

Curriculum vitae et studiorum

PERSONAL INFORMATION

Surname and name: **Russo Mariangela**

Email: mariangela.russo@unito.it

Place and date of birth: Caserta (Italy), 08/06/1982

Nationality: Italy

WORK EXPERIENCE

1/11/2019–present **Assistant Professor** of Histology, Dept of Oncology, University of Torino and Candiolo Cancer Institute, FPO-IRCCS

1/7/2019–31/10/2019 **Research Fellowship**, University of Torino: "Approfondimenti sull'eterogeneità nell'evoluzione del carcinoma coloretale metastatico: dai meccanismi alle terapie".

1/1/2019–30/06/2019 **Post Doc**, Fondazione del Piemonte per l'Oncologia, Candiolo (Italy): "Cancer of unknown primary and hypermetastatic disease: from mechanisms to therapeutic applications".

01/06/2017 – 31/12/2018 **Post Doc**, Fondazione del Piemonte per l'Oncologia, Candiolo Cancer Institute: "Sviluppo ed implementazione di una piattaforma genomica per la medicina di precisione in oncologia".

01/07/2015- 30/05/2017 **Research Fellowship**, University of Torino: "Modelli di xenotrapianti murini per valutare nuove strategie terapeutiche in pazienti con resistenza acquisita alle terapie molecolari (FP7 MErCuRIC GA 602901)".

01/01/2015 – 30/06/2015 **Post Doc**, Fondazione del Piemonte per l'Oncologia, Candiolo Cancer Institute: "Caratterizzazione della resistenza acquisita alle terapie anti-EGFR".

01/02/2013- 31/12/2014 **Research Fellowship**, University of Torino: "COLTHERES: Costruzione di modelli al fine di predire la sensibilità alle terapie mirate nei carcinomi coloretali".

18/02/2011- 31/01/2013 **Post Doc**, Fondazione del Piemonte per l'Oncologia, Candiolo Cancer Institute: "Studio dei meccanismi molecolari alla base della resistenza alle terapie anti-EGFR nei tumori coloretali in cui è presente la mutazione dell'oncogene KRAS".

01/01/2008–31/12/2010 **PhD course in Complex Systems in post-genomic Biology**, University of Torino and Horizon Discovery LTD, Building 7300 IQ Cambridge, Waterbeach, Cambridge, CB25 9TL, UK.

EDUCATION AND TRAINING

2008- 2010 **PhD in "Complex Systems in post-genomic Biology"**, University of Turin, Italy and Horizon Discovery LTD, Building 7300 IQ Cambridge, Waterbeach, Cambridge, CB25 9TL, UK. Thesis title: "Does p53 mutant R273H show dominant negative or gain-of-function activity in mediating sensitivity or resistance to anti-cancer drugs?". Supervisor: Prof. Federico Bussolino.

2007 **Master II Level in "Cancer Pharmacy and Pharmacology"**, University of Milan, Italy. Thesis title: "New cellular models for the identification of genotypes related to responses to antitumor targeted therapies". Supervisor: Prof. Alberto Corsini.

1997–2002 **Joint BSc & MSc in Pharmaceutical Biotechnologies** (five-year degree), University of Naples "Federico II", Italy. Mark 110/110 Magna cum Laude. Thesis title: "Study of antibody reactivity towards the chondroitin sulfate-containing isoform of human thyroglobulin in patients with autoimmune thyroid disease". Supervisor: Prof. Fabrizio Gentile.

Memberships and Associations:

- From 2018: EACR (European Association for Cancer Research), Membership number: EACR25048
- From 2011: AACR (American Association for Cancer Research), Associate Membership number #254531

REVIEWING ACTIVITIES:

- 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 (as PI):

- From 22/11/2019: Ricerca finalizzata 2018 Sezione Giovani ricercatori e Starting Grant (PI-3 years).

Project Title: "Targeting oncogene-driven T-cell exclusion in colorectal cancer".

- 2016-2018: 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".

Awards:

- 12/12/2020: "Valeria Tabasso Rivolo" Award, Best Scientific work Impact Factor.

- 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.

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)

Teaching:

2020-2021 Lecturer in Histology at School of Medicine, University of Torino

2020-2021 Lecturer in Histology for the integrated course of Physiology, Anatomy and Histology in the 3-years medical courses 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.

Tutor for Lab work and thesis writing for undergraduate and PhD students attending the Biotechnology School, and Medical School at the University of Torino.

COURSES and CONGRESSES

- Oral communication "Novel isogenic cellular models as a tool to study molecular mechanisms of sensitivity or resistance to cancer targeted therapies". 51° Congresso Nazionale della Società Italiana di Cancerologia (SIC), Sesto San Giovanni (MI), Italy. From 23-11-2009 to 26-11-2009

- 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

- 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 "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
- 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
- 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 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
- 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 "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 "Cancer Evolution as a Therapeutic Target". AMP 2017 Global Congress on Molecular Pathology, Berlino, Germania. From 03-04-2017 to 05-04-2017
- 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 "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
- 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 "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 "Tumor evolution as therapeutic target". Lisbon Medical School. Lisbon, 3/4/2020.
- Oral communication "Increase of mutation rate in drug-induced persistent cancer cells in response to targeted therapies". EACR 2020, Turin, Italy. From 18-06-2020 to 19-06-2020.
- Invited Speaker "Adaptive mutability favors the evolution of secondary resistance in cancers". EACR 2021, Virtual Meeting. From 9-06-2021 to 12-06-2021.

BIBLIOMETRICS INDEXES:

Scopus Author ID: 8502894000

ORCID ID: <https://orcid.org/0000-0003-4625-1449>

H-Index: 14 (Scopus), 19 (Google scholar)

N. of citations: 1724 (Scopus), 2544 (Google scholar)

PUBLICATIONS

1. **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](https://doi.org/10.1158/2159-8290.CD-20-1588).
2. 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**.
3. **Russo M**, Crisafulli G, Sogari A, Reilly NM, Arena S, Lamba S, Bartolini A, Amodio V, Magri A, Novara L, Sarotto I, Nagel ZD, Piett 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**.
4. 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**.
5. **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**.
6. Germano G, Lamba S, Rospo G, Barault L, Magri 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**.
7. **Russo M**, Bardelli A. *Lesion-directed therapies and monitoring tumor evolution using liquid biopsies*. **Cold Spring Harb Perspect Med.** **2017 Feb 1;7(2)**.
8. 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 Rheenen 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**.
9. **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**.
10. **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**.
11. 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)**

12. 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.
13. 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**)
14. 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.
15. **Russo M**, Di Nicolantonio F, Bardelli A. *Climbing RAS, the Everest of Oncogenes.* **Cancer Discov.** 2014 Jan;4(1):19-21.
16. 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**)
17. 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.
18. 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.