

## EDUCATION & TRAINING

INT is strongly committed to educating future research scientists and clinicians and is directly engaged in quality education and training. INT offers a wide range of educational activities for clinical and experimental researchers at different stages of their professional experience. PhD studentships, postdoctoral research fellowships, graduate student training, medical residency training, psychology and social work training, as well as continuing medical education are all included in the portfolio of educational opportunities offered to staff and external participants.

Invited lectures, seminars and workshops in a variety of research disciplines related to cancer are regularly arranged. Participants in education and training programs are encouraged to attend also the interdepartmental journal clubs, clinical case discussions and grand rounds as well as other multidisciplinary activities aimed to create interspecialistic knowledge.

### Academic Programs

INT provides education and training at various levels, including undergraduate, graduate as well as postgraduate medical and biotechnology students, physicians, nursing students, and nurses. On the basis of formal agreements with the University of Milan, INT hosts the Chairs of Medical Oncology (Prof Alessandro M. Gianni), Hematology (Prof Paolo Corradini), Medical Statistics and Biometry (Prof

Adriano Decarli), Anesthesiology (Professor Martin Langer) and Pathology (Prof Giuseppe Pelosi). A number of staff members have a joint appointment as professors at the University of Milan and contribute to the regular curriculum at this University. INT hosts the "Postgraduate School in Oncology", the "Postgraduate Medical School in Pathology", and the 3-year degree in "Nursing Sciences" of the University of Milan. Additionally, INT participates in the degree in "Biotechnology and Molecular Medicine in Oncology", as well as in two PhD programs of the University of Milan ("Hematology" and "Medical Biotechnology").

### Doctoral (PhD) training program at INT

The INT is an Affiliated Research Centre of the Open University, Milton Keynes, UK, providing a PhD Program in Life and Biomolecular Sciences. The program run at INT meets the requirements of the Quality Assurance Agency (QAA) for Higher Education Code of Practice INT provides direct support for these training positions and offers fellowship/grants to European Community postgraduate students holding a degree in Medicine, Biological Sciences or Pharmacy.

Students are involved in several activities, including induction courses, generic skills training, journal club meetings, and seminars. At present, 19 students are carrying out their training program as shown below.

### PHD STUDENTS AND RESEARCH TOPICS - OPEN UNIVERSITY, LONDON

#### Buracchi Alessia

Modulation of regulatory T cell suppression in tumors through OX40

#### Anania Maria Chiara

Role of genes differentially expressed in thyroid carcinogenesis

#### Vizioli Maria Grazia

Role of oncogene-induced senescence and DNA damage response in thyroid carcinogenesis

#### Cossa Giacomo

Modulation of sensitivity to platinum compounds in ovarian carcinoma cell systems

#### Boeri Mattia

Exploring the role of microRNA in early lung cancer

#### Catucci Irene

Identification of low penetrance alleles genetic modifiers and mutation analysis in familial breast cancer cases

#### Piovan Claudia

MicroRNAs in breast tissue biology and disease: involvement in development and tumorigenesis processes

#### Santangelo Alessandra

SPARC, a matricellular protein that protect tumors from therapy

#### Sasso Marianna

Biomarkers of aggressive phenotype in triple negative breast cancer

#### Bianchi Francesca

FHIT oncosuppressor gene in carcinogenesis

#### Bortolomai Ileana

Identification and characterization of tumor-initiating cells from gynecological malignancies

#### Bertolini Giulia

Isolation in vitro propagation and characterization of lung cancer stem cells

#### Perego Michela

Phenotypical and functional studies on putative cancer stem cells of human melanoma

#### Zappasodi Roberta

Active and adoptive immunotherapy in indolent lymphoproliferative diseases

#### Colombo Francesca

In vitro analysis of functional polymorphisms modulating individual risk of lung cancer

#### Fruzzanti Elisa

Genome-wide identification of functional polymorphisms modulating individual risk of lung cancer

#### Crippa Elisabetta

Identification of miRNA target gene pairs involved in hereditary breast cancer

#### Passafaro Alfonso

Role of SPARC in inflammation and cancer

#### Rigoni Alice

Mast cells at the interface between external challenges and immune regulation in colitis and colorectal cancer

In 2010, two students were awarded a PhD degree: Paolo Gandellini and Marilena Iorio.

