



GIULIA FIORENTINO

Place and day of birth: Genova, 12/01/1993

Citizenship: Italian

CURRENT POSITION

- **2022/02/01: Fixed-term research assistant** (RTD–A, SSD BIO/06) at the Laboratory of Developmental Biology, Department of Biology and Biotechnology, University of Pavia, Italy.

EDUCATION

- **2021/02/23: Ph.D.** in "Healthcare Technologies, Bioengineering e Bioinformatics" at the Department of Biology and Biotechnology of the University of Pavia, with a final grade "Ottimo", discussing a thesis titled: "Digital 3D functional atlas of the mouse ovary" – Supervisor Prof. Maurizio Zuccotti
- **2017/07/27: Master's Degree** in Molecular Biology and Genetics (LM-6 - Class of Master's Degrees in Biology) at the Department of Biology and Biotechnology of the University of Pavia, with a final grade 110/110 cum laude, discussing a thesis held at the Laboratory of Molecular Genetics titled: "Expression in *Bacillus subtilis* of the *cry11Aa* δ -endotoxin gene of *Bacillus thuringiensis israelensis* under the control of the *aprE* promoter confers larvicidal activity towards *Aedes albopictus*" - Supervisor Prof. Alessandra Albertini
- **2015/03/27: Bachelor's Degree** in Biological Science (L-13 - Class of Bachelor's Degrees in Biological Science) at the University of Palermo, with a final grade 110/110 cum laude, discussing a thesis held at the "Villa Sofia-Cervello" Hospital of Palermo titled: "I markers cromosomici nelle indagini citogenetiche prenatali e postnatali" – Tutor Prof. Fabio Caradonna and Dr. Marcella Vita Mazara.
- **2011/07: High school diploma** at the "Liceo Classico Meli" of Palermo, with a final grade 100/100.

OTHER WORK EXPERIENCE

- **2023/09/15-09/30 and 2023/11/1-11/30: Visiting researcher**, Center for X-ray Analytics, EMPA, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland.
- **2020/03/01-04/30: Visiting Ph.D. student**, Center for X-ray Analytics, EMPA, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland.

TEACHING ACTIVITY

- **2022 - today:** Teaching activity in the **Master** course 'Biologia e Biotecnologie della riproduzione: dalla ricerca alla clinica', University of Pavia, Italy.
- **2022 - today:** Teaching of **Embryology** (3CFU of the course Comparative Anatomy) in the bachelor courses Biological Science and Natural Science, University of Pavia, Italy.
- **2020 - today: 'Cultore della materia'** in the courses 'Biologia dello sviluppo e delle cellule staminali' (SSD BIO/06), 'Biologia della Cellula Animale' (SSD BIO/06), 'Developmental Biology' (SSD BIO/06), 'Biologia dello sviluppo e delle cellule staminali' (SSD BIO/06), 'Biotecnologie della riproduzione' (SSD BIO/06), University of Pavia, Italy.
- **2017 - today: Seminars** in the courses 'Developmental Biology' (master's degree in 'Molecular Biology and Genetics'), 'Biotecnologie della Riproduzione' (master's degree in 'Biotecnologie Avanzate'), 'Biologia dello sviluppo e delle cellule staminali' (bachelor's degree in 'Biotecnologie'), 'Biologia dello sviluppo e delle cellule staminali' (master's degree in 'Biologia Sperimentale ed Applicata'), 'Ingegneria Tissutale e Laboratorio' (master's degree in 'Bioingegneria'), University of Pavia, Italy.

COURSES AND SUMMER SCHOOLS

- **2020/09/7-10:** XXXIX Annual School of Bioengineering: “AI-enabled health care: from decision support to autonomous robots”, Bressanone, Italy
- **2019/09/09-12:** XXXVIII Annual School of Bioengineering: “Advanced bioengineering methods, technologies and tools in surgery and therapy”, Bressanone, Italy
- **2019/07/08-13:** EMBL Course: “Super-Resolution Microscopy”, EMBL Heidelberg, Germany.
- **2018/09/10-13:** XXXVII Annual School of Bioengineering: “Immagini Biomediche: Nuove tendenze in tecnologia, metodi e applicazioni”, Bressanone, Italy
- **2018/06/04-08:** Summer School: “Summer School - Data Mining and Data Analysis with R”, University of Pavia, Italy

