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Luca Agnelli

- ## RESEARCH PROFILE HIGHLIGHTS AT-A-GLANCE

Brief biographical sketch.

Graduated in **Biological Science** and **PhD** in Experimental Hematology, since 2002 I have been involved in bioinformatic and biostatistic research in the whole spectrum of **–omics analyses of hematologic and solid tumors**. Thanks to my participation in several AIRC projects as personnel/collaborator, I have established proficient collaborations with researchers of national and international relevance in clinical and biostatistics/bioinformatics fields, as documented by the publication track.
Currently, I am employed at the **Istituto Nazionale Tumori (INT), in Milan, as senior bioinformatician**, at the Department of Innovation Diagnostics, headed by G. Pruneri, where I coordinate the **bioinformatics group** (with 8 people involved to date)**;** and at the Department of Medical Oncology 1, headed by F. De Braud, where I am recipient of the "SMART Experimental Cancer Medicine Trials eNABLED" Accelerator Award project for the **digitisation of experimental cancer medicine** trials and the translatability of pre-clinical observations. Specifically, I contribute to the development of PROACT2.0 application for patient-to-medical-team communication improvement in early-phase trials, adopted in several INT projects and within the UE H2020 CCE-DART project since 2024.
In 2023, I have been appointed by the Scentific Directorate as **co-coordinator of the Line 2 of Institutional "Ricerca Corrente" funds** from the Ministry of Health for the current 3-year project.
I am involved in the technical administration of the institutional **High-Performance Computing (HPC) platform**. I am referral for the **NGS data analysis pipelines** in the context of the institutional **Molecular Tumor Board (MTB)**, for the molecular pathology diagnostic procedure aimed at personalized treatment of advanced tumors. Within the **Advisory Board for the Communication** of the INT Scientific Directorate, I have contributed to develop the renewed **Institutional website** for the Research group. I act as coordinator for the development of a cloud platform for the storage, analysis and monitoring of demographical, molecular, clinical and treatment data of **Italian MTBs in collaboration with CINECA (project MTB-VCS-ITA)**. I am **section Editor** of "non-codingRNA"and "Tumori" journals, member of the board of "Exploration of Targeted Anti-tumor Therapy" journal. **Adjunct professor from 2008 to 2010 at the Univ of Milano-Bicocca**, MS in Bioinformatics, I have been considered eligible to be appointed in the **ASN fields 05/F1, 05/E2, 06/N1, 06/D3 by the Italian Ministery of University and Research**. I have been awarded by "Young Researchers" Award, G. Berlucchi Foundation, in 2006 (1st placed) and "Under40 in hematology" award in 2013 (3rd placed). To date, I am author of **109 peer-reviewed publications** (**h-index: 44**, >4500 citations as of May 2024), three book chapters and one e-book.

- ## WORK EXPERIENCE

11/02/2020 – CURRENT Milan, Italy
SENIOR BIOINFORMATICS RESEARCHER INNOVATION DIAGNOSTICS AND MEDICAL ONCOLOGY 1 DEPARTMENTS - IRCCS NATIONAL INSTITUTE OF CANCER

Website https://www.istitutotumori.mi.it/web/guest/s.c.-anatomia-patologica-2

ACADEMIC APPOINTMENTS

12/2013 – 30/12/2019 Milan, Italy
RESEARCH GRANT - POST-DOC POSITION IN BIOINFORMATICS AND BIOSTATISTICS RESEARCH IN CANCER UNIVERSITY OF MILAN - DEPARTMENT OF ONCOLOGY AND HEMATO-ONCOLOGY

Post-doc research grants - art. 22 L. 240/2010:from 01.01.2014 to 31.12.2014; from 01.01.2015 to 31.12.2015; from 01.01.2016 to 31.12.2016; and from 01.01.2017 to 31.12.2017 on AIRC 5x1000 funds.from 01.01.2018, on going: on AIRC 2015-2018 IG16722 funds

