

Curriculum vitae Mariangela Russo

Personal details

Born in Italy

Nationality: Italian

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Educations

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| 2018 | National scientific qualification as Associate Professor in:
- SSD BIO/17, sector 5/H2 (Histology, from 24/09/2018)
- SSD MED/06, sector 06/D3 (Blood diseases, Oncology and Rheumatology, from 31/10/2018)
- SSD MED/46, sector 06/N1 (Health Sciences and Applied Medical Technologies, from 15/10/2018). |
| 2008-2010 | PhD in “Complex Systems in post-genomic Biology”
University of Turin, Italy |
| 2007-2007 | Master II Level in “Cancer Pharmacy and Pharmacology”
University of Milan, Italy |
| 2000-2005 | Joint BSc & MSc in Pharmaceutical Biotechnologies (five-year degree), Mark 110/110 Magna cum Laude.
University of Naples “Federico II”, Italy |

Professional experiences and current position

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| 12/2021 – Today | Assistant Professor - RTDB
Dept. of Oncology, University of Turin, Italy, Turin (Italy) |
| 11/2019–11/2021 | Assistant Professor - RTDA
Dept. of Oncology, University of Turin, Italy, Turin (Italy) |
| 07/2019–10/2019 | Research Fellowship
"Approfondimenti sull'eterogeneità nell'evoluzione del carcinoma coloretale metastatico: dai meccanismi alle terapie ". Dept. of Oncology, University of Turin, Italy, Turin (Italy) |
| 01/2019–06/2019 | Post Doc
“Cancer of unknown primary and hypermetastatic disease: from mechanisms to therapeutic applications”. Fondazione del Piemonte per l'Oncologia, Candiolo (Italy). |
| 06/2017 – 12/2018 | Post Doc
"Sviluppo ed implementazione di una piattaforma genomica per la medicina di precisione in oncologia". Fondazione del Piemonte per l'Oncologia, Candiolo (Italy). |
| 07/2015- 05/2017 | Research Fellowship
"Modelli di xenotrapianti murini per valutare nuove strategie terapeutiche in pazienti con resistenza acquisita alle terapie molecolari (FP7 MErCuRIC GA 602901)". Dept. of Oncology, University of Turin, Italy, Turin (Italy). |
| 01/2015 – 06/2015 | Post Doc
" Caratterizzazione della resistenza acquisita alle terapie anti-EGFR ". Fondazione del Piemonte per l'Oncologia, Candiolo (Italy). |
| 02/2013-12/2014 | Research Fellowship
" COLTHERES: Costruzione di modelli al fine di predire la sensibilità alle terapie mirate nei carcinomi coloretali ". Dept. of Oncology, University of Turin, Italy, Turin (Italy). |
| 02/2011- 01/2013 | Post-Doc fellow
“Studio dei meccanismi molecolari alla base della resistenza alle terapie anti-EGFR nei tumori coloretali in cui è presente la mutazione dell'oncogene KRAS ". Fondazione del Piemonte per l'Oncologia, Candiolo (Italy). |
| 01/2008–12/2010 | PhD course in Complex Systems in post-genomic Biology |

“Does p53 mutant R273H show dominant negative or gain-of-function activity in mediating sensitivity or resistance to anti-cancer drugs?” Horizon Discovery LTD, Building 7300 IQ Cambridge, Waterbeach, Cambridge, CB25 9TL, UK.

2007-2007 **Master “Research stage”**

“New cellular models for the identification of genotypes related to responses to antitumor targeted therapies”. Laboratory of Molecular Oncology, Candiolo Cancer Institute, FPO-IRCCS.

