoung Tai No (Yonsei Univ., Korea)

  Masahiro Okamoto (Kyushu Univ., Japan)

  Hiroyuki Toh (Kyushu Univ., Japan)

- **Program Committee**

  Sanghyuk Lee (Ewha Womans Univ., Korea)

  Gyoon-Hee Han (Yonsei Univ., Korea)

  Kwang-Hyun Cho (Korea Advanced Institute of Science and Technology, Korea)

  Yutaka Akiyama (Tokyo Inst. Tech., Japan)

  Yasushi Okazaki (Saitama Med. Univ., Japan)

  Hiroshi Chuman (Univ. of Tokushima, Japan)

- **Advisory Committee**

  Kwang H. Lee (Korea Advanced Institute of Science and Technology, Korea)

  Hong Gil Nam (Pohang University of Science & Technology, Korea)

  Chang No Yoon (Korea Institute of Science and Technology, Korea)

  Akihiko Konagaya (Tokyo Inst. Tech., Japan)

  Kozo Kawahara (World Fusion Co., Ltd., Japan)

  Yukio Tada (Univ., of Tokyo, Japan)

- **Local Committee: KSBSB 10**

  Hyun Joo (Inje Univ., Korea)
  Cheolmin Kim (Pusan Nat'l Univ., Korea)
  Keun Woo Lee (Gyeongsang Nat'l Univ., Korea)
  Daehee Hwang (Pohang University of Science & Technology, Korea)
  Hyunju Lee (Gwangju Institute of Science and Technology, Korea)
  Heebal Kim (Seoul Nat'l Univ., Korea)
  Yangseok Kim (Kyunghee Univ., Korea)
  Keun-Joon Park (Korean National Institute of Health, Korea)
  S. June Oh (Inje Univ., Korea)
  Young Joo Kim (Korea Advanced Institute of Science and Technology, Korea)

- **CBI Society Logistic Committee**

  Tsuguchika Kaminuma (Chem-Bio Informatics Society Secretariat, Japan)
  Takayoshi Okabe (Univ. of Tokyo, Japan)
  Tomokazu Matsusue (Mochida Pharmaceutical Co., Ltd., Japan)
  Tadashi Horiuchi (Keio Univ., Japan)
  Masafumi Yohda (Tokyo Univ. of Agriculture and Technology, Japan)
  Akihiko Konagaya (Tokyo Med. Dental Univ., Japan)
  Yukio Tada (Univ. of Tokyo, Japan)

Benefactors

The Biophysical Society of Japan

The Chemical Society of Japan

The Japanese Society for the Study of Xenobiotics

The Molecular Biology Society of Japan

Japan Association for Medical Informatics

Japanese Society for Bioinformatics

Japan Society for Industrial and Applied Mathematics

Contributors

Eisai Co., Ltd.

Taisho Pharmaceutical Co., Ltd.

DAIICHI SANKYO COMPANY, LIMITED

Mochida Pharmaceutical Co., Ltd.

CBI-KSBSB CONFERENCE 5

Scope

We warmly invite you to attend the Joint Conference of the Chem-Bio Informatics (CBI) Society of Japan and the Korean Society for Bioinformatics and Systems Biology (KSBSB). Both societies started to organize annual meetings from the year 2000, and this Joint Meeting will be, for each, their 10th International Meeting. Both societies have promoted biological and chemical and biological computing and informatics especially focused on in silico simulation of the biological systems and on unveiling disease mechanisms at the molecular level and on in silico drug design. The annual meetings of these societies have attracted not only academic researchers but also those who are working in biotech or pharmaceutical industries and IT solution companies.

Many delegates from China, other East Asian countries, and others from around the world are also welcome to come to the attractive beaches of Busan in Korea to learn about and to discuss recent advances in the broad areas of interest in biological and chemical and biological informatics and computing and their applications within the network scope of disease biological understanding and drug discovery.

BIOINFO 2009
Time Table

Date	Nov 4 (Wed)		Nov 5 (Thu)		Nov 6 (Fri)	
Time/place	**Hall A**	**Hall B**	**Hall A**	**Hall B**	**Hall A**	**Hall B**
09:00-10:00			**Session 1** Translational bioinformatics for personalized medicine	**Session 2** AHeDD (Asia Hub for e-Drug Discovery)	**Session 5** Emerging Technologies	**Session 6** Metabolic Syndromes
10:00-11:00						
11:00-12:00			**Opening Ceremony** (20 min)		**Break** (20 min)	
			Plenary Lecture 1 Dr. Yukio Tada		**Plenary Lecture 3** Dr. Johann Gasteiger	
12:00-13:00	**Registration (Lobby)**		**Workshop 1** World Fusion Co. & Ariadne Genomics Co.		**Workshop 2** IBC Journal	**Workshop 3** KOBIC KRIBB
13:00-14:00	**Tutorial 1** Introductory Systems Biology	**Tutorial 2** Statistical Genetics	**Break**		**Break**	
14:00-15:00			**Session 3** Network and systems biology	**Session 4** Drug discovery and design	**Session 7** Genome-wide data analysis	**Session 8** Chemical biology and chemical genomics
15:00-16:00	**Break**					
16:00-17:00	**Tutorial 3** Application of Machine-learning Algorithms	**Tutorial 4** Rational Drug Design	**Break**		**Break**	
			Plenary Lecture 2 Dr. Hong Gil Nam		**Plenary Lecture 4** Dr. Tomoko Niwa	
17:00-18:00	**Welcome Reception (Hall C)**	**Poster Session 1 (Hall C)**	**Poster Session 2 (Hall C)**		**Closing Ceremony** < OnBit Award, Poster Award, Drawing Gift >	
18:00-19:00			General Assembly (10 min)			
			BANQUET (Convention Hall)			
19:00-20:00						
21:00-22:00			**21:30pm~ NIGHT CRUISE**			

