INFOBIOMED: Structuring European Biomedical Informatics (BMI) to Support Individualised Healthcare

- **36 months.** Official start date 1-Jan-04.
- **16 institutions.**
- Main objective: "Set a durable **structure** for BMI at the European level that supports its **consolidation** as an **integrative** scientific discipline that exploits the **synergies** between BI and MI" (BI and MI have been separate disciplines up to now).

- **Specific objectives** can be broadly divided in 2 groups:
  - **‘Community’**: education, training, mobility, spreading knowledge, creating a self-sustainable structure.
  - **‘Scientific’**: progress in data interoperability, interfacing of methods, technologies and tools, pilot applications.
INTEGRATIVE BMI CURRICULUM

STUDY OF THE AMERICAN COLLEGE OF MEDICAL INFORMATICS AND SCIENTIFIC ADVISORY BOARD RECOMMENDATIONS

• **Integrating** of experiences in the **computational sciences** and **application domains** rather than just concatenating them.

• **Diversity among trainees**, with individualized, interdisciplinary cross-training allowing each trainee to develop key competencies that he or she does not initially possess

• Direct immersion in **research and development activities**.

• Exposure across the wide range of basic informational and computational sciences.

• Training efforts in BMI addressed to:
  • Attract people as **early** in their academic careers as possible.
  • Design **collaborative efforts** for medical doctors, medical informaticians, biologists and bioinformaticians.
INFOBIOMED TRAINING CHALLENGE

- **Objective**: to promote the exchange of views and dialogue between disciplines, which is key for the future development of Biomedical Informatics, in the context of a specific research problem, to help focus the effort towards a tangible target.

- **Innovative format**: 2 groups of 5 students with different backgrounds work in a case study that can benefit from an integrative approach for one week.

- 2 editions of the ITC have been celebrated:
  - 1st edition: 12-16 September in Viladrau and Barcelona.

- A 3rd edition is planned for October 2006 in Edinburgh.
INFOBIOMED TRAINING CHALLENGE

- **Pharmainformatics** was the subject of the first and second editions.
- **Multidisciplinary teams**: biologists, immunologists, computer engineers, mathematical modellers, epidemiologists, pharmacists, bioinformaticians, medical doctors, etc.
- **Multidisciplinary case studies** submitted by the students
- **Competition between teams**: winning team was to be awarded a mobility grant for each member to one of the INFOBIOMED partner organisations.
- **3 Tutors** guided the teams, experts were available for advice.
- Besides working in a specific case study the participants learnt to work in a multidisciplinary team, each one contributing with their own expertise and taking advantage of the other participants knowledge.
FIRST EDITION OF THE ITC

- 2 international teams of 5 students.
- 7 different nationalities
- Gender balance: 4 men, 6 women
- Average age: 27.9 years old
- Average experience in research: 3.5 years
- 2 Case Studies:
  1- The modeling of genetic regulatory networks in cancer
  2- Targeting EGFR signal transduction pathway by anticancer drugs.
INFOBIOMED TRAINING CHALLENGE

- Work in teams for 4 days in Viladrau, guided by 3 tutors.

- Final presentation session in Barcelona in front of an international jury.

- The prize was awarded ex-aequo to both teams.
SATISFACTION SURVEY

The participants scored high most of the aspects of the Training Challenge.

- Overall satisfaction with the Training Challenge (1-5 scale): 4.50
- Would recommend the ITC to colleagues: 100%
- Usefulness compared with “traditional” training events. More useful: 100%

**The Best**
- Integration with people from different backgrounds. Discovering new areas of science.
- Collaborative team work.
- Learn new skills, new ideas.
- The possibility to ask anything you want.
- The location.

**The Worst**
- Stress because of the competition.

**What should change**
- Drop the competition. Put less stress on the competitive part.
- More internet connections.
- More focused case studies.
SECOND EDITION OF THE ITC

- 2 international teams of 5 students.
- 2 Case Studies:
  1- Modelling of lipid genetic and metabolic pathways in response to infection and immune stimulation.
  2- Commonalties of, and differences between hormonal pathways in breast, endometrium, and prostate cancer.
- The First team won the ITC. 2 members of the second team were also awarded.

6th June 2006, Santiago de Compostela
EVALUATION CRITERIA

Team work
• Degree of integration of disciplines
• Degree of collaboration between team members
• Degree of balance between disciplines

Scientific soundness
• Will patients benefit from the proposed approach?
• Mechanistic understanding, genetic variation
• Therapeutic intervention:
  – possibilities for existing therapies
  – possibilities for new drug classes.

Project plan
• Degree of consistency of the future research plan proposed
• Argue necessity of participants mobility

Quality of the presentation
• Does the presentation reflect a team work?
• Does the next aspects emerge from their team work?