CURRICULUM VITAE

MILENA URBINI, PhD

milena.urbini@unicamillus.org
H-index: 25 | Scientific publications: 76

PROFESSIONAL EXPERIENCE

July 2026 – Present
Associate Professor
Saint Camillus International University of Health Sciences, Rome, Italy

January 2022 – Present
Head of the Genomics Facility
Biosciences Laboratory, IRCCS Istituto Romagnolo per lo Studio dei Tumori "Dino Amadori" (IRST), Meldola, Italy

March 2020 – Present
Senior Biologist
Biosciences Laboratory – Translational Oncology, IRCCS IRST "Dino Amadori", Meldola, Italy
Translational research on solid tumours and liquid biopsy using high-throughput omics approaches, including genomics, transcriptomics and epigenomics.

June 2011 – February 2020
Postdoctoral Research Fellow
Interdepartmental Centre for Cancer Research "G. Prodi" (CIRC), University of Bologna. Work site: Paediatric Oncology and Haematology Laboratory, Pavilion 13, Sant'Orsola-Malpighi Hospital, Bologna, Italy
Molecular characterisation (genomic, transcriptomic and epigenomic) of solid tumours, particularly gastrointestinal stromal tumours (GIST), and other rare adult sarcomas.

June 2010 – June 2011
Project Research Collaborator
Paediatric Oncology and Haematology Laboratory – Pession Unit, Sant'Orsola Hospital, Bologna, Italy
Immunogenomics of unrelated-donor haematopoietic stem cell transplantation in paediatrics: prognostic value of non-HLA genetic polymorphisms.

EDUCATION AND PROFESSIONAL QUALIFICATIONS

June 2026
Italian National Scientific Qualification for Associate Professor
Academic field 06/D3 – Blood Diseases, Oncology and Rheumatology, Italian Ministry of University and Research

April 2021
Italian National Scientific Qualification for Associate Professor
Academic field 05/E3 – Clinical Biochemistry and Clinical Molecular Biology, Italian Ministry of University and Research

May 2021
Italian National Scientific Qualification for Associate Professor
Academic field 06/N1 – Health Professions and Applied Medical Technologies, Italian Ministry of University and Research

October 2021 – September 2022
Second-Level Master's Degree in Omics Data Analysis
University of Padua, Italy
Project: Analysis of circulating free and extracellular-vesicle-associated microRNAs in plasma from patients with non-small-cell lung cancer.

September 2019
Professional Qualification as a Biologist
University of Modena and Reggio Emilia, Italy – Final score: 168/200

January 2014 – May 2017
PhD in Oncology and Experimental Pathology (29th cycle)
University of Bologna, Italy
Thesis: Next-generation sequencing of gastrointestinal stromal tumours (GIST) resistant to tyrosine-kinase receptor inhibitors. Supervisor: Prof. Guido Biasco.

September 2007 – March 2010
MSc in Molecular and Industrial Biotechnology
University of Bologna, Italy
Thesis: Molecular alterations in rhabdomyosarcoma development in HER-2/neu transgenic and p53-hemizygous mice. Final grade: 110/110 cum laude. Supervisor: Prof. Pier-Luigi Lollini.

September 2004 – March 2007

BSc in Biotechnology

University of Bologna, Italy
Thesis: Cytotoxic activity induced by Lipoplatin in established human non-small-cell lung cancer cell lines. Final grade: 106/110. Supervisor: Prof. Anna Zaghini.

TECHNICAL SKILLS

High-Throughput Molecular Biology

- **Next-generation sequencing (NGS):** experimental design; library preparation for whole-exome, RNA (mRNA and small RNA) and targeted sequencing; use of Illumina platforms (NovaSeq 6000, NextSeq 500, MiSeq), Thermo Fisher Ion S5 and Nanopore long-read sequencing; design of probes for targeted regions.
- **NGS data analysis:** variant prioritisation and pathogenicity prediction; fusion transcript identification and impact prediction; gene-expression analysis, hierarchical clustering, principal component analysis and pathway enrichment.
- **Spatial transcriptomics:** GeoMx Digital Spatial Profiler workflow and data analysis.
- **Array technologies:** sample preparation and use of Affymetrix platforms; gene-expression analysis (HTA 2.0, Clariom), SNP genotyping and copy-number analysis (CytoScan HD and OncoScan); use of ChAS software; DMET assay, genotype-frequency analysis and association studies.

