

## S38 Circulations in the Neurosciences

**Coordinated by & Chaired by**

**Jean-Gaël Barbara** (Université Pierre & Marie Curie, Paris, France)

**Mutation carriers : leadered by Spaniards US laboratories in the early 80s**

**Enrique Wulff Barreiro (1)**

**Emilia Currás (2)**

(1) Consejo Superior de Investigaciones Científicas,

(2) Universidad Autónoma de Madrid,

SPAIN

The history of the initial protocols to transfer viral genetic products inducing tumors was greatly facilitated by the availability of continuous cell line of highly contact-inhibited cells (NIH/3T3). During the 70s the teachings of those involved in this research reached some of the recent arrived in the US Spanish oncologists. And in the early 80s significant Spanish biologists arrived in the Columbia university develop laborious techniques for the detection of oncogenes, involving the gene cloning of regions where are aberrations, sequencing and identification of structural genes in the affected loci and then determination of their role in cancer. After the initial observation that a significant proportion of the tumors scoring positive in the fibroblasts used - the NIH 3T3 cells - and that the genes responsible belonged to the ras family, Isabel Guerrero isolated the two main murine genes responsible for the phenotype, N-ras, in results presented in 1984. The following year she sequenced the complete coding region of N-ras, and suggested evidence for the spectrum of activated mutations in different mouse strains and by different agents. A number of methodical factors affect this historical series of performances. Concept symbols derived from the display of the graphical distribution along time of the concurrent performances, reveal the successive shifts features of their authors from the Columbia University to the Cold Spring Harbor Lab and the Kaplan Cancer Center.

### **Circulations of invertebrate animal models in neuroscience at play in interdisciplinary research**

**François Clarac** CNRS, P3M,

FRANCE

Neuroscience was established around the 1960s. In this new field of research, invertebrate preparations were of great value for understanding the organisation of the neurone. The paper will provide a analysis of how these animal preparations were exchanged between laboratories and provided solid grounds for the circulations of neuroscientific concepts.

Just before and after the WWII, the squid axon was used for the study of nerve conduction in parallel by A.L. Hodgkin (1914-1998) and A.F. Huxley (1917-) from Cambridge and K.S. Cole and H.J. Curtis in Woods-Hole.

The visceral (abdominal) ganglion of the mollusc *Aplysia* was studied by A. Arvanitaki (1901-1983) near Toulon, Paris and New-York.

The stomatogastric preparation from rock-lobsters was discovered by D. Maynard (1929-1973) and represents the best known neural network.

The analysis of the flight of the cricket was developed by D. Wilson (1933-1970) when he was working in the laboratory of T.Weis-Fogh (1932-1975).

The results obtained by these preparations were one of the cornerstone of neuroscience in explaining the basic neuronal functioning, the intrinsic neuronal properties the synaptic activations and their different properties in inducing complex networks.

We want to show how different laboratories in Europe or in America adopted these models and how they favoured the circulations of new concepts in the different disciplines of neuroscience.

### **Commitments and scientific ideas of J.-M. Lahy on psychotechnics and USSR**

**Isabelle Gouarné** Cultures et sociétés urbaines (CSU, Paris 8 – CNRS) and

Centre nantais de sociologie (CENS, Université de Nantes),

FRANCE

I will analyse the intellectual and political life of J.-M. Lahy (1872-1943). In the early 1920s, he joins the movement "Russie nouvelle". His commitments to USSR develop between the two wars, when the relations between the communist world and Western intellectuals are not yet stabilised. This study asks the relations between political commitments and intellectual practices of French academics. How the commitments of Communist scientists can be in part explained by the evolutions at stake in their disciplines, by their place in the academic world or their intellectual education. Two lines of analysis are presented. First, I will show how the philo-sovietism of Lahy is part of his scientific project aiming a novel program against Taylorism. Second, I will study how in the 1930s French intellectuals take over the Soviet Marxist discourse on science.

### **The Rockefeller Fellows and the transnational circulations of neurosciences (1930-1960)**

**Ludovic Tournès** Professor of history, University of Paris-Ouest Nanterre La defense,

FRANCE

That American philanthropic foundations played a great role in the funding of science from the beginning of the 20th Century onwards is well known. However, most studies have focused on the funding of important institutions, in order to assess the □ American □ influence on different national scientific scenes. This paper adopts a different perspective : it focuses on fellowships, which has been overlooked by most historians of philanthropy, and uses them as a way to analyse the transnational circulation of researchers in neuroscience at the time of their emergence (1920s-1950s).

In this perspective, the Rockefeller foundation is not considered as a vector of diffusion of American science, but as a turntable in the transnational circulation of men, knowledge and practices, from United States to Europe, Europe to the US and Europe to Europe. After having presented an international panorama of the Rockefeller fellowships in the field of neuroscience, the paper focuses on the French case in order to present a detailed analysis of the role of the Rockefeller both in the institutionalisation of neuroscience (neurosurgery, neurophysiology, neurobiology) and in the inclusion of French researchers within a transnational network of neuroscientists from the 1930s onwards.

### **Circulations in the revival of French neuroscience after Second World War. Part 1 - First generation scientists**

**Jean-Gaël Barbara** CNRS, Université Pierre et Marie Curie and

Université Diderot, Paris,

FRANCE

The revival of French neuroscience after WWII was conditioned by the will of young fellows and their idea of science radically different from that of their masters, where international collaborations and exchanges were central to their work. This appears in a striking manner for those scientists born around 1900, and it is also significant of their students, born in the 1920s, who are the real actors of the birth of French neuroscience.

In this presentation, the first generation will be analysed. It includes Alfred Fessard, Louis Bugnard, René Wurmser and Henri Laugier, the first three being Rockefeller fellows. We shall show how their initial careers, the beneficial funds from the Rockefeller foundation to visit foreign laboratories, and their network enabled them to develop a collaborative idea of science at an international level. This was also pivotal when they allowed French scientists to escape France during WWII and when they organised the visits of younger colleagues just after WWII in foreign countries, thereby making the renewal of French physiology possible.

### **Circulations in the revival of French neuroscience after Second World War. Part 2 - Second generation scientists**

**Claude Debru** Professor of Philosophy of Science,

Ecole normale supérieure, Paris,

FRANCE

The revival of French neuroscience after WWII was conditioned by the will of young fellows and their idea of science which was rather different from that of some of their influential their masters. International collaborations and exchanges became central to their work. This appears in a striking manner for those scientists born around 1900, and it is also significant of their students born in the 1920s, who are the real actors of the birth of French neuroscience after WWII.

In this presentation, the second generation will be analysed. It includes Yves Laporte, Pierre Buser, Michel Jouvet, Antoine Remond, Robert Naquet, Henri Gastaut and Henri Korn. We will describe the circulations of techniques, instruments, concepts and theories between France, United-Kingdom and the United-States, but also Eastern countries, in which these scientists participated in the 1950s and 1960s.