Description of the Life Sciences Field

Background

The Life Sciences and Health sectors represent important strategic international stakes in terms of economic and social issues. In this sector, the United States occupies a more and more preponderant position. Biology research in the U.S. is mostly concentrated in "clusters" built around leading academic and research institutions (Boston, Philadelphia, San Diego, San Francisco, ..). These clusters attract 60% of funding from the NIH (National Institutes of Health) for research, 67% of biotechnology patents, 95% of investments in partnerships and 75% of biotech companies with over 100 employees. The dynamism in research in the area of Life Sciences in the United States is reinforced by:

- A federal policy backed by targeted national policies, supporting with public aid, both biomedical research and basic academic research (considered here as the main driving force of innovation).
- A significant investment in academic institutions in order to increase the space designated for research in universities, more than half of this space being devoted to research in biology and health
- A multidisciplinary scientific and technological approach: creation of numerous multidisciplinary research centers that encourage innovation.
- A close link between academia and industrial research funding

Research funding

The life sciences sector in the United States is funded by two major national agencies which are the National Institute of Health (NIH) and the National Science Foundation (NSF).

- The National Institutes of Health Founded in 1887, the NIH is one of the largest medical research centers in the world. With a budget of $ 31.2 billion for 2011, the agency employs over 18,000 people including 6,500 scientists. The NIH is also a funding agency that distributes nearly 80% of its budget for research grants, 50,000 were distributed last year to 3,000 institutions in order to fund research projects for more than 325,000 researchers around the world.

- The National Science Foundation The National Science Foundation (NSF) is a government agency that provides financial support for basic scientific research in several areas, including the Life Sciences. The agency operates mainly by awarding research grants to universities, laboratories, or individuals (directors of laboratories, research fellows and PhD students). The overall budget of the NSF is $ 6.8 billion for 2011, of which 711,56 is in the field of life sciences.

The role of the Office of Science and Technology in Life Sciences

The Life Sciences sector at the Office of Science and Technology is covered by two scientific positions at the Consulate General of France in Los Angeles, the people posted to these positions work closely with representatives from INSERM and the CNRS at the Embassy of France in Washington D.C. These strategic
locations ensure that the sectors with the highest potential in terms of research, technological innovation and dynamic scientific policies are covered. Indeed, the Embassy in Washington is located near the U.S. federal government agencies and at the center of the key points of culture, education and commerce. The presence of many higher education centers, prestigious universities, the NIH, many companies and government agencies, make this region one of the fastest growing in the field of Life Sciences. Meanwhile, California, is a dynamic region in the biomedical field. Research is centered around three clusters based in San Francisco, Los Angeles and San Diego. This State has a network of prestigious research institutes, is among one of the largest biotechnology industries in the U.S. and is at the forefront of innovation in the organization and the funding mechanism for biomedical research. It is within this dynamic context of excellence and innovation that the Life Sciences sector provides the role for science and technology monitoring and strives for Franco-American scientific and academic cooperation in this area.

Scientific and Technological monitoring

The role of technological monitoring aims to diffuse information in France on the latest scientific and technological advances in the United States as well as the science policies used.

This activity monitoring is performed using several complementary approaches:
- ensuring regular monitoring of websites of various major universities and research centers, as well as those of federal agencies or ones for each specific State
- by participating in conferences that focus on the Life Sciences field
- by visiting research teams
- by establishing regular contacts with U.S. researchers and French scientists installed in the U.S.

The information collected is transmitted to France by short published articles (or notes) with all the other articles from the other scientific sectors in the Electronics Weekly bulletin of the Office of Science and Technology.

The French-American Scientific and University Cooperation

Our university cooperation effort is handled through the organization of visits of experts (Exploratory Missions) on themes where both countries share a scientific excellence, or by animating a Franco-American day, with the principal objectives being to (i) present the excellence of French research while debating a topical scientific subject, (ii) facilitate the interaction between French and American research teams in order to facilitate the establishment of partnerships, and to (iii) allow the exchange of researchers, students and technology between the two nations. The various types of actions organized in recent years, have been around three priority areas: technological advances, (genomics, proteomics, systems biology, imaging)

Priorities in Life Sciences

The priority areas in Life Sciences are:
- **Advanced Technology**: Genomics, Proteomics, Systems biology, imaging
- **Strategic Research** themes: Infectious Diseases, Neuroscience, Cancer, Stem Cells
- **Clinical Applications**: Immunization, New Therapeutics, Clinical Trials

Examples of actions

**Delegations**: Organization and accompaniment of visiting delegations INSERM / CNRS, and parliamentary visits.

**Events**: French-American Biological Symposium (FABS), French-American Symposia, Expert missions, Post Doc day, Science coffees events ("cafe des Science").

**Reports**: "The Rise of translational research in the United States : federal support and new academic and private initiatives", "The National Institutes of Health: Organization, Budget and Fellowships, " Stem cells", "Neuroimaging ...

- **Contacts** : Scientific department - Embassy of France
- **Contacts** : INSERM Representation