2005-2007 **Biotechnologist researcher**

Department of Research & Development, I.C.I. International Chemical Industry S.p.A. of Celvole (CE), Italy

Participation to Directive and Scientific Boards of Scientific Societies and/or Institutions:

- Member of the teaching committee of the National PhD Program “European School of Molecular Medicine (SEMM)”.
- Member of the Early Career Researcher Council (ECR) of European Association for Cancer Research (EACR).
- Organization and Scientific Committee of EACR ECR symposia and meetings.
- Member of the EACR Conferences Committee.
- Member of the Scientific Program Committee and Chairman of the “4th EACR Early Career Researchers' Conference”, June 2024.
- Member of the Panel of Reviewers and Chairman and at “EACR Annual Meeting 2024”, Rotterdam, June 2024.
- Member of the Scientific Program Committee of the EACR Conference on “Persister Cells: from Bacteria to Cancer”, Lyon, France, 18–20 March 2025.
- Member of the Scientific Program Committee of the “EACR Annual Meeting 2025”, Lisbon June 2025.

Honors

- 12/12/2020: “**Valeria Tabasso Rivolo**” Award, Best Scientific work IF.
- 3/11/2020: **Award Best Oral Presentation in “Pre-clinical Breakthroughs”** session, 5° Annual Meeting Alleanza Contro il Cancro.
- 23/06/2017: **Begnudelli Award**. Best scientific poster awarded at the 29th Pezcoller Symposium, Italy.

Teaching activity:

- 2021- today: Lecturer in Histology for the integrated course of Biology, Biochemistry, Anatomy and Histology in the 3-years medical courses in Nursing held in University of Turin Medical School
- 2020 - today: Lecturer in Histology at School of Medicine, University of Torino
- 2020 - today: Lecturer in Histology for the integrated course of Physiology, Anatomy and Histology in the 3-years medical courses in Biomedical laboratory techniques held in University of Turin Medical School
- 2013- 2020: Complementary teaching activity in the course of Functional Histology and the Genetic Basis of cancer in the Molecular Biotechnology School at the University of Turin.

Editorial activity:

- 2021 Guest editor (“Biomedicines”) for the Special Issue: Molecular Characteristics and Therapeutic Application of Tumor Heterogeneity. Website: https://www.mdpi.com/journal/biomedicines/special_issues/advanced_tumor_heterogeneity
- Contribution to the volume “Cancer Evolution”, Cold Spring Harbor Perspective in Medicine 2017: "Lesion-Directed Therapies and Monitoring Tumor Evolution Using Liquid Biopsies", Russo M. & Bardelli A. Cold Spring Harb Perspect Med. 2017 Feb 1;7(2). PMID: 28003276.

Grants and funding

- Nov 2022: PNRR M4C2-Investimento 1.4-CN00000041 "Finanziato dall'Unione Europea-NextGenerationEU". Project title: “National Center for Gene Therapy and Drugs based on RNA Technology”.

- **Jan 2022: My First Grant Airc. PI-5 years.** Project Title: Drug induced mutability in cancer cells: from molecular characterization to clinical targets”.
- **Nov 2019: Ricerca finalizzata 2018 Sezione Giovani ricercatori e Starting Grant. PI-3 years.** Project Title: “Targeting oncogene-driven T-cell exclusion in colorectal cancer”.
- **2016: 5x1000 MIUR 2012-FPRC Innovation Grants, Fondazione Piemontese per la Ricerca sul Cancro (FPRC), Candiolo Cancer institute FPO-IRCCS, Candiolo (TO). PI – 3 years.** Project Title: “Targeting the trunk of colorectal cancer evolution”.

