Curriculum Vitae

Giovannino Silvestri, Biologist, Ph.D.
Marlene & Stewart Greenebaum Comprehensive Cancer Center,
University of Maryland School of Medicine

Date 6/2/2026

Contact Information

Business Address: Greenebaum Comprehensive Cancer Center 655 West Baltimore Street, 9-020 Baltimore, 21201
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Foreign Languages: English (Fluently), Italian (Native Language)
Web page: http://www.medschool.umaryland.edu/profiles/Silvestri-Giovannino/

Permanent Resident of The United States of America, in the prestigious National Interest Waiver Category EB2.

Education

10/2003-10/2006 B.S., Biology, University of Calabria, Italy.
11/2006-08/2009 M.S., Biology, University of Calabria, Italy (Magna cum Laude).
01/2010-05/2013 Ph.D., Cellular and Molecular Pathology and Biology, University of Verona, Italy

Thesis Advisor – Dr. Claudio Sorio.
"Biochemical and functional characterization of the oncosuppressor gene Protein Tyrosine Phosphatase Receptor Gamma".

Personal Statement

As a passionate and results-driven cancer biologist and laboratory operations expert, I have dedicated more than twelve years to advancing innovation at the intersection of immunology, virology, and translational therapeutics. My career has been defined by building and managing complex research environments, driving discovery, and developing models that bridge fundamental biology with clinical application.

I am currently a Senior Associate in Dr. Maria Baer's BLS2 wet laboratory at the Marlene and Stewart Greenebaum Comprehensive Cancer Center, University of Maryland, Baltimore, where my research focuses on acute myeloid leukemia (AML) with FLT3-ITD mutations. I serve as Principal Investigator and supervisor on a funded American Cancer Society Institutional Research Grant targeting hypoxia-driven resistance in FLT3-ITD AML and as Co-PI or key personnel on multiple NIH- and VA- projects (R21, R01, VA Merit). I have also submitted an NIH R03 grant as PI to pioneer patient-derived organoid models as New Alternative Methods (NAMs) to reduce reliance on animal testing, reflecting my commitment to precision medicine and the development of next-generation therapeutic discovery platforms.

I hold a Ph.D. in Molecular and Cellular Biology and Pathology from the University of Verona, Italy, where I studied phosphatase signaling in leukemia progression, focusing on the tumor suppressor PTPRG in chronic myeloid leukemia (CML). As a postdoctoral fellow at the University of Maryland, Baltimore, I shifted my focus toward mechanisms of stemness in CML, establishing expertise in both chronic and acute leukemias. Over the past decade, my research has spanned in vitro and in vivo models, encompassing high-parameter flow cytometry, immune profiling, cell sorting, microscopy, and molecular signaling analyses. In Dr. Baer's laboratory, I have investigated leukemia stem and progenitor cell populations from human systems, while also interrogating therapeutic vulnerabilities in FLT3-ITD AML.

My scientific contributions include uncovering the role of RNA metabolism and microRNA tumor suppressors in leukemia pathogenesis, as well as advancing therapeutic strategies targeting resistance pathways. Most recently, our work has demonstrated that co-administration of Pim kinase inhibitors with the FDA-approved FLT3 inhibitor gilteritinib enhances cytotoxicity *in vitro* and *in vivo* via GSK-3β activation. These findings build on my broader commitment to understanding therapy resistance within the bone marrow microenvironment and developing rational combination strategies.

Beyond discovery research, I bring expertise in clinical trial operations, regulatory compliance, and laboratory management. I hold a Certificate in Clinical Trials Operations from Johns Hopkins University, covering data management, budgeting, and advanced operational frameworks. My work has been published in leading journals including *Leukemia (Nature), PNAS*, *Blood Cancer Discovery*, *Cancer Research Communications*, *Frontiers in Immunology*, *Haematologica*, and *Oncotarget*. I also remain deeply engaged in mentoring junior scientists, serving as a peer reviewer, and contributing to the global scientific community through editorial and communication roles.

My long-term vision is to integrate advanced *in vitro* modeling, molecular biology, and translational therapeutics to tackle resistance mechanisms in leukemia and bring forward more effective, less toxic therapies for patients. With a strong foundation in molecular cancer biology, extensive experience in leukemia biology, and a proven track record of grant funding and collaborative research, I am committed to shaping the future of cancer research through innovation, precision, and mentorship.

Post Graduate Education and Training

06/2005-05/2006 Internship in Anatomy Pathology, Centro Sanitario, University of Calabria, Rende, Italy.
1/2010-5/2013 Ph.D. student, Mol. and Cellular Bio. and Pathol., University of Verona, Verona, Italy.
09/2013-06/2018 Post-Doctoral Fellow, Mol. Oncology, University of Maryland Baltimore, Baltimore, USA.
07/2018-12/2018 Research Associate, Program in Oncology, University of Maryland Baltimore, Baltimore, USA.
1/2019-06/2023 Research Associate, IHV, University of Maryland Baltimore, Baltimore, USA.
07/2023-pres. Research Associate, Greenebaum CCC, University of Maryland Baltimore, Baltimore, USA.

Academic Appointments

09/2013-06/2018 Post-Doctoral Fellow, Mol. Oncology, University of Maryland Baltimore, Baltimore, USA.
07/2018-12/2018 Research Associate, Program in Oncology, University of Maryland Baltimore, Baltimore, USA.
01/2019-06/2023 Research Associate, IHV, University of Maryland Baltimore, Baltimore, USA.
07/2023-pres. Research Associate, Greenebaum CCC, University of Maryland Baltimore, Baltimore, USA.
11/2025-pres. IRB review committee board, UMB/VA, University of Maryland Baltimore, Baltimore, USA.

Professional Society Membership

2015-present Member, American Society of Hematology (ASH).
2015-present Member, American Association for the Advancement of Science (AAAS).
2016-present Member, The International CML Foundation (iCMLf)
2017-present Associate Member, American Association for Cancer Research (AACR).
2025-present IRB Membe review committee board, UMB/VA, University of Maryland Baltimore, Baltimore, USA.
2025-present Member of ISSNAF – The Italian Scientists and Scholars in North America Foundation, Washington D.C., USA.
2025-present Member of the Cancer Therapeutics program at the Marlene and Stewart Greenebaum Comprehensive Cancer Center, Baltimore, USA.

