

# Joint Research Labs

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# 1. Introduction

## 1.1 About IFOM Foundation

The IFOM Foundation (<http://www.ifom-firc.it>) is a highly technological, non-profit research centre. The research conducted at IFOM aims to understand the molecular processes responsible for the onset and development of cancer.

IFOM was established in 1998 by FIRC (the Italian Foundation for Cancer Research). The aim was to create a research environment where scientists from the major National scientific institutions in the Milan area (European Institute of Oncology, National Institute for Cancer Research, Mario Negri Pharmacological Research Institute, San Raffaele Biomedical Sciences Park, University of Milan) could collaborate and pool their organizational, economical and cultural resources, in order to meet the demands of modern-day science.

The creation of this network between research institutes is the first of its kind in Italy and has made IFOM an internationally competitive Research Centre in molecular oncology and functional genomics. The shared research environment and the availability of cutting edge technologies have allowed IFOM scientists to obtain first-rate scientific results at the international level.

IFOM has been recognized as a Centre of Excellence for Research by the Lombardy Regional Council, which also contributed to the realization of the Centre. There are approximately 250 research scientists working at IFOM, 20% of whom come from other European or non-European Countries. The average age of researchers is 30, and 58% are women.

The research programs running at IFOM<sup>1</sup> are focused on basic and applied molecular oncology. Scientists at IFOM study the fundamental biological mechanisms involving DNA and proteins that are responsible for the development of cancer. Their aim is to identify key processes that can be disrupted or stimulated by therapeutic intervention. The scientists and Principal Investigators working at IFOM are selected according to rigorous international evaluation criteria.

## 1.2 About the Campus IFOM-IEO

In 2007, IFOM merged its scientific and educational activities, and its technology platforms with the European Institute of Oncology (<http://www.iew.it>), a comprehensive cancer research institute located in Milan, Italy.

The resulting Campus IFOM-IEO ( <http://www.ifom-iew-campus.it> ) is the largest molecular oncology research centre in Europe, with a surface area of 24,000 m<sup>2</sup>, 12,000 m<sup>2</sup> of which are dedicated to laboratory space. The Campus hosts approximately 500 researchers, belonging to 33 research groups that collectively follow 40 lines of research.

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1 For further details, see IFOM brochure attached.

IFOM and IEO have created a core post-genomic technology facility to complement their research activities. This resource offers a wide range of services, such as genomics, nanotechnology, DNA high-throughput sequencing, bioinformatics, robotics, proteomics, immunology, imaging, molecular pathology, model organisms and structural biology. These core facilities are managed and coordinated within the Campus IFOM-IEO by Cogentech (Consortium for Genomic Technologies), while the Centre of Cellular and Ultrastructural Oncology at the Department of Experimental Medicine (DiMeS), established by IFOM in 2003 at the University of Genoa, offers a state-of-the-art electron microscopy service.

### **1.3 Educational activities**

Educational activities at IFOM and IEO are managed and coordinated by SEMM<sup>2</sup>, the European School of Molecular Medicine, situated at the Campus IFOM-IEO. SEMM offers advanced education, of international standing, in emerging sectors of biomedicine, such as genomics, molecular medicine and nanotechnology, through PhD and Postdoctoral programs, international scientific events and scientific seminars. The educational model adopted by SEMM involves intensive laboratory activity flanked by a program of advanced, interdisciplinary courses.