Molecular Biology Techniques

- **Nucleic-acid extraction:** RNA and DNA extraction from cells, frozen or FFPE tissues, blood and plasma using column-based and TRIzol methods; purification and precipitation; quality assessment of degraded material; spectrophotometric, NanoDrop and fluorometric quantification.
- **Genome editing:** CRISPR-Cas9 guide-RNA design, cloning into Cas9 plasmids, cell-line transfection and mutant-clone selection.
- **Cloning:** primer design; restriction-enzyme and TOPO TA cloning; plasmid extraction; bacterial-clone selection; transfection of eukaryotic cells.
- **PCR and sequencing:** primer design, RT-PCR, real-time PCR, ligation PCR, RAPD, TaqMan assays for gene expression and copy number, endpoint PCR, digital PCR and Sanger sequencing.
- **Protein methods:** protein extraction from cell lines and tissues; Western blotting.
- **DNA methylation:** global and locus-specific methylation analysis using bisulphite conversion or enzymatic digestion.

Cell Culture

Culture of tumour cell lines and induced pluripotent stem cells (iPSCs); plasmid transfection by lipofection or nucleofection; gene silencing using siRNA or antisense oligonucleotides; chemosensitivity and viability assays; preparation of samples for cell-cycle and apoptosis analysis.

Bioinformatics

Use of R and Bioconductor packages for statistical and biological analyses; basic knowledge of Python and Bash/Unix; searches in biomedical databases (Ensembl, NCBI, UniProt and PDB) and variant-annotation resources; primer design; gene-expression analysis, PCA and hierarchical clustering; association studies; fusion-transcript analysis; DNA-sequence analysis using Sequencher; variant prioritisation based on predicted protein impact; pathway analysis using DAVID, WebGestalt, ToppGene and GSEA.

Languages and Digital Skills

- **English:** B2 level; language certification obtained at ALTAIR CILTA, Bologna.
- **Operating systems and programming:** advanced Windows skills; basic Unix; basic knowledge of C++, Python, Bash and R.
- **Scientific and office software:** bioinformatics and statistical-analysis tools, biomedical databases, Photoshop, GIMP and Microsoft Office (Word, Excel and PowerPoint).

Driving licence: Category B

PROFESSIONAL MEMBERSHIPS AND GRANTS

Professional registration: Italian National Order of Biologists

Memberships: ESMO; EACR; AACR

Research Projects

- **Young Researchers Grant, Italian Finalised Research Programme – Co-Principal Investigator:** “NovEl Weapons towarDs precision medicinE: an integrated Approach to predict chemoresponse in sarcoma Lesions” (NEWDEAL), GR-2024-12378482, IRST. Principal Investigator: S. Vanni.
- **PNRR Rare Diseases Grant 2023 – Co-Principal Investigator:** “Circulating biomarkers and innovative device development for relapsed/refractory germ cell tumours (BIO-TEST)”, PNRR-MR1-2023-12377571. Principal Investigator: U. De Giorgi.
- **AIRC Investigator Grant 2021 – Collaborator:** “Identification of a multiparametric prognostic algorithm for resected early-stage non-small-cell lung cancer – IMPRESS”. Principal Investigator: P. Ulivi.

- **ERA PerMed Grant 2021 – Collaborator:** “A machine-learning approach to identify patients with resected non-small-cell lung cancer at high risk of relapse”. Principal Investigator: P. Ulivi.
- **Desmoid Tumor Research Foundation Grant 2013 – Collaborator:** High-throughput genome study to identify predictors of aggressiveness in patients with sporadic desmoid tumours managed with a watch-and-wait approach. Principal Investigator: C. Colombo.
- **AIRC My First AIRC Grant 2013 – Collaborator:** “Whole-genome study of gastrointestinal stromal tumours resistant to tyrosine kinase inhibitors using an NGS approach”. Principal Investigator: M.A. Pantaleo.

