

# ***The Asia Pacific Bioinformatics Network***

Endorsed By    

## **Bioinformatics Resources for Teaching, Training and Research**

Report by

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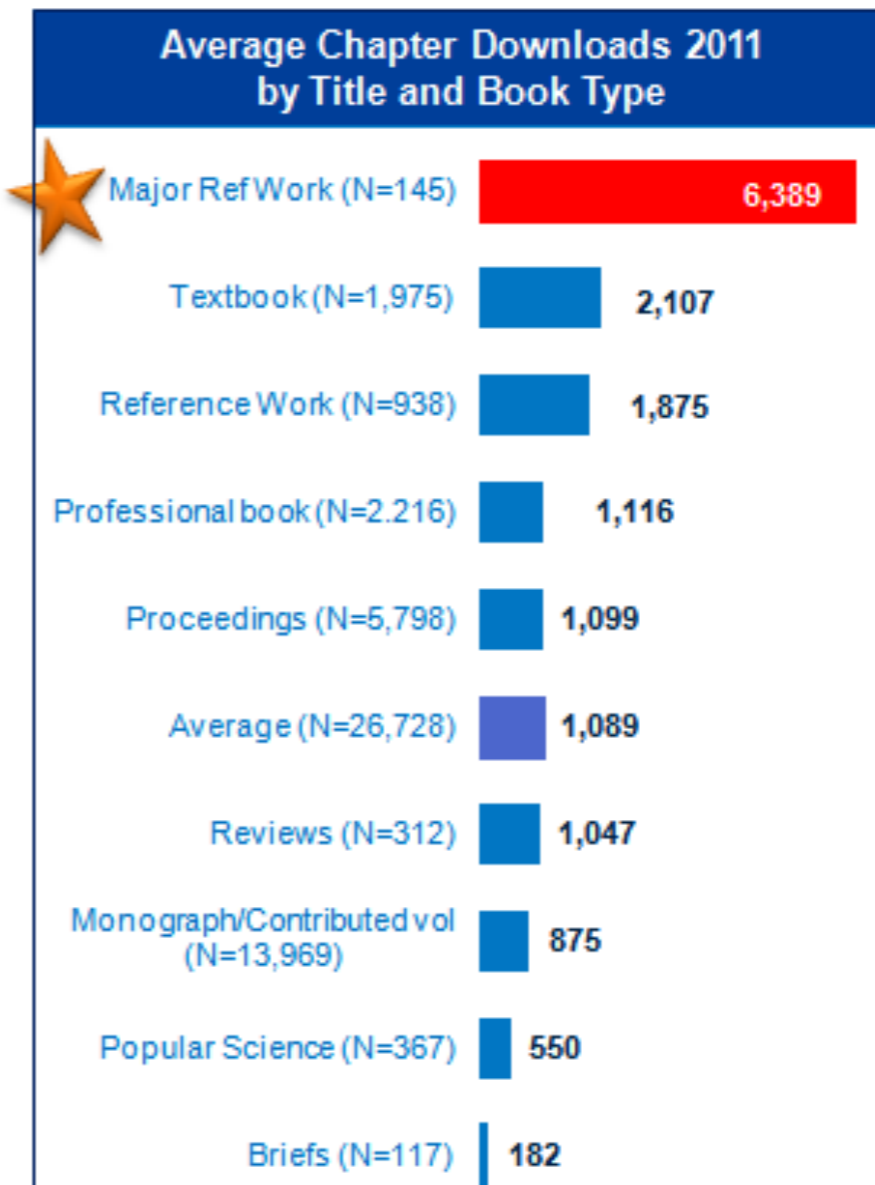
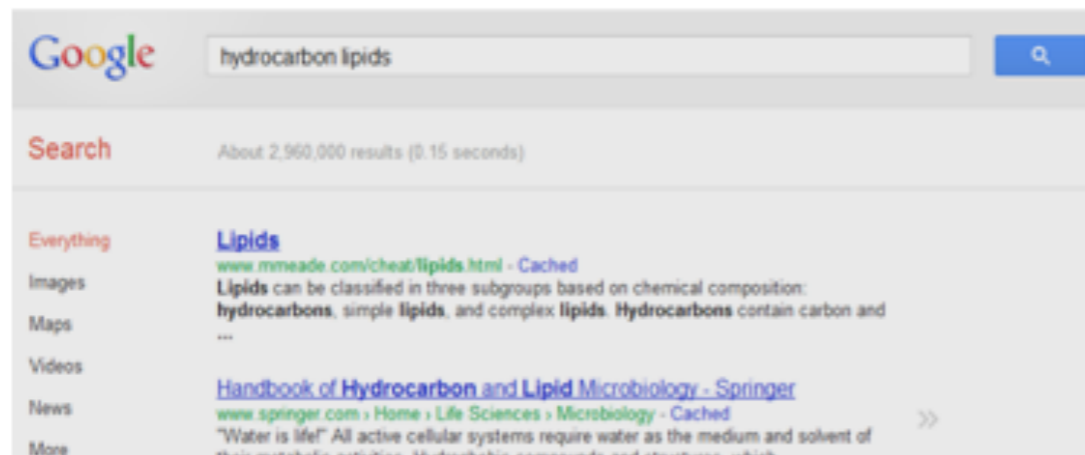
# Encyclopedia of Computational Biology/Bioinformatics