- **Exhibition : Hall C**

Program Contents

✓ 4 Plenary Lectures

✓ 8 Scientific Sessions
   - Two parallel tracks (two hours per session)
   - The symposia will consist of invited talks only (5-6 speakers for each session)
   - Co-organizer and co-chair system between Korean & Japanese societies

✓ Poster Sessions of 12 topics

✓ 4 Tutorials

✓ 3 Industry Luncheon Workshops

Plenary Lectures

Plenary Lecture 1

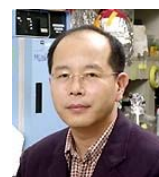11:30-12:30, Thursday, Nov. 5, 2009 (Hall A)

Yukio Tada (Chemical Biology Research Initiative, The University of Tokyo, Japan)
"Lessons learned in participating CBI Society and successful drug design"

Plenary Lecture 2

16:30-17:30, Thursday, Nov. 5, 2009 (Hall A)

Hong Gil Nam (Pohang University of Science & Technology, Korea)
"Modeling senescence and death in plant leaves"

Plenary Lecture 3

11:30-12:30, Friday, Nov. 6, 2009 (Hall A)

Johann Gasteiger (Molecular Networks, Germany)
"The German HepatoSys Project"

Plenary Lecture 4

16:30-17:30, Friday, Nov. 6, 2009 (Hall A)

Tomoko Niwa (Discovery Research Laboratories, Nippon Shinyaku Co.,Ltd.,
Japan)
"Elucidation of Characteristic Structural Features of Protein Kinases:
 A Neural Network Approach"

Scientific Sessions

| **Session 1** | **Translational Bioinformatics for Personalized Medicine**
09:00-11:00, Thursday, Nov. 5, 2009 (Hall A) |

Co- Chairs: **Juhan Kim** (Seoul National University, Korea)
Hiroshi Tanaka (Tokyo Medical and Dental University, Japan)

S1-1
09:00-09:30
Systems Pathology - A new concept for understanding disease -
Hiroshi Tanaka (Tokyo Medical and Dental University, Japan)

S1-2
09:30-10:00
Omics analysis for biomarker discovery and personalized medicine
Kazuhiko Uchida
(Graduate School of Comprehensive Human Sciences University of
Tsukuba, Japan)

S1-3
10:00-10:30
Pathway-wise co-expression network in lung cancer
Sung Bum Cho (Ewha Womans Medical Research Institute, Korea)

S1-4
10:30-11:00
Semantic Signature: biological interpretation of gene expression
Microarray data on a semantic space
Jihun Kim (National Institute of Health, Korea)

Session 2

AHeDD (Asia Hub for e-Drug Discovery)
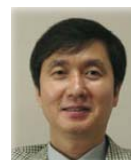09:00-11:00, Thursday, Nov. 5, 2009 (Hall B)

Co-Chairs: **Kyoung Tai No** (Yonsei University, Korea)
Yutaka Akiyama (Tokyo Institute of Technology, Japan)

S2-1
09:00-09:20
Recent Activity of AHeDD
Kyoung Tai No (BMDRC, Yonsei Unversity, Korea)

S2-2
09:20-10:00
Ligand-based SAR-omics as a paradigm for the lead evolution in
drug design
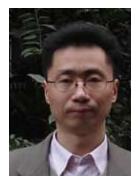**Toshio Fujita** (Kyoto University, Japan)

S2-3
10:00-10:30
Pharmacophore modeling in drug discovery: perspectives, challenges,
and advances
Sheng-Yong Yang (Sichuan University, China)

S2-4
10:30-11:00
Biological Network Based Drug Design
Luhua Lai (Peking University, China)

Session 3

Network and Systems Biology
14:00-16:00, Thursday, Nov. 5, 2009 (Hall A)

Co-Charis: **Kwang-Hyun Cho** (Korea Advanced Institute of Science and Technology, Korea)

Masahiro Okamoto (Kyushu University, Japan)

S3-1
14:00-14:30
An integrative modeling of afterload-induced cardiac hypertrophy:
from contractile proteins to system
Eun Bo Shim (Dept. of Mechanical & Biomedical Engineering,
Kangwon National University, Korea)

S3-2
14:30-15:00
A system-level study on the emergent properties of biological interaction
networks
Kwang-Hyun Cho (Department of Bio and Brain Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Korea)

