

APAC07 Conference

Perth, Western Australia, 8-12th October 2007

Trends Impacting Bioinformatics on the Grid

Presented by:

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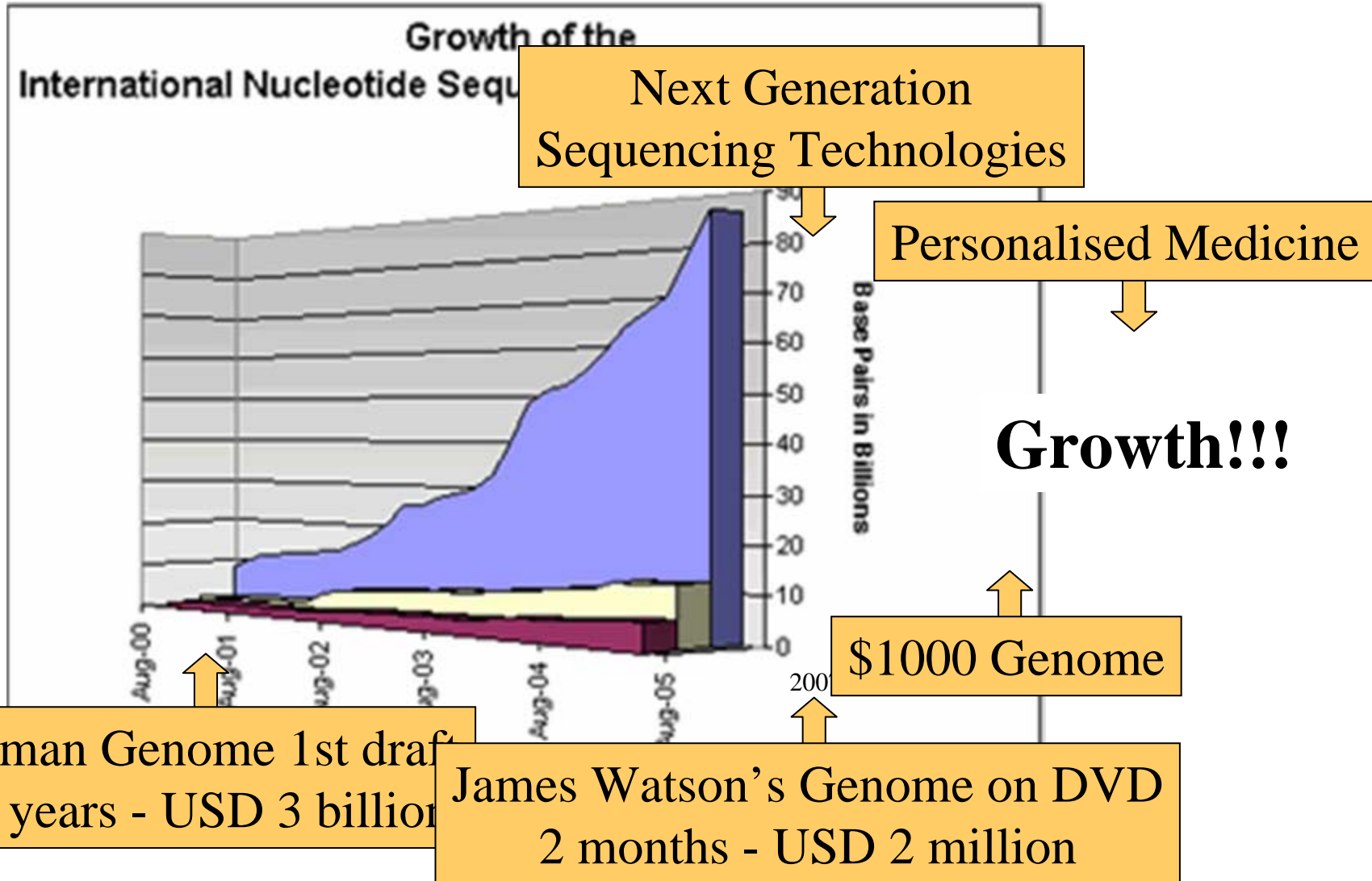
CENTRE FOR
COMPARATIVE GENOMICS