Springer Publishing Product Development | 2012 | 4



## Springer Major Reference Works

- Springer Reference Works are Highest downloaded products
  - **Encyclopedia of Genetics, Genomics, Proteomics and Informatics (2008).**
  - **Handbook of Hydrocarbon and Lipid Microbiology (2008).**
- Reasons:
  - Easily Accessible
  - High Quality Reference Content



## Steps, Stages and Estimated Timeline



### Proposal/ Review/ Contract

- Scope
- Topic divisions
- Field editor recruitment



### Initial TOC

- Subfield content refinement
- Author recruitment



### Writing

- Reviews
- Revisions
- Online publication



### Proofing

- Print & e-book publication

3-6 months

6-12 months

12-18 months

18-24 months

# Topics identified so far

## Sections

- Algorithms
- Artificial Intelligence and Machine Learning
- Data Mining and Integration
- Sequence Analysis
- Ontology
- Biological Pathways
- Biological Networks
- Systems Biology
- Molecular Interactions
- Disease Informatics
- Structural Biology informatics
- Drug Design

## Sections

- Genome Informatics
- Proteome Informatics
- Microbio- and Metagenome Informatics
- NGS technologies
- Lipidomics
- Metabolome Informatics
- Translational Bioinformatics
- Immunoinformatics
- Text Mining
- Phylogeny
- Biostatistics

# Future APBioNet Project with Springer Media

- Call for Editors/Section Editors/Interested Contributors - Handbook of Bioinformatics Protocols (“Maniatis” of Bioinformatics)
- Key issue: standardization of reproducible protocols
- E-mail Shoba or [tinwee@apbionet.org](mailto:tinwee@apbionet.org)

# APBioNet Training/Education

## **What it is?**

Asia-Pacific Bioinformatics Network is an international organization of scientists and researchers working on the promotion and advancement of bioinformatics as a scholarly scientific discipline

## **When it was established & who's involved?**

Founded in 1998 at PSB Hawaii; secretariat in Singapore; gained the acknowledgement, endorsement and/or affiliation with APAN, ISCB and ASEAN Subcommittee on Biotechnology; incorporation as public non-profit limited liability company is ongoing



## **What it does?**

- Development of bioinformatics network infrastructure
- Exchange of data and information
- Development of training programs, conferences (InCoB), workshops and symposia and the encouragement of collaborations in the field of bioinformatics with an Asia-Pacific focus

## **Who are our communities?**

Practitioners, scientists and students from both biology and computing backgrounds in Asia and Pacific Rim



# Training Activities

## Who we train?

It depends on the location & type of training offered but ranges from undergraduates to post-docs & researchers

