CURRICULUM VITAE ET STUDIORUM

Personal details

Name	Sharon Russo
Place and date of birth	Naples, Italy –
First Language	Italian
Other Languages	English (level C1) Spanish (level A2)
Current position	Research Fellow at the Institute of Genetics and Biophysics (IGB), National Research Council of Italy (CNR), Naples, Italy. (https://www.igb.cnr.it/index.php/fernando-gianfrancesco/)
Field of specialization	Human molecular genetics; bone cell biology; bone disorders and tumors
Major research interest	My main scientific interest is the comprehension of molecular bases of bone disorders and tumors. I joined Gianfrancesco's "Bone Diseases and Tumours" Laboratory at the Institute of Genetics and Biophysics (IGB) in 2018 for my master thesis. I graduated in 2019 with a thesis on the characterization of the *Zfp687* knock-in mouse model of Paget's disease of bone. In 2020, I joined the PhD course in Molecular Life Sciences, with experimental activities at IGB under the supervision of doctor Gianfrancesco. My PhD project aimed to expand the knowledge of *Zfp687* in bone remodeling and development. Currently, as junior post-doc, I am exploring the functional role of Zfp687 in bone-marrow derived cells, belonging to the haematopoietic and mesenchymal lineages.
E-mail	
Web	Twitter: Linkedin:
ORCID	
Specific professional skills	Molecular biology: DNA and RNA extraction, qRT-PCR, RT-PCR, molecular cloning, bacteria cells transformation, transfection. Proteomics: Protein extraction; Western blot. Cell culture: murine Bone-Marrow Mesenchymal Stromal cells (BM-MSCs) and Hematopoietic Stem cells (HSCs) isolation and differentiation in osteoblasts/adipocytes and macrophages/osteoclasts, respectively; immortalised cell lines culture (human/mouse). Histology: murine bone decalcification; paraffin-embedding and microtoming of murine tissues; histological stainings. Proven and qualified skills in µCT analysis: scanner operation, scan evaluation and visualization, 3D reconstructions and data management.

Others: mouse dissection and tissues collection; subcutaneous and intratibial injections; cardiac-punch and retro-orbital blood collection and serum isolation; transgenic mice handling.

Education and appointments

13 December 2023 — PhD in Molecular Life Sciences at the University of Campania "Luigi Vanvitelli". Thesis entitled "*Investigating the complex role of ZNF687 in Paget's disease of bone and its impact in bone metabolism*".

1 Nov 2020 – 31 Oct 2023 — PhD student in Molecular Life Sciences at the University of Campania "Luigi Vanvitelli". Experimental activity at the Institute of Genetics and Biophysics – National Research Council of Italy, under the supervision of Dr. Fernando Gianfrancesco.

29 May 2022 – 01 April 2024 — Research Fellow at the Institute of Genetics and Biophysics – National Research Council of Italy, in the laboratory of Dr. Fernando Gianfrancesco on the AIRC project entitled *"Investigating the loss of Profilin 1 as a cause of aneuploidy in osteosarcoma"*. AIRC IG 25110.

16 May 2022 –13 May 2023 — Research Fellow at the Institute of Genetics and Biophysics – National Research Council of Italy, in the laboratory of Dr. Fernando Gianfrancesco on the project entitled *"Assessing the polygenic burden of rare disruptive mutations in Parkinson's disease: a novel diagnostic test to predict Parkinson's disease risk"* Ministero della Salute RF 2019-12370224.
prot. 1853 del 17/05/2021.

28 Apr 2021 – 27 Apr 2022 — Research Fellow at the Institute of Genetics and Biophysics – National Research Council of Italy, in the laboratory of Dr. Fernando Gianfrancesco; AIRC project entitled *"Investigating the loss of Profilin 1 as a cause of aneuploidy in osteosarcoma"*. AIRC IG 25110.

11 Mar 2020 – 10 Mar 2021 — Research Fellow at the Institute of Genetics and Biophysics – National Research Council of Italy, in the laboratory of Dr. Fernando Gianfrancesco on the project entitled "*Novel and minimal invasive biomarkers for Parkinson's disease: profiling of serum circulating miRNAs and patho-physiological implications".*
prot. 0000913 (10/03/2020).

Oct 2019 – Dec 2019 — Consultant at M&M Biotech S.c.ar.l., Naples, Italy.

22 October 2019 — Master Degree with full marks and honours in Biology (curriculum in Molecular and Cellular Biology) at the University of Naples "Federico II". Thesis in Applied Biology, entitled *"Phenotypic*

characterization of Zfp687 knock-in mouse model to study the giant cell tumor associated with Paget disease of bone".

Mar 2018 – Oct 2019 — Master student at the Institute of Genetics and Biophysics – National Research Council of Italy, in the "Molecular Genetics and Genomics" laboratory headed by Dr. Fernando Gianfrancesco.