Honors and Awards

06/2009, Best Graduate Award 2009, University of Calabria, Rende, Italy, awarded for distinguished performance in biology.
01/2010-03/13, Ph.D. Student Fellowship, Italian Ministry of Health, University of Verona, Verona, Italy.
09/2012, 14th ESH-iCMLf Travel Award, Baltimore, Baltimore, USA.
09/2014, 16th ESH-iCMLf Travel Award, Philadelphia, USA.
05/2015, Award for Best poster presentation, University of Maryland, Baltimore, USA.
08/2015, American Society of Hematology Abstract Award winner, Orlando, USA.
09/2017, September Postdoc Appreciation Month, University of Maryland, Baltimore, USA
04/2018, Member Memory Board and Membership Testimonial, Selected from The American Association for Cancer Research (AACR), Chicago, USA.
10/2022, Silver Plaque Award given by the Mayor of Rende for scientific research career, Rende Italy.

Professional Activities

12/2012, MicroFTIR stage and performing experiments at the Synchrotron Soleil, Paris, France.
09/2013, Organized laboratory planning and maintenance, University of Maryland, Baltimore, USA.
06/2015, Mentor laboratory for *The Nathan Schnaper Summer Intern Program (NSIP) in cancer Research* at Universityof MarylandBaltimore Greenebaum CCC, Baltimore, USA
09/2018-present, Postdoc Peer Mentor Program, University of Maryland, Baltimore, USA.
06/2018-present Judge, *Undergraduate Poster Competition 2018,* Stevenson University and Johns Hopkins Medical Institution, Baltimore, USA. Selected by the Collaborative Teaching Fellows Program to evaluate research posters of undergraduate students and excite them about research careers.
04/2019, Judge, 42 Medical Research Day (MSRD), University of Maryland, Baltimore, USA.
05/2020, Judge, 43 Medical Research Day (MSRD), University of Maryland, Baltimore, USA.
04/2021, Judge, 44 Medical Research Day (MSRD), University of Maryland, Baltimore, USA.
05/2022, Judge, 45 Medical Research Day (MSRD), University of Maryland, Baltimore, USA.
04/2023, Judge, 46 Medical Research Day (MSRD), University of Maryland, Baltimore, USA.
04/2024, Judge, 47 Medical Research Day (MSRD), University of Maryland, Baltimore, USA.
11/2025 Judge, 48 Medical Research Day (MSRD), University of Maryland, Baltimore, USA.

Licenses & certifications

1. **IRB Member Module – ONLY** CITI Program. Issued Feb 2026. Credential ID 73453285.
2. **NSF Research Security Consolidated Training,** University of Maryland Baltimore. Issued May 2026 Credential ID 182736230
3. **Organizational improv Organizational improv** The Johns Hopkins University - Carey Business SchoolThe Johns Hopkins University - Carey Business School Issued Jun 2024.
4. **Conflicts of Interest Conflicts of Interest** CITI Program CITI Program Issued Mar 2024 · Expires Mar 2028 Credential ID 61050470.
5. **Investigators, Staff and Students Investigators, Staff and Students** CITI ProgramCITI Program Issued Mar 2024 · Expires Mar 2027. Credential ID 60372761.
6. **Working with Mice in Research Working with Mice in Research** CITI ProgramCITI Program Issued Mar 2024 · Expires Mar 2027. Credential ID 60372762
7. **Clinical Trials Analysis, Monitoring, and Presentation Clinical Trials Analysis, Monitoring, and Presentation** Johns Hopkins University Issued Nov 2023 Credential ID P3CP6FX3FVH2
8. **Clinical Trials Data Management and Quality Assurance Clinical Trials Data Management and Quality Assurance** Johns Hopkins Nov 2023 Credential ID.
9. **Clinical Trials Management and Advanced Operations Clinical Trials Management and Advanced Operations** Johns Hopkins University Nov 2023 Credential ID VUBL5ZWRJ28M
10. **Clinical Trials Operations Specialization Clinical Trials Operations Specialization** Johns Hopkins Issued Nov 2023 Credential ID 5Z4LWQJG9884
11. **Design and Conduct of Clinical Trials Design and Conduct of Clinical Trials** Johns Hopkins
    University Issued Oct 2023 Credential ID SEQJSJQ38BGL
12. **Design and Interpretation of Clinical Trials Design and Interpretation of Clinical Trials** Johns Hopkins University Issued Oct 2023 Credential ID MDSCR5WDBVCPC
13. **COVID-19: Insights for Higher Ed Leaders COVID-19: Insights for Higher Ed Leaders** CITI Program Issued Apr 2021 Credential ID 39553648
14. **Participating in Vaccine Research Participating in Vaccine Research** CITI Program Issued Apr 2021 Credential ID 39292168
15. **COVID-19: Back to Campus (2020-2023) COVID-19: Back to Campus (2020-2023)** CITI Program Issued Aug 2020 Credential ID 37727502
16. **Biomedical Responsible Conduct of Research Biomedical Responsible Conduct of Research** CITI Program Issued Dec 2013Credential ID 11880343

Local and National Service

Editorial Activity

Academic Editor

06/2024-present Cancer Therapy Reviews.
06/2024-present Journal of AIDS and HIV Treatment.
04/2024-present Archive of Stem Cell and Therapy.

11/2024-present Frontiers in RNA Research.

Grant Reviewer

06/2021 Health Research Council of New Zealand (HRC)

Editorial Board

Peer review activities for international journals

Ad hoc reviewer with more than 70 articles reviewed since 2017 in over 18 scientific journals including:

- Genes
- Cancers
- Journal of Clinical Medicine
- Journal of Cellular Physiology
- Oncotarget
- Frontiers in Oncology
- Healthcare
- Frontiers in Cell and Developmental Biology
- Vaccines
- Pharmaceuticals
- Blood
- International journal of cancer
- Cellular Signaling
- BioMed Research International
- Journal of Blood Medicine
- BioEssays
- Pathogens
- International Journal of Molecular Sciences
- Journal of AIDS and HIV treatment

Local Service

09/2018-present Postdoc Peer Mentor Program, University of Maryland, USA.

