

# The Asian Bioinformatics Center (ABC) Initiative

Presenter: Rohit Reja,  
ABC Project Secretariat  
(on behalf of Dr. Tan Tin Wee, NUS, Singapore)

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# Asian Bioinformatics Center Project

- Endorsed by the

- Asia Pacific Bioinformatics Network  
(established 1998 as APAN Project 101)  
[www.apbionet.org](http://www.apbionet.org)



- E-International Molecular Biology  
Laboratory (e-IMBL) [www.eimbl.org](http://www.eimbl.org)



- Asia Pacific – International Molecular  
Biology Network (A-IMBN) [www.a-imbr](http://www.a-imbr)



- Hosted in the Korean Bioinformatics  
Center, Taejeon. (KOBIC)

# The APAN-APBioNet first project

since 1998



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**biosequence & bioinformatics data**

**This node: bio-mirror.net**

This is a world bioinformatic public service for high-speed access to up-to-date DNA & protein biological sequence databanks.

## Bio-mirror Nodes

### Australia:

<ftp://biomirror.aarnet.edu.au/biomirror/>  
<rsync://biomirror.aarnet.edu.au/biomirror/>

### Austria:

<http://biomirror.genome.tugraz.at/>  
<ftp://biomirror.genome.tugraz.at/BioMirror/>

### China:

<http://bio-mirror.cn.apan.net/>

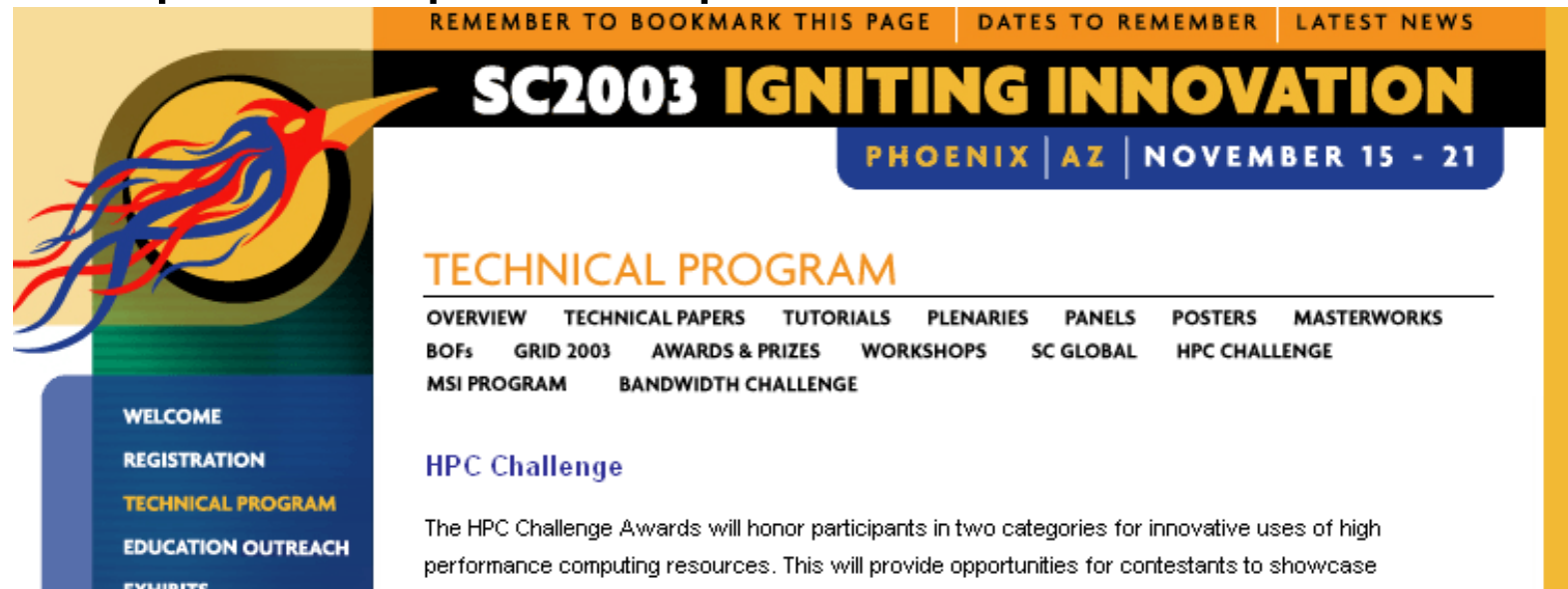
## Databanks (Current Status)