07/2003 – 12/2004 Milan, Italy
FIXED-TERM CONTRACT FOR RESEARCH ACTIVITY ON HEMATOLOGIC MALIGNANCIES AND BIOINFORMATICS UNIVERSITY OF MILAN - DEPARMENT OF MEDICAL SCIENCES

Fixed-term project-oriented employement contract - F.I.R.B. fund from Italian Ministry for University and Research on the topic: "Multiple Myeloma: molecular alterations and neoangiogenesis"

OTHER APPOINTMENTS

12/2010 – 12/2013 Milan, Italy
FELLOWSHIP FOR BIOINFORMATICS AND BIOSTATISTICS RESEARCH IN CANCER FONDAZIONE IRCCS CA' GRANDA OSPEDALE MAGGIORE POLICLINICO

Felloships on the following topics: "Microarray analysis of deregulated micorRNAs in multiple myeloma associated with disease progression and prognosis" and "Clinical and biological relevance of non-coding sequences (miRNA) in plasma cell dyscrasias"

12/2013 – 03/2014
FELLOWSHIP FOR BIOINFORMATICS AND BIOSTATISTICS RESEARCH IN CANCER SOCIETÀ ITALIANA EMATOLOGIA SPERIMENTALE

Research fellowship on "Integrative genomics and high-throughput sequencing apporaches to unravel relevant micoRNAs in the biology and clinical outcome of multiple myeloma"

12/2007 – 12/2010 Milan, Italy
FELLOWSHIP FOR BIOINFORMATICS AND BIOSTATISTICS RESEARCH IN CANCER F.I.R.C. - FONDAZIONE ITALIANA RICERCA SUL CANCRO

Fellowship on the project: "Genome, transcriptome and regulatory networks in multiple myeloma: integrative analysis of microarray data"

12/2004 – 12/2007 Milan, Italy
FELLOWSHIPS FOR RESEARCH ACTIVITY IN HEMATOLOGIC MALIGNANCIES AND BIOINFORMATICS FONDAZIONE IRCCS CA' GRANDA OSPEDALE MAGGIORE POLICLINICO

Fellowships on the following topics: "Molecular pathogenesis of multiple myeloma: role of the MMSET gene involved-in t(4;14) translocation"; "Global gene expression profiling of multiple myeloma: clinical insights into the bio-diversity of the disease"; "Genomic profiling (array-CGH) and gene expression (GEP) combined analysis for the prognosis and identification of new therapeutic targets: application to the study of multiple myeloma."

01/2002 – 07/2003 Milan, Italy
FELLOWSHIP FOR RESEARCH ACTIVITY ON HEMATOLOGIC MALIGNANCIES FONDAZIONE IRCCS CA' GRANDA OSPEDALE MAGGIORE POLICLINICO

Fellowships on the following topics: "Immunophenotypic and molecular genetic study in multiple myeloma and MGUS", "Monitoring of the disease in patients with hematologic malignancies: real-time quantitative PCR analysis of specific genetic lesions"

TEACHING APPOINTMENTS

2007 – 2010 Milan, Italy
FIXED-TERM CONTRACT AS ADJUNCT PROFESSOR/EXTERNAL FACULTY MEMBER UNIVERSITY OF MILANO-BICOCCA

Teaching activity:
- for the academic years 2008-2009 lab-assistant in the Immunogenomics course helded by Prof. P. Ricciardi Castagnoli and Dr. F. Zolezzi, University of Milano-Bicocca, Master of Science in Bioinformatics
- for the academic years 2009-2010 Adjunct Professor/External Faculty Member in the Immunogenomics course at the University of Milano-Bicocca, Master of Science in Bioinformatics.