S3-3
15:00-15:30
Construction and analysis of drug networks
Susumu Goto (Bioinformatics Center, Institute for Chemical Research,
Kyoto University, Japan)

S3-4
15:30-16:00
How to determine essential regulatory relations of amino acids in
amino acid metabolism
Masahiro Okamoto (Laboratory of Bioinformatics, Graduate School
of Systems Life Sciences, Kyushu University, Japan)

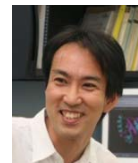| **Session 4** | **Drug Discovery and Design**
14:00-16:00, Thursday, Nov. 5, 2009 (Hall B) |

Co-Chairs: **Sun Choi** (Ewha Womans University, Korea)
Yuji Takaoka (Taisho Pharmaceutical Co., Ltd., Japan)

S4-1 14:00-14:30

An integrated approach to knowledge-based target discovery

Kenji Mizuguchi (National Institute of Biomedical Innovation, Japan)

S4-2 14:30-15:00

Structure-based design of BACE-1 inhibitors

Kyeongsik Min (Drug Discovery, LG Life Sciences Ltd., Korea)

S4-3 15:00-15:30

Experimental Approaches to Advanced Structure-Based Drug Design

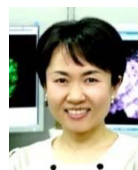**Takayoshi Kinoshita** (Osaka Prefecture University, Japan)

S4-4 15:30-16:00

In Silico Studies of Novel Mechanism-Based Inactivators of

S-Adenosylhomocysteine Hydrolase

Sun Choi (Ewha Womans University, Korea)

Session 5 **Emerging Technologies**
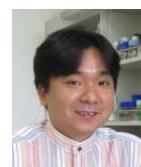09:00-11:00, Friday, Nov. 6, 2009 (Hall A)

Co- Chairs: **Hanjo Kim** (Bioinformatics and Molecular Design Research Center, Korea)
Masafumi Yohda (Tokyo University of Agriculture and Technology, Japan)

S5-1
09:00-09:25
From tip to toe in metabolomics: it's basic technique and advanced topics
Yoshiaki Ohashi (Human Metabolome Technologies Inc ., Japan)

S5-2
09:25-09:50
Automated System for Epigenetics
Masaaki Takahashi (Board of Director, Genetein Co. Ltd., Japan)

S5-3
09:50-10:15
Integrated Database Project for Life Science in Japan
Toshihisa Takagi (DBCLS [Database Center for Life Science],
Research Organization of Information and Systems (ROIS);
The University of Tokyo Japan)

S5-4
10:15-10:40
Recent progresses in u-Health informatics
Yun Sik Kwak (Kyungbuk National University, Korea)

S5-5
10:40-11:00
Transcriptome Analysis for Identifying Fusion Genes
Sanghyuk Lee (Ewha Womans University, Korea)

Session 6	**Metabolic Syndromes**
	09:00-11:00, Friday, Nov. 6, 2009 (Hall B)

Co-Chairs: **Yasushi Okazaki** (Saitama Medical University, Japan)
Kyong Soo Park (Seoul National University, Korea)

S6-1
09:00-09:30
Cytochrome c oxidase subunit 7-related protein (COX7RP) modulates
mitochondrial respiratory function and energy production
Satoshi Inoue (The University of Tokyo, Japan)

S6-2
09:30-10:00
An integrative approach for understanding mitochondrial diseases
using novel proteomic profiling methods
Daehee Hwang (Pohang University of Science & Technology, Korea)

S6-3
10:00-10:30
Systems Biology of Osteoblast and Adipocyte Differentiation
- Insight Into the Molecular Mechanism Underlying Osteoporosis
and Metabolic Syndrome -
Yasushi Okazaki (Saitama Medical University, Japan)

S6-4
10:30-11:00
Leveraging benchwork and bioinformatics: How we identified a novel,
functionally relevant cell-surface protein for the NKp30 ligand receptor
Eugene C. Yi (College of Medicine, Seoul National University, Korea)

Session 7

Genome-wide Data Analysis
14:00-16:00, Friday, Nov. 6, 2009 (Hall A)

Co- Chairs: **Jong-Young Lee** (Korean National Institute of Health, Korea)
Akihiko Konagaya (Tokyo Medical Dental University, Japan)

S7-1

14:00-14:30
Metabolomics provides new insights into systems biology
Masahiro Sugimoto (Graduate School of Media and Governance, Keio University, Japan)

S7-2

14:30-15:00
Linkage Disequilibrium between Polymorphisms of Single Nucleotide and Copy Number
Sangsoo Kim (Department of Bioinformatics, Soongsil University, Korea)

S7-3

15:00-15:30
Fission yeast chemical genomics for global drug target identification
Minoru Yoshida (RIKEN Advanced Science Institute, Japan)

S7-4

15:30-16:00
Genome-wide association study of bone mineral density in Korea
Yoon Shin Cho (Korea Centers for Disease Control and Prevention, Korea)

Session 8 **Chemical Biology and Chemical Genomics**
14:00-16:00, Friday, Nov. 6, 2009 (Hall B)