## What we train?

- Introductory bioinformatics workshops (Univ. of Brunei, Perdana Univ.)
- Data analytics seminar & hands-on bioinformatics workshop on R
- Practical parallel computing in R
- Cloud computing with BioSlax and NUS BioCloud
- Bioinformatics workshop on R/Bioconductor
- Training activities are conducted by members or endorsed by APBioNet



# Training Activities

- Workshops in context of EUAsiaGrid
  - Grid enabling phylogenetic inference of HIV dengue and other flavivirus sequences
  - Grid enabling parameter sweep for SVM parameter optimization of caspase cleavage sites prediction
  - Grid enabling genome search to identify T3SS effectors
  - Grid enabling AutoDock ligand-receptor docking for HLA-ligand complexes and Gromacs
  - Drug discovery/GVSS Virtual Screening on avian flu and dengue fever, WISDOM (wide in silico docking on malaria)
  - Grid Application Platform TWGrid
  - Computational Biology Workshop in Malaysia funded by SEA-EU-Net and MOSTI endorsed and coordinated by APBioNet



# Training Activities

- Forthcoming Workshop

3<sup>rd</sup> ASEAN-China Bioinformatics Workshop in 2013  
(Suzhou; Prof. Shen Bairon and A/Prof. Tin Wee Tan)

Merlion Singapore-France Workshop on Supercomputing  
in Traditional and Translational Bioinformatics



