

BIOGRAPHICAL SKETCH

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NAME: Marialuisa Lavitrano

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Full Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Napoli Federico II	MS Science	07/1983	Biology

A. Personal Statement

I am Professor of General Pathology and Immunology at the University of Milano-Bicocca, where I lead the Molecular Medicine Laboratory and BBMRI.it, the Italian national hub of the European Research Infrastructure on Biobanking (BBMRI-ERIC). My academic and scientific work is deeply rooted in molecular and translational medicine, with a primary focus on oncology, cardiovascular diseases, neurodegenerative disorders, and organ transplantation, integrating scientific innovation with ethical, legal, and social implications of biotechnologies.

Over the years, I have developed a multidisciplinary approach that includes bioethics, technology transfer, governance, and international collaboration, contributing to both scientific advancement and strategic development of research infrastructures in Europe. I am committed to strengthening the internationalization of research and training, having served as Vice-Rector for International Affairs and actively promoted open science through my roles in BBMRI-ERIC and the European Open Science Cloud (EOSC) Association, where I serve as Vice-President.

I have been directly involved in the coordination of more than 15 European projects (H2020, Horizon Europe), in leading national research infrastructure strategy, and in international evaluation activities, including serving as Chair of the Czech Research Infrastructure Evaluation Panel, NIH reviewer, and advisor to multiple European ministries and agencies. My contributions extend to teaching, technology transfer, and scientific policy, always guided by a strong commitment to ethical standards, societal responsibility, and high-quality research.

B. Positions, Scientific Appointments, and Honours

Current Academic and Scientific Positions

- **Full Professor of Pathology and Immunology**, University of Milano-Bicocca (2016–Present)
- **Director**, Molecular Medicine Unit, Dept. of Medicine and Surgery, University of Milano-Bicocca (2001–Present)
- **Director**, Italian Node of BBMRI-ERIC (BBMRI.it) (2013–Present)
- **Vice-President and Director**, EOSC Association (2020–Present)
- **Director**, Executive Master in Management of Research Infrastructures (EMMRI) (2015–Present)

Previous Academic Appointments

- **Vice-Rector for International Research and Training**, University of Milano-Bicocca (2006–2013)
- **Director**, School of Specialization in Medical Oncology (2014–2020) and in Laboratory Medicine (2021–Present)
- **Vice-Director**, Department of Surgical Sciences, University of Milano-Bicocca (2006–2012)

Appointments at Ministries (MIUR & Ministry of Health)

- **Member**, Governing Boards of BBMRI, ECRIN, EATRIS, and INFRAFRONTIER (2010–2013)
- **Coordinator**, Italian participation in the Biomedical Sciences ESFRI Roadmap
- **Expert**, Ministry of Health for Internationalization and Biomedical Research (2008–2011)
- **Member**, Joint Commission (MIUR and Ministry of Health) for International Strategy and Strategic Planning (2008–2011)

Bioethics and Governance Appointments

- **Co-Director**, Common Service ELSI, BBMRI-ERIC (2015–2018)
- **Member**, Ethical Committee, University of Milano-Bicocca (2006–2020)
- **Italian Representative**, Council of Europe Bioethics Commission (1999–2004)
- **Member**, Vatican Pontifical Academy for Life – Working Group on Ethics (2000–2004)

Executive and Advisory Roles

- **Member**, eScience Advisory Committee, Netherlands eScience Center (2022–Present)
- **Member**, GÉANT eHealth Task Force Steering Committee (2021–Present)
- **Member**, Board of Directors, Italian Foundation for Cancer Research (FIRC/AIRC) (2016–Present)
- **Member**, Board of Directors, Biogem Research Institute (2011–Present)
- **Scientific Director**, BiOnSil Srl (Spin-off of UNIMIB) (2010–2013)

Awards and Honours

- **Chair**, Scientific Panel for Evaluation of Research Infrastructures, Czech Republic (2021–Present)
- **Member**, Ethics & Data Governance Board, Italian Research Center for HPC, Big Data, and Quantum Computing (2022–Present)
- **Selected Role Model**, European Project TWIST – Towards Women in Science and Technology (2011)

C. Contributions to Science

Overview of Research Focus: My research addresses key biomedical challenges in oncology, cardiovascular diseases, neurodegenerative conditions, and organ transplantation. By leveraging molecular medicine, biotechnologies, and preclinical imaging, I have contributed to advancing understanding in these areas, particularly focusing on molecular mechanisms driving disease pathogenesis and therapeutic resistance. I use a variety of in vitro, in vivo, and ex vivo models to dissect cellular and molecular pathways, aiming to develop targeted therapies and diagnostics.