Co- Chairs: **Gyoonhee Han** (Yonsei University, Korea)
Hiroyuki Toh (Kyushu University, Japan)

S8-1
14:00-14:30
Discovery of Novel Cancer Chemotherapy based on Histone Modification
Gyoonhee Han (Department of Biotechnolgy, Yonsei University, Korea)

S8-2
14:30-15:00
Small Molecule Tools for Cell Biology and Cell Therapy
Motonari Uesugi (Institute for Chemical Research, Kyoto University, Japan)
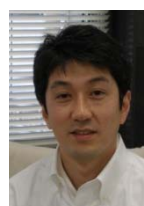
S8-3
15:00-15:30
New small molecules suppressing hypoxia-induced ROS production and angiogenesis
Ho Jeong Kwon (Yonsei University, Korea)

S8-4
15:30-16:00
Chemical genetics of biological phenomenon: Nyctinastic movement of plants
Minoru Ueda (Tohoku University, Japan)

Tutorials

- 4 tutorials on the first day

Tutorial 1

Introductory Systems Biology
13:00-15:00, Wednesday, Nov. 4, 2009 (Hall A)

Organizer: **Masahiro Okamoto** (Kyushu University, Japan)

T1-1
13:00-13:40
Network analysis in systems biology
Susumu Goto (Institute for Chemical Research, Kyoto University, Japan)

T1-2
13:40-14:20
Web-based Resources for Metabolomics
Masanori Arita (The University of Tokyo, Japan)

T1-3
14:20-15:00
How to simulate cellular functions with the computational methods
Hiroshi Matsuno (Yamaguchi University, Japan)

Tutorial 2

Statistical Genetics
13:00-15:00, Wednesday, Nov. 4, 2009 (Hall B)

T2
13:00-15:00
Statistical Methods for GWAS (Genome-wide Association Studies)
Seungyeoun Lee (Sejong University)

Tutorial 3　　**Application of Machine-learning Algorithms**
15:30-17:30, Wednesday, Nov. 4, 2009 (Hall A)

T3　15:30-17:30
Machine Learning and Applications in Biology
Hyunjung (Helen) Shin (Ajou University)

Tutorial 4　　**Rational Drug Design**
15:30-17:30, Wednesday, Nov. 4, 2009 (Hall B)

Organizer:　**Hiroyuki Toh (Kyushu University, Japan)**

T4-1　15:30-16:30
Web services for function prediction of proteins
Kengo Kinoshita (The University of Tokyo, Japan)

T4-2　16:30-17:30
Fragment Molecular Orbital (FMO) Method: Application to Drug
Discovery
Hirofumi Watanabe (Kobe University, Japan)

Luncheon Workshops (industrial)

- Luncheon workshops on the second & third days
- Companies to support the joint conference

🌐 *A lunch box will be provided to a participant.*

Workshop-1	**World Fusion Co. and Ariadne Genomics Co. (Japan)**
	12:30-13:30, Thursday, Nov. 5, 2009 (Hall A)

Workshop-2	**IBC (Interdisciplinary Bio Central) Journal (Korea)**
	12:30-13:30, Friday, Nov. 6, 2009 (Hall A)

Workshop-3	**KOBIC Organizes "KRIBB Session" (Korea)**
	12:30-13:30, Friday, Nov. 6, 2009 (Hall B)

Special Event   21:30~, Thursday, Nov. 5, 2009

Moonlight Cruise

🌐 Welcome Address : **Young Seo Park** (President of KISTI)

    ✓ It will be spoken in Japanese in 20min.

⚫ Interpreter: **Keun-Joon Park** (Principal Research Scientist, NIH)

"Security and Process Fee: **10,000 Won (800 Yen),** Social Security Number or Passport Number should be presented at the registration desk before boarding."

Poster Sessions

🌐 *Posters will be posted at Hall C. Half will be posted on Noon, Nov. 4 (removed by Noon of Nov. 5) and Half will be posted on Noon, Nov. 5 as instructed to authors previously.*

Topics	Poster Number (Total **148** papers)
1. Bioinformatics of Health and Disease	P1-01 ~ P1-17 (17)
2. Disease Mechanism and Control Model	P2-18 ~ P2-20 (3)
3. Emerging New Technologies	P3-21 ~ P3-24 (4)
4. Genome-wide Data Analysis	P4-25 ~ P4-41 (17)
5. Genomics and Proteomics	P5-42 ~ P5-48 (7)
6. Information and Computing Infrastructure for Drug Design and Toxicology	P6-49 ~ P6-72 (24)
7. Molecular Computing	P7-73 ~ P7-90 (18)
8. Molecular Recognition	P8-91 (1)
9. Population Genetics and Variation	P9-92 ~ P9-97 (6)
10. Structure and Function Prediction	P10-98 ~ P10-108 (11)
11. Systems Biology and Networks	P11-109 ~ P11-123 (15)
12. Others	P12-124 ~ P12-148 (25)