11/2000 – 12/2001 Novara, Italy
SPECIAL EDUCATION TEACHING NOVACOOP

Training in secondary schools and information events on biotechnology in the agro-food field

12/2000 – 06/2001 Magenta, Italy
SECONDARY EDUCATION TEACHING PROFESSIONAL PROFESSIONAL INSTITUTE "LEONARDO DA VINCI"

Temporary vacancy position replacement for Earth Sciences and Biology teaching (18 hours per week) in secondary school.

EDUCATION AND TRAINING

2000 Milan, Italy
GRADUATED IN BIOLOGICAL SCIENCES University of Milan

Title of the study: "Molecular characterization of caveloin in immortalized hypothalamic neurons" - ref. Prof. D. Parolaro, Prof. M. Parenti - attended at the Dept. Pharmacology, Chemotherapy and Medical Toxicology, Milan

National classification 110/110 with honors

POST GRADUATE STUDIES

2013 Milan, Italy
PHD IN EXPERIMENTAL HEMATOLOGY University of Milan

Title of the study: "Improved risk stratification in multiple myeloma using a microRNA-based classifier", attended at the Dept. Clinical Sciences and Community Health, University of Milan

02/2012 Milan, Italy
ADVANCED TRAINING COURSE IN NGS DATA ANALYSIS Istituto Nazionale Tumori

Training course "RNA-seq workshop"

11/2002 – 01/2003 Milano, Italy
ADVANCED TRAINING COURSE IN DATA ANALYSIS University of Milano Bicocca

Training course "Data mining and bioinformatics" - Dept. Biotechnology and Biosciences

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C2	C2	C1	C2
SPANISH	A2	A2	A2	A2	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Windows - Linux - macOS operating systems | UNIX | Bash Language | R | RBioconductor | NGS Data Analysis | Microarray | Graphic treatment and photo editing | Web development (ASPNET JS HMTL CSS PHP) | SPSS software | GraphPad Prism | MedCalc | Basic Python | Git | Big Data Analysis | SLURM Job Scheduler

PUBLICATIONS

Publications

SUMMARY:
Publications - from 2005 to present: **109**
Chapters in scientific books - from 2005 to present: **3**
Hirsch (H) index: **44**. Total Citations: **>4500** (source: Scopus athour ID 8343714000 as of May 2024)
ORCID: 0000-0003-0582-6170
Full list of publications and abstracts at Scholar website: https://scholar.google.it/citations?user=yXowT8sAAAAJ&hl=it

Chapters in scientific book:
Neri A, Agnelli L. *The Genomics of Multiple Myeloma and Its Relevance in the Molecular Classification and Risk Stratification of the Disease*. Springer ed., 2013 in: U. Pfeffer (ed.), Cancer Genomics: Molecular Classification, Prognosis and Response Prediction, DOI 10.1007/978-94-007-5842-1
Agnelli L, Bortoluzzi S, Pruneri G. *Bioinformatic Pipelines to Analyze lncRNAs RNAseq Data.* Methods Mol Biol. 2021;2348:55-69. DOI 10.1007/978-1-0716-1581-2_4.
Todoerti K, Ronchetti D, Manzoni M, Taiana E, Neri A, Agnelli L. *Bioinformatics Pipeline to Analyze lncRNA Arrays.* Methods Mol Biol. 2021;2348:45-53. DOI 10.1007/978-1-0716-1581-2_3.

HONOURS AND AWARDS

Honours and awards

- "Young Researchers" award, 2006, Fondazione G. Berlucchi, for his research activity and the application of high-throughput technogiy in the field of hematology-oncology (http://www.fondazioneberlucchi.com).
- "Under 40 in hematology" award, 2013, 3rd placed, Fondazione Mattioli 1885 (http://www.under40.it/)
- Scientific award, 2014, Fondazione Bruno Farmaceutici, 3rd placed (http://www.brunofarmaceutici.org/)

NETWORKS AND MEMBERSHIPS

Memberships

Ordinary member of the "Società Italiana di Ematologia Sperimentale", 2010 - 2020
Ordinary member of the "Società Italiana di Ematologia", 2018 - 2020
Ordinary member of the "Società Italiana di Cancerologia" and the "European Association for Cancer Research" (EACR), 2010