International Service

Grant Reviewer:

06/2021, Health Research Council of New Zealand (HRC)

Teaching Service

Undergraduate Student Teaching:

06/2015 Mentor laboratory for *The Nathan Schnaper Summer Intern Program (NSIP) in cancer Research* at University of Maryland Baltimore Greenebaum CCC, Baltimore, USA.

06/2017 Mentor laboratory for *The Nathan Schnaper Summer Intern Program (NSIP) in cancer Research* at University of Maryland Baltimore Greenebaum CCC, Baltimore, USA.

5/2026 American Cancer Society UMB IMPACT mentor in cancer research.

Grants and contract

Ongoing Research Support:

American Cancer Society ACS-IRG-24-1290479-19 07/01/2025-12/31/2026

Title: Targeting Metabolic Adaptations to Hypoxia to Enhance FLT3 Inhibitor Efficacy in Acute Myeloid Leukemia.

Role: PI

Veterans Affairs AI01BX005120-01A2 07/06/2021-09/30/2026

PI: Baer

Role: Co-Investigator

Title: Enhancing FLT3 inhibitor efficacy in acute myeloid leukemia with FLT3-ITD.

Acute myeloid leukemia (AML) accounts for 80% of adult acute leukemia and has a five-year survival rate of only 25%. It is more common in men and incidence increases with age. AML is associated with military service in specific groups of Veterans. It also develops following treatment for other cancers, including those common in Veterans. This merit award proposal explores approaches to improving treatment for AML with fms-like tyrosine kinase 3 internal tandem duplication (FLT3-ITD), a molecular abnormality present in AML cells in 30% of patients and associated with poor treatment outcomes. The work has the potential to improve outcomes in Veterans who develop this common and unfavorable AML subtype, including following military and medical exposures. The long-term goal is to develop clinical trials of multi-targeting approaches to improving outcomes of patients with AML with FLT3-ITD.

Pending/Research/Grant

Veterans Affairs Merit

7/1/2026-6-30-2029

PI: Baer

Co-Investigator: Silvestri

NIH/NCI R21

NIH/NCI R21
"Resensitizing FLT3-ITD AML Cells to FLT3 Inhibitors in Hypoxia"
Giovannino Silvestri (MPI), Baer (PI).
Status: Pending submission/review.

NIH/NCI R03

NIH/NCI 1R03CA304049-01A1
"**Replacing Animal Models with Patient-Derived Organoids to Advance Translational Research in FLT3-ITD Acute Myeloid Leukemia"**
Giovannino Silvestri (PI),
Scored, Pending Council Review
Project Period: 07/01/2026 – 06/30/2028

Completed/Ended Research Support:

NIH/NIAID 1R21AI174952-01 02/06/2022-01/31/2025

PI: Rathinam

Role: Key personnel

Title: Decoding HIV-1 mediated Hematopathology.

Human Immunodeficiency Virus (HIV)-1 infection causes severe hematopathology; including anemia, neutropenia, thrombocytopenia, leukemia, lymphoma, inflammatory disorders, and bone marrow failure.

A deeper understanding of the cellular and molecular mechanisms that regulate hematopoietic stem cells (HSCs) in the BM of patients with HIV-1 infection would be valuable in designing novel therapies for HIV-associated hematological diseases.

NIH/NHLBI 1R01HL132194 02/15/2017-01/31/2023

PI: Rathinam

Role: Key personnel

Title: NF-KB signaling in the control of Hematopoiesis. The goal of this project is to assess the precise role of NF-KB in hematopoietic stem cells that would be essential to understand and treat hematopoietic diseases that arise due to defective NF-KB activation.

NIH/NCI R01CA163800 01/31/2012-01/31/2019

PI: Perrotti

Role: Key personnel

Title: Role of microRNAs in the regulation of CML stem cell survival and self-renewal.

The goal of this project is to assess the role of microRNAs targeting in a canonical or decoy manner the BCR- ABL1/Jak2/SET-PP2A/b-catenin pathway in survival/self-renewal of leukemic stem and progenitor cells.

NIH-NCI 1R21CA209183-01 07/13/2016-06/30/2019

PI: Perrotti

Role: Key Personnel
Title: Role of SETBP1 in adult Ph+ acute lymphoblastic leukemia.The goal of this project is to assess the role of SETBP1 and that of the PP2A inhibitory complex in the survival and self-renewal of Ph+ B-ALL stem cells.

Ph.D. Student Fellowship, Italian Ministry of Health, University of Verona, Italy
01/01/2010 - 05/30/2013
PI: Silvestri