# Institutional Support

ASEAN

ASEAN Dialogue Partners – China, India

KOBIC

ISCB

FAOBMB

IUBMB

UNESCO

Universities

National bioinformatics societies



# Training Activities

## What resources we offer

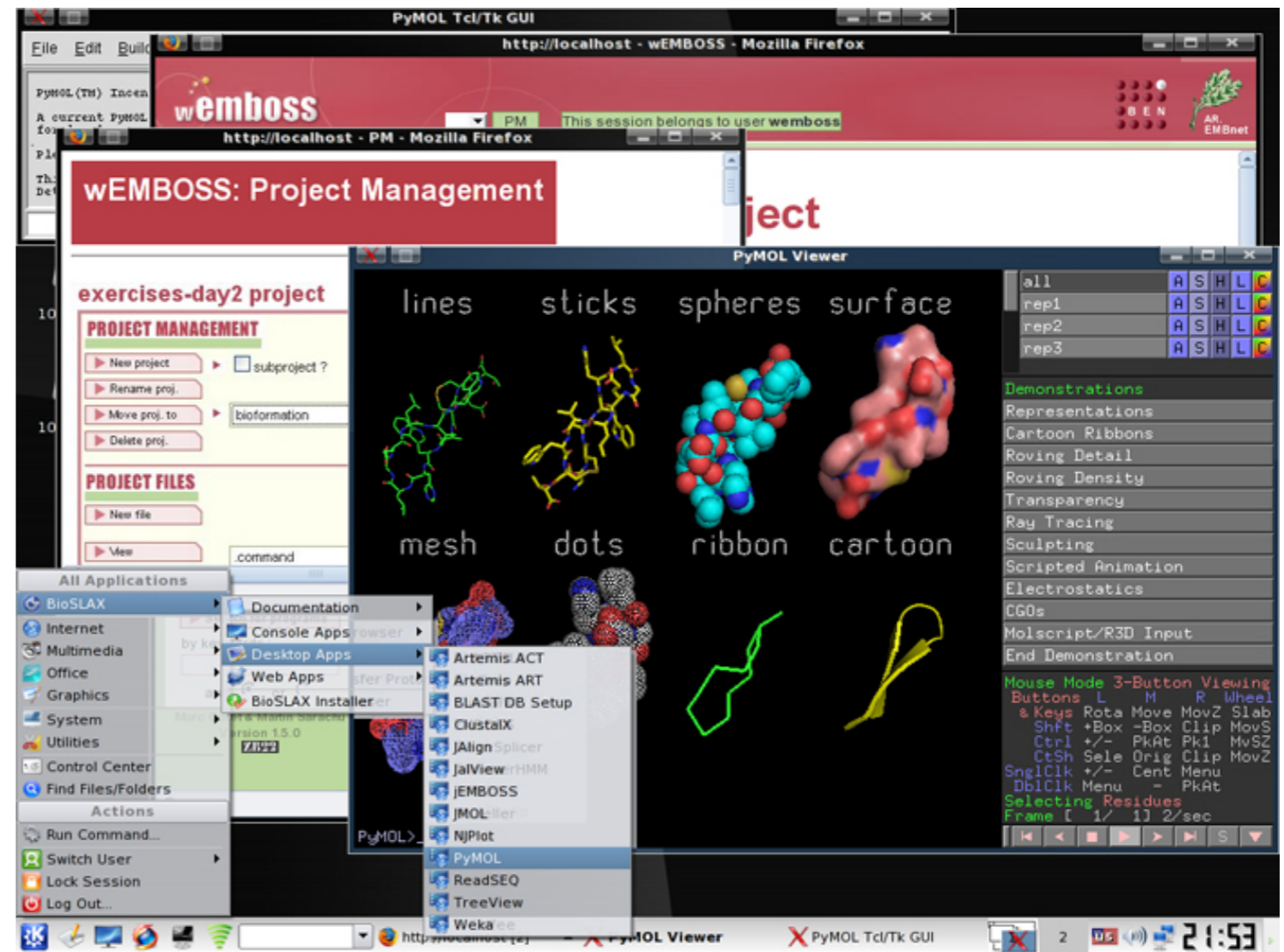
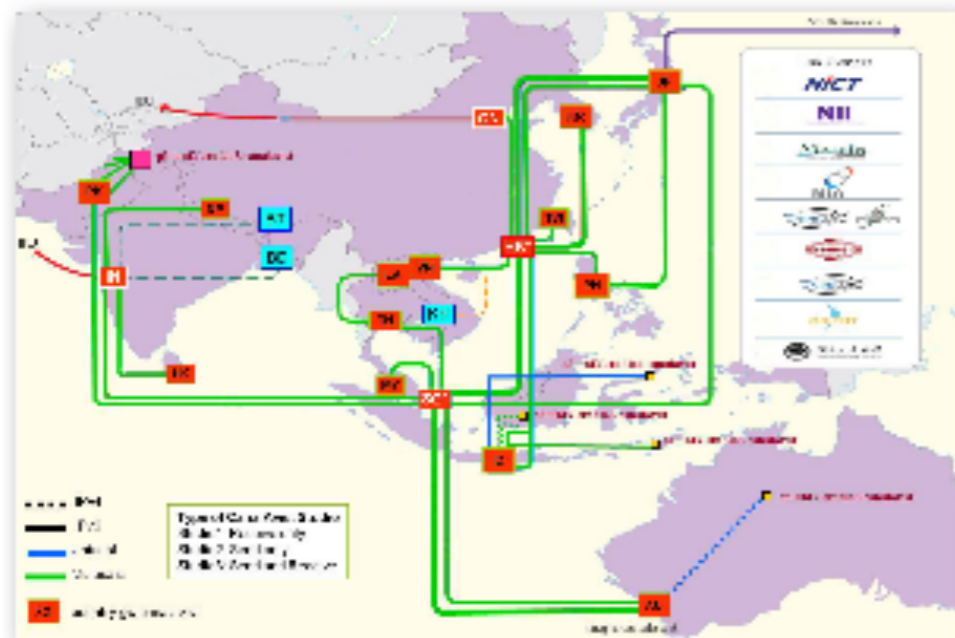
- APBioGrid in context of SingAREN
- various Grid apps (BEAST, MrBayes, Gromacs, GATE, LibSVM, MUSCLE, ProtDist)
- Bio-Mirror2 dB services
- access to Wizfolio bibliographic sharing & management
- BioSLAX virtual desktops and dB in box, APBioKnoppix
- CanalAVIST to deliver lectures and streaming videos, Cloud Computing Software,
- MIABi, AuthorID, DocID data deposition
- BioDB100
- APBioNet Overseas Research Advancement Programme and Travel Grant