AWARDS

- **2024/03/16:** Best oral presentation award for the presentation “*Confocal histology* dell'ovaio di topo: ottimizzazione della fluorescenza dell'eosina per l'identificazione 3D dei follicoli ovarici e della competenza allo sviluppo degli ovociti”, SIERR 2024, Rome.
- **2022:** Selected in the ranking “40Under40 Fortune Italia” for the section “Tech innovation”.
- **2022/11/12:** Best oral presentation award for the presentation “Ruolo dei miRNA rilasciati dalle cellule del cumulo ooforo nell'acquisizione della competenza allo sviluppo di ovociti di topo e umani”, SIFES-MR 2022, Rome.
- **2021/06/22:** Best oral presentation award for the presentation “Digital 3D reconstruction of the mouse ovary”, 66° GEI-SIBSC conference, Milan.
- **2020/11/20:** Best poster award (*ex aequo*) for the poster “3D micro-Computed Tomography reconstruction of the adult mouse ovary”, MyDEV2020, Milan.

TRAVEL GRANT

- SNSF Scientific Exchange (Nr. IZSEZ0_224198) 1 month (1-31/05/2024) at the Center for X-ray Analytics, EMPA, Dübendorf, Switzerland.
- Boehringer Ingelheim Fonds for a research stay of 1 month (1-30/11/2023) at the Center for X-ray Analytics, EMPA, Dübendorf, Switzerland.

SCIENTIFIC SOCIETY MEMBERSHIP

- **2022 - today:** Società Italiana Embriologia Riproduzione e Ricerca (SIERR)
- **2021 - today:** GEI – Società Italiana di Biologia dello Sviluppo e della Cellula (GEI-SIBSC)
- **2021 - today:** International Society of Developmental Biology (ISDB)
- **2018 - today:** European Society of Human Reproduction and Embryology (ESHRE)

SCIENTIFIC PUBLICATIONS

1. Cimadomo D., Cobo A., Galliano D., **Fiorentino G.**, Marconetto A., Zuccotti M., Rienzi L. (2024). Oocyte vitrification for fertility preservation is an evolving practice requiring a new mindset: societal, technical, clinical, and basic science-driven evolutions. *Fertil Steril*. S0015-0282(24)00004-9.
2. Bordiga M., Lupi C., Langer G., Gianoncelli A., Birarda G., Pollastri S., Bonanni V., Bedolla DE, Vaccari L., Gariani G., Cerino F., Cabrini M., Beran A., Zuccotti M., **Fiorentino G.**, Zanoni M., Garagna S., Cobianchi M., Di Giulio A. (2023). Unexpected silicon localization in calcium carbonate exoskeleton of cultured and fossil coccolithophores. *Sci Rep*. 13(1):7417.
3. **Fiorentino G.**, Smith A., Nicora G., Bellazzi R., Magni F., Garagna S., Zuccotti M. (2023). MALDI mass spectrometry imaging shows a gradual change in the proteome landscape during mouse ovarian folliculogenesis. *Mol Hum Reprod*, 2023:gaad006.
4. **Fiorentino G.**, Cimadomo D., Innocenti F., Soscia D., Vaiarelli A., Ubaldi FM., Gennarelli G., Garagna S., Rienzi L., Zuccotti M. (2023). Biomechanical forces and signals operating in the ovary during folliculogenesis and their dysregulation: implications for fertility, *Hum Reprod Update*, 29(1):1-23.

5. Bordiga M., Lupi C., Zanoni M., Bianco S, Cabrini M., **Fiorentino G.**, Garagna S., Zuccotti M., Di Giulio A. (2022). A New Method to Speed Up Nannofossil Picking for Monospecific Geochemical Analyses. *J Mar Sci Eng*, 10(12):1829.
6. Innocenti F., **Fiorentino G.**, Cimadomo D., Soscia D., Garagna S., Rienzi L., Ubaldi FM, Zuccotti M; SIERR. (2022). Maternal effect factors that contribute to oocytes developmental competence: an update. *J Assist Reprod Genet*, 39(4):861-871. **(First co-author)**
7. **Fiorentino G.**, Parrilli A., Garagna S., Zuccotti M. (2021). Three-dimensional imaging and reconstruction of the whole ovary and testis: a new frontier for the reproductive scientist. *Mol Hum Reprod*, 27(3), gaab007.
8. Coticchio G., **Fiorentino G.**, Nicora G., Sciajno R., Cavallera F., Bellazzi R., Garagna S., Borini A., Zuccotti M. (2021). Cytoplasmic movements of the early human embryo: imaging and artificial intelligence to predict blastocyst development. *Reprod BioMed Online*, 42(3), 521-528. **(First co-author)**
9. Campi G., Nicora G., **Fiorentino G.**, Smith A., Magni F., Garagna S., Zuccotti M., Bellazzi R. (2021). A Topological Data Analysis Mapper of the ovarian folliculogenesis based on MALDI Mass Spectrometry Imaging proteomics. *Lecture Notes in Computer Science*, 12721, 43-47.
10. **Fiorentino G.**, Parrilli A., Garagna S., Zuccotti M. (2020). Three-Dimensional Micro-Computed Tomography of the Adult Mouse Ovary. *Fronts in Cell Dev Biol*, 8, 566152.
11. Ursino E., Albertini A. M., **Fiorentino G.**, Gabrieli P., Scoffone V. C., Pellegrini A., Gasperi G., Di Cosimo A., Barbieri G. (2020). Bacillus subtilis as a host for mosquitocidal toxins production. *Microb biotech*, 13(6), 1972–1982.