Publications

Peer-reviewed journal articles

1. Bellisola G., Cinque G., Vezzalini M., Moratti E., **Silvestri G**., Redealli S., Gambacorti Passerini C., Wehbe K., and C. Sorio. Rapid recognition of drug-resistance/sensitivity in leukemic cells by Fourier transform infrared microspectroscopy and unsupervised hierarchical cluster analysis, ***Analyst***, 138:3934-3945, 2013.
2. Bellisola G, Bolomini Vittori M, Cinque G, Dumas P, Fiorini Z, Laudanna C, Mirenda M, Sandt C, **Silvestri G**, Tomasello L, Vezzalini M, Wehbe K, Sorio C. Unsupervised explorative data analysis of normal human leukocytes and BCR/ABL positive leukemic cells mid-infrared spectra. ***Analyst***, 140:4407-22, 2015.
3. Perrotti D, **Silvestri G**, Stramucci L. Chronic Myelogenous Leukemia (CML): Current Research Focus. ***Haematologica,*** 9:91-102, 2015.
4. Laidlaw K., Berhan S., Liu S, **Silvestri G**, Holyoake T, Frank D, Aggarwal B.B., Perrotti D**.**, Jørgensen H., Arbiser J. Cooperation of imipramine blue and tyrosine kinase blockade demonstrates activity against chronic myeloid leukemia. ***Oncotarget***, 7:51651 doi: 10.18632/oncotarget.10541, 2016.
5. Perrotti D, **Silvestri G**, Stramucci L, Yu J, Trotta R. Cellular and Molecular Networks in Chronic Myeloid Leukemia: the leukemic stem, progenitor and stromal cell interplay. ***Current drug targets***, 18:377-388, 2017
6. Srutova K, Curik N, Burda P, Savvulidi F, **Silvestri G**, Trotta R, Klamova H, Pecherkova P, Sovova Z, Koblihova J, Stopka T, Perrotti D and Machova Polakova K. BCR-ABL1 mediated miR-150 downregulation throught MYC contributed to myeloid differentiation block and resistance in chronic myeloid leukemia. ***Haematologica***, 103(12):2016-2025. doi: 10.3324/haematol.2018.193086, 2018.
7. **G Silvestri**, R Trotta, L Stramucci, JJ Ellis, JG Harb et al. Persistence of Drug-Resistant Leukemic Stem Cells and Impaired NK Cell Immunity in CML Patients Depend on MIR300 Antiproliferative and PP2A-Activating Functions, ***Blood Cancer Discovery,*** 1:1. doi:10.1158/0008-5472. BCD-190039, 2020.
8. *Palma G, *Pasqua T, **Silvestri G***, Rocca C, Gualtieri P, Barbieri A, De Bartolo A, De Lorenzo A, Angelone T, Avolio E and Botti G. PI3Kδ Inhibition as a Potential Therapeutic Target in COVID19, ***Frontiers in Immunology***, 11:2094. doi: 10.3389/fimmu.2020.0209, 2020. **equally contributed*.
9. Benedetti*, F.; **Silvestri*, G**.; Nartuhi*, C.M.; Weichseldorfer, M.; Munawwar, A.; Cash, M.N.; Dulcey, M.; Vittor, A.Y.; Ciccozzi, M.; Salemi, M.; Latinovic, O.S.; Zella D. ; Comperison of SARSCoV-2 receptors expression in primary endothelial cells and retinoic acid-differentiated human neuronal cells. ***Viruses***, 13(11):2193 doi: 10.3390/v13112193, 2022 **equally contributed*.
10. Benedetti F.*; **Silvestri G**.*; Saadat S.; Denaro F.; Latinovic S.O.; Davis H.; Williams S.; Bryant L. J.; Ippodrino R.; Rathinam V. C.; Gallo C. R.; Zella D.; Mycoplasma DNAK increases DNA copy Number Variants *in vivo*. ***The Proceedings of the National Academy of Sciences (PNAS)***,120 (30) e2219897120, 2023 **equally contributed.*

11. Jonelle K. Lee, Aditi Chatterjee, Mario Scarpa, Christopher M. Bailey, Sandrine Niyongere, Prerna Singh, Moaath K. Mustafa Ali, Shivani Kapoor, Yin Wang, **Giovannino Silvestri*** and Maria R. Baer*; Pim kinase inhibitors increase gilteritinib cytotoxicity in FLT3-ITD acute myeloid leukemia through GSK-3β activation and c-Myc and Mcl-1 proteasomal degradation. ***Cancer Research Communications,*** 4(2):431-445, 2024. *Co-Last Author.*
12. Francesca Benedetti[#], **Giovannino Silvestri**[#], Frank Denaro, Giovanni Finesso, Rafael ContrerasGalindo, Arshi Munawwar, Sumiko Williams, Harry Davis, Joseph Bryant, Yin Wang, Enrico Radaelli, Chozha V. Rathinam, Robert C. Gallo* and Davide Zella*; Mycoplasma DnaK Expression Increases Cancer Development In Vivo Upon DNA Damage. ***The Proceedings of the National Academy of Sciences (PNAS)***, 121 (10) e2320859121, 2024. # *equally contributed*.
13. Benedetti F.; Mongodin F. E.; Badger H. J.; Munawwar A.; Cellini A.; Yuan W.; **Silvestri G**.; Kraus N. C.; Marini S.; Salemi M.; Tettelin H.; Gallo C. R.; Zella D.; Bacterial DnaK Reduces the Activity of Anti-cancer Drugs Cisplatin and 5FU. ***Journal of Translational Medicine*** 22, 269, 2024.
14. Basta D., Latinovic O.S., Tagaya Y. **Silvestri G.***. Potential Advantages of a Well-balanced Nutrition Regimen for People Living with Human Immunodeficiency Virus Type -1. ***J AIDS HIV Treat.*** 6(1):11-27, 2024. **correspondent*.
15. Chatterjee A, Matsangos A, Latinovic OS, Heredia A, **Silvestri G**.* Advancing towards HIV-1 remission: Insights and innovations in stem cell therapies. ***Archive of Stem Cell and Therapy***. 2024;5(1):5-13. doi: 10.46439/stemcell.5.020. PMID: 39301092; PMCID: PMC11412077. **correspondent*.
16. Prajakta Shinde, **Giovannino Silvestri**, Panjamurthy Kuppusamy, Nicholas Stamatos and Chozha Vendan Rathinam. Influenza A virus infection leads to pancytopenia and defective immune cell differentiation program in the thymus and bone marrow. ***Biorxiv,*** 2025.
17. **Giovannino Silvestri** and Chozha Vendan Rathinam; Trim28 plays an indispensable role in maintaining functions and transcriptional integrity of hematopoietic stem cells. ***Cells***, 2025, Under Review.
18. Prajakta Shinde, **Giovannino Silvestri**, Panjamurthy Kuppusamy, Nicholas Stamatos and Chozha Vendan Rathinam. Influenza A virus infection leads to pancytopenia and defective immune cell differentiation program in the thymus and bone marrow. ***Journal of Immunology,*** 2025, under review.
19. **Giovannino Silvestri#** and Aditi Chatterjee. Rebuilding the Marrow *In Vitro*: Translational Advances in the 3D Modeling of Blood Cancers. ***Onco,*** *5*, 51, 2025. #correspondent.
20. **Giovannino Silvestri#** and Aditi Chatterjee. Stem Cell-Based Strategies for HIV-1 Remission: Emerging Frontiers and Translational Challenge. ***Arch Stem Cell Ther.*** Ahead of print. 6(1)3-5, 2025. # correspondent.
21. **Giovannino Silvestri#** and Aditi Chatterjee. HIV-1 and Artificial Intelligence: From Molecular Insight to Population Impact. ***J AIDS HIV Treat.*** Ahead of print. 7(1):123-132, 2025. # correspondent.

22. Chatterjee A, Mustafa Ali MK, Bailey CM, Liu Y, Small D, Smith CC, Traer E, Wang Y, **Silvestri G**, Baer MR. Sphingosine-1-phosphate receptor modulators resensitize FLT3-ITD acute myeloid leukemia cells with *NRAS*mutations to FLT3 inhibitors. ***bioRxiv [Preprint]***. 2025.

