

The undersigned declares to be aware of the penal liability who, under the dell'art.76DPR445/ 2000, may undergo in case of false declarations (artt.483, 485, 486 Penal Code), under his personal responsibility.

PERSONAL INFORMATION Sara Costantini

STUDIES APPLIED FOR PhD in Cell and Developmental Biology
Sapienza, University of Rome
Final grade: Excellent cum Laude

PUBLICATIONS

- Pontiggia D.¹, Benedetti M.¹, Costantini S.¹, De Lorenzo G., Cervone F. (2020). Dampening the DAMPs: how plants maintain the homeostasis of cell wall molecular patterns and avoid hyper-immunity. *Front Plant Sci.*, 11:613259. doi: 10.3389/fpls.2020.613259
- Taurino M.¹, Costantini S.¹, De Domenico S.¹, Stefanelli F., Ruano G., Delgadillo M.O., Sanchez-Serrano J.J., Sanmartin M., Santino A., Rojo E. (2018). SEIPIN Proteins mediate lipid droplet biogenesis to promote pollen transmission and reduce seed dormancy. *Plant Physiol.*, 176(2):1531-1546. doi: 10.1104/pp.17.01430

¹: as main/first author

AWARDS AND FELLOWSHIPS

- July 2021 **Winner of Post-Doc fellowship: Assegno di Ricerca -categoria B Tipologia I**
Settore Scientifico disciplinare BIO/04 (Fisiologia Vegetale)
Dipartimento di Biologia e Biotecnologie Charles Darwin, Università degli Studi di Roma La Sapienza
Progetto di Ricerca: Miglioramento della resistenza delle piante ai patogeni grazie ad un rilascio “a comando” di profili molecolari associati al danno.
- 07 July 2021 **PhD in Cell Biology and Developmental and Award of the additional title of Doctor Europaeus, PhD in Cell Biology and Developmental Biology, Sapienza University of Rome**
Final evaluation: Excellent cum Laude.
- June 2019 **Awarded the EMBO short-term fellowship**
The activity o research was held from May 2019 to July 2019 at the Swedish University of Agricultural Sciences (SLU), department of Plant Biology, Uppsala, Sweden
- February 2019 **Awarded the fellowship “Progetti di ricerca congiunti per la mobilità all'estero di studenti di dottorato del XXXIII ciclo Sapienza”**
University of Rome La Sapienza
- October 2018 **Winner of “ Progetto per Avvio alla Ricerca” - Tipo 1**
Università di Roma Sapienza
- 2017 **Winner of the Premio allo studio “Cesare Pozzo”**
Regione Puglia – Basilicata
Academic years 2015-2016.
- November 2017-July 2021 **PhD. Fellowship winner as first ranked. Course in Cell and Developmental Biology - XXXIII cycle, University of Rome “La Sapienza**

- A.Y. 2015/2016 **Awarded the Erasmus Traineeship fellowship**
University of Salento
The stage was held from June 2017 to August 2017 at CNB-CSIC (National Center of Biotechnology), Plant Molecular Genetics Department, Madrid, Spain.
- A.Y. 2015/2016 **Awarded the Erasmus Traineeship fellowship**
Consorzio EXPLORE, University of Foggia.
The stage was held from June 2016 to September 2016 at CNB-CSIC (National Center of Biotechnology), Plant Molecular Genetics Department, Madrid, Spain

CONGRESS COMMUNICATIONS

- 2021 **Poster Presentation: ICAR 2021 - The 31th international conference on Arabidopsis research, virtual (Formerly Seattle, USA)**
Cell wall DAMPs (damage associated molecular patterns) and their oxidation in Arabidopsis immunity and development. Sara Costantini, Manuel Benedetti, Daniela Pontiggia, Benedetta Mattei, Felice Cervone e Giulia De Lorenzo.
- 2019 **18th Congress of international Society for Molecular Plant Microbe Interactions (IS-MPMI), Glasgow, Scotland, 2019**
Homeostasis of cell wall derived DAMPs is regulated through oxidation by Berberine –Bridge like proteins. Federica Locci, Daniela Pontiggia, Manuel Benedetti, Sara Costantini, Felice Cervone, Giulia De Lorenzo.
- 2018 **Poster Presentation at XV FISV Congress, Rome, Italy, 2018**
SEIPIN proteins affect lipid droplet biogenesis in Arabidopsis to promote pollen transmission and reduce seed dormancy (FISV 2018) - Sara Costantini, Marco Taurino, Stefania De Domenico, Francesco Stefanelli, Guillermo Ruano, María Otilia Delgadillo, José Juan Sánchez-Serrano, Maite Sanmartín, Angelo Santino, and Enrique Rojo.