PROJECTS

Projects

Project involvements:

Participating as PI or co-PI to:
- INT Institutional observational study: "Feasibility and utility of an extensive molecular characterization through an integrated approach of genomics and transcriptomics in patients affected by biliopancreatic carcinomas" (40.000€/2ys)

Participating as WP leader to:
- IRCCS INT Institutional project "Data WareHouse (DWH) 2.0: maintenance, integration, harmonization and spread", work-package WP10 "Molecular Tumor Board" (30.000€/2ys)

Participating as investigator / involved personnel / collaborator to:
- AIRC IG1194 grant "Global gene expression profiling of multiple myeloma: insights into the bio-clinical diversity of the disease" (ys. 2004-2006, 366.000€/3ys)
- AIRC IG4148 grant "Identification of new pathogenetic signals and therapeutic targets of oncogenic ALK " (ys. 2006-2008, 150.000€/3ys)
- AIRC IG4659 grant "Integrative genomic approach to the molecular pathology of multiple myeloma" (ys. 2007-2009, 363.000€/3ys)
- AIRC IG8675 grant "Integrative genomic approach to the molecular pathology of multiple myeloma" (ys. 2009-2011, 240.000€/3ys)
- AIRC IG10136 grant "The role of microRNA in multiple myeloma: biological and clinical implications" (ys. 2010-2012, 462.000€/3ys)
- AIRC IG13358 grant "Identification and characterization of a new subclass of T-NHL: untying the role of ERBB4 in lymphomagenesis " (ys. 2012-2014, 300.000€/3ys)
- AIRC IG16722 grant "The relevance of long non-coding RNAs in the biological and clinical heterogeneity of multiple myeloma" (ys. 2015-2017, 450.000€/3ys)
- AIRC 5x1000 special program Molecular Clincal Oncology grant 2010 "A research platform for miRNA-based treatment of multiple myeloma and chronic lymphocytic leukemia" (12.200.000/5ys)
- AIRC IG26320 grant "UNDERTSTAND - UNraveling tumor resistance mechanisms in HR+ aDvancEd bReaST cANcer undergoing CDK4/6 inhibitors therapy" (1.079.000€/5ys)
- AIRC MFAG ID24932 grant "Unraveling the mechanism behind the progression of indolent monoclonal gammopathies to multiple myeloma" (475.000€/5ys)
- IRCCS Institutional project "Window-of-opportunity umbrella trial as a translational platform for short-course pre-operative targeted treatments in non-metastatic resectable colorectal cancer: the UNICORN study" (87.000€/3ys)

ACADEMIC DEGREES

Academic degrees

2014: in the National Scientific Qualification - application 2012, considered as eligibile to be appointed as Associate Professor in the MIUR field codes:
05/F1 (Applied Biology)
05/E2 (Molecular Biology)
06/N1 (Sciences of Health Professions and Applied Medical Technologies)
06/D3 (Blood diseases and Oncology)

JOB-RELATED SKILLS

Job-related skills

Computer skills. Proficient user of the most common OS (MacOS, Unix, Win environments). Mangament and usage of multi-node computing platforms and tools for big data analysis. Programming languages: R (advanced), bash, Python (basic).
Wet lab skills. Molecular biology: gene cloning; polymerase chain reaction (PCR) and Real-Time Quantitative PCR; DNA mutagenesis techniques; Next-Generation Sequencing and microarray technology (gene expression, genome, microRNA, methylation profiling). Cell Biology and Biochemistry: Cell cultures; Analysis of transcriptional activity; Analysis of protein expression (immunofluorescence, Western blotting, two-dimensional electrophoresis, subcellular fractioning); confocal microscopy.