🌐 *10 Best Poster Awards will be given at the closing ceremony.*

Poster Presentation Information

1. Poster Presentation Set-up time

Poster Session I Set-up time :   11. 4(Wed) 13:00-19:00
                                                        11. 5(Thurs) 10:00-12:00
                                                        Removal: 11. 5(Thurs) 12:00-13:00
Poster Session II Set-up time :   11. 5(Thurs) 13:00-18:00
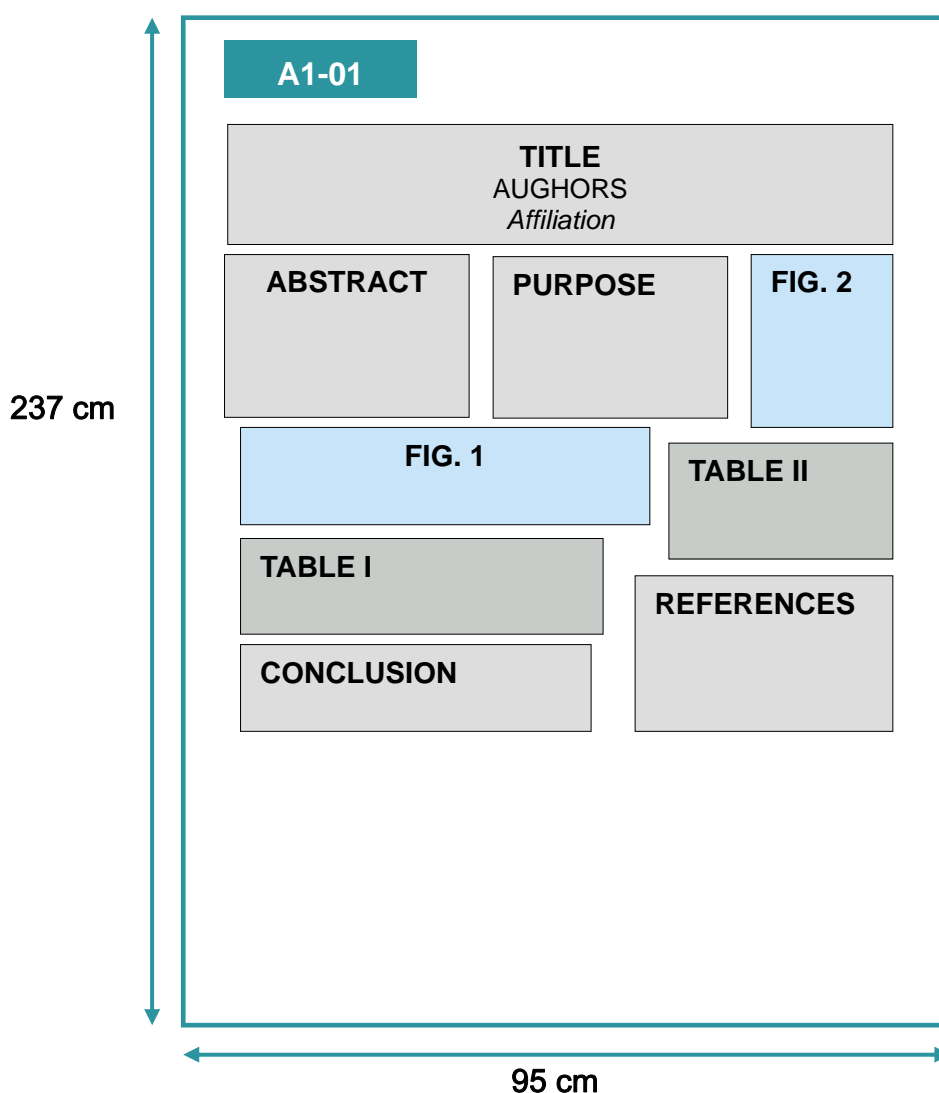   11. 6(Fri) 10:00-12:00
                                                        Removal: 11. 6 after 12:00

2. Authors Present Time

Poster Session I :   11. 4 (Wed) 17:30-19:00
Poster Session II: 11. 5 (Thurs) 14:00-16:00

3. Place : Grand Hotel, 2F GrandBallRoom C

Poster Board Size : Width 95 cm x Height 237 cm (0.95 M X 2.37 M)

Your poster board has the number which is shown in the Proceedings.

Push-pins and tapes are provided.

4. Poster Contents and Example

5. Poster Number Table

Topics	Poster Session					
	Session I.			**Session II.**		
1. Bioinformatics of Health and Disease	**P1-01**	~	**P1-09**	**P1-10**	~	**P1-17**
2. Disease Mechanism and Control Model	**P2-18**			**P2-19**	~	**P2-20**
3. Emerging New Technologies	**P3-21**	~	**P3-22**	**P3-23**		**P3-24**
4. Genome-wide Data Analysis	**P4-25**	~	**P4-32**	**P4-33**	~	**P4-41**
5. Genomics and Proteomics	**P5-42**	~	**P5-44**	**P5-45**	~	**P5-48**
6. Information and Computing Infrastructure for Drug Design and Toxicology	**P6-49**	~	**P6-60**	**P6-61**	~	**P6-72**
7. Molecular Computing	**P7-73**	~	**P7-81**	**P7-82**	~	**P7-90**
8. Molecular Recognition	**P8-91**					
9. Population Genetics and Variation	**P9-92**	~	**P9-94**	**P9-95**	~	**P9-97**
10. Structure and Function Prediction	**P10-98**	~	**P10-102**	**P10-103**	~	**P10-108**
11. Systems Biology and Networks	**P11-109**	~	**P11-116**	**P11-117**	~	**P11-123**
12. Others	**P12-124**	~	**P12-135**	**P12-136**	~	**P12-148**
	74 papers			**74 papers**		
	Total papers are 148					