Local mirror	Description	Home s
BlastDB	Biosequence databases for BLAST searches	NCBI
Blocks	Highly conserved regions of proteins	NCBI
DDBJ	DNA Data Bank of Japan	NIG
EMBL	The EMBL Nucleotide Sequence Database	EBI
Ensembl Human	Automatic annotation on eukaryotic genomes	Ensembl

Australia, Austria, China, Japan, Korea, Malaysia, New Zealand, Philipines  
Singapore, Taiwan, Thailand, USA are involved in this project

# Won Supercomputing SC'2003 Most Geographically Distributed Project

- <http://www.psc.edu/publicinfo/sc2003/awards.html>



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## SC2003 IGNITING INNOVATION

PHOENIX | AZ | NOVEMBER 15 - 21

### TECHNICAL PROGRAM

OVERVIEW TECHNICAL PAPERS TUTORIALS PLENARIES PANELS POSTERS MASTERWORKS  
BOFs GRID 2003 AWARDS & PRIZES WORKSHOPS SC GLOBAL HPC CHALLENGE  
MSI PROGRAM BANDWIDTH CHALLENGE

#### HPC Challenge

The HPC Challenge Awards will honor participants in two categories for innovative uses of high performance computing resources. This will provide opportunities for contestants to showcase

### Most Geographically Distributed Application: Global Analysis of Arthropod Evolution

A global team of researchers dynamically link a large number of high performance computers and networks across five continents to run fastDNAm1, a parallel program for inference of phylogenetic relationships based on DNA sequences. They simultaneously demonstrate a global-scale distributed computing application and at the same time perform meaningful analysis of an important biological problem.

# Published paper in top bioinformatics Journal (Gilbert et al, 2004)

Bioinformatics

ABOUT THIS JOURNAL CONTACT THIS JOURNAL SUBSCRIPTIONS CURRENT ISSUE ARCHIVE SEARCH

Oxford Journals > Life Sciences > Bioinformatics > Volume 20, Number 17 > Pp. 3238-3240

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PEER REVIEWED SUPPLEMENTS AVAILABLE

**Bioinformatics Advance Access originally published online on April 1, 2004**  
Bioinformatics 2004 20(17):3238-3240; doi:10.1093/bioinformatics/bth219

[Bioinformatics vol. 20 issue 17 @ Oxford University Press 2004; all rights reserved.](#)

Applications Note

**Bio-Mirror project for public bio-data distribution**

Don Gilbert <sup>1,\*</sup>, Yoshihiro Ugawa <sup>2</sup>,  
Markus Buchhorn <sup>3</sup>, Tan Tin Wee <sup>4</sup>, Akira Mizushima <sup>5</sup>,  
Hyunchul Kim <sup>6</sup>, Kilnam Chon <sup>6</sup>, Seyeon Weon <sup>7</sup>,  
Juncai Ma <sup>8</sup>, Yoshihiro Ichiyanagi <sup>8</sup>, Der-Ming Liou <sup>9</sup>,  
Somnuk Keretho <sup>10</sup> and Suhaimi Napis <sup>11</sup>

<sup>1</sup> Department of Biology, Indiana University, Bloomington, IN 47405, USA, <sup>2</sup> Miyagi University of Education, Japan, <sup>3</sup> ANU Internet Futures

