EUROPEAN CURRICULUM VITAE FORMAT

PERSONAL INFORMATION

Name	**Antonella Canini**
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E-mail	**canini@uniroma2.it**
Nationality	Italian
Date of Birth	May 22th, 1964
Gender	Female

ACADEMIC ROLE

FROM DECEMBER 20TH 2004 TO DATE *- FULL PROFESSOR IN BOTANY (SSD BIO/01), DEPARTMENT OF BIOLOGY UNIVERSITY OF ROME "TOR VERGATA".*

WORK EXPERIENCE

FROM NOVEMBER 2021 TO DATE *- DIRECTOR OF THE DEPARTMENT OF BIOLOGY OF UNIVERSITY OF ROME "TOR VERGATA".*

FROM 2021 *TO DATE- MEMBER OF BOARD OF DIRECTORS FOR THE "FLORA ITALIANA" FOUNDATION.*

FROM 2021 *TO DATE- MEMBER OF THE PUBLIC GREEN COMMITTEE APPOINTED BY THE ITALIAN MINISTRY OF THE ECOLOGICAL TRANSITION.*

FROM JANUARY 15TH 2021 TO DATE *- VICE-PRESIDENT OF SOCIETÀ BOTANICA ITALIANA ONLUS.*

FROM 2014 TO 2019 *- RECTOR'S DEPUTY FOR THE TERRITORY, ENVIRONMENT, AND ECO-SUSTAINABILITY.*

FROM JULY 2012 TO OCTOBER 2018 *- DIRECTOR OF THE DEPARTMENT OF BIOLOGY OF UNIVERSITY OF ROME "TOR VERGATA".*

IN 2014 *- UNIVERSITY DELEGATE FOR RELATIONS WITH THE MAE FOR EXPO 2015.*

FROM 2005 *- DIRECTOR OF THE HONEY RESEARCH CENTER AND DIRECTOR OF THE BOTANICAL GARDEN OF THE UNIVERSITY OF ROME "TOR VERGATA".*

EDUCATION AND TRAINING

IN 1994 *- SPECIALIZATION IN APPLIED BIOTECHNOLOGY*

IN 1991 *- PHD IN CELLULAR AND MOLECULAR BIOLOGY AT THE UNIVERSITY OF ROME TOR VERGATA*

IN 1987 *- GRADUATION IN BIOLOGICAL SCIENCE WITH HONORS AT THE UNIVERSITY OF ROME TOR VERGATA*

PERSONAL SKILLS AND COMPETENCES

Keywords. bioactive compounds; plant biodiversity; plant conservation; aquaponics plant culture; antioxidants; plant secondary metabolites; agrobiodiversity; nutraceutics; climate impact on plants (i.e., soil alteration, salinity, drought); plant microRNAs.

Research interests. The field of her scientific activity concerns: assembly and use of biosensors in plant tissues; extraction and localization of enzymes in cyanobacteria and plant tissues; characterization and localization of plant-derived allergens; chromatography techniques for the determination of phytocomplex; transmission and scanning electron microscopy (in particular, spectroscopic localization of elements - ESI and EELS) in plant tissues; analysis of honeybee products; bioactivity of nutraceutics; plant genetics; food quality. In detail, she is responsible for a research group that deals with the identification and extraction of bioactive molecules from plants by means of high liquid pressure chromatography and mass spectrometry techniques, determination of antioxidant properties and their effect on carcinogenic and non-cancerous cell lines. In the last decade, her activity has been directed towards the use of genetic-molecular techniques (e.g., DNA barcoding, microsatellite profile) for taxonomic identification and classification of plant species, plant population studies, certification of agri-food products (such as grapevine and olives) in their production chain. These methodologies have been also applied in studies of Archaeobotany and Forensic Botany that allowed her to participate in various research projects in collaboration with anthropologists, forensic physicians, and geneticists. She has carried out a series of studies about the characterization of honey plants from Lazio, Abruzzi, and Africa, and the identification of the botanical and nutraceutical properties of Italian and European honeys. She has developed a series of protocols for the certification of bee products safety and quality, with reference to the verification of pollutants like pesticides, antibiotics, neonicotinoids, heavy metals, and for the use of the beehive as monitoring system for environmental contamination and biodiversity. She has activated various training courses and analysis services for honey and other bee products, structuring a qualified university center for the analyses of beehive products (Honey Research Center). In the last years, she has coordinated activities concerning nanobiotechnologies, that is nanomaterials used as vectors for plant molecules in animal systems, and the role of microRNAs present in plant food and medicinal products and extracts as regulators of human gene expression. She has also activated research lines aimed at the conservation of plant germplasm and biodiversity recovery, using *in vitro* culture systems, and environmental decontamination processes, using species with a high capacity to accumulate heavy metals and chemical pollutants in terms of phytoremediation.