23. **Giovannino Silvestri**#. Fueling the Fire: How Glutamine Metabolism Sustains Leukemia Growth and Resistance. ***Biomed 6(1), 7,*** 2026. #correspondent.

24. Aditi Chatterjee, Moaath K. Mustafa Ali, Christopher M. Bailey, Yuchen Liu, Donald Small, Catherine C. Smith,Elie Traer, Yin Wang, **Giovannino Silvestri** and Maria R. Baer. Sphingosine-1-phosphate receptor modulators resensitize FLT3-ITD acute myeloid leukemia cells with *NRAS* mutations to FLT3 inhibitors. ***Leukemia Nature,*** 2026**.** ***Leukemia*** **(2026). https://doi.org/10.1038/s41375-026-02982-7.**

25. **Giovannino Silvestri**. Leukemia stem cells in acute myeloid leukemia: biology, therapeutic resistance, and barriers to durable remission. ***J Biomed Res (Middlet)***. 2026;7(1):41–45.
26. **Silvestri G,** Chatterjee A, Rendina BP, Bar EE, and Baer MR. Glutamine-dependent downregulation of FLT3-ITD is a mechanism of FLT3 inhibitor resistance in FLT3-ITD AML in hypoxia. ***bioRxiv [Preprint]***. 2026 May 15:2026.05.02.722336.

Major Invited Speeches

National

1. **Silvestri, G.,** MicroRNAs as regulators of stem and progenitor CML cells function, ESH-iCMLf, Philadelphia, 2014.
2. **Silvestri, G.,** Role of the MSC-Derived Exosomal and Endogenous JAK2-SET/PP2A-Beta CateninModulator Mir-300 in Leukemic Stem/Progenitor Proliferation and Survival in CML, 57th ASH, Orlando, 2015.

International

1. **Silvestri, G.,** The BM Niche Uses Mir-300 As a Biological Rheostat to Selectively Control Stem CellDriven Malignant Hematopoiesis and Innate Anti-Cancer Immunity. ESH-iCMLf, Estoril, Portugal, 2017.

Proffered Communications: oral (O) and poster (P) poster presentation

1. Morsi H., El Ayoubi H., Moratti E., Vezzalini M., **Silvestri G.**, Stradoni R., Murineddu M., Gabbas A., Monne M. and C. Sorio. High Resistance Rate of Chronic Myeloid Leukaemia (CML) to Imatinib Myselate (IM) Might be related to Protein Tyrosine Phosphatase Receptor

Type Gamma (PTPRG) DownRegulation. *Proceedings Qatar Foundation* Annual Research Forum *Epub: November 2011* (O).

2. Bellisola G., Cinque G., Vezzalini M., **Silvestri G.**, Redaelli S., Gambacorti Passerini C., Wehbe K. and C. Sorio. Rapid identification of drug-resistance/sensitivity in leukemic cells by Fourier Transform InfraRed microspectroscopy (microFTIR) and unsupervised Hierarchical Cluster Analysis (HCA) *Proceeding of the Synchrotron Radiation User Meeting* Oxford, UK, September 2012. (P).

3. **Silvestri G*.,** Mirenda M., Vezzalini M., Moratti E., Laudanna C. and C. Sorio. Molecular mechanisms of the antiproliferative effect of Protein Tyrosine Phosphatase Receptor-like Gamma (PTPRG): BCR/ABL and LYN kinase as key targets. *Proceeding of the 14th ESH-iCMLf International Conference on CML Biology and Therapy*. Baltimore, Usa, September 2012 (P) (*): recipient of the iCMLF travel award.

4. Bellisola G., Cinque G., Vezzalini M., Moratti E., **Silvestri G.**, Redaelli S., Wehbe K. and C. Sorio. Rapid identification of drug-resistance/sensitivity in leukemic cells by Fourier transform infrared microspectroscopy (microFTIR) and unsupervised pattern recognition. *Proceeding of the 14th ESHiCMLf International Conference on CML Biology and Therapy*. Baltimore, USA, September 2012 (P).

5. Bellisola G., Cinque G., Sandt C., Dumas P., **Silvestri G.** and C. Sorio. Oncosuppressive effect of direct transduction of receptor-type tyrosine-protein phosphatase gamma (PTPRG) intracellular catalytic domains in K562 cells. *Proceeding of the 15th ESH-iCMLf International Conference on CML Biology and Therapy*. Estoril, Portugal, September 2013 (P).

6. Tomasello L., **Silvestri G.**, Della Peruta M., Fiorini Z., Vezzalini M. and Claudio Sorio. Protein Tyrosine Phosphatase Receptor Type Gamma is an inhibitor of critical BCR/ABL driven pathways in Chronic Myeloid Leukemia. *Societa' Italiana di Cancerologia.* Ferrara, Italy, September 2014 (O).

7. Bellisola G., Tomasello L., Fiorini Z., **Silvestri G.**, Vezzalini M. and Claudio Sorio. Direct transduction of Receptor-Type Protein Tyrosine-Phosphatase Gamma (PTPRG) intracellular catalytic domains in K562 cells. *Societa' Italiana di Cancerologia.* Ferrara, Italy, September 2014 (P).

8. **Silvestri G*.**, Ellis J., Stramucci L., Harb J.G., Neviani P., Marcucci G., Reid A., Milojkovic D., Apperley J., Baer M., Trotta R., and D. Perrotti. MicroRNAs as regulators of stem and progenitor CML cells function. Peer reviewed and printed in the Proceedings of the 2014 ESH-iCMLf International

Conference on CML-Biology and Therapy, Philadelphia (O). (*): Invited Speaker.

9. **Silvestri G.,** Ellis J.J., Stramucci L., Harb J.G., Neviani P., Marcucci G., Roy D-C., Hokland P., Milojkovic D., Reid A., Apperley J.F., Livak F.M., Baer M.R., Trotta R., and D. Perrotti. miR-300 acts as a tumor suppressor in Ph^+ progenitors by Modulating the JAK2-SET/PP2A-B catenin interplay. Peer Reviewed and Published in Blood (Suppl.) dedicated to the 56th ASH Annual Meeting 2014 (P).