17 March 2017 — Bachelor's Degree in Biology (curriculum in Molecular Biology) at the University of Naples "Federico II". Thesis in Molecular Biology, *entitled "Stavudine and its degradation byproducts: genotoxic assessment by UmuC Test"*. Final grade 108/110.

Dec 2016 – March 2017 — Bachelor student at the University of Naples "Federico II, under the supervision of Prof. Emilia Galdiero.

11 July 2013 — High School Diploma in Classical Studies with full marks at "Marco Galdi", Cava de' Tirreni (SA).

Honours and Awards

2023 — Recipient of the Registration Fee Waiver to participate as a speaker at the SIOMMMS-IFMRS International Fellow Day on 26 October 2023, Giardini-Naxos, Italy.

2023 — Recipient of the "Best Oral Presentation" awarded by the Italian Society of Osteoporosis, Mineral Metabolism and Skeletal Diseases (SIOMMMS) for the best oral communication at XXIII National Meeting. 26-28 October 2023, Giardini-Naxos, Italy.

2022 — Recipient of the "New Investigator Award" awarded by the European Calcified Tissue Society (ECTS) for one of the highest scoring abstracts submitted by new investigators at the 49th Annual Meeting, 6–10 May 2022, Helsinki, Finland.

Research activities on animals

2021-2026 — Participation in the project "Studio dei modelli murini dei geni *Zfp687* e *Pfn1* coinvolti nell'insorgenza di tumori scheletrici e di altre patologie del metabolismo" as PhD student, authorization no. 125-2021-PR released by the Italian Ministry of Health.

2015-2020 — Participation in the project "Studio di funzioni e regolazioni geniche riguardanti i pathways che coinvolgono il gene *Zfp687*, mediante l'uso di modelli murini" as master degree student, authorization n.551/2015-PR released by the Italian Ministry of Health.

Abstracts in National and International meetings (selected as Oral communications presented by Russo S)

2024 **Russo S,** D'Angelo M. R, Scotto di Carlo F, Gianfrancesco F. *"Zfp687 deficiency causes altered skeletal growth due to impaired osteoclast differentiation"* at the the 51th edition Annual Meeting of the European Calcified Tissue Society (ECTS), 25-28 May 2024, Marseille, France.

2023 **Russo S,** Lambiase M, D'Angelo M. R, Scotto di Carlo F, Gianfrancesco F. *"The depletion of the Zfp687 gene, responsible for an aggressive form of Paget's disease of bone, leads to skeletal growth retardation"* at the the I edition of the SIOMMMS-IFMRS International Fellow Day, 26 October 2023, Giardini-Naxos, Italy.

2023 **Russo S,** Lambiase M, D'Angelo M. R, Scotto di Carlo F, Gianfrancesco F. *"The depletion of the Zfp687 gene, responsible for an aggressive form of Paget's disease of bone, leads to skeletal growth retardation"* at the the XXIII Annual Meeting of the Società Italiana dell'Osteoporosi, del Metabolismo Minerale e delle Malattie dello Scheletro (SIOMMMS), 26-28 October 2023, Giardini-Naxos, Italy.

2023 **Russo S**, Scotto di Carlo F, Licastro D, Gianfrancesco F. *"Investigating the functional role of Zfp687 in Paget's disease and bone remodelling"* at the International Paget's Symposium, 19-20 April 2023, Manchester, United Kingdom.

2022 **Russo S**, Scotto di Carlo F, Fortunato G, Maurizi A, Teti A, Licastro D, Settembre C, Gianfrancesco F. *"The ZNF687 mutation causes Paget's disease of bone dysregulating osteoclast transcriptional program and osteoblast activity"* at the XXII Annual Meeting of the Società Italiana dell'Osteoporosi, del Metabolismo Minerale e delle Malattie dello Scheletro (SIOMMMS), 13-15 October 2022, Bari, Italy.

2022 **Russo S**, Scotto di Carlo F, Fortunato G, Settembre C, Gianfrancesco F. *"Zfp687 knock-in mouse model of Paget's disease of bone exhibits increased bone marrow adiposity preceding bone remodelling alteration"* at the 49th Annual Meeting of the European Calcified Tissue Society (ECTS), 6-10 May 2022, Helsinki, Finland.

2021 **Russo S**, Scotto di Carlo F, Fortunato F, Esposito T, Settembre C, Gianfrancesco F. *"Zfp687 knock in mouse model of Paget's disease exhibits increased bone marrow adiposity preceding bone loss and osteophyte formation"* at the 4th Annual Meeting of "Skeleton" (Italian Telethon-funded researchers), 27-28 January 2021, Virtual Event.

