UNIVERSITÀ DEGLI STUDI DI MILANO

VIRGILIO PROGRAM

LIST OF LABS & RESEARCH PROJECTS – 2022-23 - UNIMI

NAME OF THE LAB	LAB PI	RESEARCH PROJECTS
The Laboratory of Metabolic Liver Diseases Research, currently located at the Ospedale Policlinico, Department of Pathophysiology and Transplantation, UNIMI	Luca Valenti Luca.valenti@unimi.it	* EPIDEMIC-FLD: Exome sequencing and Protein characterization for the IDEntification of Mutations and pathways Involved in Fatty Liver Disease * Impact of whole exome sequencing on the clinical management of patients with advanced nonalcoholic fatty liver and cryptogenic liver disease * The Liver BIoBank Lombardia gEnomic cohort study (LIVER-BIBLE): personalized medicine for the management of hepatic and cardiovascular thrombotic complications of fatty liver * Validation of a genetic risk score predicting hepatic fat accumulation and its complications in healthy individuals with metabolic risk factors * Study for the Evaluation of Risk of hEpatocellular carcinoma in NonAlcoholic fatty liver (SERENA): A multicenter prospective cohort study for the evaluation of the interaction between congenital and acquired risk factors in the pathogenesis of hepatocellular carcinoma in patients with nonalcoholic fatty liver and disease risk stratification * FOGS: Fondazione Genomic Study COVID-19. Identification of the genetic determinants and the mechanism of the susceptibility to develop

		severe COVID-19 for risk stratification improvement and development of novel therapeutic approaches.
Unit of Clinical and Experimental Immunology Department of Medical Biotechnologies and Translational Medicine, UNIMI	Domenico Mavilio domenico.mavilio@unimi.it	1) Immune Reconstitution after haematology Bone marrow Transplantation: impact on clinical outcomes and development of nobel therapeutic approach. 2) Innate immune resins in mielodysplastic syndromes. 3) Innate immune responses in the physiopathology of solid tumors (liver cancers, ADK colon, glioblastoma) 4) Innate immune responses in auto inflammatory and autoimmune diseases 5) Idiopathic thromboembolism All these project are performed in human settings For all the related info on the lab and its project of translational immunology: https://www.humanitas-research.org/groups/domenico-mavilio-group/
LABORATORY OF MOLECULAR VIROLOGY	Serena Delbue serena.delbue@unimi.it	- Unravelling the role of the Human Endogenous Retroviruses in the colon cancer tumorigenesis - Study of the reactivation of the Human polyomaviruses in immunocompromised patients - Study of the antiviral properties of artemisinin derivatives drugs

		- Isolation of SARS-CoV-2 from biological sample; study of anti-SARS-CoV-2 activity of several drugs and materials; study of the neutralization activity of sera and vaccines against SARS-CoV-2.
LAB of Infectious Diseases- dept of Health sciences, University of Milan San Paolo hospital	Giulia Marchetti giulia.marchetti@unimi.it	Research on HIV infection: 1. Gut Mucosal immunology of HIV+ patients in different stages of disease (with major focus on acute HIV infection. 2. Gut microbioma in HIV+ patients. 3. Immune phenotype and function in HIV+ patients undergoing different antiretroviral therapies. Research on COVID-19: 1. Immune correlates of disease severity in COVID-19 patients. 2. Immune correlates of Post-Acute COVID-19 Syndrome (PACS). 3. Characterization of the immune response to anti-SARS-COV2 vaccine in different cohort of patients
Biochemistry and Molecular Biology Laboratory Health Science Dipartment, H.San Paolo	Paola Signorelli paola.signorelli@unimi.it	1. Pathological role of lipid metabolism in Cystic Fibrosis: from thereapeutic adjuvants to lung transplant rejection 2. Proteostasis and lipidostasis in Parkinson's disease : innovative strategies to reduce neurodegeneration 3. Lipid metabolism in myocardial ischemia reperfusion injury
Clinical microbiology	Elisa Borghi Elisa.Borghi@unimi.it	Neurodevelopment and Microbiota The role of microbiota in drug-resistant epilepsy

		Overcome biofilm-related Candida antifungal tolerance Addressing the new mycological challenge: Candida auris resistance and environmental persistence.
The Laboratory of Genomics Technologies Department of Medical Biotechnologies and Translational Medicine, University of Milan), Palazzo LITA,Segrate (Milan).	Cristina Battaglia cristina.battaglia@unimi.it	Genomic technologies and application in personalized medicine Exploitation of genomic databases and bioinformatics web tools RNAseq analysis in cellular and animal model Pathways analysis to understand the molecular and biochemical bases of human diseases (cancer, rare and multifactorial diseases) Investigating the role of non codingRNA in age-related diseases (in collaboration with prof.Marco Venturin, Biometra)
Unit of Immunotherapy and Anticancer Innovative Therapeutics, Fondazione IRCCS Istituto Nazionale Tumori	Massimo Di Nicola Massimo.DiNicola@istitutotumori.mi.it>	Implementation of a translational research program of adoptive cell therapy with CAR T cells in solid tumors; Isolation, immunophenotypic characterization and expansion of anti-tumor T lymphocytes from the peripheral blood of patients with solid tumors; Exploitation of new epigenetic circuits controlled by the transcriptional repressor BCL6 in Triple Negative Breast Cancer; The role of TRK receptors in Glioblastoma stem cells.

