Marco Barreca | CV

Address: University of Milano-Bicocca,
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Education

PhD in Converging Technologies for Biomolecular Systems (TeCSBI)   [11/2022 – Actual]

University of Milano-Bicocca

Project: Multidimensional data integration to capture intrinsic and extrinsic mechanisms driving treatment benefit in breast cancer

Supervisor:
Prof. Daniela Besozzi (associate professor, Department of Computer Science, Systems and Communication, University of Milan-Bicocca)

Co-supervisors:
Dr. Maurizio Callari (Postdoctoral Research Fellow, University of Cambridge).

Master's Degree in Industrial Biothecnology (LM-08)   [09/2019 – 10/2021]

University of Milano-Bicocca

Final grade: 110/110 cum laude

Thesis: Computational analysis of the role of the immune system in the treatment of triple negative breast cancer: transcriptome deconvolution and mathematical modeling

Supervisor:
Prof. Daniela Besozzi (associate professor, Department of Computer Science, Systems and Communication, University of Milan-Bicocca)

Co-supervisors:
Dr. Giampaolo Bianchini (Director of Medical Oncology - Clinical Tralslational and Immunotherapy research, IRCCS San Raffaele Hospital);
Dr. Maurizio Callari (Postdoctoral Research Fellow, University of Cambridge);
Dr. Simone Spolaor (Postdoctoral Researcher, Eindhoven University of Technology).

Bachelor's Degree in Biothecnology (L-02)   [09/2016 – 11/2019]

University of Milano-Bicocca

Final grade: 109/110

Thesis: Definition of the AKT-induced senescence signaling network

Supervisor:
Dr. Renata Anita Tisi (researcher, Department of Biotechnology and Biosciences, University of Milano-Bicocca)

High school graduation   [09/2011 – 06/2016]

Liceo sicentifico C. Marchesi, Mascalucia (CT)

Final grade: 100/100 cum laude

Research Experience

Extracurricular internship

Michelangelo Tech Srl

The activity financed by Michelangelo Tech Srl, an organization with an agreement with the University of Milan-Bicocca, includes:
- bioinformatics analysis and processing of gene expression profiles of carcinoma samples breast collected during clinical studies carried out by the Michelangelo Foundation;
- the identification, acquisition and analysis of public datasets containing gene expression profiles obtained from clinical breast cancer samples;
- the development, validation and application of gene signatures capable of predicting cellularity (percentage of tumor cells) of a clinical specimen;
- the study of the dynamics of gene expression in triple negative breast cancers.

Skills acquired/improved:

- computational skills in R/Bioconductor environment;
- use of statistical tools for data analysis;
- oral and written communication skills, also in English.

Other activities:

- deepening of scientific knowledge;
- networking in academia and the private sector through participation in seminars, conferences and events.

Tutor:

Dr. Maurizio Callari (Postdoctoral Research Fellow, University of Cambridge)

External internship [12/2020 – 10/2021]

Laboratory of Medical Oncology, Clinical Translational and Immunotherapy – IRCCS San Raffaele Hospital

The activity involved the use of computational tools and programming languages such as R and Python and had the aim of improving breast cancer therapies. Were carried out:
- transcriptomic data analysis;
- creation of representative graphics;
- statistical significance tests;
- predictive analytics.

Collaboration with Cancer Research UK Cambridge Center (CRUK CC) [11/2020 – 10/2021]

Identification of gene expression-based predictive biomarkers in breast cancer under the supervision of

Dr. Maurizio Callari (Postdoctoral Research Fellow, University of Cambridge)

Technical skills and competences

Linguistic competences

Native language: Italian
Other languages: English (B2)

Computer skills

Programming languages and packages

Programming language R / Programming language Python / Simpful / Bioconductor/CRAN / ComplexHeatmap

/ Limma / tidyverse

Operating systems

Windows / Linux

Softwares

UCSF Chimera / Office Package / Maestro 10.6 / PyMOL / COPASI / Jalview / BLAST / Galaxy / Gromacs

Publications and Conference Comunications

Manuscript in preparation

The Breast Cancer Purity Signature (BCPS) improves bulk transcriptomics data interpretation and prognostic performance

Marco Barreca, Matteo Dugo, Barbara Galbardi, Alessia Franco, Olivia Biasi, Luca Licata, Giulia Viale, Carlo Bosi, Matteo Maria Naldini, Pinuccia Valagussa, Daniela Besozzi, Giuseppe Viale, Giampaolo Bianchini1, Luca Gianni, Maurizio Callari.

EACR Conference - Cancer Genomics – Oxford, UK

Development and validation of a Breast Cancer Purity Signature (BCPS) to improve bulk transcriptomics data interpretation and prognostic performance

Marco Barreca, Matteo Dugo, Barbara Galbardi, Alessia Franco, Olivia Biasi, Luca Licata, Giulia Viale, Carlo Bosi, Matteo Maria Naldini, Pinuccia Valagussa, Daniela Besozzi, Giuseppe Viale, Giampaolo Bianchini1, Luca Gianni, Maurizio Callari.

SABCS - San Antonio Breast Cancer Symposium, San Antonio, Texas

Comparison of early modulation of biological pathways and immune microenvironment by anthracyclines- or taxane-based treatment

Maurizio Callari; Marco Barreca; Matteo Dugo; Barbara Galbardi; Lucia Viganò; Alberta Locatelli; Luca Licata; Giulia Viale; Pinuccia Valagussa; Giuseppe Viale; Luca Gianni; Giampaolo Bianchini.
https://aacrjournals.org/cancerres/article/82/4_Supplement/PD10-09/681401

SABCS - San Antonio Breast Cancer Symposium, San Antonio, Texas

Immune milieu associated with PD-L1 status in TNBC is dependent on time of biomarker assessment and treatment received: A secondary analysis of the NeoTRIPaPDL1 trial

Maurizio Callari; Chiun-Sheng Huang; Daniel Egle; Begoña Bermejo; Claudio Zamagni; Matteo Dugo; Marc Thill; Antonio Anton; Marco Barreca; Stefania Russo; Eva Maria Ciruelos; Richard Greil; Stefania Zambelli; Balázs Gyorffy; Chanel Smart; Olivia Biasi; Pinuccia Valagussa; Giuseppe Viale; Luca Gianni; Giampaolo Bianchini.
https://aacrjournals.org/cancerres/article/82/4_Supplement/P1-04-02/680410/Abstract-P1-04-02-Immune-milieuassociated-with-PD