Abstracts in National and International meetings (selected as Oral communications)

Rossi M, Scotto di Carlo F, Silvestri D. A, Battafarano G, Di Giuseppe L, Cesarini V, **Russo S**, Di Gregorio J, Corona M, Barra A, Pezzullo M, De Stefanis C, Pelle S, Toniolo R. M, Minisola S, Gianfrancesco F, Gallo A, Del Fattore A. Role of ADAR2 editing enzyme in Osteosarcoma. Società Italiana dell'Osteoporosi, del Metabolismo Minerale e delle Malattie dello Scheletro (SIOMMMS), Bari, Italy, 13-15 October 2022.
(selected as oral communication presented by the first author).

Scotto di Carlo F, **Russo S**, Muyas F, Mangini M, Pazzaglia L, Genesio R, Biamonte F, De Luca AC, Scotlandi K, Cortés-Ciriano I, Gianfrancesco F. The loss of Profilin 1 is a driver of chromosome instability in osteosarcoma. European Calcified Tissue Society (ECTS), Helnsinki, Finland, 07-10 May 2022.
(selected as oral communication presented by the first author).

Scotto di Carlo F, **Russo S**, Muyas F, Mangini M, Pazzaglia L, Genesio R, Biamonte F, De Luca AC, Scotlandi K, Cortés-Ciriano I, Gianfrancesco F. Profilin 1 dysfunction causes cytoskeletal defects in mitosis and undermines chromosomal stability. EMBO workshop- Chromosome segregation and aneuploidy, Wien, Austria, 01-04 May 2022.
(selected as oral communication presented by the first author).

Scotto di Carlo F, **Russo S**, Muyas F, Pazzaglia L, Esposito T, Genesio R, Nitsch L, Cortés-Ciriano I, Gianfrancesco F. Loss of function of Profilin 1 underlies mitotic defects and aneuploidy in pagetic and primary osteosarcoma. Skeleton 2021, Italy, 27-28 January 2021.
(selected as oral communication presented by the first author).

Scotto di Carlo F, **Russo S**, Muyas F, Pazzaglia L, Esposito T, Settembre C, Cortés-Ciriano I, Gianfrancesco F. Loss of function of PFN1 drives the development of pagetic and primary osteosarcoma. The American Society for Bone and Mineral Research (ASBMR), Seattle, USA, 11-14 September 2020.
(selected as oral communication presented by the first author).

Russo S, Divisato G, Fico M, Scotto di Carlo F, Abbes Y, Piemontese M, Parisi S, Russo T, Settembre C, Gianfrancesco G. Exploring the functional role of ZNF687 in a severe form of Paget's disease of bone. Forum In Bone and Mineral Research, Milan, Italy, 28 February – 1 March 2019.
(selected as oral communication presented by Scotto di Carlo F).

Abstracts in National and International meetings (selected as poster presentations)

Russo S, D'Angelo M. R, Scotto di Carlo F, Gianfrancesco F. Exploring the effects of genes involved in bone remodelling on skeletal aging. Age-It General Meeting, Venice, Italy, 20-22 May 2024.
(selected as poster presentation presented by Russo S).

Russo S, Scotto di Carlo F, Licastro D, Gianfrancesco F. The ZNF687 mutation of Paget's disease causes severe bone remodelling alterations as a result of a deregulated osteoclast transcriptional program. European Calcified Tissue Society (ECTS), Liverpool, United Kingdom, 15-18 April 2023.
(selected as poster presentation presented by Russo S).

Rossi M, Scotto di Carlo F, Silvestri D. A, Battafarano G, **Russo S**, Di Giuseppe L, Di Gregorio J, Corona M, Barra A, Pelle S, Toniolo R. M, Minisola S, Gianfrancesco F, Gallo A, Del Fattore A. Deaminase Acting on RNA-2 enzyme: a novel tumor suppressor for osteosarcoma. European Calcified Tissue Society (ECTS), Liverpool, United Kingdom, 15-18 April 2023.

(selected as poster presentation presented by the first author).

Scotto di Carlo F, **Russo S**, Licastro D, Settembre C, Gianfrancesco F. PFN1 loss in bone cells reveals novel pathological mechanisms underlying Paget's disease associated with osteosarcoma. Società Italiana dell'Osteoporosi, del Metabolismo Minerale e delle Malattie dello Scheletro (SIOMMMS), Bari, Italy, 13-15 October 2022.
(selected as poster presentation presented by the first author).

Rossi M, Scotto di Carlo F, Silvestri D. A, Battafarano G, Di Giuseppe L, Cesarini V, **Russo S**, Di Gregorio J, Corona M, Barra A, Pezzullo M, De Stefanis C, Pelle S, Toniolo R. M, Minisola S, Gianfrancesco F, Gallo A, Del Fattore A. Overexpression of Deaminase Acting on RNA-2 enzyme ADAR2 Reduces Osteosarcoma Progression. The American Society for Bone and Mineral Research (ASBMR), Austin, TX, USA, 09-12 September 2022.
(selected as poster presentation presented by the first author).

