

The Industry Programme at the European Bioinformatics Institute: assisting European Pharmaceutical companies with bioinformatics

Jean-Jack M. Riethoven and Alan J. Robinson

EMBL Outstation - Hinxton, European Bioinformatics Institute,
Wellcome Trust Genome Campus, Hinxton, Cambridge, UK.
URL: <http://industry.ebi.ac.uk/> e-mail: IndustrySupport@ebi.ac.uk

Abstract

Advances in bioinformatics and computational biology, and indeed information technology in general, are having a very considerable impact on all biotech-based industry. The EBI has therefore launched an Industry Support Programme, with the overall aim of helping industry to adapt quickly to, and maximise the benefits from, developments in these fast-growing fields. The BioStandards project within this Programme formed a consortium of twenty-one leading pharmaceutical companies in Europe. The key objectives in this project are education and technology development. On the technology development end, the industry and the EBI created a working programme which includes the development and adaptation of (new) databases, software and information structures which are of particular importance to industry. Special emphasis is given to the promotion of existing standards, and the development of new ones. Examples of topics that are covered in this area are: improving EST databases, wrapping sequence analysis software, visualisation support, mining bioinformatics data, creating metabolic pathway and gene expression databases, and using CORBA to integrate existing crucial bioinformatics services.

The BioStandards project has attracted the participation of twenty-one leading pharmaceutical companies from throughout Europe (right). By working as a consortium we have been able to further our understanding of mutual bioinformatics problems and their solutions. Funding for the project was provided by equal contributions from the industrial partners, the EMBL, and the EU under their DGIII programme.

- Akzo Nobel
- Astra
- Boehringer-Ingelheim Austria GmbH
- British Biotech
- Chiron/Vaccines
- Glaxo Wellcome
- Hoffmann-La Roche
- Hoechst AG
- Hoechst Marion Roussel
- Janssen
- Merck KGaA
- Monsanto
- Novartis Pharma AG
- Novo Nordisk
- Pfizer
- Pharmacia and Upjohn
- Rhône-Poulenc
- Schering
- SmithKline Beecham
- Synthelabo
- Zeneca

Education and Awareness



Dedicated web pages for general project information, news, progress reports, and prototype developments. Most of this information is restricted to members.

A quarterly newsletter, the "BioInformer", which covers bioinformatics related issues in the areas of research, development and services. Available on-line (<http://bioinformer.ebi.ac.uk>) and as a paper copy.

An up-to-date on-line database of workshops, seminars, and conferences related to bioinformatics and computational biology (<http://bioinformer.ebi.ac.uk/Events/>).

Workshops and conferences on a variety of bioinformatics-related topics. The Industry Programme organises an average of 8 workshops and one major conference a year. Typical topics include: CORBA, database techniques, protein structure prediction, gene prediction, sequence analysis of protein domains, data mining and visualisation, SRS, AppLab and W2H.



Technology Development

Assessment, enhancement, and integration of existing EBI services

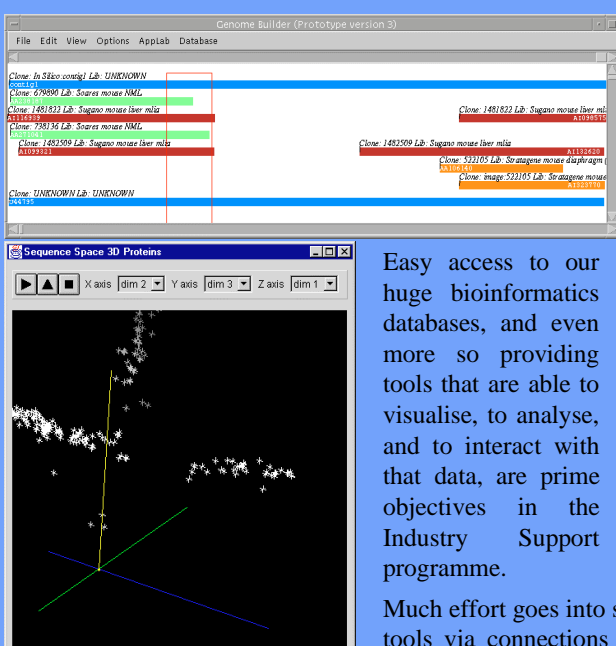
Prototyping new technologies and methods to improve knowledge and rules discovery from biological data

Special emphasis on the promotion of existing (bioinformatics) standards and the development of new ones

Analysed speed and efficiency of sequence comparison hardware, improved EST databases, creating metabolic pathway and gene expression databases, GenomeBuilder applet, improved error checking and correction software for sequence databases, W2H

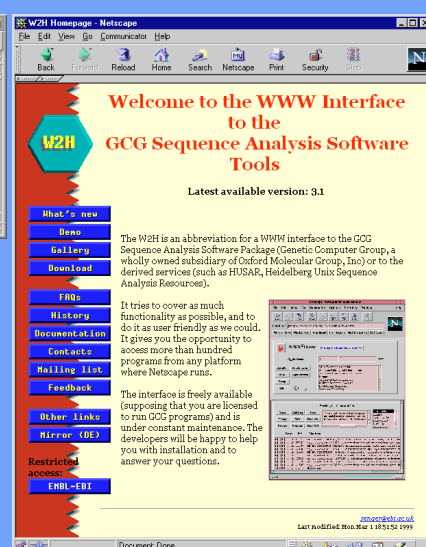
Modify and demonstrate applicability of existing visualisation and analysis software to bioinformatics domain, new and improved gene splice site prediction algorithms

Adopted CORBA as interoperability layer, Java widgets for bioinformatics (visualisation) applications, AppLab



Easy access to our huge bioinformatics databases, and even more so providing tools that are able to visualise, to analyse, and to interact with that data, are prime objectives in the Industry Support programme.

Much effort goes into standardising the interoperability of these tools via connections with the OMG-Life Sciences Research task force.



A significant part of the Programme deals with finding novel ways to analyse and mine the various molecular biology databases. Besides the more traditional sources of information, the recent boom of DNA microarray data provides challenging avenues into extracting useful knowledge from this data source, and opportunities to integrate it with related databases.

The sheer bulk of the information, however, makes us search not only for solutions in the bioinformatics domain, but also adopt solutions that have been around in e.g. the financial world for quite some time now. Together with developing new algorithms, this brings us a step closer to getting a grip on our data.

