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RESEARCH EXPERIENCE

MSCA Global Postdoctoral Fellow

Nottingham Trent University (UK)
University of Zurich (Switzerland)
University of Bologna (Italy)

01/02/2026 – 31/02/2029

- **Call:** Marie Skłodowska Curie Global Postdoctoral Fellowship 2024
- **Name of the project:** "*EXIT PLAN - Involvement of EXtracellular vesicles in cell wall remodelling and InTercellular communication during the apical growth of PLANt cells*".
- **Grant number:** 101203959
- **Main activities:**
 - Isolating and characterising extracellular vesicles from pollen and roots.
 - Generating plant mutants to knock-out or label specific proteins.
 - Evaluating the downstream effects of plant-derived extracellular vesicles in cell wall remodelling and intercellular communication.

Postdoctoral Research Fellow

University of Bologna - Bologna (Italy)

02/2022 – 02/2026

From 1/02/2025 to 31/01/2026:

- **Name of the project:** "*SALUTE! Mapping the allergenicity of Bologna's cycle paths*".
- **Main activities:**
 - Planning the sampling of aeroallergens and pollutants along two cycle paths in Bologna.
 - Creating an interactive map of cycle paths, vegetation, and pollutants sources in the city.
 - Quantifying the aeroallergens and correlating molecular and palynological data
 - Developing a lateral-flow test prototype for aeroallergens.

From 1/02/2023 to 31/01/2025:

- **Name of the project:** "*Environmental and health impacts of air pollution: integrating the effects of aerosol exposure in a multiexposome study*".
- **Main activities:**
 - Investigating the effects of the exposure to 2D-nanomaterials on the germination of tobacco and hazel pollen, by culturing the pollen in vitro with and without the nanomaterials and evaluating morphological and biochemical modifications by means of microscopy and immunofluorescence.
 - Investigating the effect of heat-stress on pollen-pistil communication, by cultivating canola plants in standard and heat-stress conditions, isolating extracellular vesicles from their pollen and analysing them with an omics approach, and performing cross-breeding experiments.
 - Grant and paper writing.

From 02/2022 to 31/01/2023:

- **Name of the project:** "*Ecosystem Services and Disservices in Urban Parks*".
- **Main activities:**
 - Analysing the potential of urban vegetation to remove air pollutants, by calculating ecosystem services either on empirical data collected on the field, or on data available from public repositories.

- Analysis of the effect of air pollution on urban vegetation, in terms of photosynthetic efficiency (Fv/Fm, p.index, measured with a chlorophyll fluorimeter) and micromorphological changes in the leaf surface (evaluated by scanning electron microscopy).
- Developing an experimental design to assess the correlation between allergenic pollen exposure and intensity of the symptoms experienced.
- Co-tutoring of undergraduate and graduate students.
- Grant and paper writing.

Marco Polo Scholarship **Nottingham Trent University – Nottingham (UK)** **01/10/2019 – 31/01/2020**

- **Name of the project:** "*Study on the secretion of respirable size nanovesicles delivering allergens during pollen germination*".
- **Main activities:**
 - Isolation of extracellular vesicles from *Actinidia chinensis* and *Olea europaea* pollen grains.
 - Visualisation of extracellular vesicles by nanoparticle tracking analysis and atomic force microscopy.
 - Characterisation of molecular markers of pollen extracellular vesicles by dot blot and western blot.



TEACHING EXPERIENCE

Invited lecturer **PoliS-Lombardia - Milano (Italy)** **15-24/09/2025**

Lecturer during the “**Basic aerobiology training and refresher course**” organised by the PoliS-Lombardia-Regional Institute for Lombardy Policy Support.

Invited lecturer **University of León - León (Spain)** **24-30/11/2024**

Lecturer in “**Palynology**” (1 ECTS) at the Faculty of Biological and Environmental Sciences, for the master’s degree in Botanical and Zoological Diversity Investigation, as part of the Erasmus+ mobility.

Expert teacher **Laura Bassi High School - Bologna (Italy)** **09/2024 – present**

Teacher in a STEM practical laboratory (“**STEM by STEM**” PNRR project) for high school classes (Forensic botany lab, 90h).

Adjunct Lecturer **University of Bologna - Bologna (Italy)** **01/2024 – present**

Lecturer in "**Environmental Botany**" (1 ECTS) at the Department of Medical and Surgical Science (DIMEC), for the master's degree in Health Professions of Prevention Sciences.

Co-tutor **University of Bologna - Bologna (Italy)** **2019 – present**

Co-tutor of three undergraduate students (one in Natural Sciences and two in Biology) and eleven graduate students (five in Sciences and Management of Nature, three in Biodiversity and Evolution, one in Global Change Ecology and Sustainable Development Goals, one in Teaching and Communication of Natural Sciences).