Invited presentations

- Invited Speaker at 35° Pezcoller Symposium, Trento, 24-25/06/2024.
- Invited Speaker at Forbeck Meeting “Non-genetic Drug Tolerance Mechanisms”, Castello, Italy. From 12-05-2024 To 15-05-2024.
- Invited Speaker “Leveraging DNA Damage Response to prevent secondary resistance to MAPK pathway inhibition”. EACR Signaling Circuits in Cancer Virtual meeting. 13-02-2024.
- Invited Speaker “Leveraging DNA Damage Response to Prevent Evolution of Drug Resistance”. XVIII Symposium in Oncobiology Virtual meeting. 08-11-2023.
- Invited Speaker “Leveraging DNA Damage Response to Prevent Evolution of Drug Resistance”. AACR Cancer Evolution Working Group (CEWG) seminar series. Virtual meeting 02-11-2023.
- Chairman and Invited Speaker “Leveraging DNA Damage Tolerance to Prevent Cell Persister- to-Resistant Evolution”. EACR 2023, Turin, Italy. From 12-06-2023 to 15-06-2023.
- Invited Speaker “Adaptive mutability in persister cancer cells favors the evolution of secondary resistance to targeted therapy”. EMBO workshop: Persistent cancer cell, Virtual Meeting. From 28-06-2022 to 1-07-2022
- Invited Speaker “Adaptive mutability favors the evolution of secondary resistance in cancers”. EACR-Astrazeneca Drug Tolerant Persister Cells, Virtual Meeting. From 7-12-2021 to 8-12-2021
- Invited Speaker “Adaptive mutability favors the evolution of secondary resistance in cancers”. EACR 2021, Virtual Meeting. From 9-06-2021 to 12-06-2021.
- Oral communication “Increase of mutation rate in drug-induced persister cancer cells in response to targeted therapies”. EACR 2020, Turin, Italy. From 18-06-2020 to 19-06-2020.
- Invited Speaker "Tumor evolution as therapeutic target". Lisbon Medical School. Lisbon, 3/4/2020.
- Invited Speaker “Nuovi approcci terapeutici basati sul profilo molecolare dei tumori”. Management delle patologie del colon retto (I meeting della gastroenterologia di Bologna), Bologna, Italy. From 19-11-2018 to 19-11-2018
- Invited Speaker “Eterogeneità e resistenza nel carcinoma del colon-retto”. XIX CONGRESSO NAZIONALE AIOM (Associazione Italiana di Oncologia Medica), Roma, Italy. From 27-10-2017 to 29-10-2017
- Invited Speaker "Il DNA tumorale circolante nel monitoraggio molecolare delle neoplasie". Seconda edizione del Corso residenziale "La biopsia liquida: stato attuale e futuri sviluppi", Genova, Italy. From 29-09-2017 to 29-09-2017
- Oral communication for Begnudelli Awards “Targeting ‘trunk’ pathway mutations overrides secondary resistance to targeted therapies in colorectal cancers”. 29th Pezcoller Symposium, Trento, Italy. From 22-06-2017 to 23-06-2017
- Invited Speaker “Cancer Evolution as a Therapeutic Target”. AMP 2017 Global Congress on Molecular Pathology, Berlino, Germania. From 03-04-2017 to 05-04-2017
- Invited Speaker "La resistenza alle terapie molecolari e suo superamento". Meeting Advanced colon cancer 2016: from precision medicine to real world performance, Padova, Italy. From 24-06-2016 to 24-06-2016
- Invited Speaker "Heterogeneity, drug resistance and clonal evolution in colorectal cancers". SIBBM Seminar 2016 della Società Italiana di Biofisica e Biologia Molecolare, Napoli, Italy. From 18-06-2016 to 18-06-2016
- Invited Speaker "Precision medicine nel carcinoma del colon". Corso "Dalle sindromi genetiche alla precision medicine in oncologia" della Società Italiana di Genetica Umana (SIGU), Roma, Italy. From 08-06-2016 to 08-06-2016
- Oral communication “Tumor heterogeneity and lesion-specific response to targeted therapy in colorectal cancer”. American Association Cancer Research (AACR) Annual Meeting 2016, New Orleans, USA. From 16-04-2016 to 20-04-2016
- Invited Speaker "Precision oncology of CRC: From identification of tumor drivers to liquid biopsies".