CONGRESSES AND SYMPOSIA

1. **Fiorentino G.**, Fantinato A., Brazzale G., Cimadomo D., Vaiarelli A., Ubaldi F.M., Rienzi L., Garagna S., Zuccotti M. (2024). *Confocal histology* dell'ovaio di topo: ottimizzazione della fluorescenza dell'eosina per l'identificazione 3D dei follicoli ovarici e della competenza allo sviluppo degli ovociti. SIERR 2024, Rome 14-16 March 2024. **(Best oral presentation award)**.
2. **Fiorentino G.**, Una mappa 4D dell'ovaio di topo. Procreazione Symposium 2023, Bologna 21-23 Septemebr 2023. **(Invited Speaker)**
3. **Invited Speaker** at the Merck sponsored scientific symposium “Diversity, balance and innovation in MAR”. ESHRE 2023, Copenhagen 25-28 June 2023.
4. Zuccotti M., **Fiorentino G.**, Smith A., Nicora G., Bellazzi R., Cimadomo D., Vaiarelli A., Ubaldi F. M., Rienzi L., Magni F., Garagna S. (2023) Single-follicle spatial proteomics of the whole ovary by MALDI mass spectrometry imaging: towards the identification of protein-markers of the follicle's quality. ESHRE 2023, Copenhagen 25-28 June 2023.
5. **Fiorentino G.**, Smith A., Nicora G., Bellazzi R., Magni F., Garagna S., Zuccotti M. (2023) In situ proteomics: identification of differentially expressed proteins during mouse folliculogenesis. GEI-SIBSC 2023, Oliveri 5-8 June 2023.
6. **Fiorentino G.**, Smith A., Nicora G., Bellazzi R., Magni F., Garagna S., Zuccotti M. (2023) Proteomica in situ dell'ovario: studio di proteine differenzialmente espresse durante la follicologenesi di topo. SIFES-MR 2023, Riccione 17-19 May 2023.
7. **Fiorentino G.**, Cimadomo D., Innocenti F., Merico V., Taggi M., Angotzi M., Venturella R., Albricci L., Vaiarelli A., Sproviero D., Cereda C., Gagliardi S., Ubaldi F.M., Garagna S., Rienzi L., Zuccotti M. (2022). Ruolo dei miRNA rilasciati dalle cellule del cumulo ooforo nell'acquisizione della competenza allo sviluppo di ovociti di topo e umani. SIFES-MR 2022, Rome 10-12 November 2022. **(Best oral presentation award)**.
8. Cimadomo D., **Fiorentino G.**, Innocenti F., Merico V., Taggi M., Angotzi M., Venturella R., Albricci L., Vaiarelli A., Sproviero D., Cereda C., Gagliardi S., Ubaldi F.M., Garagna S., Rienzi L., Zuccotti M. (2022). Cumulus cells secrete micro-vesicles carrying miRNAs: their role in the acquisition of mouse and human oocyte's developmental competence. 13th Biennial Alpha Conference, Sevilla 6-9 October 2022.
9. **Fiorentino G.**, 4D digital twin technologies for the reproductive medicine of the future. (2022) XVII Annual Meeting of the MSRM - VIII Edition of the Pelvis as a Mother, Bari 18-20 September 2022. **(Invited Speaker)**
10. **Fiorentino G.**, Parrilli A., Cimadomo D., Vaiarelli A., Rienzi L., Ubaldi F.M., Garagna S., Zuccotti M. (2022). 3D micro-Computed Tomography imaging and reconstruction of the mouse ovary before and after gonadotropins treatment. ESHRE 38th Annual Meeting, Milan 4-6 July 2022.
11. **Fiorentino G.**, Parrilli A., Cimadomo D., Vaiarelli A., Rienzi L., Ubaldi F.M., Garagna S., Zuccotti M. (2022). Micro-Computed Tomography 3D reconstruction of the mouse ovary following gonadotropins treatment. GEI-

SIBSC, Gargnano 5-7 June 2022.