# Resources

**BioSLAX**  
 CD, DVD, Vmware,  
 USB stick, MokaFive,  
 VMPlayer and  
 Citrix Xen Cloud

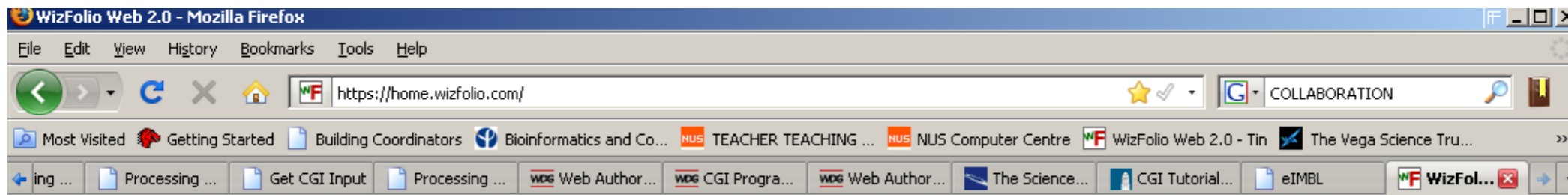
## CanalAVIST



CanalAVIST is a part of the ASEAN Virtual Institute of Science and Technology ([AVIST](#)) and the ASEAN Science and Technology Research and Education Network Alliance (ASTRENA) under ASEAN Committee for Science and Technology to provide channels for seamless education, teaching, training, conferencing, lectures, talks through ASEAN countries for ASEAN researchers and students.



# Resources



## WizFolio Web 2.0 The Next Big Think

WizFolio is a web based productivity tool for managing all types of information. Researchers will improve their research efficiency using WizFolio to gather, organize and generate citations in their writings. You can also use WizFolio to manage and share web pages, pictures, videos, and all kinds of information. WizFolio is Web 2.0 at its best!

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### Login


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### No Hassle Test Dr

Note: Data in Test Drive Account will

### Create an Account

(It's fast and free)

### How WizFolio will save yo

**Locate PDF**

WizFolio will locate the PDF of your col  
If there is a free PDF, WizFolio will save  
your collections.

**Upload PDF**

Upload PDFs and WizFolio will attempt  
matching bibliographic data.