✓ **Authors Present Time**

    Poster Session I :   **11. 4 (Wed) 17:30-19:00**

    Poster Session II: **11. 5 (Thurs) 14:00-16:00**

EXHIBITION

1. Time: 2009. 11. 4(Wed) 12:00 ~ 11. 6(Thurs) 18:00

2. Place: Grand Hotel 2nd floor, GrandBall Room C Hall

3. Exhibition Company List

Name of Institution	Items of Exhibition	Phone	Address
World Fusion Co., Ltd.	Software exhibition (LSKB Chemical Extension, PathwayStudio etc.)	+81-3-3662-0521	2-15-15 Nihonbashi Ningyo-cho, Shinsendo Bld 7F, Chuo-ku, Tokyo, 103-0013, Japan
Interdisciplinary Bio Central	Journal	054-279-8420	(790-784) 경북 포항시 남구 효자동 산 31 번지
Korean Institute of Oriental Medicine	한의의료정보시스템소개	042-868-9549,	대전광역시 유성구 엑스포로 483 [305-811] 한국한의학연구원 전통의학정보연구본부 정보연구센터
Korean Bioinformation Center	자체 생산 DB 홍보, 연구지원 홍보, 교육홍보	042-879-8511	대전시 유성구 어은동 52 한국생명공학연구원 국가생물자원정보관리센터
KISTI Supercomputing	Super Computer	011-9828-9547	(305-806) 대전광역시 유성구 어은동 52-11 한국과학기술정보연구원

4. Booth (Space) Size :   2 M X 1 M

- Table (size 1800 X 450mm), Chairs and table cover will be provided.
- Internet Lan is optional. Price: 16,500 kw/1line per day

PRE-REGISTRATION

Participants are advised to register in advance **(before 31 Oct. 2009)** to receive an early registration discount. Please read carefully the registration guidelines.

Registration Fees

	Category	Pre Registration By Sep. 15, 2009	**Regular-Registration Sep. 16 ~ Oct. 31**	On-Site Registration Nov. 4 ~ 6
Japanese	Reg.	USD 150	**USD 180**	USD 200
	Student	USD 30	**USD 50**	USD 70
Korean	Reg.	KW 150,000	**KW 180,000**	KW 200,000
	Student	KW 30,000	**KW 50,000**	KW 70,000
Speakers (Chairs)		Free	**Free**	Free

Methods of Payment
On-line Credit Card (US Dollar or Korean Won only)

Registration Process

To attend the Conference, please select the following processes.
Click the online-registration button on the website and use a fully secured e-commerce payment system.

Registration Confirmation

A written confirmation and official receipt of your registration will be sent you once your registration form and payment are received.

Cancellation and Refund Policy

If you want to cancel your plan, please contact KSBSB office (micky@kribb.re.kr, +82-42-860-4431). Please understand that some surcharge will be deducted from your refund as follows.

*Refunds will be made after the Conference.

| Date	Amount to be refunded
By Sep 30, 2009	90% of registration fee and Tour fee
By Oct 20, 2009	50% of registration fee and Tour fee
After Oct 21, 2009	No refunded