Laboratory of Molecular and Cellular Biology Applied to Neurodevelopmental Disorders	Nicoletta Lansberger (together with Angelisa Frasca) nicoletta.landsberger@unimi.it angelisa.frasca@unimi.it	Study of the efficacy of Neural Precursor/Stem Cell (NPCs) in Rett syndrome and searching for the secreted therapeutic molecules Analysis of the cerebellar defects in a mouse model of Rett syndrome and development of novel pharmacological approaches Searching for novel molecular targets in Mecp2 null defective astrocytes for the treatment of Rett syndrome In vitro study of cell-cell communication in Rett syndrome. Identification and characterization of novel modifier genes of Rett syndrome.
Locomotion Physiomechanics Lab	Alberto Minetti aminetti@icloud.com	- joint friction in health, sport and disease: effects in locomotion economy - human locomotion on extra-terrestrial celestial bodies: hypogravitational emulation cavedium - partitioning muscle activity in alpine skiing: EMG, GPS and geodetic track altimetry as experimental tools
Lab of Functional Anatomy of the Stomatognathic System	Chiara Sforza (together with Claudia Dolci, Daniele Gibelli, Annalisa Cappella, Andrea Palamenghi) Chiarella.sforza@unimi.it Claudia.dolci@unimi.it Daniele.gibelli@unimi.it	3D analysis of the craniofacial structures in healthy subjects and patients

	annalisa.cappella@unimi.it andrea.palamenghi@unimi.it	
Lab of Movement Analysis	Chiarella Sforza (together with Claudia Brunetti, Matteo Zago, Rodrigo Rabello da Silva) Chiarella.sforza@unimi.it Claudia.brunetti@unimi.it Matteo.zago@unimi.it Rodrigo.rabello@unimi.it	- 3D analysis of human movement in sport and exercise - 3D analysis of human movement
Biochemistry and Molecular Biology Laboratory Health Science Department, San Paolo Hospital	Anna Caretti Anna.Caretti@unimi.it Tutor: Dr. Michele Dei Cas	Hepatic tumor-derived extracellular vesicles as critical players in cancer immune escape Modulation of the sphingolipid metabolism as anti-fibrotic strategy in glaucoma affected patient
UOC CHIRURGIA DELLA MANO- Ospedale San Giuseppe, Multimedica	Giorgio Pajardi giorgio.pajardi@unimi.it Elena Mantovani (Secretary) elena.mantovani@multimedica.it	Studio clinico Regenskin: studio clinico per la valutazione dell'efficacia del prodotto medicinale caratterizzato da piastrine e cellule staminali nel trattamento delle lesioni da pressione o ulcere da decubito.
STEM CELL LABORATORY- Department of Pathophysiology and Transplantation,	Y. Torrente yvan.torrente@unimi.it	Studio clinico per la produzione di iPSCs da fibroblasti per la terapia dell'epidermiolisi bollosa

Ospedale maggiore Policlinico		
Lab of Molecular and Cellular Hematology, Bone Tarrow Transplantaion Unit, Fondazione IRCCS Istituto NazionaleTumori Milano	Paolo Corradini paolo.corradini@unimi.it Carniti Cristiana Cristiana.Carniti@istitutotumori.mi.it	1. From Molecular Pathogenesis to Prognostic and Therapeutic Targets in Peripheral T-cell Lymphoma 2. CAR T CELL THERAPY FOR AGGRESSIVE LYMPHOMAS: monitoring feasibility, efficacy and toxicity biomarkers 3. Optimizing the management of lymphoma patients in the era of precision medicine: a prospective study using the liquid biopsy for disease outcome prediction and monitoring by assessment of clonotypic IGH rearrangement and circulating tumor DNA genotyping
Leukocyte Biology Lab	Massimo Locati Massimo.Locati@humanitasresearch.it	Dissecting the relative contribution of distinct Tumor-Associated Macrophage subsets in glioblastoma progression (appropriate for lab rotation and thesis) Macrophage plasticity: molecular constrains and potential intervention (appropriate for lab rotation, not for thesis)
Laboratory of Biotechnological Applications Department of Biomedical, Surgical and Dental Sciences IRCCS Istituto Ortopedico Galeazzi	Anna Teresa Brini anna.brini@unimi.it together with Chiara Giannasi chiara.giannasi@unimi.it Stefania Niada stefania.niada@grupposandonato.it	Characterization of soluble and extracellular veiscles-associated factors of Adipose- derived stromal cells (hASCs) secretome Effect of hASCs conditoned medium in *in vitro* and *in vivo* model of osteoarthritis (OA) Priming strategies to increase the therapeutic potential of ASC secretome