10th STAR NETWORK MEETING 2015, Sarzana (La Spezia), Italy. From 16-12-2015 to 16-12-2015

- Invited Speaker "Diagnostic tools to effectively implement personalised medicine strategies". 75th International Congress of International Pharmaceutical Federation (FIP), Düsseldorf, Germany. From 29-09-2015 to 30-10-2015
- Oral communication "The molecular landscape of colorectal cancer cell lines unveils clinically actionable targets". American Association Cancer Research (AACR) Annual Meeting 2015, Philadelphia, USA. From 18-04-2015 to 25-04-2015
- Invited Speaker "Il profilo genetico delle mutazioni di KRAS, NRAS, BRAF e PIK3CA nelle terapie a bersaglio dei carcinomi colorettali". Valentino Investigator meeting, Fondazione IRCCS Istituto Nazionale Tumori Milano, Italy. From 17-09-2014 to 17-09-2014

Publications

1. Mariella E, Grasso G, Miotto M, Buzo K, Reilly NM, Andrei P, Vitiello PP, Crisafulli G, Arena S, Rospo G, Corti G, Lorenzato A, Cancelliere C, Barault L, Gionfriddo G, Linnebacher M, **Russo M**, Di Nicolantonio F, Bardelli A. *Transcriptome-wide gene expression outlier analysis pinpoints therapeutic vulnerabilities in colorectal cancer*. **Mol Oncol**. 2024 Mar 11. doi: 10.1002/1878-0261.13622. **Online ahead of print**.
2. **Russo M**. *Genetic and non-genetic drug resistance: Darwin or Lamarck?* **Mol Oncol**. 2024 Feb;18(2):241-244. doi: 10.1002/1878-0261.13601. **Epub 2024 Feb 2**.
3. Sogari A, Rovera E, Grasso G, Mariella E, Reilly NM, Lamba S, Mauri G, Durinikova E, Vitiello PP, Lorenzato A, Avolio M, Piumatti E, Bonoldi E, Aquilano MC, Arena S, Sartore-Bianchi A, Siena S, Trusolino L, Donalisio M, **Russo M**, Di Nicolantonio F, Lembo D, Bardelli A. *Tolerance to colibactin correlates with homologous recombination proficiency and resistance to irinotecan in colorectal cancer cells*. **Cell Rep Med**. 2024 Feb 20;5(2):101376. doi: 10.1016/j.xcrm.2023.101376. **Epub 2024 Jan 15**.
4. Bersani F, Picca F, Morena D, Righi L, Napoli F, **Russo M**, Oddo D, Rospo G, Negrino C, Castella B, Volante M, Listì A, Zambelli V, Benso F, Tabbò F, Bironzo P, Monteleone E, Poli V, Pietrantonio F, Di Nicolantonio F, Bardelli A, Ponzetto C, Novello S, Scagliotti GV, Taulli R. *Exploring circular MET RNA as a potential biomarker in tumors exhibiting high MET activity*. **J Exp Clin Cancer Res**. 2023 May 12;42(1):120. doi: 10.1186/s13046-023-02690-5.
