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EDUCATION & TRAINING

INT is strongly committed to educating future 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 careers. 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 interdepartmental journal clubs, clinical case discussions, and grand rounds as well as other multidisciplinary activities aimed to create cross-specialty 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, who in 2012 became Coordinator of the PhD School of Experimental Hematology Program at the University of Milan), Medical Statistics and Biometry (Prof Adriano Decarli), Anesthesiology (Prof Martin Langer), and Pathology (Prof Giuseppe Pelosi). A number of staff members have joint appointments as professors at the University of Milan. 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 at the University of Milan (Hematology and Medical Biotechnology).

DOCTORAL (PhD) TRAINING PROGRAM AT INT

INT is an Affiliated Research Center of the Open University, Milton Keynes, UK, providing a PhD Program in Life and Biomolecular Sciences. The program run at INT is regularly monitored to ensure that it 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, data sessions, and seminars.

MASTERS

INT offers a range of highly specialized Master Courses.

• In 2012, Dr Mazzaferro in collaboration with the University of Milano – Bicocca, organized the 7th edition of the Master Course (2nd level) in Organ Transplantation Medicine.
• Academic Master in Epidemiology. This is a joint appointment with the University of Turin, 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 a 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
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, hosting a number of residents/students and organizing part of 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. Within the Surgery Department, the Unit of Colorectal Surgery is affiliated with the General Surgery Residency Programs of the Milano-Bicocca and Pavia Universities; the Unit 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 holds very sought-after weekly and 3-monthly surgery courses for Italian and foreign surgeons. The Gynecologic Oncology is chosen for clinical fellowships by many visiting surgeons from Italy and abroad 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 has close links with the University, and is involved in postgraduate teaching and supervision of junior medical staff. In collaboration with the Human Morphology Department of the University of Milan, this Unit 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 Unit also collaborates with the Otorhinolaryngological School of Specialization of the University of Milan, hosting students for practical training and organizing lessons and courses. The Thoracic Surgery 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 Unit that collaborates actively with several medical universities. The Senology Unit collaborates with the University of Milan in 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 of the 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 2012, the INT ECM Provider has proposed 178 events in the main areas
Education & Training

(clinical governance, on the job learning, risks prevention, and emergency management, etc.) of ECM-CPD (151 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 34,371 formative credits, involving 4108 individuals.

OPEN UNIVERSITY PhD STUDENTS AND THEIR RESEARCH TOPICS

Mattia Boeri Exploring the Role of microRNA in Early Lung Cancer
Irene Catucci Identification of Low-Penetrance Alleles Genetic Modifiers and Mutation Analysis in Familial Breast Cancer Cases
Alessandra Santangelo SPARC, a Matricellular Protein that Protect Tumors from Therapy
Marianna Sasso Biomarkers of Aggressive Phenotype in Triple Negative Breast Cancer
Alice Rigoni Mast Cells at the Interface between External Challenges and Immune Regulation in Colitis and Colorectal Cancer
Davide Bernareggi Conversion of AFRA Fab into a Fully Human Monoclonal Antibody Directed against Folate Receptor α: in vitro and in vivo Studies
Daniele Lecis Inhibitors of Apoptosis Proteins (IAPs) as Targets for Anti-Cancer Treatment
Ilaria Torselli The Influence of Tumor Microenvironment on Osteosarcoma
Gaia Ghedini Role of Δ16HER2 Splice Variant in Response to Drug Targeting HER2 Receptor

Sara Ciceri Molecular Characterisation of Wilms Tumor
Alice Dassano Expression Networks and Effectors of Genetic Susceptibility to Lung Cancer in Mice
Elvira D’Ippolito The Role of microRNAs in Triple Negative Breast Cancer
Emanuela Fina Biological and Clinical Significance of Circulating Tumor Cells in Breast Cancer
Olga Kochuk Interference of pH Regulators as an Immunomodulating Therapeutic Strategy for Liver Cancer
Emanuela Minna miRNA Deregulation in Thyroid Carcinogenesis: in vitro Models to Study Molecular Mechanisms and Functional Effects
Valentina Prolumo Functional Role of miR-205 in Normal and Malignant Human Prostate
Andrea Tamirotti Identification of Early Biomarkers of Neoplastic Transformation in Mouse Tumor Models of Breast and Prostate Carcinogenesis

In 2012, 6 students were awarded a PhD degree: Mariachiara Anania, Alessia Burocchi, Giacomo Cossa, Claudia Piovan, Alfonso Passafaro, and Maria Grazia Vizioli

In addition to the students enrolled in the Open University Program, INT hosts PhD students from diverse institutional and disciplinary backgrounds, mainly registered in PhD Courses with Italian Universities. The Preventive and Predictive Medicine Department hosts Doctoral Students enrolled in the School of Biomedical, Clinical and Experimental Sciences UNIMI: Nicolò Bassani, Marco Fornili, Elena Landoni, Annalisa Orenti, Maddalena Plebani, Valentina Rosato, Maria Giovanna Scarale, Letizia Trevisi, and Federica Turati.