Neural Stem Cell Lab	Prof. Stefania Corti stefania.corti@unimi.it Monica Nizzardo monica.nizzardo1@gmail.com	- Generation of 3D spinal cord and brain models to study motor neuron disorders (PI: Prof. Corti) - Gene therapy in spinal muscular atrophy with respiratory distress type 1 (SMARD1) in vitro and in vivo models (PI: Dr. Nizzardo) - Combined gene therapy approach for Charcot-Marie-Tooth Neuropathy Type 2A (CMT2A): in vitro and in vivo models (PI: Dr. Rizzo) - Study of C9ORF72-related pathogenesis in ALS patients' specific iPSC-derived lines (PI Prof. Corti) - Study of the role of stahtimn 2 in the pathogenesis of Spinal Muscular Atrophy (SMA) (PI Dr. NIzzardo) - Neural Stem Cells transplantation in murine cortex as a therapeutic approach for ALS (PI Prof. Corti)
Lab of Psychoimmunopharmacology and stress-related diseases	Raffaella Molteni raffaella.molteni@unimi.it Tutor- Dr. Vittoria Spero vittori.spero@unimi.it	Cross-talk between neuroinflammation and redox system in the vulnerability and resilience to stressful experience Involvement of redox system in the mechanism of action of antidepressant and antipsychotic drugs Role of inflammation in stress-induced depressive phenotype and in the mechanism of action of antidepressant drugs

Lab "Servizio per la diagnosi e lo studio delle anomalie genomiche" Department of Medical Biotechnologies and Translational Medicine, University of Milan), Building LITA, Segrate (Milan). http://www.analisidna.unimi.it/index.html	Paola Riva Paola.riva@unimi.it Tutors: Emanuela Martinoli, Viviana Tritto, Paola Bettinaglio	Cytogenetics and molecular Genetics of chromosomal and monogenic diseases. Study of molecular mechanisms involved in variable expressivity of Noonan Syndrome Unsolved challenges in neurofibromatosis type 1: the search for novel clinical and molecular predictors for spinal neurofibromatosis diagnosis and management Not only haploinsufficiency in NF1 microdeletion (MD) syndrome: looking at pseudo-dominance and position effect for a personalize medicine
Immunobiology Lab	Biasin Mara Mara.biasin@unimi.it Daria Trabattoni Daria.trabattoni@unimi.it	Molecular mechanisms responsible for natural resistance to viral infections Photobiology: electromagnetic spectrum effect on pathogen inhibition and inactivation ERAP1 and ERAP2 role on natural and acquired immunity in viral infections Roles of SARS-CoV-2 accessory proteins on host adaptation and the modulation of immune responses Immune responses to vaccines in HIV-infected patients Immune checkpoints in lung transplant New therapeutic approaches to prevent rejection after lung transplant Immuno-virological dynamics triggered by anti-HIV therapy suspension

Laboratory of hematology, University of Milan, Ospedale Policlinico.	Niccolò Bolli niccolo.bolli@unimi.it	genomic characterisation of monoclonal gammopathies to uncover genotypic determinants of the tumor phenotype, prognostic markers of progression and predictive markers of treatment response.
Lab of Endocrine Metabolic Research (LEMR), IRCCS Istituto Auxologico Italiano, Via Zucchi 18 – 20095 Cusano Milanino (MI)	Luca Persani luca.persani@unimi.it	Genetic/epigenetic origin of endocrine diseases Zebrafish models of rare thyroid diseases
	Laura Fugazzola	Molecular tools for the diagnosis and treatment of thyroid cancers Searching for molecular mechanisms responsible for raioiodine refractoriness in advanced thyroid caner In vitro models for the development of new compounds for advanced thyroid cancer
	Marco Bonomi	Unraveling the complex genetic basis of Congenital GnRH Deficiency using WES, bioinformatic, in vitro and in vivo models
	Iacopo Chiodini	Roles of glucocorticoids secretion, tissue activation and peripheral sensitivity in obesity, hypertension, diabetes and osteoporosis
	Giovanni Vitale	Development of new therapeutic strategies in neuroendocrine tumors: from in vitro to zebrafish

The Laboratory of Precision Medicine of Neurological Diseases, currently located at the Ospedale Policlinico, Department of Pathophysiology and Transplantation, and LITA building in Segrate	Filippo Martinelli Boneschi: filippo.martinelli@unimi.it Skype: filippo.martinelli.boneschi Email: filippo.martinelli@unimi.it Twitter: @fmartinelli71	- MULTIPLEMS (dry project): analysis of genome-wide association data of imputed SNPS associated with response to treatment in an international cohort of drug-treated patients with Multiple Sclerosis. - API (wet and dry project): assessment of the role of environmental pollutants in triggering epigenetic changes and inflammatory activity in a cohort of patients with Multiple Sclerosis. - PEDIGREE (wet and dry project): characterization of genetic, epigenetic and microbiota composition in a cohort of pediatric cases of Multiple Sclerosis collected in a multicentric Italian cohort study
	Edoardo Villani edoardo.villani@unimi.it	