Registration Site: http://www.ksbsb.or.kr

Grand Ball Room (2f) Guide

- **Hall A :** Opening & Closing Ceremony, Invited speaker presentation, General Assembly, Tutorial, Workshop
- **Hall B :** Invited speaker presentation, Tutorial, Luncheon Workshop
- **Hall C :** Poster Presentation, Exhibiton, Welcome Reception
- **Lobby :** Registration Desk, Pre-View
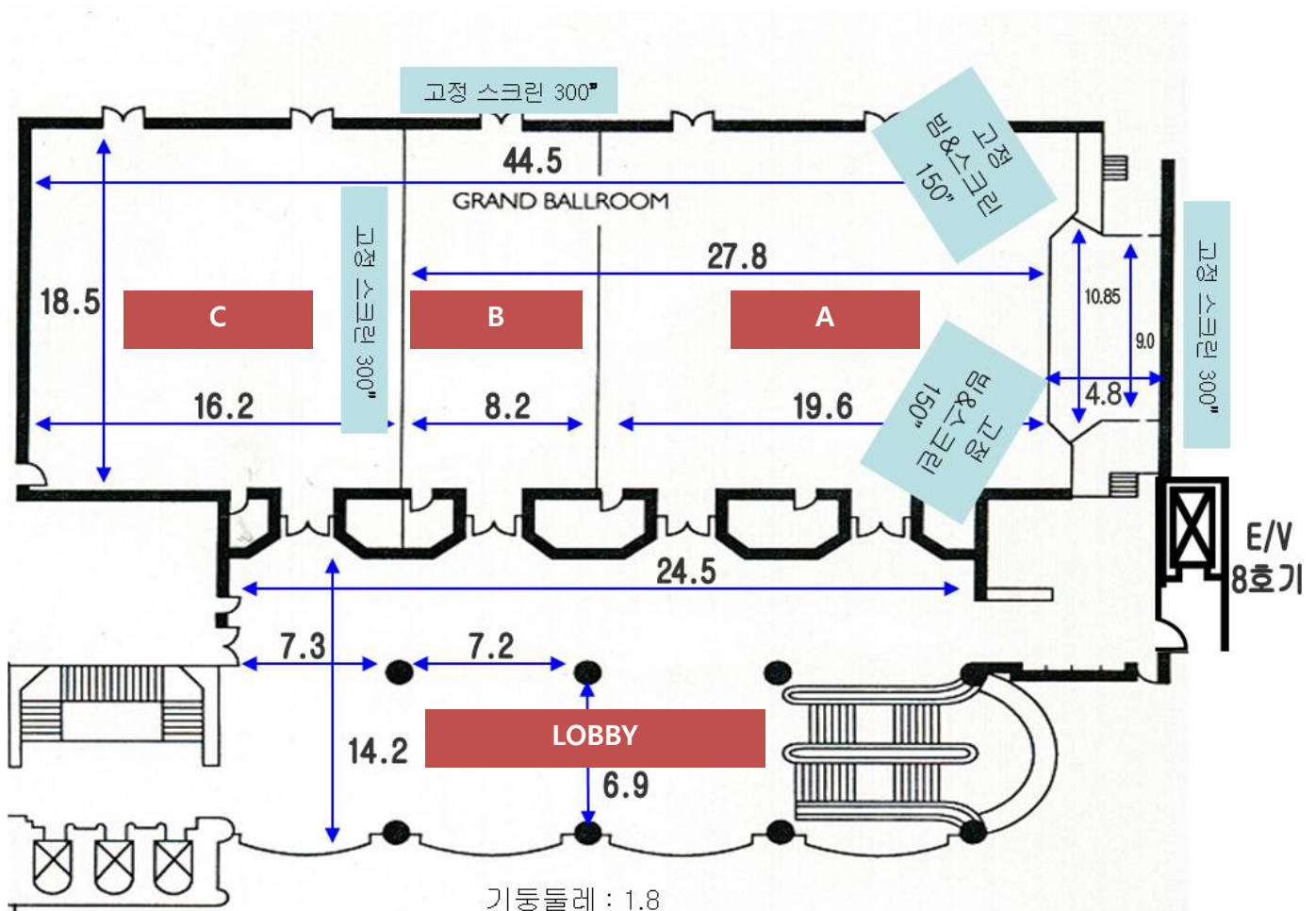
Convention hall (2F) Guide

- **Convention Hall :** BANQUET (11. 5, Thurs, 18:00 ~)
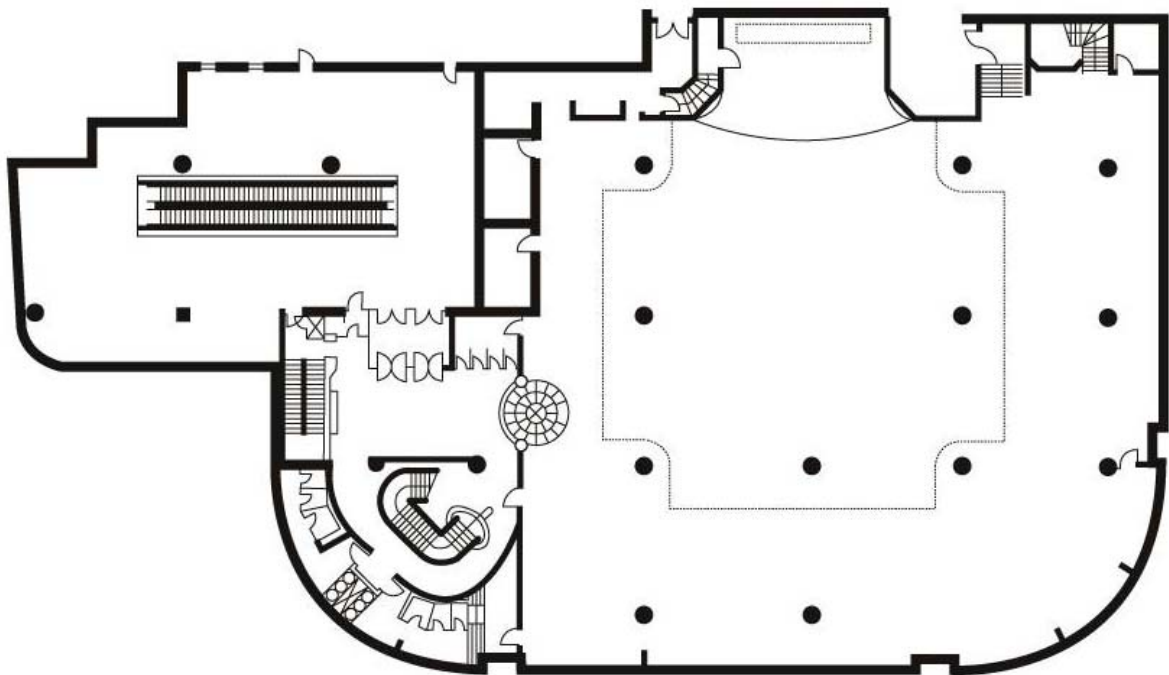
ACCOMODATION