CONFERENCE CONTRIBUTIONS

- 2026 ELCC – Sbrighi C et al. Poster presentation.
- 2026 Innovative Therapies in the Clinical Practice of Genitourinary Tumours – **Urbini M. Invited speaker.**
- 2025 ESMO Immuno-Oncology – Canale M et al. Poster presentation.
- 2025 Biomarkers Summit in Urological Cancers, 10th Annual International Meeting – **Urbini M. Invited speaker.**
- 2025 16th International Gastric Cancer Congress – Molinari C et al. Poster presentation.
- 2025 Alliance Against Cancer, 9th Annual Meeting – **Urbini M et al. Oral presentation**.
- 2024 EACR Liquid Biopsy – Urbini M et al. Poster presentation.
- 2024 ESMO Annual Congress – De Giorgi G et al. Poster presentation.
- 2024 CNAPS Annual Congress – Urbini M et al. Poster presentation.
- 2023 World Conference on Lung Cancer – Journal of Thoracic Oncology 18(11 Suppl):S543, abstract EP07.04.
- 2023 Alliance Against Cancer, 8th Annual Meeting – Ulivi P et al. Poster presentation; Best Abstract Award.
- 2023 Biomarkers Summit in Urological Cancers, 8th Annual International Meeting – **Urbini M. Invited speaker.**
- 2023 ESMO Annual Congress – Urbini M et al. Poster presentation, Ann Oncol S1072-S1073.
- 2023 ISLB Annual Congress on Liquid Biopsy – Gurioli G et al. Poster presentation, Journal of Liquid Biopsy 1:100084.
- 2022 Sarcomas and GIST: The Challenges of the 2020s and the New Era – **Urbini M. Invited speaker.**
- 2022 ISLB Annual Congress on Liquid Biopsy – Virga A et al. Poster presentation.
- 2022 Alliance Against Cancer, 7th Annual Meeting – Virga A et al. Poster presentation.
- 2022 ESMO Annual Congress – Ulivi P et al. Poster presentation, Ann Oncol S552-S553.
- 2022 ESMO GI – Marisi G et al. Poster presentation, Ann Oncol S291.
- 2021 ISLB Annual Congress on Liquid Biopsy – **Urbini M et al. Poster presentation; Best Abstract Award.**
- 2021 Alliance Against Cancer, 6th Annual Meeting – **Urbini M. Oral presentation.**
- 2021 AACR Annual Meeting – Urbini M et al. Cancer Res 81(13 Suppl), abstract 541.
- 2020 ASCO Annual Meeting – Nannini M et al. Poster presentation.
- 2018 EUSARC, The Biology of Sarcoma **– Urbini M. Oral presentation.**
- 2018 ASCO Annual Meeting – Indio V et al.; Pantaleo MA et al.; Urbini M et al. Poster presentations; Urbini et al. abstract.
- 2017 CTOS Annual Meeting – Colombo C et al. Poster 263, #2804336.
- 2016 Affymetrix Workshop, “Affymetrix GeneChip: Applications for Clinical Research” – **Urbini M. Oral presentation.**
- 2016 CTOS Annual Meeting – Nannini M et al. Poster 142; Urbini M et al. Poster 001.
- 2015 ASCO Annual Meeting – Stacchiotti S et al. Poster presentation, J Clin Oncol 33, abstract 10553.
- 2014 ASCO Annual Meeting – Nannini M et al. Poster presentation, J Clin Oncol 32:5s, abstract 10513.
- 2013 ASCO Annual Meeting – Urbini M et al. abstract e21523; Pantaleo et al. poster, abstract 10540.
- 2012 ASCO Annual Meeting – Nannini M et al. Poster presentation, J Clin Oncol 30, abstract 10087.
- 2012 37th AIEOP National Congress – Masetti R et al. Abstract C009 and poster P024.
- 2011 European Hematology Association, 16th Congress – Masetti R et al. Poster presentation, Haematologica 96(s2):189-190, abstract 0455.

SELECTED SCIENTIFIC PUBLICATIONS

- Urbini M, Eleveld TF, Polano M, et al. Impact of Circulating Tumor DNA and Copy-Number Alterations on Clinical Outcome in Relapsed/Refractory Germ Cell Tumors Treated With Salvage High-Dose Chemotherapy. J Clin Oncol. 2026;44(9):801-811. First author.
- Virga A, Urbini M, Polano M, et al. Mutational and low-coverage whole-genome sequencing identifies actionable DNA-repair alterations in prostate cancer plasma DNA. Sci Rep. 2025;15:21296. Co-first author.
- Petracci E, Pasini L, Urbini M, et al. Circulating cell-free and extracellular-vesicle-derived microRNA as prognostic biomarkers in early-stage NSCLC: results from the RESTING study. J Exp Clin Cancer Res. 2024;43:241. Corresponding author.
- Urbini M, Marisi G, Azzali I, et al. Dynamic Monitoring of Circulating Tumor DNA in Patients With Metastatic Colorectal Cancer. JCO Precis Oncol. 2023;7:e2200694. First author.
- Pasini L, Vannini I, Ulivi P, et al.; Urbini M. Comparative Analysis of Free-Circulating and Vesicle-Associated Plasma microRNAs of Healthy Controls and Early-Stage Lung Cancer Patients. Pharmaceutics. 2022;14:2029. Last author.
- Pantaleo MA, Urbini M, Schipani A, et al. SDHA Germline Variants in Adult Patients With SDHA-Mutant Gastrointestinal Stromal Tumor. Front Oncol. 2022;11:778461. Corresponding author.
- Urbini M, Astolfi A, Indio V, et al. Gene duplication, rather than epigenetic changes, drives FGF4 overexpression in KIT/PDGFRA/SDH/RAS-P wild-type GIST. Sci Rep. 2020;10:19829. First author.
- Astolfi A, Indio V, Nannini M, et al.; Urbini M, Pantaleo MA. Targeted Deep Sequencing Uncovers Cryptic KIT Mutations in KIT/PDGFRA/SDH/RAS-P Wild-Type GIST. Front Oncol. 2020;10:504. Co-last author.