### Masters

- *Academic Master in Epidemiology*. This is a joint appointment with the University of Torino, ISI Foundation and INT Division of Etiologic Epidemiology and Prevention.
- *Master in Rectal Surgery*. INT and ARECO (Association for the European Research in Surgical Oncology) offer a Rectal Surgery Master for medical doctors with Surgery degree.
- *Academic Course in Oncologic Lymphology*. The course is designed for physicians and students graduating in lymphology and oncologic lymphology. The Division of Palliative Care, Pain Therapy and Rehabilitation is the scientific coordinator and is in charge of the educational activities, referred to the Medical Faculty of the University of Milan.
- *Master of Palliative Medicine for Nurses*. Under the direction of the University of Milan and in collaboration with INT, this academic course trains graduated nurses to provide palliative care to patients with cancer diseases.
- *Master in Medical Statistics and Statistical Methods for Epidemiological Research*. MSSME is aimed for graduate with Medicine, Biological Sciences, Physics or Statistics degree. Postgraduate course in biostatistics are also provided. Postgraduate students are often directly involved in research projects coordinated by MSBB members

### Other Courses

The Pathology Department is involved in the training programs of the Postgraduate Medical Schools of Pathology, Endocrinology and Respiratory Medicine (University of Milan) and of the Soft Tissue Pathology, Postgraduate School of Pathology (Insubria University of Varese).

The Anesthesia Department is involved in the training program and residency of the Postgraduate School for Anesthesia and Intensive Care, hosts a number of residents/students and organizes part of the formal teaching in the program of the postgraduate course of the Medical School - University of Milan. Residents in Anesthesia and Intensive Care, Cardiology, Nutritional Support (University of Milan and Milano-Bicocca) work within all the Units of the Department. Many Staff Members have teaching positions or are tutors in postgraduate medical schools or in national/international master programs in Supportive Cancer Care, in Organization, Management and Care in Hospice and in INT Nursing School.

Within the Surgery Department, the Division of Colorectal Surgery is affiliated with the General Surgery Residency Programs of the Milano-Bicocca and Pavia Universities; the

Division of Gastrointestinal and Hepatopancreatobiliary Surgery and Liver Transplantation is a training center for the University of Milan and the Italian College of Surgeons and is chosen for clinical fellowships by many visiting clinicians and surgeons every year. In the area of clinical and training activities, the Plastic and Reconstructive Surgery Unit holds weekly and 3-monthly surgery courses for Italian and foreign surgeons. The Gynecologic Oncology Division is chosen for clinical fellowships by many visiting surgeons from Italy and other countries every year. It also organizes a biennial international meeting, and a gynecologic oncology course with more than 50 participants three times a year. The Otorhinolaryngology Surgery Division has close links with the University, and is involved in postgraduate teaching and supervising of junior medical staff. In collaboration with the Human Morphology Department of the University of Milan, this Division activated two research doctoral degrees to develop a new non-invasive method to evaluate the functionality of the mimetic musculature after iatrogenic damage to the facial nerve. The Division also collaborates with the Otorhinolaryngoiatric School of Specialization of the University of Milan, hosting students for practical training and organizing lessons and courses. The Thoracic Surgery Division collaborates with the General Surgery and Thoracic Surgery School of Specialization of the University of Milan, hosting students for practical training. Many postdoctoral fellows attend the Melanoma and Sarcoma Division that collaborates actively with several medical universities. The Senology Division collaborates with the University of Milan to teaching and research projects.

The Medical Staff of the Diagnostic Imaging and Radiotherapy Department is involved in educational activities cooperating with the University of Milan and Milano-Bicocca in the Radiology, Radiotherapy, and Medical Oncology Specialization Schools, in the "Clinical Application of Nuclear Medicine", Nuclear Medicine School of Specialization. The Radiotherapy Unit also provides tutoring of radiography and radiation technician students.

### Continuing Medical Education Program

The educational and training program promotes professional, cultural and human growth of INT employees. During 2010, the INT ECM Provider has proposed 203 events in the main areas (clinical governance, learning on the job, risks prevention and emergency management, etc.) of ECM-CPD (159 were accredited), attracting the interest and the participation of resident and visiting health professionals. In particular, the educational initiatives included in the Business Formation Plan (BFP) have achieved a total amount of 26,347 formative credits, involving 3,963 people.