Lab demonstrator **University of Bologna - Bologna (Italy)** **02/2019 – present**

Lab demonstrator in **18 teaching labs**, in particular for:

- **high-school classes**, in the teaching labs of plant cytology and histology (sample preparation and observation by optical microscopy), plant molecular biology (dot blot, SDS-PAGE), melissopalynology, forensic botany;
- **undergraduate students** in Biology, in the following teaching labs: Plant Biology and Diversity (sample preparation and observation by optical microscopy, pollen germination); Biochemistry (enzymatic activity assays, bioinformatic analysis in UniProt); Plants, Food, and Environment (dot blot, ABTS assay, melissopalynology); Botany: Interactions Of Plants Humans And Environment (protein isolation, SDS-PAGE, dot blot, western blot, aeropalynology, photosynthetic efficiency measurements in fluorimetry).

- **graduate students** in the teaching lab: Plant-Environment Interactions and Biomonitoring (protein extraction and quantification, ROS analysis, SDS-PAGE).

Substitute Teacher **Liceo degli Scolopi - Firenze (Italy)** **05/2018 – 05/2018**

Substitute Teacher in Biology, Chemistry, and Earth Science for 9 High School classes.



EDUCATION

PhD in Earth, Life, and Environmental Sciences – Biology Curriculum **University of Bologna - Bologna (Italy)** **2018 – 2022**

- **Thesis Title:** "Relationships between airborne pollen allergens and environmental factors."
- **Tutor:** Prof. Stefano Del Duca
- **Evaluation:** Excellent with Honours
- **Main activities:**
 - Isolation and characterisation of extracellular vesicles secreted by olive and kiwi pollen during germination;
 - Calculation and comparison of allergenicity indices for the urban vegetation, with an ecological approach.

Master's degree in Biodiversity and Evolution **University of Bologna - Bologna (Italy)** **2014 – 2017**

- **Thesis Title:** "Vegetational diversity of a protected area in an urbanised context"
- **Tutor:** Prof. Alessandro Chiarucci, **Grade:** 110/110 with Honours

Bachelor's degree in Biology **University of Modena and Reggio Emilia - Modena (Italy)** **2010 – 2014**

- **Thesis Title:** "Paleoecological indicators of pastoralism: pollen and spores from sheepfolds in Basilicata (Italy)"
- **Tutor:** Prof. Anna Maria Mercuri, **Grade:** 110/110 with Honours



PUBLICATIONS

Papers published in IF journals:

1. Suanno C., Marincich L., Corneti S., Aloisi I., Pincigher L., Papi E., Parrotta L., Antognoni F., Del Duca S., "Biochemical Analysis of Wheat Milling By-Products for Their Valorization as Potential Food Ingredients", International Journal of Molecular Sciences, 2025, <https://doi.org/10.3390/ijms26125830>
2. Isani G., Rudelli C., Andreani G., Fabbri M., Suanno C., Parrotta L., Del Duca S., "Trace element levels in Italian honeybees and wild plants: which factors matter?", Apidologie, 2025, <https://doi.org/10.1007/s13592-025-01194-9>
3. Rodríguez-Fernández A., Aloisi I., Blanco-Alegre C., Vega-Maray A.M., Valencia-Barrera R.M., Suanno C., Calvo A.I., Fraile R., Fernández-González D., "Identifying key environmental factors to model Alt a 1 airborne allergen presence and variation", Science of The Total Environment, 2024, <https://doi.org/10.1016/J.SCITOTENV.2024.170597>
4. Suanno C., Tonoli E., Fornari E., Savoca M.P., Aloisi I., Parrotta L., Faleri C., Cai G., Coveney C., Boocock D. J., Verderio E. A. M., Del Duca S., "Small extracellular vesicles released from germinated kiwi pollen (pollensomes) present characteristics similar to mammalian exosomes and carry a plant homolog of ALIX", Front Plant Sci, 2023, ISSN: 1664-462X, <https://doi.org/10.3389/FPLS.2023.1090026>

