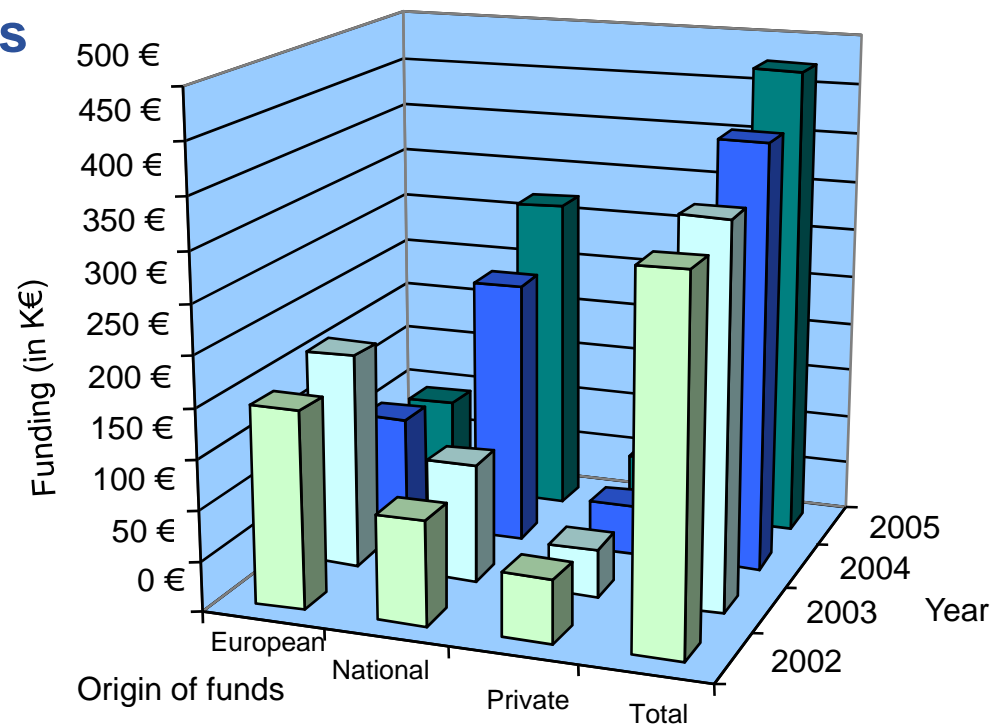


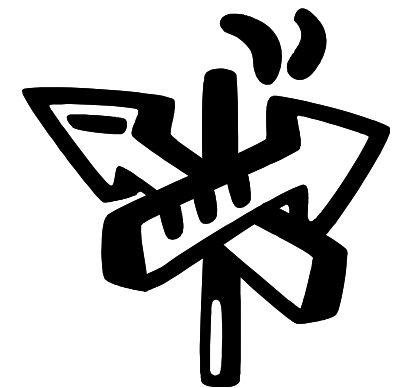
Actividades del Grupo de Redes y Computación de Altas Prestaciones

*Vicente Hernández García
Ignacio Blanquer Espert*

- A Research Group Funded by Vicente Hernandez, with 20 Years of Existence and Comprising 30 Researchers.
- The GRyCAP has Participated in 19 European Projects, Being the Coordinator in 10 of Them (8 Of them on the Medical Sector).
- The GRyCAP is Integrated in the Institute of Applications of Advanced Information Technologies and Communications (ITACA) and the Network Centre of Biomedical Engineering (CRIB).
- Ignacio Blanquer is the Responsible Person of the Medical Technologies Area of this Group.



