



PRESS RELEASE

*SEMM – European School of Molecular Medicine
University of Milan
IFOM The FIRC Institute of Molecular Oncology Foundation
IEO – European Institute of Oncology*

Workshop on Cell Migration From Molecules to Organisms and Diseases

From cell shape and motility to cell-cell communication and cancer development. An International Workshop organized in Milan from May 12th to 14th will present the latest discoveries on the mechanisms leading to tumor formation and metastases, along with the state-of-the-art imaging techniques that allow real-time monitoring of the invasion mechanisms.

What are the molecular processes that allow cell motility? Is there any relationship between cell shape and the ability to migrate to distant sites where secondary tumors, or metastases, can form? How can these events be observed and monitored real time? These and other issues will be addressed during the **Workshop on Cell Migration: From Molecules to Organisms and Diseases**, that will be held in Milan from May 12th to 14th. The initiative is promoted by the **European School of Molecular Medicine (SEMM)** and the **University of Milan**, in collaboration with **IFOM – The FIRC Institute for Molecular Oncology of the Italian Foundation for Cancer Research**, and **IEO – European Institute of Oncology**. Venue of the Workshop will be the IFOM-IEO Campus (via Adamello 16, Milan), recently opened on April 16th, which represents to date the biggest area dedicated to oncological research in Europe.

“Cell migration is a key event in a wide spectrum of developmental and physiological processes – comments Ugo Cavallaro, of IFOM-IEO Campus and member of the Workshop’s Scientific Committee –, such as, in particular, organogenesis and the correct localization of cells during development. In addition, cell migration plays a crucial role in the pathogenesis of various diseases, various diseases, first and foremost in cancer. In cancer, cell migration enables tumor invasion and metastatic dissemination.”

On May 12th the first two sessions will be dedicated to *Cytoskeleton* and to the *Signalling to/from cytoskeleton*: they will address the strategies that cells adopt in their migration – that are strictly correlated with cell shape and with inner structures such as microtubules and actin fibers – and the molecular signalling pathways that cells commonly establish among each others (Pekka Lappalainen, Helsinki, Finland).

In tumors, cell acquire the ability to move to distant sites and form secondary tumors: this topic will be discussed in the *Signalling/Adhesion* session, on May 13th, where particular emphasis is given to the ability of stem cells to respond to stimuli and orient themselves during morphogenesis (Elaine Fuchs, NY, USA). Details will be provided on specific structures called podosomes (Stefan Linder, München, Germany), which are able to degrade the extracellular matrix and are then thought to contribute to cellular invasiveness. The *Imaging* session will on focus on “live cell biosensor designs”, used to study the spatial-temporal dynamics of signaling in cell behavior (Klaus Hahn, Chapel Hill, NC, USA). At the end of the second day, IFOM scientist Marina Mione will chair a session on *Animal Models*, that will provide insights on the usefulness of model organisms such as Zebrafish (*Danio rerio*), *Xenopus* and *Drosophila*.

The Workshop closing day, May 14th, will focus on *Organogenesis* and *Diseases*. After having elucidated the molecular pathways involved in cell migration, the lecturers will step upwards at the organ level, to address the regulation of blood vessel morphogenesis (Ralf Adams, London, UK), the development of neurites and the formation of a functional nervous system (Frank B. Gertler, Madison, USA). In the final session the convened scientists will present an overview on *Diseases*, underlying the events that take place at the invasive front of tumors (Avri Ben-Ze'ev, Rehovot, Israel), and suggesting the existence of three distinct mechanisms of metastatic tumor cell invasion and dissemination (Gerhard Christofori, Basel, Switzerland), with profound implications on the clinical side.

“Ranging over a number of critical issues in cell biology and physiology, both in physiological and pathological conditions – says Marina Mione, who is also a member of the Workshop’s Scientific Committee – this Workshop will provide the attendees with an incredible opportunity of deepening their knowledge with the latest data from laboratories of excellence from all over the world. It also confirms the leading role of IFOM-IEO Campus in gathering scientific excellence, and in giving a high-level contribution to data-sharing and scientific cooperation”. By gathering many of the most prominent scientists who study, at the international level, cell migration mechanisms, the Workshop will then provide, as IFOM scientist and member of the Workshop’s Scientific Committee Giorgio Scita remarks, “an outstanding platform for the exchange of new findings, approaches and perspectives. With relevant implications towards the understanding of key aspects of cancer progression and the design and development of novel therapeutic strategies.”

A full description of the event program is available at: <http://www.semm.it/workshop/cellmig07/>.

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