

**ANTONELLA FURINI**  
Professor of Plant Genetics

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**PERSONAL DATA**

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Birthday and birthplace: August 22<sup>nd</sup>, 1956; Lungavilla (Pavia) Italy.  
Citizenship: Italian  
Address: Dipartimento di Biotecnologie, Strada Le Grazie, 15, 37134 Verona, Italy

**EDUCATION**

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|           |  |
|-----------|--|
| 1991-1995 | PHD IN MOLECULAR GENETICS, Max-Planck Institute/University of Cologne (Germany), Advisors: Prof F. Salamini, Prof. D. Bartels. |
| 1985-1986 | MASTER OF SCIENCE IN PLANT PHYSIOLOGY, University of California, Davis.  |
| 1982/1983 | LAUREA IN SCIENZE AGRARIE (110/110), University of Padua.  |

**EMPLOYMENT**

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|--------------|---|
| 2016-present | Full professor of Plant Genetics at the Department of Biotechnology of the University of Verona.              |
| 2005-2015    | Associate Professor of Plant Genetics at the Department of Biotechnology of the University of Verona.         |
| 1999-2004    | Assistant Professor of Plant Genetics at the Department of Biotechnology of the University of Verona.         |
| 1996-1998    | Scientific Consultant for Genetic transformation of ornamental crops, Minoprio Foundation (Como, Italy).      |
| 1991-1995    | Researcher, Max-Planck Institute, Cologne (Germany).  |
| 1988-1991    | Appointed as FAO Associate Expert at CIMMYT (International Centre for Maize and Wheat Improvement) in Mexico. |
| 1983-1986    | Researcher in Plant Physiology, University of California, Davis (CA, USA).                                    |

**EXPERIENCES ABROAD**

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| 1983-1986 | Department of Environmental Horticulture, University of California, Davis (CA-USA)                                   |
| 1988-1991 | International Centre for Maize and Wheat improvement (CIMMYT) Mexico.  |
| 1991-1995 | Department of Plant Breeding and Molecular Genetics, Max-Planck Institute für Züchtungsforschung, Cologne (Germany). |

**VISITING SCIENTIST**

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| 06-1999 | DNA Plant Technology Corporation, Cinnaminson (NJ-USA) |
| 10-1993 | Department of Genetics University of Bochum (Germany)  |

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| 06-1998 | Department of Plant Science University of Wageningen (The Netherlands)          |
| 09-1998 | Max-Planck Institute, Cologne (Germany)   |
| 02-1999 | Max-Planck Institute, Cologne (Germany)   |
| 09-1999 | Max-Planck Institute, Cologne (Germany)   |
| 09-2000 | Max-Planck Institute, Cologne (Germany)   |
| 05-2001 | Department of Soil, Plant and Environment Science, University of Naple (Italy), |

## EDITORIAL ACTIVITY

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Referee for the following International Scientific Journals:

Annals of Botany, BMC-Genomics, Chemosphere, Environmental and Experimental Botany, Environmental Science and Pollution Research, Genetica, Journal of Experimental Botany, Journal of Hazardous Materials, Journal of Integrative Plant Biology, Molecular and General Genetics, New Phytologist, Plant and Soil, Plant Cell Reports, Plant Journal, Plant Physiology, Plant Science, Plant Signaling & Behavior, Plant Systematic and Evolution, Planta, PlosOne, Proteomics, Theoretical and Applied Genetics.

Plants and Heavy Metals (ed. Furini A.) Springer Brief in Molecular Science. Biometals. Springer 2012. pp 86.

2015 Associate Editor for Frontiers in Plant Science – Research Topic: Environmental phytoremediation: Plants and Microorganisms at Work.

2015-present Editor of Frontiers in Plant Science – Section Plant Biotechnology

2019-present Editor of Plants – MDPI Journal

## SCIENTIFIC ACTIVITY

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The research activity is mainly focused on plant metal interaction. In this contest plant homeostasis network regulating metal uptake, distribution, intracellular traffic, chelation, and sequestration is investigated. Metal hyperaccumulators adapted to metal rich soils are of central interest for their natural capacity of accumulating trace elements. Furthermore, low metal bioavailability responsible for reducing crop productivity, and metal toxic causing agricultural and environmental problems are also investigated. Regarding essential metals, their variation and enhancement in plant tissues is considered to obtain crop species enriched in these elements (biofortification).

Again, as part of the plant-environment interactions, genetic and molecular mechanisms responsible for the tolerance to water stress are investigated with particular attention to crop species.

## FINANCED PROJECTS ON COMPETITIVE FUNDING

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| PRIN 2000    | Somatic hybridization between eggplant ( <i>Solanum melongena</i> ) and incompatible arboreous species of <i>Solanum</i> .                   |
| PRIN 2002    | Regeneration and analysis of somatic hybrids between eggplant ( <i>Solanum melongena</i> ) and arboreous <i>Solanum</i> species.             |
| FIRB 2002-06 | Molecular systems for the identification and analysis of genetic determinants relevant to agro-industry, livestock, and environment.         |
| PRIN 2006    | Characterization of Myb59 transcription factor in <i>Arabidopsis thaliana</i> expressed at earlier stages of flower development. (41.577 €). |

