

## **PERSONAL INFORMATION**

Family name, First name: Trost, Paolo

Researcher unique identifier: [orcid.org/0000-0002-6347-8701](https://orcid.org/0000-0002-6347-8701)

Date of birth: March 14, 1963

Nationality: Italian

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## **EDUCATION**

1994. PhD in Cell Biology and Physiology, University of Bologna.

1989. Five-year degree in Agricultural Science, University of Bologna.

## **CURRENT POSITIONS**

- Full professor of Plant Physiology, Department of Pharmacy and Biotechnology, University of Bologna (since 2003).
- Director of the 2<sup>nd</sup> level Master degree (Laurea magistrale) in Molecular and Cell Biology (since 2021).
- Vice-Director of the Department of Pharmacy and Biotechnology (FABIT) of the University of Bologna (since 2017).

## **PREVIOUS POSITIONS AND MAJOR INSTITUTIONAL RESPONSABILITIES**

2005-present: Member of the Scientific board of the PhD in Molecular and cell biology of the University of Bologna

2016-2021: Coordinator of the Laurea magistrale in Biologia Molecolare e cellulare.

2017-2019: Scientific advisor of the Bio-Agro-Food Department of National Research Council (CNR).

2013-2017: President of the Italian Society of Plant Biology.

2001-2012: Associate Professor of Plant Physiology, Faculty of Mathematical, Physical and Natural Sciences of the University of Bologna.

1993-2001: Assistant Professor of Plant Physiology, Faculty of Mathematical, Physical and Natural Sciences of the University of Bologna.

## **SELECTION COMMITTEES**

1998-present: Member of the Jury for the selection of candidates for permanent positions in Plant physiology (SSD BIO/04), in several Italian universities (25 in total).

1998-present: Member of PhD commissions in Plant Biology and related subjects (18 in Italy; 3 abroad).

2016-2018: Member of the Commission for the national scientific habilitation (Abilitazione Scientifica Nazionale, ASN) for Plant physiology (SSD BIO/04).

2015. President of the Jury for the selection of candidates for positions of Primo ricercatore and Institute Director for the National Research Council (CNR).

## **TEACHING AND RELATED ACTIVITIES**

Course Units at the University of Bologna:

2022-present: Oxygen and Redox Biology, 24 h, 2<sup>nd</sup> level Master degree in Molecular and Cell Biology

2021-present: Plant Environment Molecular Interactions, 24 h, 2<sup>nd</sup> level Master degree in

## Molecular and Cell Biology

2018-present: Biodiversità ed evoluzione, 48 h, B. sc. Biotecnologie.

2013-present: Fisiologia vegetale, (40 h), B.sc. Scienze biologiche.

2012-2021: Fisiologia degli stress e dinamiche redox nelle piante (32 h), Master (LM) in Biologia Molecolare e Cellulare.

2013-2018: Fisiologia vegetale with lab (76 h), B.sc. in Scienze biologiche.

2014-2017: Biologia vegetale (24 h), B.sc. Biotecnologie.

2008-2017: Produttività primaria e sviluppo sostenibile, 32 h, B.sc Scienze Biologiche.

2004-2012: Fisiologia vegetale cellulare (24 h), Master (LM) in Biologia Molecolare e Cellulare.

2002-2012: Fisiologia molecolare delle piante, 55 h, B.sc. in Scienze Biologiche.

1995-2007: Fisiologia delle piante coltivate (50 h), B.sc. Biotecnologie.

1993-2002: Laboratorio di Fisiologia vegetale (24 h), B.sc. Scienze biologiche.

Co-author of textbooks of Plant physiology for Italian universities: *Biologia vegetale*, edited by Pupillo et al., for Zanichelli-Bologna (2003); *Elementi di Fisiologia vegetale*, edited by Rascio for EdiSES-Napoli (1<sup>st</sup> edition 2012, 2<sup>nd</sup> edition 2017, 3<sup>rd</sup> edition 2021).

## SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

1995-present: 4 Postdocs / 11 PhD students / 31 Master Students.

## AWARDS

2012. "Assunta Baccarini-Melandri" award assigned by the Italian Society of Plant Physiology.

## RESEARCH ACTIVITY

Head of the Laboratory of Molecular Plant Physiology at the University of Bologna. Main research interests are focussed on (i) structure/function relationships of photosynthetic enzymes and multienzyme complexes; (ii) thiol-based redox regulation; (iii) starch metabolism; (iv) ascorbate metabolism.

## PUBLICATIONS

97 publications indexed in Scopus (119 in total)

Total citations: 5000 (GS)

H-index: 42 (GS)

orcid.org/0000-0002-6347-8701

complete list of publications at <https://scholar.google.it/citations?user=C9zo-OUAAAJ&hl=it>

### Selected recent publications:

1. Mattioli et al., Structural snapshots of nitrosogluthione binding and reactivity underlying S-nitrosylation of photosynthetic GAPDH. *Redox Biol.* 2022 Aug;54:102387.
2. Gurrieri et al., Calvin-Benson cycle regulation is getting complex. *Trends in Plant Science*; 2021; 26:898.