5. **Russo M**, Pompei S, Sogari A, Corigliano M, Crisafulli G, Puliafito A, Lamba S, Erriquez J, Bertotti A, Gherardi M, Di Nicolantonio F, Bardelli A, Cosentino Lagomarsino M. *A modified fluctuation-test framework characterizes the population dynamics and mutation rate of colorectal cancer persister cells*. **Nat Genet**. 2022 Jul;54(7):976-984. doi: 10.1038/s41588-022-01105-z. **Epub 2022 Jul 11**.
6. **Russo M**, Sogari A, Bardelli A. *Adaptive Evolution: How Bacteria and Cancer Cells Survive Stressful Conditions and Drug Treatment*. **Cancer Discov**. 2021 May 5. doi: 10.1158/2159-8290.CD-20-1588.
7. Arena S, Corti G, Durinikova E, Montone M, Reilly NM, **Russo M**, Lorenzato A, Arcella P, Lazzari L, Rospo G, Pagani M, Cancelliere C, Negrino C, Isella C, Bartolini A, Cassingena A, Amatu A, Mauri G, Sartore-Bianchi A, Mittica G, Medico E, Marsoni S, Linnebacher M, Abrignani S, Siena S, Di Nicolantonio F, Bardelli A. *A Subset of Colorectal Cancers with Cross-Sensitivity to Olaparib and Oxaliplatin*. **Clin Cancer Res**. 2020 Mar 15;26(6):1372-1384.
8. **Russo M**, Crisafulli G, Sogari A, Reilly NM, Arena S, Lamba S, Bartolini A, Amodio V, Magrì A, Novara L, Sarotto I, Nagel ZD, Piatt CG, Amatu A, Sartore-Bianchi A, Siena S, Bertotti A, Trusolino L, Corigliano M, Gherardi M, Lagomarsino MC, Di Nicolantonio F, Bardelli A. *Adaptive mutability of colorectal cancers in response to targeted therapies*. **Science**. 2019 Dec 20;366(6472):1473-1480.
9. Siravegna G, Lazzari L, Crisafulli G, Sartore-Bianchi A, Mussolin B, Cassingena A, Martino C, Lanman RB, Nagy RJ, Fairclough S, Rospo G, Corti G, Bartolini A, Arcella P, Montone M, Lodi F, Lorenzato A, Vanzati A, Valtorta E, Cappello G, Bertotti A, Lonardi S, Zagonel V, Leone F, **Russo M**, Balsamo A, Truini M, Di Nicolantonio F, Amatu A, Bonazzina E, Ghezzi S, Regge D, Vanzulli A, Trusolino L, Siena S, Marsoni S, Bardelli A. *Radiologic and Genomic Evolution of Individual Metastases during HER2 Blockade in Colorectal Cancer*. **Cancer Cell**. 2018 Jul 9;34(1):148-162.e7.
10. **Russo M**, Lamba S, Lorenzato A, Sogari A, Corti G, Rospo G, Mussolin B, Montone M, Lazzari L, Arena S, Oddo D, Linnebacher M, Sartore-Bianchi A, Pietrantonio F, Siena S, Di Nicolantonio F, Bardelli A. *Reliance upon ancestral mutations is maintained in colorectal cancers that heterogeneously evolve during targeted therapies*. **Nat Commun**. 2018 Jun 12;9(1):2287.

