EMBRACE student projects at The Linnaeus Centre for Bioinformatics (SLU-UU).

EMBRACE Network of Excellence

The objective of EMBRACE is to draw together a wide group of experts throughout Europe who are involved in the use of information technology in the biomolecular sciences. The EMBRACE Network of Excellence will optimise informatics and information exploitation by pure and applied biological scientists in both the academic and commercial sectors.
The network will work to integrate the major databases and software tools in bioinformatics, using existing methods and emerging Grid service technologies. The integration efforts will be driven by an expanding set of test problems representing key issues for bioinformatics service providers and end-user biologists. As a result, groups throughout Europe will be able to use the EMBRACE service interfaces for their own local or proprietary data and tools.

The EMBRACE project has been spilt up in a series of tasks. The five larger tasks are called workpackages (WP). Erik Bongcam-Rudloff at the LCB is the coordinator of WP 4. The objectives of this WP are first to encourage research groups to formulate new test cases that will contribute to the solution of identified problems and secondly to test access to and integration of an array of frequently needed resources such as tools and databases with emphasis on availability, not performance.

We need new students to work with some of the test cases in the WP4 list.
Example of test cases are:

1-. Gastrointestinal systems biology and challenge of integrating biological background knowledge.
2- Host pathogen interactions in viral infections
3- Integrating Promoter Motif Analysis and Gene Expression
4- Wide in Silico Docking on Malaria
5- Gene expression data on estrogen response in breast cancer
6- Structural genomics
7- 3D modelling
8- Phylum-specific families
9- Horizontal transfer
10 -Detecting new protein types
11- Phylogenetic analysis
12- Protein family analysis
13- Family amplification
14- BIOMAP microarray data
15- Systems biology
16- Metabolic and gene regulatory processes related to human diseases
17- Genome wide identification of genes involved in cell cycle with relevance to cancer
18- Hormone responsive breast cancer

The work will include identification of existing tools and databases to solve some of the test cases, to write web-services, to install web-tools etc. The work also allow students to participate on international workshops and courses organized by EMBRACE.

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