EDITORIAL AND PEER-REVIEW ACTIVITY

Editorial and peer-review activity

Section editor
Tumori journal
ncRNA journal

Editorial board member
Exploration of Targeted Anti-tumor Therapy journal
International Journal of Molecular Sciences
Frontiers in Oncology

ACADEMIC TUTORSHIPS

Academic tutorships

Supervisor for the thesis "Genomic complexity and clinical correlations in Multiple Myeloma: monocentric retrospective study", by Ferla V. Specialization school in Heamatology, University of Milan, academic year: 2016/2017.
Supervisor for the internship of the Advanced Master Course in Genomic Data Science, Nichetti F., University of Pavia, academic year: 2022/2023
Supervisor for the thesis "Sviluppo di un'applicazione R Shiny per il controllo della qualità dei dati Nanostring nCounter", by Torelli S, Bachelor Degree in Biotechnology, University of Pavia, academic year: 2023/2024

LICENSES

Licenses

Author and maintainer of "FBN: FISH Based Normalization and Copy Number inference of SNP microarray data" package for R (Agnelli et al, 2009, Genes Chrom & Cancer) deposited at http://cran.r-project.org/web/packages/FBN/, released under General Public License.

CONFERENCES, SEMINARS AND WORKSHOPS

Conferences and workshops

Relevant international participation:
Invited speaker at the XIV Congress of the European Hematology Association, Berlin "Bioinformatics tools in the onco-haematological field" - June 4-7, 2009
Invited speaker at the XIII myeloma workshop, Brno (Czech Republic), "Non-coding RNA: new insights in the multiple myeloma transcriptional landscape" - October 24th, 2018
Relevant national participation:
Invited teacher for the ECM course "Gene expression analysis in the biology and clinical evaluation of multiple myeloma and chronic lymphocityc leukemia", Cosenza (Italy), october 2011
Invited speaker for teaching at the graduate school of Molecular Medicine, University of Milan in the academic year 2011/2012 on "Genomic integrative approach for molecular classification of multiple myeloma"
Invited speaker at "L.A. Seràgnoli" Bologna - Next Generation Sequencing meetings - "The reconstruction of transcriptional regulatory networks reveals critical genes which have implications for clinical outcome of multiple myeloma" – Jan 16th, 2012
Invited speaker at Istituto di Candiolo IRCCS (TO), hosted by Dr. A. Bardelli, "Improved risk stratification in myeloma using a microRNA-based classifier" - Mar 31th, 2016
Invited speaker at IFOM-IEO Campus, hosted by Dr. P.G. Pelicci, "Disentangling the multiple myeloma transcriptional network" - Nov 18th, 2016
Invited speaker at IFOM-IEO Campus, hosted by Dr. G. Testa, "Disentangling the multiple myeloma transcriptional network" - Sep 27th, 2017
Invited speaker at "Discutiamone Insieme" workshop, Società Italiana Ematologia Sperimentale (SIES), "Nuovi criteri classificativi e/o diagnostici nelle emopatie maligne. Linfomi Non-Hodgkin", Milan, Jun 6th, 2019
Invited teacher at "Corso teorico-pratico medicina di precisione e oncologia mutazionale", Rome, Oct-Dec 2021
Invited speaker at AIOM XXIV National Congress, Rome, Oct 1st, 2022, Special session "Molecular Tumor Boards", "How to integrate BigData and MTB into clinical practice"
Invited speaker at Forum Sistema Salute 2022, Florence, Oct 7th, 2022, "The Mutational Oncology Project in Italy – MTB and Genomic Profiling Centers: from genomic profiling to MTB, the BigData management"
Invited Session Chair at the meeting "Artificial Intelligence for Oncology", Milan, May 5th, 2023

OTHER SKILLS

Other skills

Theatre practitioner and trainer for informal educations for adults and young people using theatral tecniques.

DRIVING LICENCE

Driving Licence: B

DISCLAIMERS

Disclaimers

I hereby authorize the use of my personal data in accordance to the GDPR 679/16 - "European regulation on the protection of personal data"