MOTHER TONGUE

ITALIAN

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Excellent	Excellent	Excellent	Excellent	Excellent
French	Excellent	Excellent	Excellent	Excellent	Excellent
Spanish	Good	Good	Good	Good	Good

TEACHING ACTIVITIES

- **Botany** for Biological Sciences Degree Course, University of Rome Tor Vergata (URTV)
- **Plant micropropagation** for Biotechnology Degree Course, URTV
- **Food Plants** for Biotechnology Degree Course, URTV
- **Medicinal Plans** for Pharmacy Degree Course, URTV
- She is a member of the **PhD School in Evolutionary Biology and Ecology**, URTV

GRANT SUPPORTS

• **2022/2023** - Project No: e83c22004370004. "Foresta urbana per l'Orto Botanico dell'Università di Roma Tor Vergata come rifugio di biodiversità e serbatoio di carbonio per una comunità più sostenibile" – "FORUS". Funded by Ministero Italiano dell'Ambiente, Programma di progettazioni delle azioni di riforestazione urbana nell'ambito delle città metropolitane. **Role: PRINCIPAL INVESTIGATOR**.

• **2021/2023** - Project No: A0375-2020-36658. "ASTERIA" - Sustainable agriculture: bio- and nano-technologies applied to quality horticultural productions in aquaponic. This project aimed to develop new crop cultivation systems by acquaponics methods enriched with nanoparticles and plant derivatives as biostimulants. Funded by Regione Lazio (Lazio Innova) under the Grant "Progetti di Gruppi di Ricerca 2020". **Role: PRINCIPAL INVESTIGATOR**.

• **2019/2021 -** "Environmental monitoring of Apennine Parks through the study of bee products". This project monitored the plant biodiversity of the Natural Parks of Central Italy by the study of bee products. Funded by Central Italy Natural Parks (i.e., Parco Nazionale del Gran Sasso e Monti della Laga, Parco Nazionale della Majella, Parco Nazionale d'Abruzzo, Lazio e Molise, Parco Nazionale delle Foreste Casentinesi, Parco Nazionale dei Monti Sibillini, Parco Nazionale dell'Appennino Tosco Emiliano). **Role: PRINCIPAL INVESTIGATOR**.

• **2018/2021** - Project No: A0206-2018-21382. "Aquaponic easy farm 4.0". This project represented an initiative in the field of the innovative agriculture, based on the use of space and energy in a highly sustainable way, to produce foodstuffs and services with a very low ecological impact and high quality. It includes the identification of plant species able to be cultivated in more efficient ways, in terms of resource exploitation, environmental, and economic sustainability. The project moved on the basis of the criteria for the Circular Economy. Funded by: Regione Lazio Circular Economy and Energy POR-FESR 2014-2020. **Role: PRINCIPAL INVESTIGATOR.**

2020 - Principal Investigator of the Project "Città della Conoscenza e dell'Innovazione", a complex and futuring project approved with Memorandum of Understanding by MIT, MIUR, Presidenza del Consiglio and "Tor Vergata" University, that aims to reconvert the Ex Città dello Sport of Calatrava in to an International Research Center promoting research and didactic activities on green, biodiversity, various biotechnology fields interacting with stakolders; the new center increased the employment of young researchers. For this project she has obtained in the 2020 the **Innovation Busineness Award from ANGI** (National Association of Young Innovators).