1. **Cancer Research:** My research on cancer has led to advancements in understanding the molecular basis of tumorigenesis and the mechanisms of chemoresistance in oncological therapies. I have contributed to the development of diagnostic platforms for assessing the expression of molecules related to drug resistance. I am a co-founder of the spin-off company Bionsil S.r.l., which focused on these diagnostic technologies and secured international venture funding. My 1989 publication in *Cell*, which I authored as the first and corresponding author, was hailed as a milestone in science and was pivotal in establishing new lines of research in molecular gene transfer, specifically sperm-mediated gene transfer.
2. **Cardiovascular and Neurodegenerative Diseases:** I have investigated the molecular underpinnings of cardiovascular diseases, particularly focusing on the role of vascular endothelial cells in atherosclerosis and other vascular disorders. Additionally, my work on neurodegenerative diseases has highlighted the role of protein aggregation in cellular dysfunction and neuroinflammation, offering potential therapeutic targets.
3. **Translational Medicine and Biobanking:** A key aspect of my work has been in the field of translational medicine, where I aim to bridge laboratory findings with clinical applications. I lead the Italian biobanking node (BBMRI.it), facilitating the collection and use of biological samples for research across multiple institutions in Italy. This role involves ensuring that the research infrastructure is ethically and scientifically sound while also contributing to the European-wide effort to improve the quality of biobanking resources.
4. **Ethical and Legal Aspects of Biotechnologies:** Beyond the scientific content, I have been deeply involved in the ethical implications of advanced biotechnologies. I have served on numerous ethics committees, including at the Pontifical Academy for Life and the Council of Europe, where I represented Italy in shaping policies related to the ethical use of human biological samples and clinical data in research. My participation in initiatives such as the TWIST project, which aims to promote women in sciences and technology, also highlights my commitment to social responsibility in scientific advancements.
5. **International Collaboration and Open Science:** As a strong advocate for open science, I have played a central role in the European Open Science Cloud (EOSC), focusing on how to make research data and infrastructures more accessible to the global scientific community. My efforts include shaping European policies related to the integration of national research infrastructures and ensuring that data sharing aligns with ethical guidelines.

Significant Publications: My scientific contributions are extensively published in high-impact journals, including *Cell*, *Nature*, *PNAS*, *Oncogene*, *Clinical Cancer Research*, and *Circulation Research*. I have authored over 150 peer-reviewed articles, contributing significantly to the fields of oncology, molecular diagnostics, and translational medicine.

D. Research Funding and Project Coordination

Selected EU-Funded Projects (H2020 & Horizon Europe)

- **FP6-2005-LIFESCIHEALTH-6:** Engineering of the porcine genome for xenotransplantation – *Scientific Head*
- **FP7-INFRA 20121.1.9:** Large-scale cohort studies – *Scientific Head*
- **H2020-INFRA SUPP-3-2014,** Project 654156 (RITRAIN) – *Coordinator & Scientific Head*
- **H2020-INFRA DEV-1-2015-1,** Project 676550 (ADOPT BBMRI-ERIC) – *Scientific Head*
- **H2020-INFRA DEV-1-2017,** Project 777554 (EPTRI) – *Scientific Head*
- **H2020-SC1-BHC-10-2019,** Project 874719 (Instand-NGS4P) – *Scientific Head*
- **H2020-INFRA SUPP-2019,** Project 871072 (EURIZON) – *Scientific Head*
- **H2020-INFRA DEV-2019-2,** Project 871069 (OPERAS-P) – *Scientific Head*
- **H2020-JTI-IMI2,** Project 945358-2 (BIGPICTURE) – *Scientific Head*
- **H2020-INFRA SUPP-02-2020,** Project 101008503 (RItrainPlus) – *Coordinator & Scientific Head*
- **HORIZON-INFRA-2021,** Project 101046203 (BY-COVID) – *Scientific Head*
- **HORIZON-INFRA-2021-EOSC-01,** Project 101058427 (EOSC4Cancer) – *Scientific Head*
- **HORIZON-INFRA-2021-EOSC-01,** Project 101058527 (Skills4EOSC) – *Scientific Head*
- **HORIZON-INFRA-2023,** Project 101131701 (EvolveBBMRI) – *Scientific Head*
- **HORIZON-WIDERA-2024,** Project 101188073 (RM Framework) – *Scientific Head*
- **HORIZON-INFRA-2024,** Project 101215656 (RIFF) – *Scientific Head*

National and Ministerial Projects

- Principal Investigator on multiple projects funded by the Italian Ministry of Health and MIUR in the fields of transgenesis, neurodegeneration, and translational medicine.

International Education and Training Coordination

- Oversaw international mobility programs and joint degree initiatives (FP6, FP7, Erasmus, Tempus IV)
- Directed executive education through the EMMRI program, training future leaders in research infrastructure management.