EDUCATION AND TRAINING

- 07 July 2021 **PhD in Cell and Developmental Biology, University of Rome La Sapienza-XXXIII cycle**
Excellent cum Laude (Ottimo con Lode)
Title: Cell Wall DAMPs (Damage Associated Molecular Patterns) and their oxidation in the Arabidopsis seed coat development and grafting.
Supervisors: Prof. Mattei and Prof. De Lorenzo. Reviewer: Prof. Olga Zabolina and Dr. Enrique Rojo.
- December 2019 **Held a seminar for Biology Sciences (L-BS) at University of Rome La Sapienza**
20/12/2020: "Grafting"
- April 2019 **Held two seminars for the Master Degree LM70 at University of Rome La Sapienza**
02/04/2019 : "reserve proteins, protein bodies and related genetic engineering"
04/04/2019: "lipid bodies, vegetable oils and lipid metabolic engineering"
- October 2018 **Attestation of participation to ICGEB Practical Course , Fluorescence Microscopy - FluoMicro@ICGEB**
ICGEB, International Centre for Genetic Engineering and Biotechnology - 2018 Trieste.
- September 2018 **Attestation of participation to XV FISV Congress – Sapienza University of Rome - 2018**

- June 2018 **Attestation of participation to SUMMER SCHOOL "CLIMATE CHANGE AND CROP PRODUCTIVITY: THE ROLE OF PLANT PHYSIOLOGY, BREEDING AND BIOTECHNOLOGY.**
Plant G&M, SIBV - Isola Polvese (PG)
- November 2017- July 2021 **Ph.D fellow of the course in Cell and Developmental Biology - XXXIII cycle**
La Sapienza Università di Roma, Dipartimento di Biologia e Biotechnologie "Charles Darwin", Piazzale Aldo Moro, 5, 00185 Roma (RM)
- Fellowship winner as first ranked.
- Research project: Study of the role of oligosaccharides derived from cellular cell wall degradation in the regulation of immunity and plant development process. Reference Prof. Mattei and Prof. De Lorenzo.
- May 2017 **Pre-selected to the final stage of the INPhINIT "La Caixa" Fellowship**
Barcelona, La Caixa training center
- INPhINIT relies on the European Commission's support through the Horizon 2020 Marie Skłodowska-Curie Actions - COFUND programme .
- NPhINIT is a doctoral fellowship programme .It is promoted by the "la Caixa" Foundation with the aim of supporting the best scientific talent and fostering innovative and high-quality research in Spain by recruiting outstanding international students and offering them an attractive and competitive environment for conducting research of excellence.
- Received application: 438
Pre-selected application: 143
Awarded fellowships: 57
- June 2017- August 2017 **Stage at CNB-CSIC, Madrid, Spain**
through the fellowship Erasmus Traineeship post lauream
- A.Y. 2015/2016 **Master Degree in Biology**
University of Salento, Lecce
Research thesis: "Phenotypic and functional characterization of SEIPIN- mutants of Arabidopsis thaliana.
- Final grade: 110 cum laude/110.
- Agro-Food Curriculum
 - Applied Microbiology, Applied Hygiene, Plant Physiology, Productivity and Quality, Biochemistry II, Human Physiology, Human Anatomy, Plant Cytobiology, Plant Biology of Agro-Food Products, Agro-Food Biotechnology, Physiology applied to Aquaculture, Agro-Food Methods, Ethical Economics and Normative Aspects.
- January 14, 2017 **English language certification IELTS**
British Council, Bari
- Score: 7 (CEFR level: C1)
- November 2016- January 2017 **English class at the Morgan School**
Via Castromediano,4 73013, Galatina, LE
- May 2016-January 2017 **Stage-Internship at the CNR-ISPA, Lecce**
National Research Council-Institute of Food Production Sciences, via Monteroni km 7, 73100 Lecce (LE)
- Skills development in molecular and cellular biology of plants. Functional characterization of mutants of Arabidopsis and verify the response to biotic and abiotic stress.
 - Obtained results for the writing of the Thesis: Phenotypic characterization of Arabidopsis mutants seipins