3. Tagliani et al. Structural and functional insights into nitrosoglutathione reductase from *Chlamydomonas reinhardtii*. *Redox Biol.* 2021; 38:101806.
4. Zaffagnini et al. Glutathionylation primes soluble glyceraldehyde-3-phosphate dehydrogenase for late collapse into insoluble aggregates. *Proc Natl Acad Sci U S A.* 2019;116(51):26057-26065.
5. Gurrieri et al. Arabidopsis and *Chlamydomonas* phosphoribulokinase crystal structures complete the redox structural proteome of the Calvin-Benson cycle. *Proc Natl Acad Sci U S A.* 2019 Apr 16;116(16):8048-8053.
6. Zaffagnini et al. Redox Homeostasis in Photosynthetic Organisms: Novel and Established Thiol-Based Molecular Mechanisms. *Antioxid Redox Signal.* 2019 ;31(3):155-210.
7. Marchand et al. Structural and Biochemical Insights into the Reactivity of Thioredoxin h1 from *Chlamydomonas reinhardtii*. *Antioxidants (Basel).* 2019; 8(1):10.
8. Botticella et al. Combining mutations at genes encoding key enzymes involved in starch synthesis affects the amylose content, carbohydrate allocation and hardness in the wheat grain. *Plant Biotechnol J.* 2018 10:1723-1734.

## **SEMINARS AND LECTURES**

Author of 54 scientific talks (lectures, oral communications, seminars) in different Congresses or Research Institutions.

### Selected recent oral presentations

2020. Agricultural Chemistry Winter School – Plant-soil-microbe interactions and ecosystem dynamics in a changing environment. 10-13/2/20 – Torino, Italy. “Principles of redox regulation in plants”

2019. TRR155 Meeting on Acclimation & Chloroplast Biology: from Genes to Systems. Kloster Irsee 4-8/8/19. “The crystal structure of phosphoribulokinase”.

2018. University of Bonn, Botanisches Colloquium. 28/6/18. “Modes of redox-dependent protein aggregation in photosynthetic organisms”.

2017. Faculty seminar at the University of Kaiserslautern, 23/1/17. “How redox regulation may affect protein aggregation in plants”.

2017. Conference “Chloroplast metabolism and photosynthesis”, University of Neuchatel. “Redox regulation of photosynthetic carbon metabolism”

2016. Congress of the Italian Federation of Life Sciences. Plenary symposium on “Oxygen sensing and redox signalling: common themes of aerobic life”. Lecture: “How ROS-dependent glutathionylation may induce amyloid-like aggregation of a plant glycolytic enzyme”

## **REVIEWER /EDITORIAL DUTIES**

2017-2020: Member of the Editorial board of Scientific Reports

2002–present: Project reviewer for the Deutsche Forschungsgemeinschaft; US-Israel binational science foundation; National Science Centre, Poland; Italian Ministry of Research; US Department of Agriculture; Austrian Science Fund; Agence Nationale de la Recherche, France.

## **ORGANISATION OF SCIENTIFIC MEETINGS**

2021. Member of the Scientific Organization Committee of Plant Biology Europe 2020 of the Federation of European Societies of Plant Biology (FESPB) and European Plant Science Organization (EPSO), Turin 28 June- 1 July 2021 (on line).

2017. Scientific organization, in the role of President of the Italian Society of Plant Biology (SIBV), of the Joint Congress of SIBV and the Italian Society of Agricultural Genetics (SIGA), Pisa, Italy; September, 19-22.

2015. Scientific organization, in the role of President of the Italian Society of Plant Biology (SIBV), of the Joint Congress of SIBV and the Italian Society of Agricultural Genetics (SIGA), Milano, Italy; September, 8-11.

2015. Local and scientific organization of the SIBV Plant Biology Winter School, Bertinoro, Italy.

2002. Local and scientific organization of the 6<sup>th</sup> International Conference on Plasma Membrane Redox Systems and their Role in Biological Stress and Disease (Ravenna, Italy; March, 23-26)

### **SCIENTIFIC SOCIETIES**

1991-present. Associate to the Italian Society of Plant Biology and to the Federation of European Societies of Plant Biology

2005-present. Supporting scientist of the European Plant Science Organization (EPSO).

2013–2017. President of the Italian Society of Plant Biology (elected in 2013 and 2015).

2015-2017. Member of the Working group on Scientific research of the Federation of Italian Societies of Life Sciences (FISV).

2013-2017. Member of the Steering board of the Federation of Italian Societies of Life Sciences (FISV).

1995–2011. Member of the Steering board of the Italian Society of Plant Biology (elected five times between 1995 and 2009)