- **Development of Grid-based Applications, Components and Services**
 - Middleware Development.
 - Applications: Health, e-Government, etc.
- **High Performance Computing**
 - Engineering Simulation (Hydraulics, Structural Engineering, Process Control, etc.)
 - Medical Image Processing.
 - Bioinformatics.
 - Biomedical Simulation.
 - Synthetic Image Generation.
- **Software Engineering on Computational Science and Numerical Methods**
 - Eigenvalue and Singular Value Decomposition Computation on Sparse Matrices.
 - Model Reduction.
 - Sparse Linear System Solving.
 - Non-linear Systems and Optimization.
- **Transfer of Technology.**
- **Services**
 - Renting of High Performance Computing Equipment.
 - Technological Support on High Performance Techniques.



- **Medical Imaging**

- Post-processing

- Volume Rendering, Segmentation, Registration of 3D Medical Images on Parallel, Distributed and Grid Computing.

- Storage

- Virtual Distributed Databases of Medical Images.
 - *Using Ontological Frameworks and Structured Reporting.*
 - *Encrypted Storage.*

- Sharing

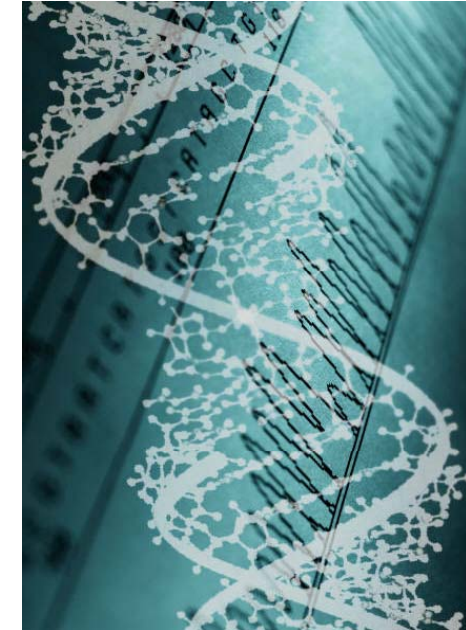
- P2P Networks for Securely Sharing Medical Images.

- Reconstruction

- High-Performance Implementation of Iterative Reconstruction of Images.



- **Bioinformatics and Biomedical Simulation**
 - Biomedical Simulation
 - Protein Folding.
 - *Design of Stable Proteins for Specific Functions.*
 - Cardiac Electric Models (CAMAEC)
 - *Simulation of the Propagation of Electric Potential in Cellular Models.*
 - Biocomputation
 - Genomics
 - *Basic Local Alignment Search Tool (BLAST) on the Grid.*
 - Knowledge Discovery
 - Data Mining on Medical Databases on the Grid.
 - Management of Decision Support Tools on the Grid.
- **Epidemiology**
 - Roadmap for the Adoption of HealthGrids.



Current Activities (National)

- **CVIMO** (<http://www.grycap.upv.es/cvimo/>)
 - Development of a Collaborative Platform for the Creation of Virtual Databases of Oncological Images and DICOM Structured Reports.
- **ngGrid**
 - New Generation Grid Components for the Efficient Exploitation of Infrastructures on E-Science.
- **CDTEAM** (<http://www.suinsa.com/cdteam/>)
 - Consortium for the Development of Advanced Medical Image Technologies.
- **eScience Spanish Network**
 - Network of 68 Research Groups and Almost 700 Researchers in the Fields of Applications, Middleware and Infrastructures in the Areas of Grid and Supercomputing.



- **SHARE: “Supporting and structuring HealthGrid Activities & Research in Europe: developing a roadmap”** (www.eu-share.org)
 - Responsible for the Preparation of the Roadmap Applications on Epidemiology.
- **EGEE “Enabling Grids for E-Science”**
 - Creation of a eScience Infrastructure at International Level.
 - Participation in the Identification, Migration and Deployment of Biomedical Applications (NA4 Activity).
- **EELA: “E-Infraestructure shared between Europe and Latin America”** (<http://www.eela-grid.org>)
 - Deployment of Grid Applications in Latinoamerica in three Areas: Biomed, Physics and Other (Climate and eLearning).
 - UPV is on Charge of the Task for Biomedical Applications



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