10. **Silvestri G*.,** Justin Ellis, Lorenzo Stramucci, Jason G Harb, Paolo Neviani, Guido Marcucci, DenisClaude Roy, Peter Hokland, Dragana Milojkovic, Alistair Reid, Jane F. Apperley, Ferenc M. Livak, Maria R. Baer, Rossana Trotta, and Danilo Perrotti. miR-300 acts as a tumor suppressor in Ph^+ progenitors by Modulating the JAK2-SET/PP2A-B catenin interplay. UMB Cancer Center Retreat,
    Baltimore, USA, May 18, 2015. (P) (*): Best Poster Presentation.
11. **Silvestri G*.**, Stramucci L, Ellis J., Yu J., Harb J.G., Neviani P., Marcucci G., Srutova K., Machova Polakova K., Roy D-C., Hokland P., Deininger MW., Bhatia R., Gambacorti-Passerini C., Milojkovic D., Reid A.G., Apperley J.F., Livak F., Baer M.R., Trotta R. and Perrotti D. Role of the MSC-derived exosomal and endogenous JAK2-SET/PP2A-beta-catenin-modulator miR-300 in leukemic stem/progenitor and NK cell proliferation and survival in CML. Peer reviewed and printed in the Proceedings of the 2015 ESH-iCMLf International Conference on CML-Biology and Therapy, Estoril, Portugal (O). (*): Best scored Biology Abstract.
12. **Silvestri G*.,** Stramucci L., Ellis J., Yu J., Harb J.G., Neviani P., Marcucci G., Srutova K., Machova Polakova K., Roy D-C, Hokland P., Deininger MW., Bhatia R., Gambacorti-Passerini C., Milojkovic D., Reid A.G., Apperley J.F., Livak F., Baer M.R., Trotta R., and Perrotti D. Role of the MSC-Derived
    Exosomal and Endogenous JAK2-SET/PP2A-Beta Catenin-Modulator Mir-300 in Leukemic Stem/Progenitor Proliferation and Survival in CML. Peer Reviewed and Published in Blood (Suppl.) dedicated to the 57th ASH Annual Meeting 2015 (O). (*): ASH travel award.
13. Trotta R., **Silvestri G.**, Stramucci L., Ellis J., Yu J., Harb J.G., Neviani P., Marcucci G., Srutova K.,
    Machova Polakova K., Roy D-C., Hokland P., Deininger M.W., Bhatia R., Gambacorti-Passerini C., Milojkovic D., Reid A.G., Apperley J.F., Livak F., Baer M.R., and Perrotti D. Role of the MSC-Derived
    Exosomal and Endogenous JAK2-SET/PP2A-Beta Catenin-Modulator Mir-300 in Leukemic Stem/Progenitor Proliferation and Survival in CML. Proceeding of the AACR Annual Meeting (New Orleans, LA) 2016 (P).
14. **Silvestri G.**, Stramucci L., Ellis J., Yu J., Harb J.G., Neviani P., Marcucci G., Srutova K., Machova Polakova K., Roy D-C., Hokland P., Deininger M.W., Bhatia R., Gambacorti-Passerini C., Milojkovic D., Reid A.G., Apperley J.F., Livak F., Baer M.R., Trotta R., and Perrotti D. Role of Mir300 in Leukemic Stem/Progenitor Proliferation and Survival in CML. Peer Reviewed and Published in the Haematologica (Suppl.) dedicated to the European Hematology Association (EHA) Annual Meeting. Copenhagen, Danmark. 2016. (O).
15. Yu J.E., **Silvestri G**., Stramucci L., Livak F.M., Baer M.R., Trotta R., and Perrotti, D. The Role of SETBP1 in Leukemia-Initiating Cell Survival and Self-Renewal in Adult Ph^+ B-ALL. ESH-iCMLF ESH-iCMLf International Conference on CML-Biology and Therapy, Houston TX Sept. 2016 (O).
16. Yu J.E., **Silvestri G.,** Stramucci L., Sanada M., Yamaguchi T., Du Y., Westermarck J., Caligiuri M.A., Garzon R., Milojkovic D., Apperley J.F., Roy D-C., Marcucci G., Calabretta, B., Baer M.R., Trotta R. and Perrotti D**.** *Potential Targeting Ph+ Acute Lymphoblastic Leukemia Stem*

and Progenitor Cells By Modulating the CIP2A-SET-SETBP1 –Mediated Suppression of PP2A Activity Peer Reviewed and Published in Blood (Suppl.) dedicated to the 58th ASH Annual Meeting 2016 (P).