- Urbini M, Indio V, Tarantino G, et al. Gain of FGF4 is a frequent event in KIT/PDGFRA/SDH/RAS-P wild-type GIST. Genes Chromosomes Cancer. 2019;58:636-642. First author.
- Urbini M, Nannini M, Astolfi A, et al. Whole Exome Sequencing Uncovers Germline Variants of Cancer-Related Genes in Sporadic Pheochromocytoma. Int J Genomics. 2018:6582014. First author.
- Urbini M, Indio V, Astolfi A, et al. Identification of an Actionable Mutation of KIT in a Case of Extraskeletal Myxoid Chondrosarcoma. Int J Mol Sci. 2018;19:1855. First author.
- Colombo C, Urbini M, Astolfi A, et al. Novel intra-genic large deletions of CTNNB1 identified in wild-type desmoid-type fibromatosis. Genes Chromosomes Cancer. 2018;57:495-503. Co-first author.
- Urbini M, Astolfi A, Indio V, et al. Identification of an SRF-E2F1 fusion transcript in EWSR-negative soft-tissue myoepithelioma. Oncotarget. 2017;8:60036-60045. First author.
- Urbini M, Astolfi A, Pantaleo MA, et al. HSPA8 as a novel fusion partner of NR4A3 in extraskeletal myxoid chondrosarcoma. Genes Chromosomes Cancer. 2017;56:582-586. First author.
- Saponara M, Urbini M, Astolfi A, et al. Molecular characterisation of metastatic exon 11-mutant GIST beyond KIT/PDGFRA genotype evaluated by next-generation sequencing. Oncotarget. 2015;6:42243-42257. Co-first author.
- Urbini M, Astolfi A, Indio V, et al. SDHC methylation in gastrointestinal stromal tumours: a case report. BMC Med Genet. 2015;16:87. First author.

CONTINUING PROFESSIONAL DEVELOPMENT

- June 2026 – EMBL Course: Introduction to Multiomics Data Integration and Visualisation, EMBL Advanced Training Centre, Hinxton, United Kingdom.
- June 2025 – EMBL Course: Whole Transcriptome Data Analysis, EMBL Advanced Training Centre, Heidelberg, Germany.
- June 2025 – Nanopore sequencing training.
- 30 October 2023 – Good Clinical Practice: From Theory to Practice.
- 4-11 October 2023 – Laboratory Safety.
- 19-21 June 2023 – Clinical Trial Academy: Advanced Training Course in Clinical Research, 2nd edition.
- 10 April 2021 – AACR Annual Meeting 2021.
- 2 October 2020 – IASLC 2020 Lung Cancer Hot Topic: Liquid Biopsy.
- 24 October 2015 – SIGU Rimini Post-Congress Course: Challenges in Genomic Analysis, from Theory to Practice.
- 19-20 June 2014 – Summer School in Biostatistics, Bologna: from univariate to multivariate analysis in cross-sectional and longitudinal studies.
- 22 February 2013 – Workshop: “CytoScan, Join the Resolution and Revolution”, Bologna.
- 16 March 2012 – Symposium: “Using RNA Sequencing to Study the Transcriptome” and “Using New Technologies to Study Genetic Diseases”, Milan.
- 9-13 January 2012 – Next-Generation Sequencing Training (Illumina), Bologna.
- 24 March 2011 – Repeated Measures and Clustered Data: Statistical Analysis Methods Using R, Bologna.
- 8-9 February 2010 – Biomedical Statistics and R Software, Bologna.

DATA PROTECTION AND DECLARATION

I consent to the processing of my personal data in accordance with Italian Legislative Decree No. 196/2003, as amended by Legislative Decree No. 101/2018, and Article 13 of Regulation (EU) 2016/679 (GDPR).

Aware that, pursuant to Article 76 of Italian Presidential Decree No. 445/2000, false declarations, falsified documents and the use of false documents are punishable under the Italian Criminal Code and applicable special laws, I declare that the information contained in this curriculum vitae is true and accurate.