5. Suanno C., Sandrini S., Aloisi I., De Nuntiis P., Facchini M.C., Del Duca S., Fernández-González D., “Airborne Pollen, Allergens, and Proteins: A Comparative Study of Three Sampling Methods”, Sustainability, 2022, <https://doi.org/10.3390/su141911825>
6. Suanno C., Aloisi I., Parrotta L., Fernández-González D., Del Duca S., “Allergenic risk assessment of urban parks: Towards a standard index”, Environmental Research, 2021, ISSN: 0013-9351, <https://doi.org/10.1016/j.envres.2021.11143>
7. Suanno C., Aloisi I., Fernández-González D., Del Duca S., “Pollen forecasting and its relevance in pollen allergen avoidance”, Environmental Research, 2021, ISSN: 0013-9351, <https://doi.org/10.1016/j.envres.2021.111150>
8. Suanno C., Aloisi I., Fernández-González D., Del Duca S., “Monitoring techniques for pollen allergy risk assessment”, Environmental Research, 2021, ISSN: 0013-9351, <https://doi.org/10.1016/j.envres.2021.111109>
9. Capotorti G. et al., “More nature in the city”, PLANT BIOSYSTEMS, 2020, ISSN 1126-3504, <https://doi.org/10.1080/11263504.2020.1837285>
10. Parrotta L., Aloisi I., Suanno C., Faleri C., Kielbowicz-Matuk A., Bini L., Cai G., Del Duca S., “A low molecular-weight cyclophilin localizes in different cell compartments of *Pyrus communis* pollen and is released in vitro under Ca²⁺ depletion”, Plant Physiology and Biochemistry, 2019, ISSN 0981-9428, <https://doi.org/10.1016/j.plaphy.2019.09.045>

Reviewer for the IF journals

- Environmental Monitoring and Assessment (2023)
- Frontiers in Plant Science (2022)



CONGRESSES

Chairperson at the conference:

- IAC2022, session “Aerosols and Health”, Athens (Greece) (09/09/2022).

Abstracts selected for oral presentation:

1. Paganelli F., Rodríguez Fernández A., Suanno C., Florenzano A., Mercuri A. M., Fernández González D., Del Duca S., Aloisi I., “Usefulness of questionnaires in the allergenic risk assessment”, MedPalynoS 2024, Salamanca (Spain).
2. Suanno C., Verderio-Edwards E., Del Duca S., “Involvement of TGases in heat-induced dysregulation of pollen tube growth and implications for pollen allergy” (Flash Talk), FEBS Workshop “Transglutaminases in human disease processes”, 2024, Bertinoro (Italy).
3. Suanno C., Montanari M., Gherardi S., Domini A., Aloisi I., “From big data to micro morphology: an experimental approach to ecosystem services calculation”, 3rd International Electronic Conference on Plant Science (IECPS), 2024, online.
4. Suanno C., Tonoli E., Fornari E., Savoca M. P., Aloisi, I., Parrotta L., Faleri C., Cai G., Verderio-Edwards E., Del Duca S., “Possible markers for pollen-derived nanoparticles carrying pollen allergens”, International Aerosol Conference (IAC) 2022, Athens (Greece).
5. Suanno C., Tonoli E., Fornari E., Savoca M. P., Aloisi, I., Parrotta L., Faleri C., Cai G., Verderio-Edwards E., Del Duca S., “Pollensomes cargo and markers in *Actinidia chinensis* Planch”, 117th Congress of the Italian Botanical Society (SBI) - VIII International Plant Science Conference (IPSC), 2022, Bologna (Italy).
6. Suanno C., Tonoli E., Fornari E., Savoca M. P., Aloisi, I., Parrotta L., Faleri C., Cai G., Verderio-Edwards E., Del Duca S., “BRO1-domain containing proteins as possible markers for pollensomes”, Annual Meeting of the Working Groups in Cell and Molecular Biology and Biotechnology and Differentiation of the Italian Botanical Society, 2022, Rome (Italy).
7. Suanno C., Tonoli E., Fornari E., Savoca M. P., Aloisi I., Parrotta L., Verderio E., Del Duca S., “Does pollen release exosomes?”, Mediterranean Palynology Societies Symposium (MedPalynoS) 2021, online.

Abstracts selected for poster presentation:

1. Suanno C., Aloisi I., Tartarini S., Del Duca S., "The extracellular life of a cytoplasmic protein: investigating profilin secretion in pollen.", 49th FEBS Congress, 2025, Istanbul (Turkey).
2. Suanno C., Ruggirello F., Del Duca S., "Optimisation of rapeseed pollen germination", MedPalynos 2024, Salamanca (Spain).
3. Suanno C., Aloisi I., Parrotta L., Fernández-González D., Del Duca S., "Allergenic risk assessment of urban parks: towards a standard index", 116th Congress of the Italian Botanical Society - VII International Plant Science Conference (IPSC), 2021, online.
4. Suanno C., Tonoli E., Fornari E., Savoca M. P., Aloisi I., Parrotta L., Verderio E., Del Duca S., "ALIX as a possible marker for pollen-released nanovesicles", ID: 157, 7th European Symposium on Aerobiology, (ESA) 2020, online.
5. Suanno C., Aloisi I., Iaquina G., Parrotta L., Del Duca S., "Allergenic potential of urban green areas: methods standardisation applied to the Botanical Garden of Bologna", 115th Congress of the Italian Botanical Society, 2020, online.



