

EUROPEAN  
CURRICULUM VITAE  
FORMAT



## PERSONAL INFORMATION

Name **ELENA GOTTARDINI**  
Address **FONDAZIONE EDMUND MACH  
VIA EDMUND MACH 1, 38098 SAN MICHELE ALL'ADIGE (TN)**  
Telephone **+390461615362** Mobile **+39 3386671149**  
SCOPUS link <https://orcid.org/0000-0001-5405-2162>  
Other link [https://www.researchgate.net/profile/Elena\\_Gottardini2](https://www.researchgate.net/profile/Elena_Gottardini2)  
E-mail **elena.gottardini@fmach.it**  
Nationality Italy  
Date of Birth 08/06/1964  
Gender Female  
CF GTTLNE64H48L378E

## WORK EXPERIENCE

- Dates (from - to) 1992-present
  - Name and address of the employer Fondazione Edmund Mach (FEM), via E. Mach 1, 38010 San Michele a/A, Italy
  - Type of business or sector Environmental botany
  - Occupation or position held **Researcher**
  - Main activities and responsibilities Main activities are on:  
Aerobiology – studies on airborne pollen for exposure risk assessment in relation to human health; test of innovative approaches for automated pollen detection and identification; analysis of long-term pollen data in relation to climate change, land use and biodiversity.  
Plant-environment interactions - studies on morphological and functional responses of plants to abiotic stresses (climate; air pollution), in relation to plant health and vitality, and to the provision of ecosystem services.
- Responsibilities:  
1/2022-present: head of Unit Environmental Botany, FEM-CRI.

## EDUCATION AND TRAINING

- Dates (from - to) 2009-2012
  - Name and type of organisation providing education and training Università degli Studi di Firenze, Firenze, Italy
  - Principal subjects/occupational skills covered Bio-systematic and plant ecology - BIO/03 Environmental and applied botany
  - Title of qualification awarded Philosophy Doctor (PhD)
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- Dates (from - to) 1984-1988
  - Name and type of organisation providing education and training Alma Mater Studiorum, Università di Bologna, Bologna (Italy)

- Principal subjects/occupational skills covered
- Title of qualification awarded

Prevention of a tobamovirus in *Capsicum annuum* L.

Master degree in Biological Sciences

## PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

Italian

OTHER LANGUAGES

English

### SCIENTIFIC SKILLS AND COMPETENCES

*Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (for example culture and sports), etc.*

- Design and implementation of sampling campaign, planning of the field work.
- Aerobiological sampling (by Hirst type, SAS, Andersen, Tauber, Sigma-2), sample preparation and micro-morphological analysis.
- Plant vitality assessment by morphological and functional traits (tree crown conditions; visible foliar symptoms; pollen viability and germination, chlorophyll content, chlorophyll fluorescence).
- Data quality assurance procedures; storing and processing data, statistical analysis, writing reports and scientific papers.
- Skills on safety at work, first aid, safe driving of off-road vehicles.
- Windows (Word, Excel, PowerPoint), QGIS, Statistica.

Management skills gained through organization of national and international courses and workshops, leading of local-scale scientific projects.

Predisposition in teamworking; skills in communication, learned by attending numerous conferences and specific courses on public speaking.

### RELEVANT ROLES AND COMPETENCES

*Coordination and administration of people, projects and budgets; at work, in voluntary work (for example culture and sports) and at home, etc.*