*This Article*

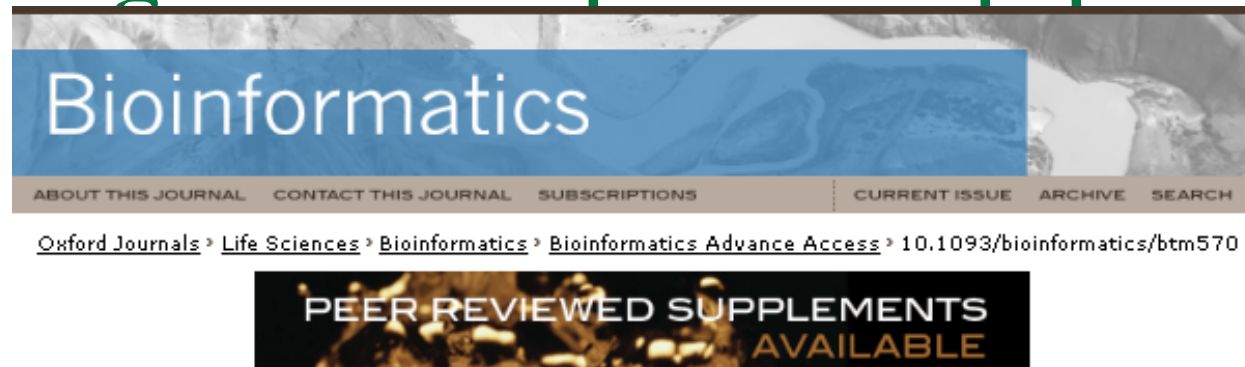
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# Received Grant from IDRC/APNIC Pan Asia Networking Grant and published paper in 2007



**Bioinformatics Advance Access published online on November 23, 2007**

Bioinformatics, doi:10.1093/bioinformatics/btm570

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## Automatic Synchronization and Distribution of Biological Databases and Software over Low-Bandwidth Networks among Developing Countries

Unitsa Sangket <sup>1,\*</sup>, Amornrat Phongdara <sup>1</sup>,  
Wilaiwan Chotigeat <sup>1</sup>, Darran Nathan <sup>2</sup>,  
Woo-Yeon Kim <sup>3</sup>, Jong Bhak <sup>3</sup>, Chumpol Ngamphiw <sup>4</sup>,  
Sissades Tongsimma <sup>4</sup>, Asif M. Khan <sup>5</sup>, Honghuang Lin <sup>5</sup>  
and Tin Wee Tan <sup>2,5</sup>

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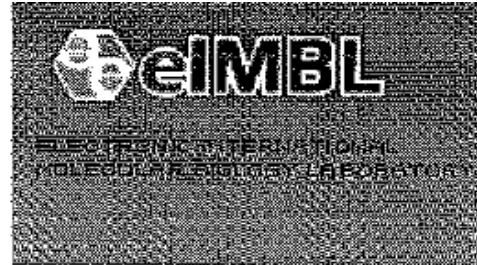
*PubMed*

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# APBioGrid, APBioBox, APBioKnoppix, and BioSlax: BioinformaticsLiveOS Projects from 2002 to date

- LiveCD, LiveDVD, LiveUSB, VMplayer version, MokaFive version, and Cloud instantiations
  - Funded in the early days by IDRC.
  - Collaboration with Sun Microsystems Asia Pacific Sci and Tech Center to produce their Sun BioBox Solution in 2007 and their Bio-ClusterGrid
-

# The Seoul Resolution of April 2009



**eIMBL International Workshop  
“Personal Genomics and  
The Asian Bioinformation Center Initiative”  
April 3-4, 2009  
IVI, Seoul National University, Korea**

## **The Seoul Resolution**

**Whereas**

**we, the undersigned delegates of the First eIMBL International Workshop on “The Impact of Personal Genomics on BioScience”, gathered at the IVI, Seoul National University, Korea, on April 3-4, 2009, (see Annex 1 – List of Signatories)**

# New Bioinformatics Initiatives for the new decade 2010-



The ABC Initiative  
Setting up of ABC HQ and  
national nodes for Bioinformation

Analogous to APNIC network  
information centre in the  
networking world.