The Surgery Department hosts Students from the UNIMI Doctoral School in Physiopathological Sciences: Simone Furia, Leonardo Duranti, Andrea Billè, and Nicola Rocco (fellowship granted by the Fondazione Adele e Bruno Onlus).

Attending the Medical Oncology Department are the following doctoral students from the UNIMI School of Clinical and Experimental Biomedical Sciences: Anisa Bermema and Silvia Gimondi. The Palliative Care, Pain Therapy, and Rehabilitation Unit hosts Cinzia Brunelli, a PhD student registered in a Program in Palliative Care at the Norwegian University of Science and Technology [Trondheim].

The Department of Experimental Oncology and Molecular Medicine hosts the following doctoral students: Elena Fusar Poli (Dept BICOM and Neuroscience Center, Insubria University of Varese), Chiara Alberti, Barbara Frigerio, Anna Granata, Katia Rea, Alessandro Satta, and Marcella Tazzari (all registered with the UNIMI Doctoral School in Biological and Molecular Sciences), Alessandra Meini (Doctoral school in Morphological, Physiological, and Sport Sciences), Alessandra Cataldo, Annalisa Conti, Giulia Grazia, Valentina Uva (School of Clinical and Experimental Biomedical Sciences UNIMI), Maurizio Callari, (Doctoral School in Biomedical Sciences and Oncology, University of Turin), Valeria Musella (School of Clinical and Experimental Biomedical Sciences, UNIMI).
SEMINARS AND CONFERENCES

JANUARY

ALBERTO BARDELLI
IRCC, University of Torino, School of Medicine
Targeted therapies for colorectal cancer

MICHELANGELO CORDENONI
Dipartimento di Istologia, Microbiologia e Biotecnologie Mediche, Università di Padova
The hippo transducer TAZ confers cancer stem cells properties to breast cancer cells downstream to EMT and cell polarity

PIER LUIGI IOLINI
Department of Hematology and Oncology Sciences, University of Bologna, Bologna
HER-2: mouse, humans and chimeras

JÜRGEN RULAND
Institut für Molekulare Immunologie Klinikum rechts der Isar, Technische Universität München, München
Antigen receptor signaling in lymphoma-genesis

FEBRUARY

MIGUEL MANO
ICGEB – International Centre for Genetic Engineering and Biotechnology, Trieste, Italy
Gene discovery by high-throughput screening using genome-wide siRNA and miRNA libraries

ROSSANA SCAVELLI
Field Applications Scientist, Illumina Italy
Whole genome genotyping: infinium and golden gate assay overview

MARCH

ARI BARZILAI
Department of Neurobiology, George S. Wise, Tel Aviv University, Tel Aviv, Israel
The effects of malfunctioning DNA damage response on the neuro-glia-vascular unit functionality

PAOLA DE Filippi
Molecular Biotecnology Centre, Università di Torino
Integrins and integrin-adaptor proteins in tumor progression

RACHEL HARPER
European Sales Development Executive, Oxford Gene Technology, Begbroke Science Park, Sandy Lane, Yarnton, Oxford
Identifying causative mutations in cancer, rare disease and family trio samples using NGS

JOOP GAKEN
Department of Haematological Medicine, King’s College London, London, UK
A functional assay for microRNA target identification and validation in cancer

JEAN-FRANÇOIS RIOU
Laboratoire de Régulations et Dynamique des Génomes, INSERM-CNRS UMR.
Muséum National d’Histoire Naturelle. Paris, France
Effects of G-quadruplex ligands at telomeric ends

APRIL

ROSA MARIA MORESCO
IBFM-CNR, Istituto Scientifico San Raffaele, Università di Milano Bicocca. Milano
PET molecular imaging in translational research

FRANCESCA DEMICHELI
Università degli Studi di Trento
Functionally active copy number variants and prostate cancer risk

MICHAEL JANES, PHD
Senior Manager, Research and Development, Molecular Probes®
Labeling and detection strategies in fluorescence microscopy
**MAY**

VINCENT GUARINO  
Institute of Composite and Biomedical Materials (IMCB), National Research Council of Italy  
**Multifunctional scaffolds for tissue engineering: tailoring properties from micrometric to nanometric scale**