June 2016- September 2016

Stage at CNB-CSIC, Madrid, Spain

Experience for account of the CNR-ISPA, through the fellowship Erasmus Traineeship, at the CNB –CSIC(Nacional de Biotechnology Center) in Madrid.

- Research activities, obtained results for the purpose of writing the thesis and a scientific article.
- Characterization of mutants of the three genes of Arabidopsis seipins. Confocal microscopy analysis of lipid bodies in embryos and pollen of mutant and wild type.
- Analysis of seed germination and pollengrains. Study of the response of nutrient starvation conditions.
- Presentation of the work done during the internship in two seminars.
- Participation in seminars organized by the CNB-CSIC.

October 2015

Certificate of attendance and profit at the Course of Consultant and Trainer HACCP

University of Roma Tor Vergata, Department of Biology e Hideea under the patronage of Birra Peroni S.r.l

- Educational visit at the company's production of porchetta Cioli Egidio Srl, Ariccia (RM).
- The legislation on food: the Italian legislation, the Community legislation, the sanctions, the competent authorities.
- The HACCP Manual: technical and regulatory aspects.
- Simulation of a HACCP plan.
- Basic knowledge of food microbiology, microbiology laboratory.
- Analytical tests on the quality of raw materials, semi-finished and food products; Biosafety food

June 2015

Attestation of participation to the seminar: The Technological Innovation in Agriculture

Chamber of Commerce of Lecce in collaboration with SO.FI.A (Sustainability of the Italian Agro-Food Chain), CRA (Council for Research and Experimentation in Agriculture) and Superelectric.

- Precision farming: execution of agronomic according to the actual needs of cultivation and biochemical characteristics and physical properties of soil. Practical demonstration on the field at the headquarters of the experimental CRA Monteroni.

November 2014

Attestation of participation to the South Italian MAPEC Workshop, Tools to support policies to protect the environment and health

University of Salento, Di.S.Te.B.A.

A.Y. 2009/2010 – A.Y
2012/2013

Three-year Degree in Biological Sciences

Università del Salento.

- Thesis in Hygiene, "Molecular Epidemiology: the micronucleus test as an indicator of environmental pollution."
- Mathematics, Physics, Information Technology, Probability and Statistics, English language.
- Cytology and Histology, Comparative Anatomy and Embryology, Zoology, General and Systematic Botany, Microbiology, Hygiene, Biochemistry, General and Inorganic Chemistry, Organic Chemistry, Genetics, Physiology, Recombinant Technologies, Molecular Biology, Ecology, Materials Science, Safety Laboratory.

A.S.2008/2009

High School Diploma

Liceo Scientifico Leonardo Da Vinci, Maglie (LE)

PERSONAL SKILLS

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken Interaction	Spoken Production	
English	C1	C1	C1	C1	C1
French	A1	A1	A1	A1	A1
Spanish	A1	A1	A1	A1	A1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills

I have excellent communication skills acquired in different contexts:

- During period abroad experiences (Erasmus traineeship, EMBO) I have developed a strong ability to communicate and establish contacts with people from different cultures both in professional and social context.
- Good scientific divulgation ability developed during seminars, lab meetings and poster presentation in congresses, where I acquired the ability to communicate with students and professionals and to talk about my scientific activity concisely and clearly.
- In several summer schools I took part during my PhD course and also during University and High School, where I developed adaption skills and I have improved the ability to cohabit with others.
- During the experience as a volunteer in the Franciscan Youth, where it is essential to discuss with others, propose ideas and actively participate in weekly meetings, regional and national youth camps. I also covered the role of animator and educator for children and adolescents, where I optimize the ability to relate and explain complex topics with teenagers and children.
- Communication skills are also matured following the entry into a theater company through which I had the chance to star in a comedy in which was fundamental the understanding between the actors and the interaction with the audience, and overcome eventual difficulties of public speaking.