# ABC Project 1 – www.abcenter.org

The screenshot shows a web browser window with the URL <http://www.abcenter.org/>. The browser's address bar and tabs are visible. The website header features the ABC logo (Asian Bioinformation Center) on the left, a navigation menu with links for Databases, Tools, About ABC, Project, and Help, and flags of several Asian countries on the right. Below the header, there are links for Feedback, Sitemap, and Contact us.

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**Filebox**

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**MainMenu**

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## Main

### What is Asia Bioinformation Center?

Established in 2009 as a virtual Asia collaboration center for large scale omics and bioinformatics projects, such as personal genome and variomics, as the first step towards a larger Asian framework for bioinformation. Our mission is to evolve a mission of an Asian bioinformatics and bioinformation institution responsible for coordinating and leading efforts towards excellence in research, education, and service in bioinformatics in Asia.

### Seoul-Resolution

5. ~~initiate dialogue with other institutions, organizations and international consortia to mutually advantageous collaborations;~~ and
6. aim to form Asian Bioinformation Centers throughout our region,

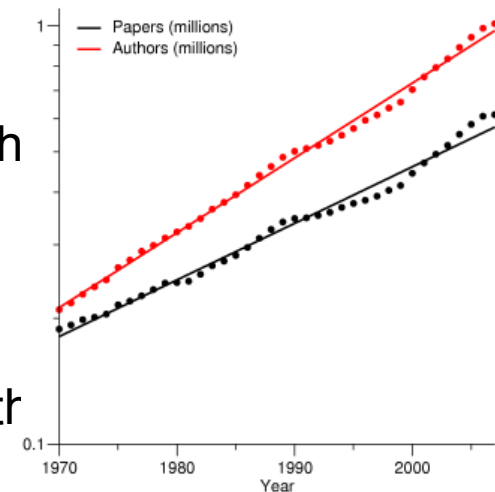
and that will ultimately lead to the formation of a physical international institute for Asian Bioinformation.

### Participating Organizations, Centers, and Laboratories

- DNA Data Bank of Japan, Japan
- National University of Singapore, Singapore
- Tsing Hua University, Taiwan
- National Health Research Institutes,

# ABC Repositories

- 2) Setting up of ABC repository for persistence of published scientific material,
- reproducibility and sustained accessibility of published software, databases and datasets in Asia.
- Usage of contributorIDs, OpenIDs, DOI handles and other standards
- Partnering Open Access journals such as BioMedCentral



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■ **From the BioMed Central blog**


**Data publication and openness in the scientific community** (29 Jun 2009)

**Richard Hays joins Asia Pacific Family Medicine as co-Editor-in-Chief** (26 Jun 2009)

**Stem Cell Research & Therapy: now**

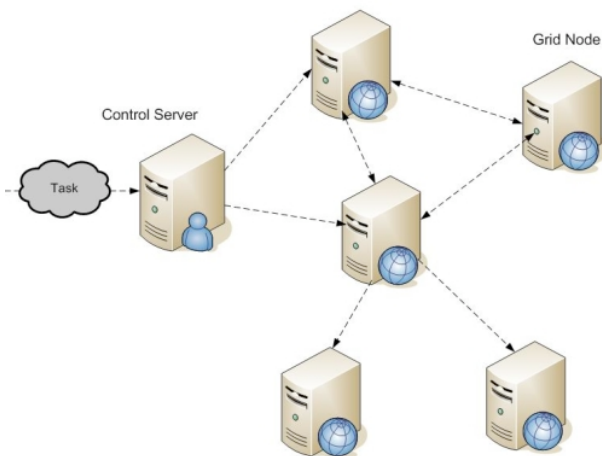
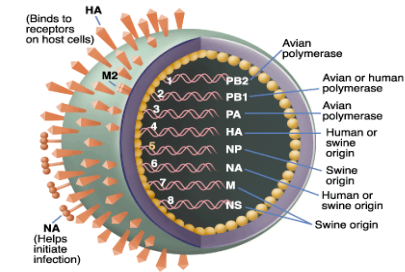
■ **Featured articles** **Open Access**

 **Seabirds select best partner**  
*BMC Evolutionary Biology* 2009, **9**:147  
Mate choice in the monogamous kittiwake, *Rissa tridactyla*, appears to be under strong selection against inbreeding as genetically dissimilar pairs produce offspring that are more likely to hatch and thrive.

