

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

## **“Foundations of life sciences and their ethical consequences”: the first PhD course in Europe to bring together scientific research and philosophy.**

The aim is to create a new generation of scholars who are able to discuss science, epistemology and ethics in the same breath. The new Postgraduate course in “Foundations of life sciences and their ethical consequences”, which was presented yesterday in Milan, is organised by the University of Milan and the European School of Molecular Medicine (SEMM) and is hosted at the IFOM-IEO Campus in Milan (IFOM – The FIRC Institute of Molecular Oncology Foundation, IEO – European Institute of Oncology). The Ph.D. course is the first of its kind in Europe and takes-off on January 1<sup>st</sup>, 2007. It features an interdisciplinary approach and the integration of both theoretical and practical knowledge, in a strongly international setting, as demonstrated by the choice of English as the official language of the course. The course coordinator is Pier Paolo Di Fiore, Scientific Director of IFOM. The scientific content is coordinated by Giovanni Boniolo, who is Professor of Logic and Philosophy of Science at Padua University. The new Ph.D. programme is open to all European graduates in the Sciences or in Philosophy. Four Ph.D student positions are available: applicants are requested to fill in the online application form, available through the SEMM web site ([www.semm.it](http://www.semm.it)) by 15<sup>th</sup> October, 2006. After an initial pre-selection, potential candidates will be invited to sit for an oral exam that will be used to assess their philosophical and biomedical knowledge, their approach to epistemology and/or bioethical research and their knowledge of English.

The four year Ph.D. course is structured as follows: for the first two years, Ph.D. students alternate between theory lessons in the morning and practical laboratory experience in the afternoon, under the guidance of a personal tutor within the IFOM-IEO Campus. The third year will be spent in an international scientific institution – this will allow students to confront a wider reality. During this year, students will also begin their thesis project, to be completed in the fourth year, at the end of which a public viva exam will be held.

There are 20 courses planned for the first two years of the Ph.D. course, corresponding to some 500 hours of lessons on both philosophical and scientific subjects, such as, logic, evolutionary biology, epistemology, philosophy of the life sciences, bioethics, biomedicine and society, molecular genetics, protein structure and bioinformatics. Courses will be held by lecturers from the University of Milan (such as the philosophers of science Giulio Giorello and Corrado Sinigaglia, and the evolutionary biologist Marco Ferraguti) and by IFOM-IEO Campus teaching staff (for example Giuseppe Testa, a stem cell expert who studies the social impact of biomedicine). Students will benefit from courses held by the major Italian and international experts in this field of study: Marcello D’Agostino, Amedeo Santosuosso e Guido Barbujani from Italy and John Harris, Mark Bedeu, Samir Okasha e Sheila Jasanoff from abroad, to name but some.

The final goal of the new Ph.D. course is to create an internationally-recognised class of scholars with the scientific and philosophical skills and background necessary to face up to three important problems: the philosophical foundations of biology and medicine, the ethical analysis of the consequences of biomedical results and the social impact of biomedicine. “Today, more than ever before, there is a real need for people with these skills” says the course scientific coordinator Giovanni Boniolo, adding: “Not only in Italy, but internationally as well. Philosophy research has a real need to move towards Science and, at the same time, scientists must begin to realize the importance of philosophical reasoning as applied to their field of research. In Europe, the situation is not ideal, as research remains very fragmented, with even high-level researchers finding themselves in isolated working environments. Clearly, both new biomedical research results and the epistemology and ethical discussions relating to them will depend on a radical re-think in the training of

scientists, who need to be able to understand, predict and critically assess the scientific revolution that is taking place.”

The Postgraduate course in “Foundations of life sciences and their ethical consequences” was designed to address this need; its international emphasis is also intended to promote greater unity and exchange of ideas within the scientific community.

### **The European School of Molecular Medicine**

SEMM (European School of Molecular Medicine, [www.semm.it](http://www.semm.it)) is a private foundation established in 2001 by a joint ministerial decree of three Italian Ministries, Health, Finance, and Education & Research.

The main goal of SEMM is to offer advanced training to scientists in the field of Post-Genomics and Molecular Medicine. SEMM intends to create a stable relationship between Basic Research Institutions and Clinic centers. Moreover, thanks to its strong international trait and the high profile of its teachers and scientists aims to:

- provide a new training model that will allow a faster and more efficient knowledge transfer from the bench to the bed side
- promote high qualified training in emerging and rapidly-developing biomedical disciplines by recruiting internationally renowned scientists as SEMM teachers
- encourage the expansion of Italian research institutes in those emerging disciplines so as to create the necessary critical mass of talent and resources to make real progress in the field of Molecular Medicine
- promote the idea that in the near future, molecular medicine will be a powerful tool to integrate technological-scientific progress (molecular drugs) with a new philosophy of approaching patients (tailored treatments)

EMM activities are carried out in two Italian cities, Milan and Naples. Thanks to an agreement with two major Italian Universities, University of Milan and University Federico II of Naples, the school is currently running three joint PhD programs:

- PhD in Molecular Medicine
- PhD in Medical Nanotechnology
- Phd in Foundations of life science and their ethical consequences

Currently SEMM includes 57 teachers in its faculty with a 10% of foreigners and enrolled 103 students with a 20% of foreign students coming from different European and non-European countries.

Moreover, SEMM organizes scientific seminars and international events such as "Meeting on Cancer" and Workshops on specific topics in order to promote research in emerging disciplines, considered crucial for the progress of science and medicine.

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