11. Germano G, Lamba S, Rospo G, Barault L, Magrì A, Maione F, **Russo M**, Crisafulli G, Bartolini A, Lerda G, Siravegna G, Mussolin B, Frapolli R, Montone M, Morano F, de Braud F, Amirouchene-Angelozzi N, Marsoni S, D'Incalci M, Orlandi A, Giraudo E, Sartore-Bianchi A, Siena S, Pietrantonio F, Di Nicolantonio F, Bardelli A. *Inactivation of DNA repair triggers neoantigen generation and impairs tumour growth.* **Nature.** 2017 Dec 7;**552(7683):116-120.**
12. **Russo M**, Bardelli A. *Lesion-directed therapies and monitoring tumor evolution using liquid biopsies.* **Cold Spring Harb Perspect Med.** 2017 Feb 1;**7(2).**
13. Vecchione L, Gambino V, Raaijmakers J, Schlicker A, Fumagalli A, **Russo M**, Villanueva A, Beerling E, Bartolini A, Mollevi DG, El-Murr N, Chiron M, Calvet L, Nicolazzi C, Combeau C, Henry C, Simon IM, Tian S, In't Veld S, D'ario G, Mainardi S, Beijersbergen RL, Lieftink C, Linn S, Rumpf-Kienzl C, Delorenzi M, Wessels L, Salazar R, Di Nicolantonio F., Bardelli A, van Rheeën J, René Medema R, Tejpar S, Bernards R. *A vulnerability of a subset of colon cancers with potential clinical utility.* **Cell.** 2016 Apr 7;**165(2):317-30.**
14. **Russo M**, Siravegna G, Blaszkowsky LS, Corti G, Crisafulli G, Ahronian LG, Mussolin B, Kwak EL, Buscarino M, Lazzari L, Valtorta E, Truini M, Jessop NA, Robinson HE, Hong TS, Mino-Kenudson M, Di Nicolantonio F, Thabet A, Sartore-Bianchi A, Siena S, Iafrate AJ, Bardelli A, Corcoran RB. *Tumor heterogeneity and lesion-specific response to targeted therapy in colorectal cancer.* **Cancer Discov.** 2015 Dec 7.
15. **Russo M**, Misale S, Wei G, Siravegna G, Crisafulli G, Lazzari L, Corti G, Rospo G, Novara L, Mussolin B, Bartolini A, Cam N, Patel R, Yan S, Shoemaker R, Wild R, Di Nicolantonio F, Sartore-Bianchi A, Li G, Siena S, Bardelli A. *Acquired resistance to the TRK inhibitor entrectinib in colorectal cancer.* **Cancer Discov.** 2016 Jan;**6(1):36-44.**
16. Medico E*, **Russo M***, Picco G*, Cancelliere C*, Valtorta E, Corti G, Buscarino M, Isella C, Lamba S, Martinoglio B, Veronese S, Beccuti M, Mottolese M, Linnebacher M, Cordero F, Di Nicolantonio F, Bardelli A. *The molecular landscape of colorectal cancer cell lines unveils clinically actionable targets.* **Nat Commun.** 2015 Apr 30;**6:7002.** (***co-first**)
17. Arena S, Bellosillo B, Siravegna G, Martinez A, Canadas I, Lazzari L, Ferruz N, **Russo M**, Misale S, Gonzalez I, Iglesias M, Gavilan E, Corti G, Hobor S, Crisafulli G, Salido M, Sanchez J, Dalmases A, Bellmunt J, De Fabritiis G, Rovira A, Di Nicolantonio F, Albanell J, Bardelli A, Montagut C. *Emergence of multiple EGFR extracellular mutations during cetuximab treatment in colorectal cancer.* **Clin Cancer Res.** 2015 Jan 26.
18. Lamba S*, **Russo M***, Sun C, Lazzari L, Cancelliere C, Grenrum W, Lieftink C, Bernards R, Di Nicolantonio F, Bardelli A. *RAF suppression synergizes with MEK inhibition in KRAS mutant cancer cells.* **Cell Rep.** 2014 Sep 11;**8(5):1475-83.** (***co-first**)
19. Misale S, Arena S, Lamba S, Siravegna G, Lallo A, Hobor S, **Russo M**, Buscarino M, Lazzari L, Sartore-Bianchi A, Bencardino K, Amatu A, Lauricella C, Valtorta E, Siena S, Di Nicolantonio F, Bardelli A. *Blockade of EGFR and MEK intercepts heterogeneous mechanisms of acquired re-sistance to anti-EGFR therapies in colorectal cancer.* **Sci Transl Med.** 2014 Feb 19;**6(224):224ra26.**
20. **Russo M**, Di Nicolantonio F, Bardelli A. *Climbing RAS, the Everest of Oncogenes.* **Cancer Discov.** 2014 Jan;**4(1):19-21.**
21. Martini M*, **Russo M***, Lamba S, Vitiello E, Crowley EH, Sassi F, Romanelli D, Frattini M, Marchetti A, Bardelli A. *Mixed lineage kinase MLK4 is activated in colorectal cancers where it synergistically cooperates with activated RAS signaling in driving tumorigenesis.* **Cancer Res.** 2013 Mar 15;**73(6):1912-21.** (***co-first**)
22. Di Nicolantonio F, Arena S, Tabernero J, Grosso S, Molinari F, Macarulla T, **Russo M**, Cancelliere C, Zecchin D, Mazzucchelli L, Sasazuki T, Shirasawa S, Geuna M, Frattini M, Baselga J, Gallicchio M, Biffo S, Bardelli A. *Deregulation of the PIK3CA and KRAS signaling pathways determines cancer cells' response to everolimus.* **J Clin Invest.** 2010 Aug;**120(8):2858-66.** Epub 2010 Jul 26.
23. Di Nicolantonio F, Arena S, Gallicchio M, Zecchin D, Martini M, Flonta SE, Stella GM, Lamba S, Cancelliere C, **Russo M**, Geuna M, Appendino G, Fantozzi R, Medico E, Bardelli A. *Replacement of normal with mutant alleles in the genome of normal human cells unveils mutation-specific drug responses.* **Proc Natl Acad Sci U S A.** 2008 Dec 30;**105(52):20864-9.**