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|--------------------|---|
| Joint Project 2008 | Characterization and identification of molecular markers associated with low cadmium accumulation in durum wheat seeds (91.000 €).  |
| Joint Project 2011 | Establishment of an efficient protocol for the micropropagation of the resurrection plant <i>Craterostigma plantagineum</i> : optimization of dehydration/rehydration and conservation (100.000 €).   |
| Joint Project 2011 | Produzione di colture cellulari totipotenti di <i>resurrection plants</i> per applicazioni nell'industria cosmetica (50.000 €).   |
| Joint Project 2012 | Molecular strategies PRO improved wheat-based safe food suitable for Gluten-Sensitive people (153.000 €).   |
| FSE 2012           | (European Social Fund) Establishment of a method of plant cell culture for applications in phytocosmetic (24.000 €).  |
| FSE 2013           | Reclamation of soils contaminated with heavy metals: Feasibility and sustainability of different strategies of phytoremediation: 1) phytoextraction, 2) phytostabilization, 3) analysis of the accumulation of heavy metals in plants. (76.860 €) |
| Joint Project 2015 | Phytoremediation of landfill leachate: a clean transition from laboratory to green environment (100.000 €).   |
| FSE 2016           | SMART VEGETABLE: Development of new horticultural crops enriched with minerals and vitamins (24.000 €).   |
| FSE 2017           | FOOD and HEALTH: Biofortification of horticultural crops (24.000 €)   |
| Joint Project 2017 | Well-Being from plants: Potential of Resurrection Plants for Phyto-Cosmetic and Phyto-Pharmaceutical applications (158.000 €).  |
| FSE 2019           | SMARTWHEAT: Improving the nutritional quality of flours through the mineral biofortification of common wheat (57.600 €).  |
| PRIN 2022          | Zinc fortification: integrative approaches to improve resilience and fruit quality (323.000 €).   |
| FSE 2023           | GRANORESILIENTE: Development of sustainable practices for improving resilience on bread wheat cultivation (78.900 €).   |

## TEACHING

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| 1997-2003 | <i>Plant Tissue Culture.</i>  |
| 2003-2004 | <i>Plant Tissue Culture and Biotechnology and Abiotic Stresses.</i>   |
| 2004-2008 | <i>Plant Tissue Culture, and Plant Molecular Genetics.</i>  |
| 2008-2009 | <i>Genomes.</i>   |
| 2009-2019 | <i>Methods in Microbiology and Genetics, Plant Molecular Genetics, Plant Biotechnology: phytoremediation.</i>                       |
| 2020 -    | <i>Genetic and Biomolecular Methods, Environmental Microbiology and Bioremediation: Phytoremediation, Plant Molecular Genetics.</i> |

## THESIS SUPERVISOR

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Supervision of 38 Master students (Graduate in Plant and Food Biotechnology), and 40 diploma students (in Biotechnology),

## PHD TUTOR

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1. Identification of genes involved in heavy metals tolerance and hyperaccumulation in *Arabidopsis halleri* and characterization of a bZIP transcription factor responsible for Cd uptake and translocation to the shoot in *Arabidopsis thaliana*. PhD student: S. Farinati.
2. Characterization of the *Arabidopsis thaliana* Myb59 transcription factor. Dottoranda: S. Maistri.
3. PCP1 and AtOSA1: *Arabidopsis thaliana* Abc1-like proteins involved in responses to oxidative stress and iron distribution in chloroplasts and *Pseudomonas putida* response to cadmium: changes in membrane and cytosolic proteomes. PhD student: A. Manara
4. Modulating heavy metal accumulation in plants: overexpression of the *Pseudomonas putida* efflux complex CzcCBA. PhD student: A. Nesler.
5. Identification of regulatory elements responsible for metal hyperaccumulation in the Brassicaceae family and Functional analysis of the *Arabidopsis thaliana* MYB48 and MYB59 transcription factors. PhD student: E. Fasani.
6. Functional analysis of AtZIP4, AtZIP6 and AtZIP9 metal transporters of *Arabidopsis thaliana* and expression of *Saccharomyces cerevisiae* ZRC1 in different plant species. PhD student: F. Martini
7. Response mechanisms to heavy metals in hypertolerant and hyperaccumulator plants. PhD student: G. Zorzi

## EDITORIAL ACTIVITY

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Referee for the following peer-reviewed journal:

Annals of Botany, BMC-Genomics, Chemosphere, Environmental and Experimental Botany, Environmental Science and Pollution Research, Genetica, Journal of Experimental Botany, Journal of Hazardous Materials, Journal of Integrative Plant Biology, Molecular and General Genetics, New Phytologist, Plant Cell & Environment Plant and Soil, Plant Cell Reports, Plant Journal, Plant Physiology, Plant Science, Plant Signaling & Behavior, Plant Systematic and Evolution, Planta, PlosOne, Proteomics, Theoretical and Applied Genetics.

Plants and Heavy Metals (ed. Furini A.) Springer Brief in Molecular Science. Biometals. Springer 2012. pp 86.

- 2015 Associate Editor per Frontiers in Plant Science (2015) – Research Topic: Environmental phytoremediation: Plants and Microorganisms at Work.
- Dal 2015 Member of the Editorial Board: Frontiers in Plant Science – Section Plant Biotechnology.
- Dal 2017 Member of the Editorial Board: MDPI - Plants

## INSTITUTIONAL RESPONSABILITIES AT THE UNIVERSITY OF VERONA

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|-----------|---|
| 2021 -    | Head of the Biotechnology Department.                                       |
| 2017-2020 | Chairperson of the School of Science and Engineering.                       |
| 2015-2018 | Department representative for the Development Cooperation.                  |
| 2010-2013 | Member of the Board of Directors as representative of Associate Professors. |
| 2009-2011 | President of the Joint Committee Students and Professors.                   |

## LANGUAGES

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Italian (mother tongue),  
English  
Spanish  
French

## SCOPUS

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Numero: 6603576889

Verona, 10/02/2024



Ai sensi e per gli effetti del DPR 445/2000, essendo consapevole delle conseguenze civili e penali per coloro che rilasciano dichiarazioni false o mendaci, sotto la mia responsabilità dichiaro che quanto sopra esposto è veritiero.