**Import from Clipboard**



## Productivity Plug-Ins



To manage and share scientific papers



# Resources & Standards

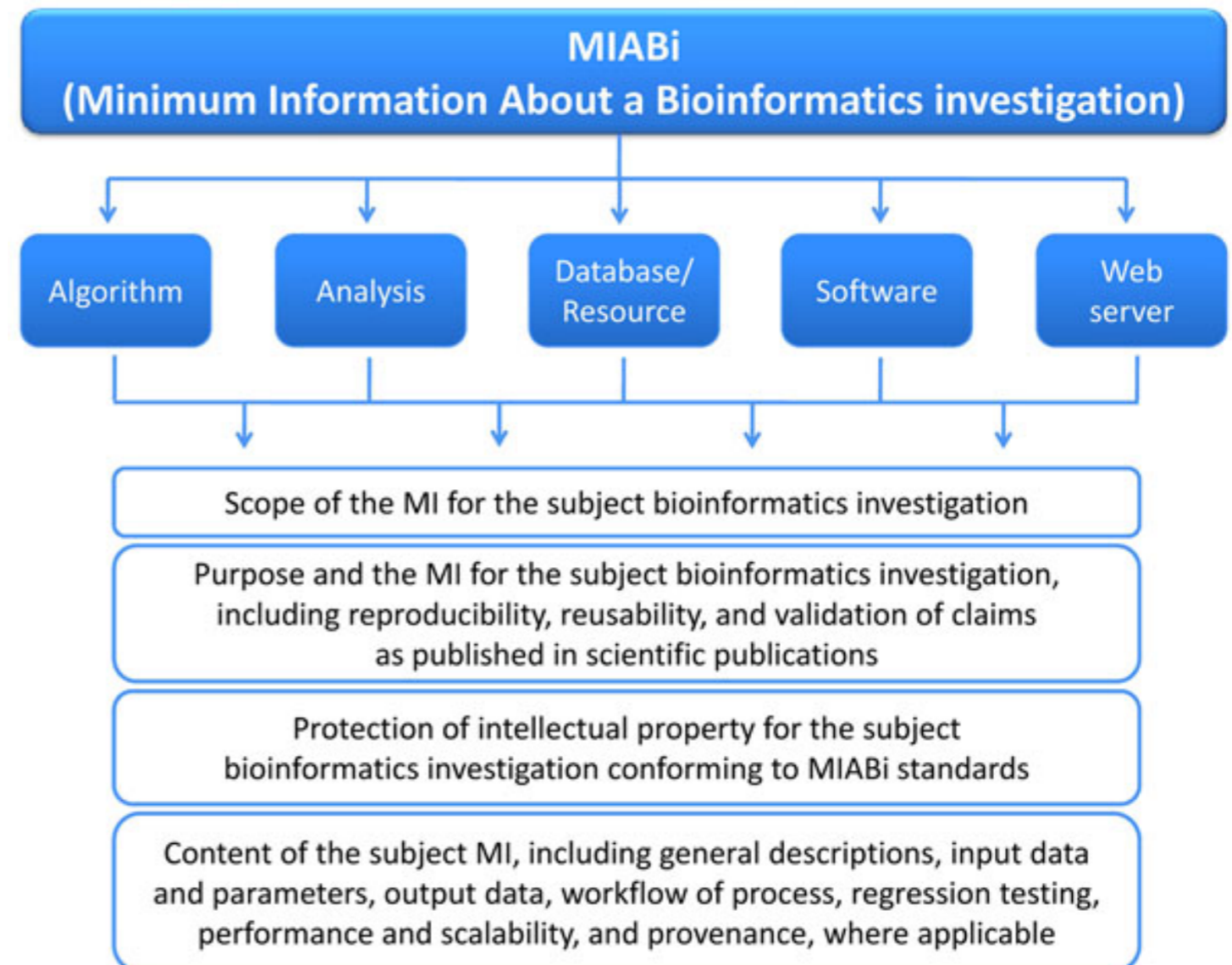
2009- Minimum Information about a Bioinformatics Investigation (MIABI proposed standard)

BioDB100 initiative:

100 MIABI-compliant integrated databases

AuthorID

DocID



Tan Tin Wee, *et al.*  
BMC Genomics 2010  
Dec 2;11 Suppl 4:S27.



# Training Needs & Dreams

## **What the issues are:**

- Minimum skill set to meet the needs and challenges of the -omics era
- What aspects do we focus training on? Is it a moving target?
- Post-training follow-up
- Stable long-term funding

## **What we can't do that we'd like to be able to do:**

to have a APBioNet central repository for tools, dB, training material, e-learning system with dedicated funding and personnel for building, maintaining and expanding it



# Training Needs & Dreams

## **What our dream is:**

to represent and support the Asia-Pacific region in terms of global issues relating to bioinformatics in research, resource sharing/barrier-free access, education, training, and public awareness.

## **Our vision for how GOBLET might help us to get there:**

- Coordinating and collaborating on training, resource building, grant applications, fundraising, lobbying and publicity
- Sharing and exchanging of training/educational resources, trainers...



# GOBLET

Global Organisation for Bioinformatics Learning, Education & Training

<http://www.mygoblet.org/>

1. Provide a global, sustainable support structure for bioinformatics educators/trainers and students/trainees
2. Facilitate capacity development in bioinformatics in all countries
3. Develop standards and guidelines for bioinformatics education and training
4. Act as a hub for fund gathering
5. Reach out to, amongst others, teachers at high schools, to bridge the gap to the next generation of bioinformaticians