

The Toulouse Cancer Campus

Pr. A. M. BOUDET
University of Toulouse
amboudet@scsv.ups-tlse.fr

It groups on a 220-hectare site the academic, scientific, technological, clinical and pharmaceutical competence of both public bodies and private enterprise, with the single shared objective of better understanding and treating cancer.

A hospital: the objective is to build a 22nd-century hospital with the best practices for care and exemplary equipment. This 300-bed hospital will be specifically dedicated to clinical research and will constitute a reference in care. It is also a university hospital for training: it aims not only to insure the best training for doctors but to develop new methods for new jobs around cancer. Last but not least, it is also an organizational innovation: it unites, in the same building and under the same organization, the "Cancer Center Claudius Regaud" and services from the Toulouse university hospital (CHU) which is regularly rated as one of the best in France.

In clinical research, both institutions enjoy a lengthy experience and acknowledged expertise. The creation of a common platform on the Toulouse Cancer Campus will nevertheless allow them to enhance their expertise by creating an innovative model of a new type of comprehensive cancer center that will compete with the best in the world. The new institute will be driven by a single medicoscientific direction. The budget for clinic and research will be autonomous. Individualized medicine will be a major goal for treatment and research. Innovation and valorization should be important providers for the future budget.

Fundamental research: inside the hospital, there will be 13,000 square meters of research laboratories: fundamental research and clinical research will then be united in the same building and work closely together so that the "from the bench to the bedside" slogan becomes a reality. Four hundred researchers will work in this unit, coming from the national research organizations Inserm and CNRS.

For many years now, joint research units between Université Paul Sabatier, Inserm and CNRS have been generating competitive research in the field of fundamental research on the mechanisms of oncogenesis as well as in anti-tumor pharmacology. They already work together in the "Thematic network for research and care" that is embodied in a "Foundation for scientific cooperation" whose principal work direction is the discovery of new oncotherapeutic molecules. The main interdisciplinary projects are focused on the discovery and validation of new targets and their clinical validation in proof-of-concept studies. This network has advantageous particularities to develop medical-scientific/ public-private alliances and to include very innovative projects in bionanotechnologies and nano health-care.

Private research :

Several companies are directly taking part in the cluster:

- **The Pierre Fabre Group** is a pharmaceutical company of worldwide reputation which was founded in the Midi-Pyrénées region, the second largest independent pharmaceutical company in France (9,000 people, €1.5 billion in 2005). Pierre Fabre devotes a quarter of its annual income to research and development in five therapeutic areas including oncology. Pierre Fabre with CNRS are managing the Toulouse Institute for Drug Sciences and Technologies, specialized particularly in high-throughput screening and the chemistry of natural substances. At the beginning of 2009, the Pierre Fabre Group will have 750 people working in a new building on the Toulouse Cancer Campus.
- **Sanofi-Aventis**: With more than 560 researchers and support staff working for Sanofi-Aventis on the Toulouse Cancer Campus, it is one of the principal centers for group upstream research, particularly in the field of tumor angiogenesis. The Discovery Research Division, based in Toulouse, has encouraged the initiation of several other collaborative projects with start-up companies in the sector. The company has launched an investment plan which means that by 2010, 1,000 researchers and staff will be working in extended facilities covering a total area of 80,000 square meters.
- **Cyclopharma Laboratoires** will settle soon on the Toulouse Cancer Campus in order to conduct R&D, manufacture and marketing of short half-life isotopes and particularly 18 FDG.
- **30 young innovative companies**, CRO's or research-focused companies, specialized in vaccines against cancer (BT Pharma), recombinant protein production (GTP Technology), or DNA sequencing (Millegen), or animal models (Avogadro, Physiogenex), experimental model for genitourinary pathologies and renal disorders (Urosphère), paludism and bacterial infections (Palumed), viral vector technology (Vectalys), advanced photonix imaging (Picometrix), etc.

InNaBioSanté Foundation: An innovative approach to interdisciplinary research

The InNaBioSanté Foundation is a private foundation created in 2006 by Total, Amgen, Pierre Fabre, Siemens and GlaxoSmithKline, with the participation of the National Research Agency. The InNaBioSanté Foundation has been approved by the French government in 2006. The specific aim of InNaBioSanté is to promote public and private research partnerships by financing interdisciplinary research projects linking the key technologies like:

- IT-Infotechnologies,
- Nanotechnologies,
- Biotechnologies,
- Radiotherapy techniques,
- Imaging technologies.

InNaBioSanté Foundation launches every year a special call for projects focused on the fight against cancer, and selects a few very innovative projects to be granted up to €1 million for a three years duration. InNaBioSanté Foundation is also involved in granting trainees the PhD and financing technological platforms for research centers or cancer institutes.

An important tool of the Foundation is a new interdisciplinary research center, the "Institute of advanced technologies for life sciences" ITAV.

ITAV has a triple objective :

- To promote interdisciplinarity
- To reduce barriers and compartmentalisation in research
- To associate public and private research for technological innovations.

ITAV has been conceived around high-level technological platforms: Nanobiotechnology, Automated parallel chemical synthesis, Multiphoton microscopy.

ITAV will welcome its first project teams in 2009, with the aim of promoting partnership between public and private research. It will provide facilities, funding and a degree of freedom which scientists need to develop original research with a maximum of concentration and a minimum of constraints.

A bio-incubator to favor creation of start-up companies will be combined with the ITAV in the same building, and will allow young biotechnology enterprises the benefit of the innovative approaches, and will also provide opportunities for pooling facilities and will be a symbol of a continuum of research operations and an orientation towards technology transfer. Funds that will be raised by InNaBioSanté Foundation will be dedicated to this innovative approach of interdisciplinary research.

The ambition of Toulouse Cancer Campus

It aims to be directly competitive at the international level because of the excellence of the different components, but mostly because of the synergies between them: it is the system--not the parts--that create the differentiation from other organizations.

The idea is that through partnership among life science industry, research institutions, hospitals and government, the Toulouse Cancer Campus will accelerate the development of innovative cancer diagnostics and treatment and create an efficient system for clinical trials in partnership between hospital and industry, this by building a cancer campus which includes cancer research, biobanking, cancer registry, clinical trials facility, industry and higher education.

Care will stay at the heart of the system, the future hospital being a center of excellence for the regional hospitals and clinics and the heart of a network.