- 1992-present: responsible for FEM Centro di Monitoraggio Aerobiologico di San Michele all'Adige - 30y-long environmental study on local bioaerosols for human health purposes (allergenic pollens and fungal spores), plant biodiversity estimates (by pollen), and plant protection (phytopathogenic fungal spores).
- 2020-present – Responsible for the project “AiRabbi: Study of the chemical and biological quality of the air in Stelvio Nazionale Park, Trentino sector” financed by Autonomous Province of Trento.
- 5/2015-present - Co-Chair of Expert Panel on Ambient Air Quality, UNECE ICP Forests. <http://icp-forests.net/page/expert-panel-on-ambient-air>
- 1/2014-present - Reference for APPA Trento in POLLnet, Rete Italiana di Monitoraggio Aerobiologico. [http://www.pollnet.it/default\\_it.asp](http://www.pollnet.it/default_it.asp)
- 10/2015-3/2019 - Technical manager and Responsible of Action B2 of the Life project "LIFE FutureForCoppiceS" - Shaping future forestry for sustainable coppices in Southern Europe: the legacy of past management trials (LIFE14ENV/IT/000514) <http://www.futureforcoppices.eu/en/>
- 2018-2022 - Partner in project EFSA SMART Surveillance: Smart Monitoring of Airborne pathogens – supporting Risk based plant health surveillance. Collection of fungal bodies and spore release procedures; sample collection by passive and active sampling; calibration of the automatic real time aerobiological particle identifier.
- 2014-2015 - Responsible for the project “Aerospeleo: airborne bioparticles in a speleotherapy site, the disused siderite mine of St. Aloisio, Collio, BS.” Financed by Cassa Padana.
- 2009-2011 - Responsible for the project “Yield potential in hazel fruits (*Corylus avellana* L.) in relation to the environmental and climatic factors in Georgia (Asia)”. Financed by Ferrero
- 2007-2012 – Responsible for the project “Ozone EFFORT: Potential and actual ozone effects on forests in Trentino”. Financed by Autonomous Province of Trento.
- 2006-2008 - Responsible for the project “CARPOL: Development of innovative methods for the identification and quantification of allergenic pollens: biomolecular approach and infrared spectroscopy”. Financed by Bando Caritro.

### PUBLICATION INDEXES (SCOPUS)

- NUMBER OF PUBLICATIONS: 44
- TOTAL NUMBER OF CITATIONS: 688
- H-INDEX: 14

## PUBLICATIONS

- Matavulj, P., Cristofori, A., Cristofolini, F., Gottardini, E., Brdar, S., Sikoparija, B., 2022. Integration of reference data from different Rapid-E devices supports automatic pollen detection in more locations. *Science of the Total Environment* 851, 158234.
- Faralli, M., Cristofolini, F., Cristofori, A., Ferretti, M., Gottardini, E., 2022. Leaf trait plasticity and site-specific environmental variability modulate the severity of visible foliar ozone symptoms in *Viburnum lantana*. *Plos One*, <https://doi.org/10.1371/journal.pone.0270520>.
- Costantini, L., Moreno-Sanz, P., Nwafor, C.C., Lorenzi, S., Marrano, A., Cristofolini, F., Gottardini, E., Raimondi, S., Ruffa, P., Gribaudo, I., Schneider, A., Grando, M.S., 2021. Somatic variants for seed and fruit set in grapevine. *Bmc Plant Biology* 21.
- Cutini, A., Ferretti, M., Bertini, G., Brunialti, G., Bagella, S., Chianucci, F., Fabbio, G., Fratini, R., Riccioli, F., Caddeo, C., Calderisi, M., Ciucchi, B., Corradini, S., Cristofolini, F., Cristofori, A., Di Salvatore, U., Ferrara, C., Frati, L., Landi, S., Marchino, L., Patteri, G., Piovosi, M., Roggero, P.P., Seddaiu, G., Gottardini, E., 2021. Testing an expanded set of sustainable forest management indicators in Mediterranean coppice area. *Ecological Indicators* 130.
- Ferretti, M., Ghosh, S., Gottardini, E., 2021. Stem Radial Growth Is Negatively Related to Tree Defoliation and Damage in Conifers, Northern Italy. *Frontiers in Forests and Global Change* 4.
- Gottardini, E., Cristofolini, F., Cristofori, A., Meier, M., Rausch, J., Vogel, D.J., Michen, B., 2021. Automated Microscopy Techniques on Passively Collected Samples Provide Reliable Quantitative Data on Airborne Pollen. *Aerosol and Air Quality Research* 21.
- Brunialti, G., Frati, L., Calderisi, M., Giorgolo, F., Bagella, S., Bertini, G., Chianucci, F., Fratini, R., Gottardini, E., Cutini, A., 2020. Epiphytic lichen diversity and sustainable forest management criteria and indicators: A multivariate and modelling approach in coppice forests of Italy. *Ecological Indicators* 115.
- Cristofolini, F., Anelli, P., Billi, B.M., Bocchi, C., Borney, M.F., Bucher, E., Cassoni, F., Coli, S., De Gironimo, V., Gottardini, E., Martinet, N., Miraglia, A., Para, C., Rossi, M., Tassan-Mazzocco, F., Travaglini, A., Verardo, P., Marchesi, S., 2020. Temporal trends in airborne pollen seasonality: evidence from the Italian POLLnet network data. *Aerobiologia* 36, 63-70.
- Cristofori, A., Bucher, E., Rossi, M., Cristofolini, F., Kofler, V., Prosser, F., Gottardini, E., 2020. The late flowering of invasive species contributes to the increase of *Artemisia* allergenic pollen in autumn: an analysis of 25 years of aerobiological data (1995-2019) in Trentino-Alto Adige (Northern Italy). *Aerobiologia* 36, 669-682.
- Cristofori, A., Cristofolini, F., Gottardini, E., 2020. Rare occurrence of airborne bioparticles in a speleotherapy site: the case study of the Sant'Aloisio disused siderite mine (Brescia, Italy). *Aerobiologia* 36, 125-130.
- Gottardini, E., Cristofolini, F., Cristofori, A., Pollastrini, M., Camin, F., Ferretti, M., 2020. A multi-proxy approach reveals common and species-specific features associated with tree defoliation in broadleaved species. *Forest Ecology and Management* 467.
- Ferretti, M., Bacaro, G., Brunialti, G., Confalonieri, M., Cristofolini, F., Cristofori, A., Frati, L., Finco, A., Gerosa, G., Maccherini, S., Gottardini, E., 2018. Scarce evidence of ozone effect on recent health and productivity of alpine forests-a case study in Trentino, N. Italy. *Environmental Science and Pollution Research* 25, 8217-8232.
- Gottardini, E., Cristofolini, F., Cristofori, A., Ferretti, M., 2018. In search for evidence: combining ad hoc survey, monitoring, and modeling to estimate the potential and actual impact of ground level ozone on forests in Trentino (Northern Italy). *Environmental Science and Pollution Research* 25, 8206-8216.
- Killi, D., Bussotti, F., Gottardini, E., Pollastrini, M., Mori, J., Tani, C., Papini, A., Ferrini, F., Fini, A., 2018. Photosynthetic and morphological responses of oak species to temperature and CO<sub>2</sub> increased to levels predicted for 2050. *Urban Forestry & Urban Greening* 31, 26-37.
- Gottardini, E., Cristofolini, F., Ferretti, M., 2017. Foliar symptoms on *Viburnum lantana* reflect annual changes in summer ozone concentration in Trentino (northern Italy). *Ecological Indicators* 78, 26-30.
- Gottardini, E., Cristofolini, F., Cristofori, A., Camin, F., Calderisi, M., Ferretti, M., 2016. Consistent response of crown transparency, shoot growth and leaf traits on Norway spruce (*Picea abies* (L.) H. Karst.) trees along an elevation gradient in northern Italy. *Ecological Indicators* 60, 1041-1044.
- Gottardini, E., Cristofori, A., Pellegrini, E., La Porta, N., Nali, C., Baldi, P., Sablok, G., 2016. Suppression Subtractive Hybridization and NGS Reveal Differential Transcriptome Expression

