
BIOGRAPHICAL SKETCH

NAME: Capello, Daniela

POSITION TITLE: Associate Professor of Clinical Biochemistry and Molecular Biology (BIO/09)

EDUCATION/TRAINING:

INSTITUTION AND LOCATION	DEGREE	Completion Date MM/YYYY	FIELD OF STUDY
University of Turin, Italy	BSc	11/1995	Biological Sciences
University of Piemonte Orientale, Italy	Specialization	10/2001	Clinical Pathology
University of Piemonte Orientale, Italy	PhD	03/2007	Molecular Medicine

A. Personal Statement

I am an Associate Professor of Clinical Biochemistry and Molecular Biology (BIO/09) at the University of Piemonte Orientale (UPO), where I also serve as Director of UPO Biobank, the institutional biobank supporting both disease-oriented and population-based research. My scientific background combines expertise in the molecular pathogenesis of hematological malignancies with a growing focus on the molecular and biochemical mechanisms underlying aging and solid tumors. My current research is dedicated to the development of translational models based on primary tumor cells and mesenchymal stem cells from adipose tissue, aimed at identifying clinically relevant biomarkers and novel therapeutic targets. Since 2022, I have been leading the Novara Cohort Study (NCS), a longitudinal and cross-sectional population study designed to investigate the biological, clinical, and environmental determinants of healthy and accelerated aging. My research integrates molecular biology, cell biology, genomics, and clinical biochemistry, bridging in vitro experimentation with molecular epidemiology. As Director of UPO Biobank, I oversee all aspects of biobanking, with a strong commitment to data quality, ethical and legal compliance, and alignment with FAIR principles. Through national and European projects such as AGE-IT and BBMRI.it, I actively contribute to strengthening biobank infrastructures and advancing biomarker research within aging-related population studies.

B. Positions, Scientific Appointments, and Honors

Academic and Research Positions:

2024– Associate Professor, Clinical Biochemistry and Molecular Biology (BIO/09), UPO
2019–2023 Associate Professor, Biochemistry (BIO/10), UPO
2016–2018 Tenure-Track Researcher (type B), Biochemistry (BIO/10), UPO
2013–2015 Research Fellow and Lecturer, Biochemistry and Clinical Biochemistry, UPO
2010–2012 Fixed-term Researcher, Biochemistry (BIO/10), UPO
2006–2010 Postdoctoral Research Fellow, UPO
2002–2005 PhD Candidate, UPO

Scientific Appointments and Responsibilities:

2021– Director, UPO Biobank
2021– Principal Investigator, Novara Cohort Study
2023– Coordinator, TrasAging Action, Department of Excellence Project 2023–2027
2024– Member, Steering Committee, PNRR Project "Strengthening BBMRI.it"
2023– Member, Third Mission Commission, Department of Translational Medicine, UPO
2022– Member, Scientific Board, Italian Core Facilities Network (NICO)

C. Contributions to Science

Research Metrics (26.05.2025)
Scholarly Output: 147 publications

Total Citations: 7,495

Average Citations per Publication: 51.0

Field-Weighted Citation Impact (FWCI): 1.88

Publications in Top 10% Most Cited (Field-weighted): 29 publications (19.7%)

Publications in Top 10% Journals (by CiteScore Percentile): 97 publications (66.9%)

Over the past two decades, my research has evolved from the molecular pathogenesis of hematological malignancies to biomarker discovery in solid primary tumor samples and cellular models. I developed in vitro systems using mesenchymal cells from adipose tissue to investigate senescence in cancer progression. In parallel, I contributed to creating UPO Biobank and now coordinate the Novara Cohort Study (NCS), integrating aging-related biomarker discovery and biobanking into population aging research.

Contributions to aging research and population-based studies. I lead the NCS, an ongoing, large-scale, multidisciplinary population study launched in 2023 to investigate the biological, social, and environmental determinants of aging. The study integrates biobanking, omics technologies, and ethical frameworks and is currently generating unique molecular and personal data in the Northern Italy region. My work contributes to identifying biomarkers of age-related diseases and cognitive decline.

- Cracas, S. V., Aleni, C., Garro, G., Antona, A., Venetucci, J., Bettio, V., Varalda, M., Scotti, L., Ferrante, D., Rolla, R., Faggiano, F., & Capello, D. (2025). Investigating aging trajectories and determinants in Northern Italy through the Novara cohort study. *Scientific Reports*, 15(1), 17908. <https://doi.org/10.1038/s41598-025-02947-3>
- Sala G., et al., Capello D., Mangialasche F., Ferrarese C. (2025). Multi-pathway blood biomarkers to target and monitor multidimensional prevention of cognitive and functional decline. *Front Aging Neurosci*, 17:1581892. <https://doi.org/10.3389/fnagi.2025.1581892>
- Grossini E., Bellan M., Venkatesan S., ... Capello D., et al. (2025). Characterization of Circulating Vesicles of Complicated and Uncomplicated Systemic Sclerosis Patients. *Int J Mol Sci*, 26(6):2380. <https://doi.org/10.3390/ijms26062380>.

