

## PROJECT INTRODUCTION

### Objectives

To develop a prototype that demonstrates the necessary infrastructural middleware (e.g. Grid services container, change notification & Grid services interactions) that operates over Grid services & Grid infrastructure to support bioinformatics personnel in performing high-throughput genomic analysis using Globus Toolkit v3.0.2 (OGSI Reference Implementation).

### Project Investigator / Manager

Tan Nam Beng  
Nanyang Polytechnic  
Tan\_nam\_beng@nyp.gov.sg

### Period of Project

Oct 2003 – Mar 2004

### Website

http://www.nyp.edu.sg

### Abstract

Blast and Primer Grid Services (based on OGSA) are developed. A resource broker is incorporated to perform a more effective job execution. SMS Notification and OGSA-based Notification Service are coupled to provide prompt notification on any Protein sequence update. Overall, the portal provides an intuitive avenue for scientists/researchers in performing Blast and Primer job submission.

## PROJECT DETAILS

### Description

The Bioinformatics portal provides the following services:

- Distributed BLAST Service**  
 This module determines the optimum Grid resource(s) to perform a BLAST job via a resource broker. Basic Local Alignment Search Tool is leveraged for searching of DNA and gene sequences similarities.
- PRIMER Unique Pattern Search Service**  
 This service allows users to key in DNA sequences to find out its uniqueness among different fasta/chromosome files. The results will be stored in MySQL database to facilitate quick retrieval for future searches.
- Protein Modification Notification Service**  
 The Notification Service simulates a scenario where a (Swiss-Prot) protein database modification done by a scientist could be made known to other scientists as soon as possible. The service leverages on the OGSA-based notification service to interface with a SMS Gateway developed in the project to send out notifications via SMS Messages.