17. P. Burda, N. Čuřík, K. Šrůtová, F. Savvulidi, **G. Silvestri**, H. Klamová, P. Pecherková, Ž. Sovová, J. Koblihová, T. Stopka, D. Perrotti, K. Machová Poláková *Myc-dependent repression mechanism of the mir-150 transcriptional regulation in chronic myeloid leukemia*. Peer Reviewed and Published in the Leukemia (Suppl.) dedicated to the European Hematology Association (EHA) Annual Meeting. Madrid, Spain. 2017 (P).
18. **Silvestri G.,** Stramucci L., Ellis J., Yu J., Harb J.G., Neviani P., Zhang B., Srutova K., GambacortiPasserini C., Pineda G., Jamieson C., Calabretta B., Stagno F., Vigneri P., Nteliopoulos G., May P., Reid A.G., Garzon R., Roy D-C., Guimond M., Hokland P., Deininger M., Fitzgerald G., Harman C., Dazzi F., Milojkovic D., Apperley J.F., Marcucci G., Qi J., Fan X., Machova-Polakova K., Baer M.R., Trotta R., and Perrotti D. *The BM Niche Uses Mir-300 As a Biological Rheostat to Selectively Control Stem Cell-Driven Malignant Hematopoiesis and Innate Anti-Cancer Immunity.* UMB CCC Retreat, September 2017 (P).
19. **Silvestri G*.,** Stramucci L., Ellis J., Yu J., Harb JG, Neviani P., Zhang B., Srutova K., GambacortiPasserini C., Pineda G., Jamieson C., Calabretta B., Stagno F., Vigneri P., Nteliopoulos G., May P., Reid A.G., Garzon R., Roy D-C., Guimond M., Hokland P., Deininger M., Fitzgerald G., Harman C., Dazzi F., Milojkovic D., , Apperley J.F., Marcucci G., Qi J., Fan X., Machova-Polakova K., Baer M.R., Trotta R., and Perrotti D. *The BM Niche Uses Mir-300 As a Biological Rheostat to Selectively Control Stem Cell-Driven Malignant Hematopoiesis and Innate Anti-Cancer Immunity.* ESH-iCMLf International Conference on CML-Biology and Therapy, Estoril, Portugal Oct. 2017 (O). (*): selected for Key note lecture.
20. **Silvestri G.,** Stramucci L., Ellis J., Yu J., Harb J.G., Neviani P., Zhang B., Srutova K., GambacortiPasserini C., Pineda G., Jamieson C., Calabretta B., Stagno F., Vigneri P., Nteliopoulos G., May P., Reid A.G., Garzon R., Roy D-C., Guimond M., Hokland P., Deininger M., Fitzgerald G., Harman C., Dazzi F., Milojkovic D., Apperley J.F., Marcucci G., Qi J., Fan X., Machova-Polakova K., Baer M.R., Trotta R., and Perrotti D. *The Bone Marrow Niche Uses Mir-300 As a Biological Rheostat to Selectively Control Stem Cell-Driven Malignant Hematopoiesis and Innate Anti-Cancer Immunity.* Peer Reviewed and Published in Blood (Suppl.) dedicated to the 59th ASH Annual Meeting 2017 (O).
21. **Silvestri G.,** Stramucci L., Ellis J., Yu J., Harb J.G., Neviani P., Zhang B., Srutova K., GambacortiPasserini C., Pineda G., Jamieson C., Calabretta B., Stagno F., Vigneri P., Nteliopoulos G., May P., Reid A.G., Garzon R., Roy D-C., Guimond M., Hokland P., Deininger M., Fitzgerald G., Harman C., Dazzi F., Milojkovic D., Apperley J.F., Marcucci G., Qi J., Fan X., Machova-Polakova K., Baer M.R., Trotta R., and Perrotti D. *The tumor suppressor activity of miR-300 is detrimental for leukemia development but required for leukemia stem cell maintenance.* Proceeding of the AACR Annual Meeting (Chicago, IL) 2018 (P).
22. Trotta R., **Silvestri G.**, Stramucci L., Guimond M., Marcucci G., Fan X., Baer M.R., and D. Perrotti. *Bone marrow microenvironment-induced miR-300 expression impairs natural killer*

cell proliferation and anti-tumor activity. Proceeding of the AACR Annual Meeting (Chicago, IL) 2018 (P).

23. Trotta R., **Silvestri G.**, Stramucci L., Guimond M., Marcucci G., Fan X., Baer M.R., and D. Perrotti. Bone marrow microenvironment-induced miR-300 expression impairs natural killer cell proliferation and anti-tumor activity. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 81():63, DOI: 10.1097/01.qai.0000558015.84504.53, April 2019. (P)
24. **Silvestri G.** *et al.* The 14q32.31 MIR300 DLK1-DIO3 oncosuppressor induces CML and AML cancer stem cell quiescence and inhibits NK cell Immunity. 21st *ESH-iCMLf International Conference on CML-Biology and Therapy*, Bordeaux, France, September. 2019 (O). (*): selected abstract.
25. **Giovannino Silvestri**, Rossana Trotta, Lorenzo Stramucci, Shuzhen Wang, Ann-Kathrin Eisfeld, Bin Zhang, Klara Srutova, Gabriel Pineda, Catriona Jamieson, Fabio Stagno, Paolo Vigneri, Georgios Nteliopoulos, Martin Guimond, Peter Hokland, Michael W Deininger, Francesco Dazzi, Dragana Milojkovic, Jane Apperley, Guido Marcucci, Xiaoxuan Fan, Maria R Baer, Bruno Calabretta, Danilo Perrotti. A 14q32.31 Genomic-Imprinted_DLK1-DIO3 microrna promotes Leukemogenesis by Inducing Stem Cell Quiescence and Inhibiting NK Cell Anti-Cancer Immunity. *Blood, The Journal of the American Society of Hematology. (2019) 134 (Supplement_1): 4141.* (P)
26. Francesca Benedetti*, **Giovannino Silvestri***, Saman Saadat, Frank Denaro, Olga S. Latinovic, Harry Davis, Sumiko Williams, Josph Bryant, Chozha V. Rathinam, Robert C. Gallo, Davide Zella. Characterization of a Mycoplasma DnaK Transgenic Mouse. *World Microbe Forum,* online worldwide, June 2021. *equally contributed.
27. Aditi Chatterjee, Moaath K. Mustafa Ali, Christopher M. Bailey, Yuchen Liu, Donald Small, Catherine C. Smith, Elie Traer, Yin Wang, **Giovannino Silvestri** and Maria R. Baer. Sphingosine-1-phosphate receptor modulators overcome FLT3 inhibitor resistance in acute myeloid leukemia with FLT3-ITD and *NRAS* mutations through sphingosine kinase 1/AKT pathway downregulation. *ASH Annual Meeting Orlando,* 2025. *Blood* (2025) 146 (Supplement 1): 3288.
28. **Silvestri G**. Glutamine-Dependent Downregulation of FLT3-ITD is a Mechanism of FLT3 Inhibitor Resistance in FLT3-ITD AML in Hypoxia. *ACS-IRG Symposium*, Baltimore, USA, 2026.

Clinical Specialty Details:

Certificate in Clinical Trials Operations by Johns Hopkins University.
Certificate earned November 1, 2023.

1. Design and Conduct of Clinical Trials
   Johns Hopkins University

Taught by: Janet Holbrook, PhD, MPH, Ann-Margret Ervin, PhD, MPH, Stephan Ehrhardt,
MD, MPH & Elizabeth A. Sugar, PhD
Grade Achieved: 87.79%

2. Clinical Trials Data Management and Quality Assurance
   Johns Hopkins University
   Taught by: Janet Holbrook, PhD, MPH, Ann-Margret Ervin, PhD, MPH & David M. Shade, JD
   Grade Achieved: 86.08%

3. Clinical Trials Management and Advanced Operations
   Johns Hopkins University
   Taught by: Ann-Margret Ervin, PhD, MPH, Anne Shanklin Casper, MA & Sheriza Baksh, PhD Grade Achieved: 87.34%

4. Clinical Trials Analysis, Monitoring, and Presentation
   Johns Hopkins University
   Taught by: Janet Holbrook, PhD, MPH, Elizabeth A. Sugar, PhD & David M. Shade, JD
   Grade Achieved: 86.23%

In the News

- Dr Silvestri on March 11th, 2019 released an interview to an italian science magazine OGGIScienza.it that interviewed him to tell to the italian community the research he is performing in the United States of America. https://oggiscienza.it/2019/03/11/leucemia-mieloidecronica/Chronic myeloid leukemia, the research to destroy cancer stem cells. Two directions of CML research: study drug-resistant cancer stem cells and develop new molecules to treat patients resistant to therapies by Luisa Alessio. 11 March 2019.