• **2018/2020** – "BEE-ProjectT: Biodiversity and Economical Evolution of Pistoia Territory (PT)". This project investigated the plant biodiversity in Pistoia territory (Tuscany) through the analysis of local beehive products, also evaluating their quality level. Funded by Fondazione Cassa di Risparmio di Pistoia e Pescia (PT) under the Grant Bando Giovani@RicercaScientifica 2017. **Role: PRINCIPAL INVESTIGATOR**.

• **2018/2020 -** "Certification of pollen production chain in the National Park of Gran Sasso and Monti della Laga". This project studied pollen from the National Park of Gran Sasso and Monti della Laga for creating a certified production chain. Funded by Parco Nazionale del Gran Sasso e Monti della Laga. **Role: PRINCIPAL INVESTIGATOR**.

• **2018** - "Olimpia Project" - Low environmental impact of grass covering and phytodepuration system". This project aimed at promote grass covering activities with phytoremediation potential. Funded by Credito Sportivo Institute (ICS). **Role: PRINCIPAL INVESTIGATOR**.

• **2016/2017** – "Improvement of the production and marketing activities of bee products". This project was funded for two consecutive years and dealt with the quality analysis of bee products. Funded by Regione Lazio Reg. UE 1308/2013. **Role: PRINCIPAL INVESTIGATOR**.

• **2016/2017** - Life Project LIFE09 NAT/IT/000118 - "RI.CO.PR.I." – "Recovery and conservation of arid grasslands in Central and Southern Italy" Funded by LIFE Program (Nature & Biodiversity) RI.CO.PR.I. had as main objective the recovery and conservation of priority habitats related to arid grasslands, present in almost all EU member states and containing a large number of rare and endangered species. **Role: PRINCIPAL INVESTIGATOR**.

• **2013** - C.E. 1698/2005PSR call. 2007-2013 - "Cooperation for the development of new products, processes and technologies, in the agricultural, food and forestry sectors" - "Our Herbs". This project was focused on recovery and conservation of aromatic herbs and spices from the Castelli

Romani (Lazio) for their use in the development of new food products. Funded by PSR Regione Lazio (Rural Developmental Strategies) 2007-2013, measure 4.1.1 124. **Role: PRINCIPAL INVESTIGATOR.**

- **2010/2013** - "Conservation of the native vines from Frosinone". This project aimed at the study and characterization of the autochthonous grapevine accessions present in the Frosinone district (Lazio region). Funded by Regione Lazio under the Grant PIF (Project - Integrated Supply Chain Design), cod. RL058, Measure 124. **Role: PRINCIPAL INVESTIGATOR**.

- **2010/2013** – Prot.2010EL8TXP_001 EPIC (Eredità della Popolazione dell'Italia Centro-meridionale). This project aimed at investigating the biological and cultural heritage of the central-southern Italian population trough 30 thousand Years, including the role of plants. Funded by MIUR (Italian Ministry for the Universities) under the Grant PRIN2010. **Role: VICE-PRINCIPAL INVESTIGATOR**.

• **2011/2012 –** "National Project *Ligustica* - Improvement of bee products". It aimed at studying and valorising the Italian apistic products. Funded by the Italian Ministry Ministero delle politiche agricole alimentari e forestali MIPAAF. **Role: PRINCIPAL INVESTIGATOR**.

• **2009/2010 and 2011/2012** - Reg. CE 1234/2007 – "Improvement of the production and marketing activities of bee products". This project was funded for two consecutive years and dealt with the quality analysis of bee products. Funded by Regione Lazio. **Role: PRINCIPAL INVESTIGATOR**.

• **2010** - Project "Activities on the Botanical Gardens of Rome Tor Vergata (Remediation)". This project aimed at improving structural and environmental level of the Botanical Gardens of Rome Tor Vergata. Funded by the Italian Ministry "Ministero dell'Ambiente e della Tutela del Territorio e del Mare" under the 4th Directorial Decree n. 30/11/2012. **Role: PRINCIPAL INVESTIGATOR**.