Scotto di Carlo F, **Russo S**, Pazzaglia L, Esposito T, Settembre C, Gianfrancesco F. The loss of Profilin 1 is associated with early-onset Paget's disease of bone degenerating into osteosarcoma. European Calcified Tissue Society (ECTS), Marseille, France, 16-19 May 2020.
(selected as oral communication presented by the first author).

Scotto di Carlo F, **Russo S**, Fortunato G, Fico M, Vizziello E, Esposito T, Settembre C, Gianfrancesco F. Shedding light on the role of the ZNF687 transcription factor in severe Paget's disease of bone. Forum In Bone and Mineral Research, Catania, Italy, 12-13 March 2020.

Scotto di Carlo F, Divisato G, **Russo S**, Piemontese M, Parisi S, Veis DJ, Fico M, Esposito T, Russo T, Settembre C, Whyte MP, Gianfrancesco F. Investigating the functional role of the ZNF687 transcription factor in aggressive forms of Paget's disease of bone. European Calcified Tissue Society (ECTS), Budapest, Hungary, 11-14 May 2019.
(selected as poster presentation presented by the first author).

Participation in National and International meetings

- International Paget's Symposium, 19-20 April 2023, Manchester, United Kingdom.
- 50th Annual Meeting of the European Calcified Tissue Society (ECTS), 15-18 April 2023, Liverpool, United Kingdom.
- XXII Annual Meeting of the the Società Italiana dell'Osteoporosi, del Metabolismo Minerale e delle Malattie dello Scheletro (SIOMMMS), 13-15 October 2022, Bari, Italy.
- 49th Annual Meeting of the European Calcified Tissue Society (ECTS), 6-10 May 2022, Helsinki, Finland.
- 4th Skeleton Meeting, 27-28 January 2021, Virtual Event.
- Workshop on "Zebrafish tools for the screening of therapeutic-relevant molecules affecting tissue mineralization" held on 25-27 November 2019, Faro, Portugal.
- XXIII Annual Meeting of the the Società Italiana dell'Osteoporosi, del Metabolismo Minerale e delle Malattie dello Scheletro (SIOMMMS), 26-28 October 2023, Giardini-Naxos, Italy.

- I edition of the SIOMMMS-IFMRS International Fellow Day , 26 October 2023, Giardini-Naxos, Italy.

Memberships in National and International Societies

- Paget's Association
- European Calcified Tissue Society (ECTS)
- Forum in Bone and Mineral Research (FBMR)
- Società Italiana dell'Osteoporosi, del Metabolismo Minerale e delle Malattie dello Scheletro (SIOMMMS)

Teaching and Educational Activities

May 2022, May and June 2023

Two-day theory-practical lessons (each year) to master students of the faculty of Health Biotecnology (University of Campania "Luigi Vanvitelli") in the course "*Innovative methods and models for the study of genetic diseases*" held by Prof. Fernando Gianfrancesco, showing the analysis of a pedigree of hereditary bone diseases and cancers, how to perform PCR, Sanger sequencing method, and analysis of sequencing results; genome editing tools; how to use engineered mouse models in order to study human disorders.

Publications

3. **Russo S***, Scotto di Carlo F*, Maurizi A, Fortunato G, Teti A, Licastro D, Settembre C, Mello T, Gianfrancesco F. A mutation in the ZNF687 gene that is responsible for the severe form of Paget's disease of bone causes severely altered bone remodeling and promotes hepatocellular carcinoma onset in a knock-in mouse model. *Bone Res*. 2023.
   *equal contribution
   doi: https://www.nature.com/articles/s41413-023-00250-3
   Impact Factor (2021): 13.362

2. Scotto di Carlo F, **Russo S**, Muyas F, Mangini M, Garribba L, Pazzaglia L, Genesio R, Biamonte F, De Luca AC, Santaguida S, Scotlandi K, Cortés-Ciriano I, Gianfrancesco F. Profilin 1 deficiency drives mitotic defects and impairs genome stability. *Commun Biol*. 2023.
   doi: https://doi.org/10.1038/s42003-022-04392-8
   Impact Factor (2021): 6.548

1. **Russo S***, Scotto di Carlo F*, Gianfrancesco F. The osteoclast traces the route to bone tumors and metastases. *Front Cell Dev Biol*. 2022.
   *equal contribution
   doi: https://doi.org/10.3389/fcell.2022.886305.
   Impact Factor (2020): 6.68

Naples

02nd April, 2024 Signature