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Brief introduction to Pacific Symposium on Biocomputing

The Pacific Symposium on Biocomputing is an international, multidisciplinary conference covering current research in the theory and the application of computational methods in problems of biological significance. Researchers from the United States, the Asian Pacific nations and around the world gather each year at PSB to exchange research results and discuss open issues in all aspects of computational biology. PSB provides a forum for work on databases, algorithms, interfaces, visualization, modeling and other computational methods, as applied to biological problems. The data-rich areas of molecular biology are emphasized.

PSB is the only meeting in the bioinformatics field with sessions defined dynamically each year in response to specific proposals from the participants. Sessions are organized by leaders in emerging areas to provide forums for publication and for discussion of research in biocomputing 'hot topics'. PSB therefore enables discussion of emerging methods and approaches in this rapidly changing field. PSB has been designated as one of the major meetings in this field by the recently established International Society for Computational Biology (see www.iscb.org).

Papers and presentations are peer reviewed typically with 3 reviews per paper plus editorial oversight from the conference organizers. The accepted papers are published in an archival proceedings volume, which is indexed by PubMed, and electronically (see <http://psb.stanford.edu/>). Finally, given the tight schedule from submission of papers to their publication, typically 5 to 5 1/2 months, the PSB proceedings each year represents one of the most up-to-date surveys of current trends in bioinformatics.

Details of PSB'04

The Pacific Symposium on Biocomputing 2004 (PSB'04) was held January 6-10 on the Big Island of Hawaii. This symposium marked the 11th annual international computational biology meeting and focused on bioinformatics. Altogether, 292 participants from 13 countries attended this symposium.

The topics covered at PSB'04 are listed in Table 1 along with the number of oral presentations and numbers of papers accepted for publication for the proceedings. The set of topics has changed from those of the previous year. These changes are commensurate with the responsiveness of this symposium to the rapid changes in this field as determined from the participants by means of the open submission of proposals for sessions.

Table 1. Topics for oral presentations at PSB'04

	Oral + Published	Published Only
Alternative Splicing	4	4
Computational Tools for Complex Trait Gene Mapping	4	3
Biomedical Ontologies	5	4
Joint Learning from Multiple Types of Genomic Data	7	3
Informatics Approaches in Structural Genomics	6	3
Computational and Symbolic Systems Biology	8	3

One hundred twenty three articles were submitted for consideration continuing the steady increase in papers submitted to this meeting, and a total of 54 were accepted (Table 1). 34 were accepted for both publication in the proceedings and for oral presentations at the meeting (Table 1). Additionally, 20 articles were chosen for publication in the proceedings but were not presented orally to the whole conference (Table 1). Instead, these 20 accepted papers were presented in formal discussion sessions or in poster sessions.

In addition to the paper-based scientific sessions, PSB'04 included a set of tutorials (Table 2). The purpose of these tutorials is to introduce new areas or to acquaint students and researchers with established topics outside their immediate focus. These tutorials are selected on the basis of submitted proposals. Each tutorial is accompanied by a booklet, which is reviewed by the co-chairs for quality-assurance.

Table 2. Tutorials for PSB'04

Systems Biology Host/Pathogen and Other Community Interactions
 Creating Web Services for Bioinformatics
 Modeling Genetic and Metabolic Networks: Design of High Throughput Experiments
 Network (Reticulated) Evolution: Biology, Models, and Algorithms

The grant from DOE provided funding for 19 participants covering registration, room and meals. Awards ranged from \$625 (5 awards) to \$1,250 (11 awards). A total of \$19,875 was committed to PSB participants (Table 3).

Table 3. Expenses for PSB'03 provided by DOE (as of 5/19/03)

AWARDS to PSB PARTICIPANTS \$19,875*
 OTHER EXPENSES \$ 0^
 TOTAL SPENT \$19,875*

*There were many last-minute cancellations due to fears of traveling in these insecure times.

^We request that the extra \$125 be added to next year's award that we may continue to facilitate as many attendees as possible.

Plans for PSB'05

PSB'05 will be held January 4-8, 2005, on the Big Island of Hawaii and will follow much the same format as PSB'99 – '04: papers, tutorials, poster sessions, formal and informal discussion groups and demonstrations. The oral presentation topics for PSB'05 are listed in Table 4.

Table 4. Topics for oral presentations at PSB'05

Inferring SNP Function Using Evolutionary, Structural, and Computational Methods
Biogeometry: Applications of Computational Geometry to Molecular Structure
Inferring Function from Structural Genomics Targets
Computational Approaches for Pharmacogenomics
Joint Learning from Multiple Types of Genomic Data
Biomedical Ontologies

Table 5. Tutorials for PSB '05

Use of Multi-locus Data in Gene Mapping Studies
Association Mapping: Design Issues and Data Analysis Approaches
Data Analysis and Sharing with Web Services
Function Prediction: From High Throughput to Individual Proteins

Information on the number of people registering for PSB2005 and requesting support currently is incomplete. The early registration deadline is November 1, 2004.