Advancing biobanking infrastructure and public trust in genomic research Through UPO Biobank and collaboration with national infrastructure initiatives, I contribute to developing ethical frameworks, digital competence, and data FAIRness. I lead several engagement initiatives to promote citizen-science collaborations.

- Aleni C., Rinaldi C., Bettio V., Mazzucco E., ... Capello D. (2022). Public Attitude Towards Biobanking: An Italian University Survey. *Int J Environ Res Public Health*, 19(20):13041. <https://doi.org/10.3390/ijerph192013041>.
- Bettio V., Mazzucco E., Aleni C., Cracas S., ... Capello D. (2023). UPO Biobank: The Challenge of Integrating Biobanking into the Academic Environment. *J Pers Med*, 13(6):911. <https://doi.org/10.3390/jpm13060911>.

Biobanking quality and technical enhancement. My work supports the continuous improvement of biobanking procedures, including sample processing and molecular quality assurance.

- Bettio V., et al., Capello D. (2023). Extracellular Vesicles from Human Plasma for Biomarkers Discovery: Impact of Anticoagulants. *PLoS One*, 18(5):e 0285440. <https://doi.org/10.1371/journal.pone.0285440>
- Antona A., Bettio V., ... Capello D. (2025). Evaluating Cryopreservation Methods in Biobanking: Impacts on Biomarker Integrity. *Biopreserv Biobank*. <https://doi.org/10.1089/bio.2024.0141>

We investigated how second-generation antipsychotics affect lysosomal biogenesis and mitochondrial function in adipose-derived mesenchymal stem cells. These findings offer mechanistic insights into age-associated adipose tissue metabolic dysfunction

- Varalda M., Venetucci J., Nikaj H., ... Capello D. (2024). Second-Generation Antipsychotics Induce Metabolic Disruption. *Cells*, 13(24):2084. <https://doi.org/10.3390/cells13242084>.

I have contributed to elucidating the anticancer mechanisms of repurposed psychotropic drugs and discovering novel therapeutic targets in cancer stem cells, focusing on colorectal cancer.

- Antona A., Leo G., Favero F., ... Capello D. (2023). *Targeting LSD1 Impairs Colorectal Cancer Tumorigenesis*. *Cell Death Discov*, 9(1):201. <https://doi.org/10.1038/s41420-023-01502-1>. *Cell Death Discov*, 9(1):201.
- Antona A., Varalda M., Roy K., ... Capello D. (2022). *Mechanism of Action of Spiperone in Colorectal Cancer*. *Cancers*, 14(3):776. <https://doi.org/10.3390/cancers14030776>. *Cancers*, 14(3):776.

Foundational work in hematological malignancies. My earlier research focused on the molecular pathogenesis of hematologic neoplasms in immunocompromised individuals.

- Capello D., Rasi S., ... Gaidano G. (2009). *Molecular Characterization of Post-Transplant Lymphoproliferative Disorders*. *J Pathol*, 218:478-486. <https://doi.org/10.1002/path.2555>. *J Pathol*, 218:478-486.
- Capello D., Cerri M., ... Gaidano G. (2003). *Molecular Histogenesis of Posttransplant Lymphoproliferative Disorders*. *Blood*, 102:3775-3785. <https://doi.org/10.1182/blood-2003-04-1294>. *Blood*, 102:3775-3785.
- Capello D., Rossi D., Gaudino G., Carbone A., Gaidano G. (2003). *Simian Virus 40 Infection in Lymphoproliferative Disorders*. *Lancet*, 361:1565-1566. [https://doi.org/10.1016/S0140-6736\(03\)13203-0](https://doi.org/10.1016/S0140-6736(03)13203-0). *Lancet*, 361:1565-1566.

Complete List of Published Work:

<https://pubmed.ncbi.nlm.nih.gov/?term=capello+d&sort=date&size=200>

D. Ongoing funded projects

I am currently involved in several active research projects supported by national strategic programs. Within the PNRR-funded AGE-IT initiative (*Ageing Well in an Ageing Society*, PE0000015), I coordinate a novel cohort study (Spoke 10 – WP2, Task 1.2) and contribute to biomarker research in the IN-TeMPO study (Spoke 8 – WP1). I also serve as institutional coordinator for the UPO Biobank and translational aging research actions within the Department of Excellence “Aging Project” (2023–2027). Additionally, I participate in the PRIN 2022 project on metabolic vulnerabilities in colorectal cancer. These projects integrate omics platforms, biobanking, and digital health to support aging, cancer, and personalized medicine research.

E. Teaching and academic training

I have extensive teaching experience in biochemistry and molecular biology across undergraduate, graduate, and specialization programs in medicine and biotechnology at the University of Piemonte Orientale. I currently teach “Clinical Biochemistry and Molecular Biology”, “Chemistry and Introductory Biochemistry”, and “Basics of Biochemistry and Metabolism” in the single-cycle Master’s degree in Medicine and Surgery, in the bachelor’s degree in Biotechnology, and the English-taught master’s degree in Medical Biotechnology. My teaching integrates research-based learning with a focus on aging biology, omics technologies, and translational medicine. I also supervise undergraduate and PhD students in biomarker discovery in aging and cancer.