12. **Fiorentino G.** (2022). Imaging e ricostruzione 4D dell'ovario: nuove frontiere per la scienza della riproduzione. inFORMAZIONE in SIERR, Rome 17-19 March 2022. (**Invited Speaker**)
13. Parrilli A., **Fiorentino G.**, Garagna S., Zuccotti M. (2021). 3D analysis of the ovarian folliculogenesis. Bruker microCT/XRM User Meeting 2021, 12-13 October 2021.
14. **Fiorentino G.**, Parrilli A., Garagna S., Zuccotti M. (2021) Micro-Computed Tomography of the adult mouse ovary: an in-silico 3D reconstruction of folliculogenesis. ESHRE virtual 37th Annual Meeting, 28 June - 1 July 2021.
15. **Fiorentino G.**, Parrilli A., Soleymaninejadian E., Garagna S., Zuccotti M. (2021) Digital 3D reconstruction of the mouse ovary. 66° convegno GEI-SIBSC, Milano 22 Giugno 2021. (**Best oral presentation award**).
16. **Fiorentino G.**, Parrilli A., Garagna S., Zuccotti M. (2020) 3D micro-Computed Tomography reconstruction of the adult mouse ovary. MyDev 2020 - Webinar, 20 November 2020. (**Best poster award**).
17. **Fiorentino G.**, Smith A., Orellana F., Magni F., Garagna S., Zuccotti M. (2020) MALDI mass spectrometry imaging of the mouse ovarian folliculogenesis. MASSA 2020 VIP - Virtual International Pre-congress, 1 September 2020. (**Relatrice**).
18. Zuccotti M., **Fiorentino G.**, Nicora G., Sciajno R., Cavallera F., Bellazzi R., Borini A., Garagna S., Coticchio G. (2020) Prediction of oocyte and embryo competence by advanced image analysis and AI. 36th Annual Meeting of the ESHRE - Virtual meeting, 5-8 Luglio 2020.
19. **Fiorentino G.**, Garagna S., Zuccotti M. (2020) Three-dimensional computed tomography of the mouse ovary. 3rd Joint Symposium "Life Science 2020" - Pavia, 19-21 February 2020. (**Relatrice**).
20. Coticchio G., Sciajno R., **Fiorentino G.**, Cavallera F., Nicora G., Bellazzi R., Borini A., Garagna S., Zuccotti M. (2019) Artificial neural-network analysis combined with time-lapse imaging predicts embryo ability to develop to the blastocyst stage. 75th Scientific Congress of the American-Society-for-Reproductive-Medicine (ASRM). Philadelphia, Pennsylvania, 12-16 Ottobre 2019. Fertility and Sterility, 112(3), e273-e274.
21. Zuccotti M., Coticchio G., **Fiorentino G.**, Cavallera F., Nicora G., Bellazzi R., Sciajno R., Borini A., Garagna S. (2019) Time-Lapse imaging combined with artificial neural-network analysis predicts oocytes and preimplantation embryos developmental competence. 65° Convegno GEI-SIBSC, Ancona 24-27 June 2019.
22. Ursino E., Barbieri G., Gabrieli P., **Fiorentino G.**, Mamberti S., Gasperi G., Albertini A.M., 2017: Expression of *Bacillus thuringiensis israelensis* toxin genes in *Bacillus subtilis* for tiger mosquito control. 19th International Conference on Bacilli & Gram - Positive Bacteria, Berlino, 11-15 June 2017.
23. Mamberti S., Ursino E., Barbieri G., Gabrieli P., **Fiorentino G.**, Leonardi C., Tosini G., Gasperi G., Albertini A.M., 2017: Identification of new bacterial species with insecticidal activities towards *Aedes albopictus* larvae. 3rd International Workshop on *Aedes albopictus*, the Asian tiger mosquito, Pavia, 10-12 April 2017.

Pavia, 10/04/2024