## SEMINARS AND CONFERENCES

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### JANUARY

#### **Viktor Umansky**

*Department of Thoracic Surgery, Thoraxklinik, University of Heidelberg, Heidelberg*  
Melanoma immunosuppressive microenvironment in RET transgenic mouse model

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### MARCH

#### **Giuseppe Toffoli**

*Experimental and Clinical Pharmacology Division, The Aviano National Cancer Institute and Center for Molecular Biomedicine, Italy*  
Pharmacogenetics in cancer: Transferring translational research into clinical practice

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### APRIL

#### **Sylvia Janetzki**

*Cancer Vaccine Consortium of the Cancer Research Institute, New York, NY*  
New Developments and Proven Solutions for ELISpot Assays

#### **Anna B. Lach**

*Scientific Consultantul Pawinskiego 5a/D – Warszawa*  
MSCCP technology – a novel approach towards biomarker discovery and personalized medicine

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### MAY

#### **Elizabeth H. Blackburn**

*Morris Herzstein Professor, Department of Biochemistry & Biophysics, University of California, San Francisco*  
Telomeres and telomerase in human health and disease

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### JUNE

#### **W. Nicol Keith**

*Centre for Oncology & Applied Pharmacology, University of Glasgow, Cancer Research UK beatson Laboratories – Glasgow*  
Why is cellular senescence an attractive target for drug discovery?  
and  
Career progression, funding & fellowships & scientific networking in the facebook era

#### **Jan van Oostrum**

*Novartis Institutes for BioMedical Research, Basel*  
Pathway Proteomics using protein Microarrays

#### **Curzio Rüegg**

*Department of Medicine, Faculty of Science, University of Fribourg, Fribourg*  
Tumor-Host interaction in angiogenesis and tumor progression

#### **Giorgio Inghirami**

*Department of Biomedical Science and Human Oncology, Department of Pathology, Center of Experimental Medicine and Research, CeRMS, University of Turin*  
Dissecting the role of ALK in anaplastic large cell lymphoma

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### JULY

#### **Peter B. Bach**

*Memorial Sloan-Kettering Cancer Center - Epidemiology and Biostatistics Department - NY*  
The International meta-analysis on lung cancer screening: recent data

**Bice Bruppacher**

*CovalX AG, CH-8952 Schlieren, Switzerland*

High-mass MALDI-TOF mass spectrometry and chemical cross-linking for interaction analysis

**Ian G. Mills**

*Uro-Oncology Research Group, Cancer Research UK Cambridge Research Institute, Li Ka Shing Centre, Robinson Way, Cambridge*

Transcriptional regulation of metabolism, stress responses and autophagy in prostate cancer

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**SEPTEMBER**

**Adrian Harris**

*The Weatherall Institute of Molecular Medicine, University of Oxford*

Mechanisms of response and resistance to anti-angiogenesis therapy

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**OCTOBER**

**Wilhelm Engström**

*Division of Pathology, Pharmacology and Toxicology, Department of Biosciences and Veterinary Public Health, Faculty of Veterinary Medicine, Swedish University of Agricultural Sciences, Uppsala*

Scaffold proteins and the control of cell proliferation in normal and malignant cells

**Dieter Fuchs**

*VisualSonics Inc.*

Presentation on high-resolution in vivo micro-imaging for small animal research

**John A. Ryals**

*Metabolon, Inc., Durham, North Carolina*

Global metabolism: non-targeted metabolomic analysis platform and its application in biological research

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**NOVEMBER**

**Phillip Beckhove**

*Translational Immunology Unit, German Cancer Research Center, Heidelberg*

Regulation of T-Cell response in cancer patients

**Chiara Malinverno**

*Department of Anatomy, Pharmacology and Forensic Medicine, University of Parma, Parma*

The role of TRAIL in apoptosis and differentiation

**Daniel Peeper**

*Molecular Genetics, The Netherland Cancer Institute, Amsterdam*

Unraveling cancer cell signaling networks & screening for novel drug targets

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**DECEMBER**

**Irene Chiolo**

*Lawrence Berkeley National Laboratory Life Sciences Division Berkeley, CA*

Spatial and temporal regulation of double-strand break repair in heterochromatin and its role in genome stability