• **2008/2011** - "Save the Queen". This research project was based on the environmental monitoring for plant biodiversity in Natural Parks and natural reserves of the Lazio region. Funded by Regione Lazio. **Role: PRINCIPAL INVESTIGATOR**.

• **2008/2010** – "Environmental monitoring by the analysis of honey and pollen produced in the National Park of Gran Sasso and Monti della Laga". The project aimed at using beehive as monitoring system for plant biodiversity in natural reserve areas. Funded by Parco Nazionale del Gran Sasso e Monti della Laga. **Role: PRINCIPAL INVESTIGATOR**.

OTHER SKILLS

- She is referee for various **scientific journals with international impact**: Planta, Plant Sci., Plant Cell Physiol., Scientific Reports, Plants, Food, Plos One, etc.
- She is Referee for **National and International Granted Agencies**.
- She is Academic Member of the **Spin-off Algares** (funded in 2009).

PUBLICATIONS

Based on Scopus citation overview, she has the following publication metrics on November 2022 - **Publications: 135; h-index: 28; h-index normalized: 28; total citations: 2532; citations/year: 74.47; citations/paper: 18.76; g-index: 44.**

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List of most significant publications:

1. Braglia R, Costa P, Di Marco G, D'Agostino A, Redi EL, Scuderi F, Gismondi A, Canini A (2022). Phytochemicals and quality level of food plants grown in an aquaponics system. JOURNAL OF THE SCIENCE OF FOOD AND AGRICULTURE, vol. 102, p. 844 -850, ISSN: 0022-5142, doi: DOI 10.1002/jsfa.11420 -
2. De Rossi S, Di Marco G, Bruno L, Gismondi A, Canini A (2021). Investigating the drought and salinity effect on the redox components of *Sulla coronaria* (L.) Medik. ANTIOXIDANTS, vol. 10, 1048, ISSN: 2076-3921, doi: 10.3390/antiox10071048 -
3. Nanni V, Di Marco G, Sacchetti G, Canini A, Gismondi A (2020). Oregano phytocomplex induces programmed cell death in melanoma lines via mitochondria and DNA damage. FOODS, 1486, ISSN: 2304-8158, doi: 10.3390/foods9101486 -