Western Australia

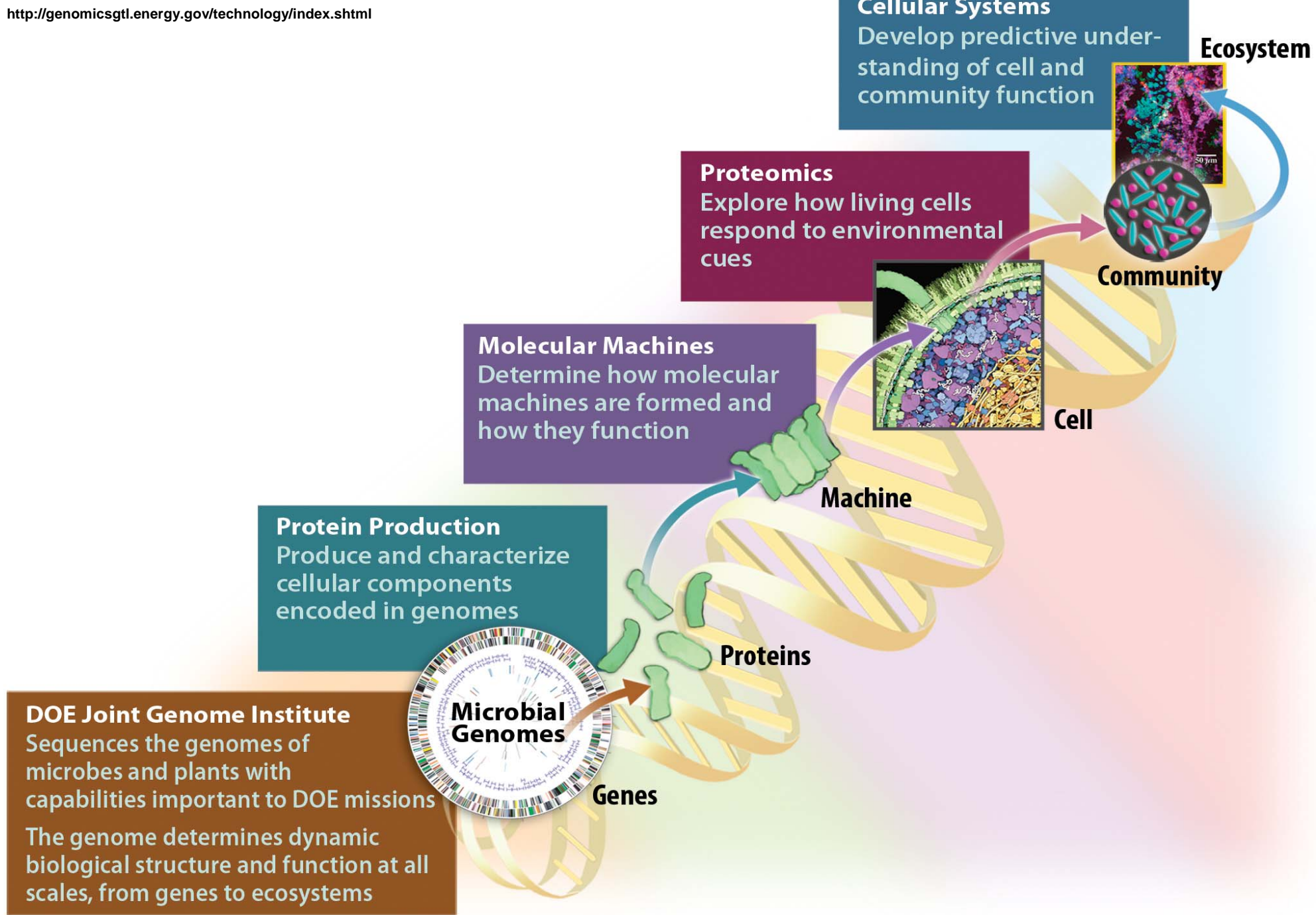
Overview

- -omics
 - Explosive growth
 - Systems biology
- Internet developments, specifically Web 2.0
 - Bioinformatics 2.0?
 - Mashups
- Impact of commercial activities
 - Personalised bioinformatics
 - Compute as service