HAEUNDAE GRAND HOTEL http://www.grandhotel.co.kr/

Information

In order to make reservations and obtain the special BioInfo2009 conference rates, please contact the Haeundai Grand Hotel (82-51-740-0555) and mention that you're attending KSBSB Conference. 100 rooms are reserved for first-come first-serve based.

The Haeundae Grand Hotel emerged on May 30th, 1996 on Haeundae Beach, one of the eight most scenic sites in the country. The brand new deluxe lodging facility combines sports facilities for a leisure hotel complex.

The hotel has not only 320 spacious guestrooms and banquet halls but also state-of-the-art facilities for leisure activities, which are all attuned for the new concept of simultaneously satisfying the combined purposes of business, leisure and sports. As the largest integrated leisure hotel in the area with a floor space of 102,138㎡, it features large-scale swimming pools occupying two floors including one pool as long as 50 meters with seven lanes which can accom-modate 1,000 persons, a 28-lane bowling hall, a theater within the hotel offering up-to-date audio and visual effets, a golf driving range. The hotel also has a hot spring bath loaded with natural minerals, equipped with special sauna docks for health buffs and other facilities.

For the special dining, there are multinational restaurants such as continental cuisine, Japanese, Chinese, as well as international buffet restaurants.

The special features of the hotel are its grand lobby, which has a three-story ceiling, lighted by a chandelier patterned after the Korean national flag, taekuk mark, and ocean waves, which boosts the high classic style of the hotel and glass elevators commanding a magnificent view of the pine trees along the beach.

Room Rate

Room Type	Normal	Discount Rate
Beach View Room	USD 520 KW 520,300	USD 140 KW 140,000
City View Room	USD 420 KW 423,500	USD 120 KW 120,000

(10% service charge and 10% tax will be added)

Location
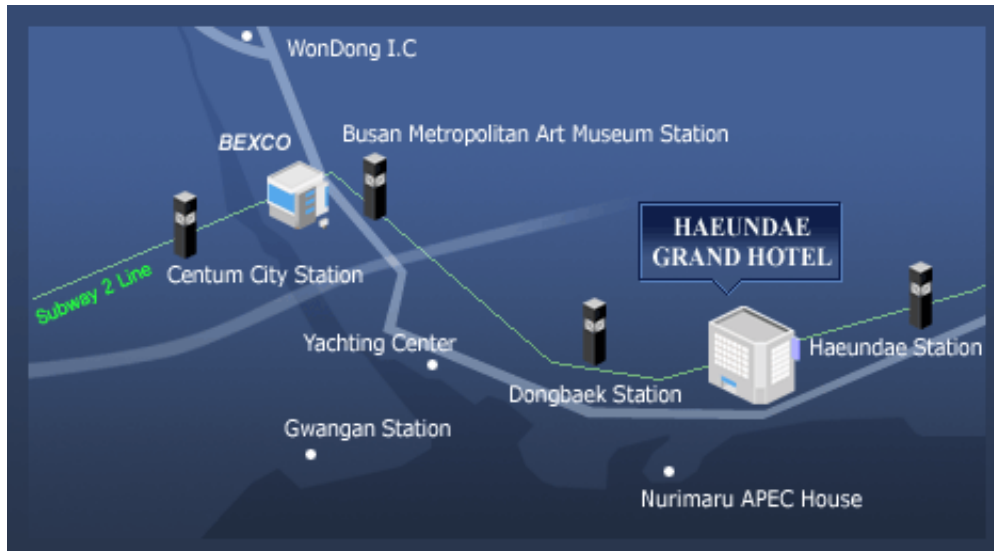
651-2 Woo-Dong, Haeundae-Gu, Busan 612-020, Korea (Phone: +82-51-740-0555)

Stretching 2㎞ with gently curved sands, the Haeundae beach offers a beautiful look in harmony with the moon light. It deserves a reputation as one of the most remarkable beaches in the world owing to the night view of the beach, the crystal sands and pine, near by pine forests and deluxe amusement facilities.

Transportation

VIA	FROM(Time)	REMARKS
BUS	Pusan Station, Downtown Area (1hour)	Bus No : 139, 140, 1001, 1003
NIGHT BUS	Downtown Area (50minutes) Airport (50minutes)	1003 307
TRAIN	Busan Station ~ Haeundae Station (35minutes)	
LIMOUSINE	Airport (1hour)	every 20minutes (07:10~21:40)
FERRY	Coastal Ferry Terminal (1hour)	every 1 hour