SKILLS

Core research skills:

- **Plant cultivation** in traditional and hydroponic/aeroponic systems, acquired during my PhD and the postdoctoral fellowships.
- **Pollen collection, storage, and germination**, acquired during my PhD and the postdoctoral fellowships.
- **Sample preparation for histological and cytological analyses**, acquired during the academic career.
- **Basic knowledge of microscopy and spectroscopy**, acquired with the following workshops and courses: "Drive AFM: Innovations and Future Trends in AFM Applications", Quantum design Italy (22/06/2023); "Practic course of ESEM-EDS microscopy", University of Bologna (13/04/2023); "Training on Raman spectroscopy", CNRS France (28-31/03/2023); and during the academic career.
- **Molecular biology and biochemistry techniques** (protein isolation and quantification, electrophoresis, immunoblotting, immunolabelling, spectrophotometry, and enzymatic assays) acquired in the academic studies and reinforced during the PhD course, the postdoctoral fellowship, and the lab demonstrations.

Additional research skills:

- **Basic bioinformatics** with R and Python, acquired during the academic studies and with the course "Data Science - theory and Python applications", Alta Formazione Insubria (24-28/10/2022); "Statistics for STVA PhD course", University of Bologna (26/02/2019 -08/03/2019);
- **Basic knowledge of Remote Sensing and Geographic Information Systems (GIS)**, acquired during my academic studies and internships, and through the seminar "Remote sensing" (17/04/2020) and the course "Numeric cartography and GIS Lab" (6 ECTS, 14/10/2018-10/01/2019), both organised by the University of Bologna.

Transferable skills:

- **Teaching**, acquired with the teaching experience in High School and University, and as a Lab Demonstrator, and supported by the following courses: "Teaching and learning technologies" (6 ECTS), "Inclusive teaching" (6 ECTS), "Cultural Anthropology" (6 ECTS), and "General Psychology" (6 ECTS) at UniPegaso (2018);
- **Scientific writing**, acquired during the PhD course and the postdoctoral fellowships, and enhanced with the courses "LaTeX: scientific formatting for lazy people... like scientists!" (28/05/2020), and "Language Empowerment for Academics (LEA) - C1 English course" (5/10/2022-16/12/2022), hosted by the University of Bologna;
- **Science communication**, acquired during the scholarship "EuroMediterranean course of Environmental Journalism Laura Conti – XVI Edition", Legambiente (9/10/2017-17/11/2017), and deepened by attending the seminar "Selling Science to politicians and publics – communicating technical science to

non-technical audiences” of Prof. Iain Stewart (25/02/2019) and the workshop “@Uniboper - PhD storytelling” hosted by the University of Bologna (16-31/05/2022); by contributing to public outreach events organised by the University of Bologna (Fascination of Plants Day, BiGeA day) and by the CNR (The European Researchers' Night); and by writing magazine articles on La Nuova Ecologia (Legambiente) and UniBo Magazine (University of Bologna).

- **Teamwork and conflict management**, acquired with the webinar “*Optimal management of work requests*” held by the University of Bologna (2024) and the course “*Soft skills for the working world*” held by the Aldini Valeriani Foundation (2018), and implemented during my working career.
- **Basics of entrepreneurship**, acquired with the following courses and workshops: “*Practical skills for business start-up - Project management*”, Ecipar (2018); “*Road Map to AlmaEClub*”, University of Bologna; “*Connecting Nature – Business Model Canvas, Financing and Entrepreneurship Workshop*”, Horizon2020 project Connecting Nature (01-02/06/2019).
- **Basics of sustainable lab practices**, acquired with the StarLab webinar “*Towards the sustainable laboratory*” (15/10/2024).



LANGUAGES

- **Italian** (mother tongue)
- **English** (IELTS C1 certificate)
- **French** (basic knowledge)



PROJECTS

- “SALUTE! Mapping of the allergenicity of Bologna's cycle paths”, grant “Scientific Research 2023 - Del Monte Foundation of Bologna and Ravenna”.
- Understanding the impact of heat stress on pollen-pistil communication in crops (HEATSTOP), PRIN PNRR 2022.
- Effects of 2D-nanomaterials on seed plants reproduction (2D-NANO MAD PLANTS), PRIN 2020.



AWARDS AND RECOGNITION

- Winner of the Marie Skłodowska-Curie Global Postdoctoral Fellowship 2024 with the project “EXIT PLAN” (2025).
- Winner of the science communication contest “TOP TEN 2024 in animal and plant biology”, organised by the Academy of Sciences of Bologna (2024).
- Winner of the TG-sponsored Youth Travel Fund (YTF) grant (2024)
- Winner of the Medpalynos 2021 Speech Award in Pollen Biology and Structure (2021).
- Winner of the Laura Conti scholarship for environmental journalism (2018).



MEMBERSHIPS

- International Society for Extracellular Vesicles (ISEV)
- Italian Society of Biochemistry (SIB)

In compliance with the Italian legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document.

Nottingham, 12/02/2026

Chiara Deana