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2 <http://www.semm.it>

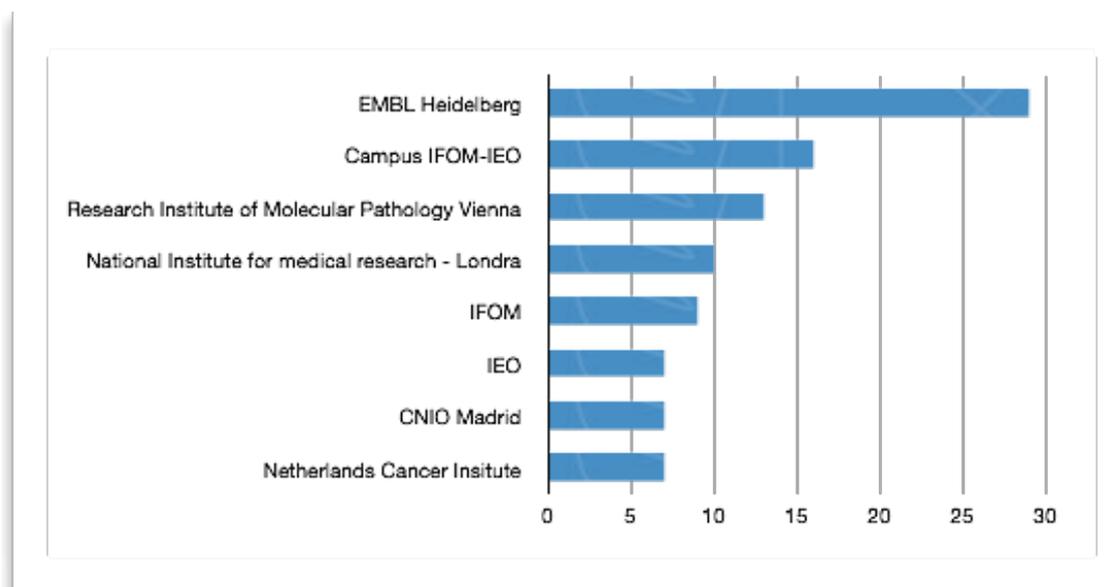
## 2. International activities

### 2.1 The concept

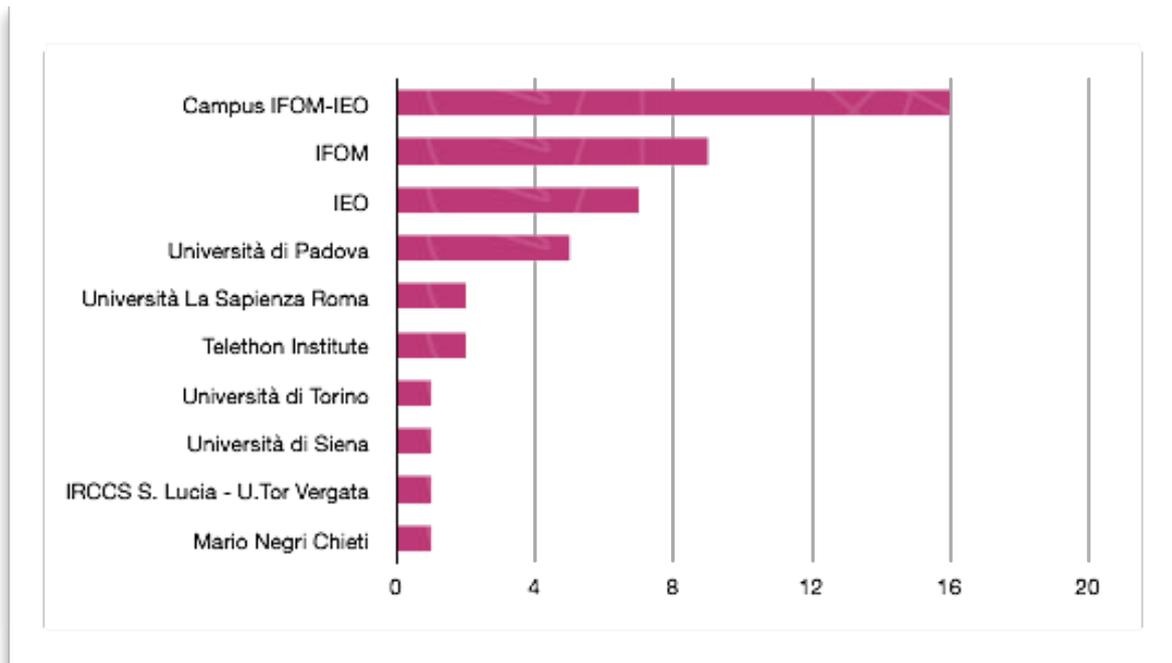
Since its foundation in 2000, IFOM was conceived as a platform connecting the best scientific groups in molecular oncology within the Milano Area. This model allowed IFOM to achieve the necessary critical mass of scientific personnel and technological infrastructure required to be a prominent European cancer research institute in terms of publications on peer-reviewed journals.

The results of the first 10 years of activities of IFOM and the Campus IFOM-IEO are shown in Fig. 1:

**Fig. 1. Scientific Publications on Nature & Cell (2004-2009) of Europe's largest cancer research institutes**



Moreover, at the Italian level, the difference in terms of scientific impact is even more evident (fig. 2)



**Fig. 2: Publications on Nature & Cell (2004-2009) of Italy's largest cancer research institutes.**

To achieve these results, the Campus IFOM-IEO has been able to create a thriving work environment with first-class researchers as shown by the number of EMBO members working at the Campus (figg. 3,4). Moreover, two IFOM senior researchers are also members of Cell's editorial board.



**Fig. 3: EMBO members in Italy and at the Campus IFOM-IEO.**



**Fig. 4: Young EMBO members in Italy and at the Campus IFOM-IEO**

In order to better pursue its institutional goals, IFOM needs to continue its policy of hiring top-level scientists and investing in cutting-edge technologies. However, despite adequate compensation packages and a vibrant scientific environment, IFOM hasn't been successful in attracting foreign scientists because of the current situation of Italy as a country. Although very pleasant for tourism and internationally recognized for its quality of life, Italy is a difficult environment for senior foreign scientists (with family) aiming at moving to Milan for research and business purposes due to high bureaucracy, lack of people speaking English and high pressure on prices.

Therefore, if it is too difficult to attract foreign top scientists to Milan for reasons that are not under direct control of IFOM, IFOM is committed to reach them through the opening of an IFOM JRL in a vibrant Life Sciences hub in order to extend its scientific impact.