MARK HEWITSON  
Genomic Specialist Thermo Fisher Scientific  
**Introduction to siRNA. An overview about gene silencing and possible strategies to improve siRNA specificity. RNAi experimental workflow, controls and example from the literature**

**JUNE**

FRANCESCO DI MICHELE  
Università degli Studi, Trento, and Associate Professor in Pathology and Laboratory Medicine. Assistant Professor in Computational Biomedicine. Weill Cornell Medical College, New York, USA  
**Functionally active copy number variants and prostate cancer risk**

FRANCESCA GRANUCCI  
Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy  
**Deciphering the complexity of activatory and tolerogenic functions of dendritic cells**

HERVÉ CHAULIE  
Field Application Scientist. Agilent  
**Agilent CGH and CGH-LOH arrays in clinical and cancer research**

JOAN KNOLL  
University of Western Ontario, London, Ontario, Canada  
**Genomic stability in breast cancer: implications for pharmacogenetics**

PETER ROGAN  
University of Western Ontario, London, Ontario, Canada  
**Interpreting functionally significant non-coding variants of uncertain significance in genome scale sequence analysis**

STUART S. MARTIN  
Marlene and Stewart Greenebaum NCI Cancer Center University of Maryland School of Medicine, Baltimore, USA  
**Targeting the cytoskeletal physics of circulating breast tumor cells to reduce metastasis**

**JULY**

STEFAN COSTINEAN  
Department of Pathology, Comprehensive Cancer Center, Wexner Ohio State Medical Center, Columbus Ohio, USA  
**Decreased hematopoiesis in miR29ab1 deficient mice**

PETER JULIAN DYSON  
Department of Immunology, Division of Medicine, Imperial College, London, UK  
**The T cell receptor uses antibody-like recognition to engage MHC-peptide ligands**

HERBIE NEVILLE  
Cancer Therapeutics, Northern Institute for Cancer Research, University of Newcastle, UK  
**40 Years of cancer research – from chemical warfare to patient welfare**

SUGHRA RAZA  
Radiology Harvard Medical School – Breast Imaging, Department of Radiology, Brigham & Women’s Hospital, USA  
**Using the BI-RADS lexicon for organization and clarity**

MAHVAH TAVASSOLI  
Molecular Oncology, King’s College London. Guy’s Hospital, London, UK  
**Targeted therapeutics and predictive biomarkers for customizing treatment of head and neck cancer patients**

**AUGUST**

ANNA BERGAMASCHI  
Department of Molecular and Integrative Physiology, University of Illinois and College of Medicine at Urbana-Champaign, IL, USA  
**14-3-3z role in tamoxifen associated development of endocrine resistance in breast cancer**
OCTOBER

PIONEERING SOLUTIONS FOR HUMAN IPS CELL RESEARCH
OLIVIER FERAUD, PHD, University Paris-Sud, France
Practical approach for successful reprogramming and associated quality controls
SEBASTIAN KNOBEL, PHD, R&D Miltenyi Biotec, Germany
Streamlining the iPS workflow from reprogramming to differentiation
CLAUDIA BEARZI, PHD, Multimedica SpA - IRCCS Multimedica, Milano, Italy
Post-natal cardiomyocytes can generate iPS cells with an enhanced cardiomyogenic capacity
DAVID HAY, PHD, University of Edinburgh, UK
Deriving metabolically active and predictive hepatocytes from pluripotent stem cells
CHIARA VERPELLI, PHD, CNR Institute of Neuroscience, Milano, Italy
Self-renewing neuronal progenitors from human iPS cells as model to study neuro-developmental disorders
VANIA BROCCOLI, PHD, San Raffaele Scientific Institute, Milano, Italy
Direct lineage conversion of human skin fibroblasts into functional dopaminergic neurons

NOVEMBER

GIAN CARLO AVANZI
Medicina e Chirurgia d’Accettazione e d’Urgenza, AOU Maggiore della Carità di Novara, Dipartimento di Medicina Traslazionale. Università del Piemonte Orientale A. Avogadro, Italy
Gas6 and TAM receptors: multiple roles in cellular interactions
TIMOTHY M. THOMSON
Department of Cell Biology, Barcelona Institute of Molecular Biology, Consejo Superior de Investigaciones Científicas (CSIC), Barcelona, Spain
Metastasis as a consequence of interplays between epithelial and mesenchymal programs of tumor cells

DECEMBER

W. NICOL KEITH
Institute of Cancer Sciences, University of Glasgow, CRUK Beatson Laboratories Glasgow, UK
Screening strategies to unlock targets for senescence drug discovery