4. Novelli S, Gismondi A, Di Marco G, Canuti L, Nanni V, Canini A (2019). Plant defense factors involved in *Olea europaea* resistance against *Xylella fastidiosa* infection. JOURNAL OF PLANT RESEARCH, vol. 132, p. 439-455, ISSN: 0918-9440, doi: 10.1007/s10265-019-01108-8 -
5. Zanella L, Gismondi A, Di Marco G, Braglia R, Scuderi F, Redi EL, Galgani A, Canini A (2019). Induction of Antioxidant Metabolites in *Moringa oleifera* Callus by Abiotic Stresses. JOURNAL OF NATURAL PRODUCTS, vol. 82, ISSN: 0163-3864, doi: 10.1021/acs.jnatprod.8b00801 -
6. Gismondi A, De Rossi S, Canuti L, Novelli S, Di Marco G, Fattorini L, Canini A (2018). From *Robinia pseudoacacia* L. nectar to Acacia monofloral honey: biochemical changes and variation of biological properties. JOURNAL OF THE SCIENCE OF FOOD AND AGRICULTURE, ISSN: 1097-0010-
7. Nanni V, Canuti L, Gismondi A, Canini A (2018). Hydroalcoholic extract of *Spartium junceum* L. flowers inhibits growth and melanogenesis in B16-F10 cells by inducing senescence. PHYTOMEDICINE, ISSN: 0944-7113 -
8. Gismondi A, Di Marco G, Canini A (2017). Detection of plant microRNAs in honey. PLOS ONE, vol. 12, ISSN: 1932-6203, doi: e0172981 -
9. Gismondi A, Di Marco G, Canuti L, Canini A (2017). Antiradical activity of phenolic metabolites extracted from grapes of white and red *Vitis vinifera* L. cultivars. VITIS, vol. 56, p. 19-26, ISSN: 0042-7500 -
10. Gismondi A, Nanni V, Reina G, Orlanducci S, Terranova ML, Canini A (2016). Nanodiamonds coupled with 5,7-dimethoxycoumarin, a plant bioactive metabolite, interfere with the mitotic process in B16F10 cells altering the actin organization. INTERNATIONAL JOURNAL OF NANOMEDICINE, vol. 11, p. 557-574, ISSN: 1178-2013, doi: 10.2147/IJN.S96614 -
11. Gismondi A, Reina G, Orlanducci S, Mizzoni F, Gay S, Terranova ML, Canini A (2015). Nanodiamonds coupled with plant bioactive metabolites: A nanotech approach for cancer therapy. BIOMATERIALS, vol. 38, p. 22-35, ISSN: 0142-9612, doi: 10.1016/j.biomaterials.2014.10.057 -
12. Impei S, Gismondi A, Canuti L, Canini A (2015). Metabolic and biological profile of autochthonous *Vitis vinifera* L. ecotypes. FOOD & FUNCTION, vol. 6, p. 1526-1538, ISSN: 2042-6496, doi: 10.1039/c5fo00110b -
13. Di Marco, G, Gismondi, Angelo, Canuti, Lorena, Scimeca, M, VOLPE, ANTONIO, CANINI, ANTONELLA (2014). Tetracycline accumulates in *Iberis sempervirens* L. through apoplastic transport inducing oxidative stress and growth inhibition. PLANT BIOLOGY, vol. 16, p. 792-800, ISSN: 1435-8603, doi: 10.1111/plb.12102 -
14. Gismondi Angelo, Canuti, L, Grispo, M, CANINI, ANTONELLA (2014). Biochemical Composition and Antioxidant Properties of Lavandula angustifolia Miller Essential Oil are Shielded by Propolis Against UV Radiations. PHOTOCHEMISTRY AND PHOTOBIOLOGY, vol. 90, p. 702-708, ISSN: 0031-8655, doi: 10.1111/php.12229 -
15. Gismondi, Angelo, Fanali, F, Labarga Martinez, J, Caiola Grilli, M, CANINI, ANTONELLA (2013). *Crocus sativus* L. genomics and different DNA barcode applications. PLANT SYSTEMATICS AND EVOLUTION, ISSN: 0378-2697, doi: 10.1007/s00606-013-0841-7 -
16. Gismondi, Angelo, Canini, Antonella (2012). Microsatellite analysis of Latial *Olea europaea* L. cultivars. PLANT BIOSYSTEMS, vol. 147, p. 686-691, ISSN: 1126-3504, doi: 10.1080/11263504.2012.751066 -
17. Alesiani D, Canini A, D'Abrosca B, Della Greca M, Fiorentino A, Mastellone C, Monaco P, Pacifico S (2010). Antioxidant and antiproliferative activities of phytochemicals from Quince (*Cydonia vulgaris*) peels. FOOD CHEMISTRY, vol. 118, p. 199-207, ISSN: 0308-8146, doi: doi:10.1016/j.foodchem.2009.04.098 -
18. Grilli Caiola M, Leonardi D, Canini A (2010). Seed structure in *Crocus sativus* L. x, *C. cartwrightianus* Herb., *C. thomasii* Ten. and *C. hadriaticus* Herb. at SEM. PLANT SYSTEMATICS AND EVOLUTION, ISSN: 0378-2697, doi: 10.1007/s00606-009-0261x
19. Pichichero E, Canuti L, Canini A (2009). Characterization of the phenolic and flavonoid fractions and of the antioxidant power of Italian honey of different botanical origin. JOURNAL OF THE SCIENCE OF FOOD AND AGRICULTURE, vol. 89, p. 609-616, ISSN: 0022-5142 -
20. Perazzini R, Leonardi D, Ruggeri S, Alesiani D, D'arcangelo G, Canini A (2008). Characterization of *Phaseolus vulgaris* L. Landraces Cultivated in Central Italy. PLANT FOODS FOR HUMAN NUTRITION, ISSN: 0921-9668, doi: 10.1007/s11130-008-0095-7-

According to law 679/2016 of the Regulation of the European Parliament of 27th April2016, I hereby express my consent to process and use my data provided in this CV

Rome, Nov 7th 2022