Faster and cheaper technology

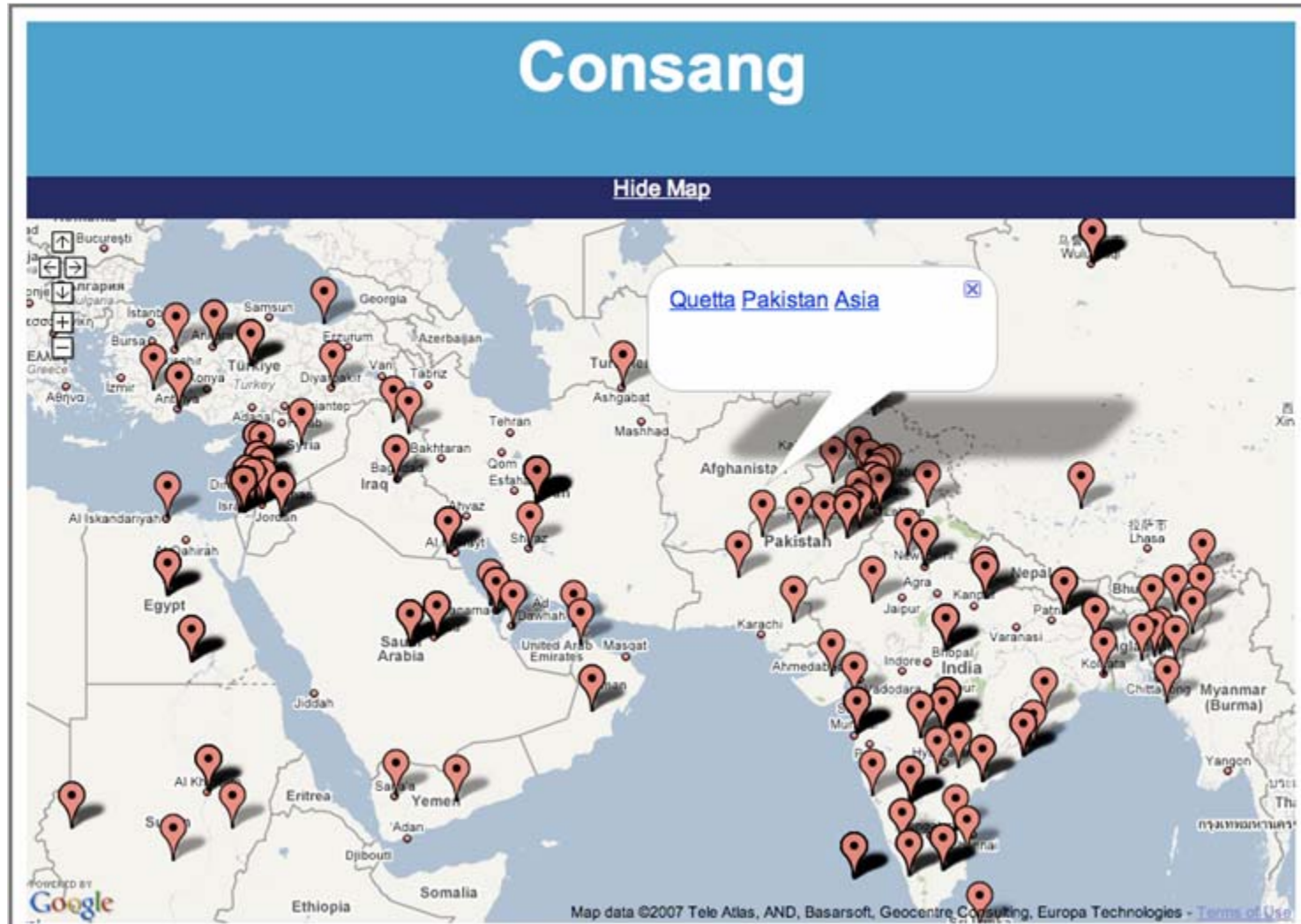
- Explosive growth in data
- Personalised genomics
 - What happens when it costs \$1000 to sequence a genome?
- What about other -omics
 - Proteomics, Metabolomics
- Systems biology



Web 2.0

- Transparent access to massive computational power
- Simple, powerful web interfaces
- Indexed, Fully searchable
- Online communities
- Open, programmable interface
 - Community applications, Mashups

Simple Bioinformatics Mashup



Web 2.0 bioinformatics resource

- Given a biological feature
 - gene, sequence, protein, organism, pathway and so on
- Provide a Web resource that can find out everything that is known about it
- Simple, fast, comprehensive, intuitive
- Enable scientists to conduct analysis online, not just review precomputed data
- Access, communication, curation

Commercial - Compute as service

- Amazon S3
- clusterondemand.com
- nirvanix.com
 - Some web 2.0 business are already built using *compute as service* model for infrastructure

Commercial Activities - Personalised genome

- Genetic information services
- 23andMe.com
 - Investment from google
 - Founded by wife of google founder (Sergey Brin)

Summary

- Masses of data requiring storage, analysis, integration
- Is Web 2.0 relevant?
- What can we leverage from Web 2.0 applications in other domains?
- Are the commercially available compute as service offerings relevant to the Grid?