- “From the historic center of Rende to the United States to fight on the front line against the Coronavirus. Giovannino Silvestri from Rende is also part of the team of scientists who have proposed a new therapeutic protocol for the treatment of Covid-19 to the Annunziata hospital in Cosenza. Raised in the ancient village of Oltre Campagnano, he has lived in the USA since 2013 and works as an associate researcher at the Institute of Human Virology of the University of Maryland in Baltimore. Born in 1984, he graduated with honors from the Faculty of Biology of the University of Calabria in 2009 and three years later obtained his PhD from the University of Verona in biology and molecular and cellular pathology. In recent weeks his research work has focused on the Covid-19 pandemic which is unfortunately claiming thousands of victims all over the world. "To date, there is no known effective pharmacological treatment for which therapeutic alternatives are needed to alleviate and stop this pandemic due to a completely new virus," explains Silvestri. «The work of which I co-authored with Ennio Avolio, Teresa Pasqua and Giuseppe Palma, involves the use of the treatment of two drugs capable of acting together and mitigating the worsening of the lung disease, the now sadly famous syncytial pneumonia, caused by Sars-Cov-2 ”, underlines the researcher. «The treatment consists of a selective antagonist of

peripheral H1 histaminergic receptors in combination with a specific inhibitor of one of the inflammatory cascades which, when activated, causes a strong perturbation of the immune responses with a typical pulmonary clinical picture of Covid-19», he highlights."This new therapeutic protocol - concludes Silvestri - could give an important turning point in the treatment of Covid-19 patients, especially in the early stages of the evolution of the pathology, that is, in avoiding or reducing the need for treatment in intensive care". https://www.quotidianodelsud.it/calabria/lintervista/salute-e-assistenza/2020/04/03/coronavirusla-terapia-antivirus-dal-ricercatore-calabrese-negli-usa April 2022, Italy.

- Chronic myelogenous leukemia (CML) is a stem cell disorder once considered an eventual death sentence upon progression to the terminal acute/blastic cell phase, a terrible clinical outcome that has improved with the introduction of tyrosine kinase inhibitors. A major continuing problem with treating CML is the persistence of drug-resistant leukemia stem/initiating cells (LS/IC).In the first issue of Blood Cancer Discovery, Silvestri and colleagues describe an incredibly in-depth mechanistic study using genetic and pharmacologic modulation of the miRNA MiR300 with and without treatment with activators of the serine-threonine protein phosphatase 2A (PP2A) in human cells. In vitro studies and in vivo mouse models of patient-derived xenografts were used to address the need to target LS/ICs and restore immunity of impaired natural killer cells for attenuation of CML progression. Spotlight by Hal Broxmeyer. https://bloodcancerdiscov.aacrjournals.org/content/1/1/13. July 2020.

- «To Giovannino Silvestri a brilliant mind who, with his research, gives hope and faith in science». These were the words imprinted on the silver plaque given by the mayor Manna to the transplanted biologist in Baltimore where he has lived for 10 years and works as an associate researcher at the Institute of Human Virology at the University of Maryland. In addition to the doctor's parents, the Assessors Annamaria Artese, Lisa Sorrentino and Fabrizio Totera took part in the ceremony. «It is an honor to have this illustrious citizen who, with his work, offers the possibility of treatment for patients suffering from chronic myeloid leukemia» said Mayor Marcello Manna. Dr Silvestri, during the stop forced by the pandemic, helped also to activate a treatment at the Cosenza hospital that avoids the complications of the consequences of pneumonia: “Although I have lived in America for some time - said Silvestri - where I came to work with Robert Charles Gallo, US academic, discoverer of the retroviral origin of AIDS in 1982, I am very fond of my roots and this is where I trained and graduated. I thank my city for this important recognition”. https://www.ilpendolo.it/la-citta-di-rende-omaggia-il-concittadinodi-fama-mondiale-giovannino-silvestri/ October 2022, Italy.

- A team of researchers from the University of Maryland School of Maryland’s (UMSOM) Institute of Human Virology (IHV), a Center of Excellence of the Global Virus Network (GVN), published new findings that emphasize the crucial role of the urinary and genital tract microbiota in adverse pregnancy outcomes and genomic instability that originate in the womb during fetal development. This research was spearheaded by Robert Gallo, MD,

The Homer & Martha Gudelsky Distinguished Professor in Medicine, Co-Founder and Emeritus Director of UMSOM's
IHV, and Co-Founder and Chair of the Scientific Leadership Board of the Global Virus Network "We aim to further explore the mechanisms underlying these findings and their potential implications for preventing and treating chromosomal abnormalities and genetic diseases," said co-lead author Giovannino Silvestri, PhD, former Research Associate of Medicine in UMSOM's IHV. The human microbiota is known to affect metabolism, susceptibility to infectious diseases, immune system regulation, and more. One of these bacterial components, Mycoplasmas, have been linked to various cancers. The research team has been studying one Mycoplasma protein, DnaK, which belongs to a family of proteins that safeguards other bacterial proteins against damage and aids in their folding when they are newly made, acting as a so-called 'chaperone.' However, while this protein is advantageous for bacteria, its effects on animal cells are less favorable. To this regard, the team had previously demonstrated that this DnaK is taken up by the body's cells and it interferes with key proteins involved in preserving DNA integrity and in cancer prevention, such as the tumor suppressor protein p53.https://ihv.org/news/2023News/Researchers-from-the-Institute-of-Human-Virology-Discover-that-a-Bacterial-ProteinCauses-Genomic-Instability-and-Contributes-to-Reduced-Fertility-and-Birth-Defects.html July 2023,