 **Schistosoma genome map**

# Other collaborative research projects:

- ABC Flu database
- Phylogenetics Research as extension of our SC'2003 award project



# Expansion to AIDB

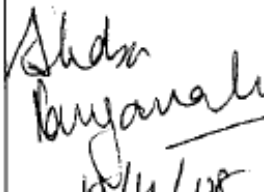
- Support of delegates from ASEAN countries and experts including those from Australia, China, Korea, Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Singapore Thailand, Vietnam
- Forwarding to ASEAN and ASEAN China Joint Science and Technology Committee for endorsement.

## Participation in the Proposed ASEAN Infectious Diseases Database (AIDB)

Pursuant to the resolutions of the ASEAN Workshop on Reverse Genetics-Based Vaccines for Avian Influenza (21-22 January 2008) hosted in Bangkok Thailand by BIOTEC Thailand, a proposal for an ASEAN Infectious Diseases Databases (AIDB) has been formulated in the attached (**ANNEX 1**).

In support of this proposal contained in ANNEX 1, which is intended to be submitted to the ASEAN SubCommittee on Biotechnology (SCB), for the purpose of escalation to ASEAN Committee On Science and Technology (COST) and for onward transmission to the ASEAN-China Joint Science and Technology Committee (ACJSTC), we the undersigned on this day, 17/18 April 2008, at the 2<sup>nd</sup> ASEAN-China International Bioinformatics Workshop held at National University of Singapore, hereby declare

- our **interest** to participate actively in this joint effort as a scientist/official from ASEAN member country or from an ASEAN-Dialogue Partner country;
- our **involvement** in supporting this initiative either by attending AIDB conferences and workshops or following up on activities with our respective institutions; and
- where appropriate, our **contribution** to the formation and setting up of the AIDB **either**
  - in kind e.g. hosting of servers, **or**
  - with funding e.g. research grants, **or**
  - with human resources, e.g. trainers, administrators **or**
  - with information sharing.

Name and Designation	Signature / Date
<p><b>INTERNATIONAL EXPERTS</b></p> <p>1. Prof. Shoba Ranganathan            Chair of Bioinformatics            Department of Chemistry and            Biomolecular Sciences,            Biomolecular Frontiers CoRE            &amp; ARC Centre of Excellence in Bioinformatics            MACQUARIE UNIVERSITY Sydney NSW 2109, Australia</p>	 18/4/08

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# Personal Genomics project

- Headed by KOBIC it will include various aspects of Genomics spurred by the new High Performance DNA sequencing technologies.
  - Big boom anticipated.
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# Call for Participation

## Request for Endorsement from APAN

- Currently 17 institutes/organizations from five countries have joined this initiative to carry out bioinformatics and computational biology research on bioinformation.
- We look forward to fully co-operate with APAN, Transpac2, TEIN2, TEIN3, TEIN4, SEA-EU-NET and FP7 project partners and others to deliver results on our Asian side using Advanced research networking to connect all our nodes with those in Europe and North America.

- Please contact

- Rohit Reja  
Project Secretariat  
Asia Bioinformation Center  
c/o KOBIC, Korea  
[rejarohit2004@gmail.com](mailto:rejarohit2004@gmail.com)

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- Contacts: [tinwee@bic.nus.edu.sg](mailto:tinwee@bic.nus.edu.sg); [jong@kribb.re.kr](mailto:jong@kribb.re.kr)