

BIOMEDICAL RESEARCH ACTIVITIES

In biomedical and bioinformatics research area there are agreements with several Institutions located in central and southern Italy.

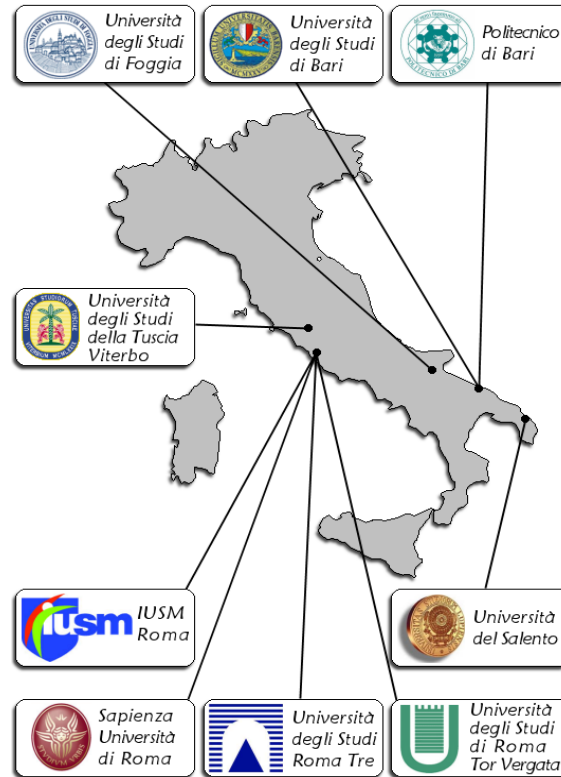
Since 2001 CASPUR has been collaborating with the national Universities on several projects in the areas:

- comparative genomics
- alternative splicing
- biorepository
- microarray
- structural biology
- system biology
- advanced technology for bioinformatics
- chemical properties of macromolecules

CASPUR is particularly active in training and support for researchers and students in high performance computing (HPC).

www.caspur.it/ccb/bioinformatics
Contact: tiziana.castrignano@caspur.it

CASPUR ASSOCIATED UNIVERSITIES



CASPUR - Via dei Tizii, 6 - Roma - Italy
Tel. 06444861 - Fax 064957083

Bioinformatics
@ **CASPUR**
SuperComputing
Center of Rome



THE CONSORTIUM

Established in 1992, the “Inter-University Consortium for the Application of Super-Computing for Universities and Research-CASPUR” is a non-profit organization, financed by the Ministry for Education, Universities and Research and by associated Universities.

The main scientific activity of our centre, CASPUR, is to exploit the most advanced computing technologies to accelerate research in scientific computing.

The “Computational Chemistry and Biology Research Group” of CASPUR involves more than 20 staff members with expertise in computer science, software development, computational biology and project management to deliver solid solutions for researchers across Italy and Europe.

PLATFORM DESCRIPTION

A bioinformatics platform has been established to provide hardware architectures optimized for high-performance and high-throughput data-mining tools.

The new CASPUR research-oriented computational environment includes:

- 1) 2048 cores AMD Barcelona Opteron, 4.5 Terabytes of memory and DDR Infiniband will push the performance near 17 Tflops.
- 2) 248 cores AMD/Intel multi-core servers, 0.5 Terabytes of memory and DDR Infiniband for about 1 Tflops dedicated to databases and services for biomedical research.

A comprehensive infrastructure for bioinformatics data analysis, data model, data simulation, and data prediction has been built up at CASPUR to strongly support experimental biologists for data validation and formulation of new research hypotheses.

The platform offers several type of free web tools and databases developed at CASPUR:

- High-Throughput and High Performance bioinformatics Applications
- High Availability Biomedical database
- Bioinformatics web services
- Large-scale molecular dynamics simulations of biological macro-molecules.

Furthermore our centre provides assistance and custom programming to special bioinformatics projects.