Organisational / managerial skills

I have developed excellent organizational skills during different experiences:

- during my PhD course in the laboratory of Plant Physiology, and during the training period in the scientific laboratories at the CNR of Lecce and the CNB in Madrid, where organizing the research work according to the time and tools availability and in relation to work of other colleagues was essential
- as volunteer in Franciscan Youth because I held the role of local contact person from the year 2012 to the year 2014. During this time I was an active member in the organization and in the design of charity events, cultural events and local school camps..
- I was a member of the board of a local association for the fight against cancer, which has the objective of raising funds through the organization of theater plays to help research, promote and organize free screening and help families with patients in economic difficulty in my city.
- Excellent team spirit developed according to the values of sport of respect and fairness, thanks to the performance, since childhood, of various group activities such as volleyball and soccer. In addition, these experiences have increased adaptability and problem solving.

Job-related skills Professional skills in plant physiology, molecular biology and biochemistry.
 Very good ability to use laboratory instruments according to the safety rules and to carry out standard biological analysis protocols developed during the PhD course and academic years. I improved my ability to formulate hypotheses, set up experiments and evaluate critically the results. I developed experience in proteins biochemical and physiological characterization.
 In particular during my work in different laboratories I have acquired skills in molecular and biochemistry technique such as DNA and RNA extraction, expression analysis by qRT-PCR, proteins extraction, agarose and polyacrylamide (SDS-PAGE) gel electrophoresis, western blot, GUS assay, DNA cloning, plant transformation (agroinfiltration, floral dip), protein heterologue expression in *Pichia pastoris*, enzymatic assay (orange xylenol assay), extraction of plant cell wall fractions, and determination of monosaccharide composition by HPAEC. I developed also expertise in physiology studies and phenotypic characterization, with the use of microscopy, infection assays of *A. thaliana* seedlings, elicitation assays with cell wall DAMPs (damage associated molecular pattern) of *A. thaliana* seedlings, seeds germination/dormancy assay, pollen germination in vitro assay, grafting in vitro using Arabidopsis. Very good ability to use bioinformatic and biostatistic tools.

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Independent user	Independent user	Independent user	Independent user

Levels: Basic user - Independent user - Proficient user
[Digital competences - Self-assessment grid](#)

- Excellent knowledge of Microsoft Office tools
- Excellent knowledge of Adobe Photoshop
- Excellent knowledge of editing programs of images, video and animations
- Excellent use of Wacom graphic tablets.
- Excellent use of scientific database: PubMed, Tair, Uniprot, Genevestigator, Snappgene, PDB
- Excellent use of Bioinformatic software; PyMol, DNAMAN, ImageJ, MEGA, Snappgene, CFX manager Software (biorad), Chromeleon
- Very good use of biostatistic software: R-project and R-studio

Other skills Artistic skills:
 Excellent ability to traditional and digital drawing.
 Basic knowledge of musical theory and practice acquired through piano private lessons.

Driving licence B

Personal Data authorize the use of my personal data in accordance with Legislative Decree 30 June 2003, n.196 "Code concerning the protection of personal data"

La sottoscritta dichiara di essere consapevole che il presente curriculum vitae sarà pubblicato sul sito istituzionale dell'Ateneo, nella Sezione "Amministrazione trasparente", nelle modalità e per la durata prevista dal d.lgs. n. 33/2013, art. 15.

Autorizzo la pubblicazione del mio curriculum vitae e il trattamento dei dati personali in esso contenuti in base all'art. 13 del D. Lgs. 196/2003 e all'art. 13 GDPR 679/16