Profiles in Wayfaring Tree (*Viburnum lantana* L.) Treated with Ozone. *Frontiers in Plant Science* 7.

Cristofori, A., Bacaro, G., Confalonieri, M., Cristofolini, F., Frati, L., Geri, F., Gottardini, E., Tonidandel, G., Zottele, F., Ferretti, M., 2015. Estimating ozone risks using forest monitoring networks-results for science, policy, and society. *Annals of Forest Science* 72, 887-896.

Bussotti, F., Pollastrini, M., Cascio, C., Desotgiu, R., Gerosa, G., Marzuoli, R., Nali, C., Lorenzini, G., Pellegrini, E., Carucci, M.G., Salvatori, E., Fusaro, L., Piccotto, M., Malaspina, P., Manfredi, A., Roccotiello, E., Toscano, S., Gottardini, E., Cristofori, A., Fini, A., Weber, D., Baldassarre, V., Barbanti, L., Monti, A., Strasser, R.J., 2014. Conclusive remarks. Reliability and comparability of chlorophyll fluorescence data from several field teams (vol 73, pg 116, 2011). *Environmental and Experimental Botany* 102, 68-68.

Cristofolini, F., Brunialti, G., Giordani, P., Nascimbene, J., Cristofori, A., Gottardini, E., Frati, L., Matos, P., Batic, F., Caporale, S., Fornasier, M.F., Marmor, L., Merinero, S., Zapata, J.N., Torra, T., Wolseley, P., Ferretti, M., 2014. Towards the adoption of an international standard for biomonitoring with lichens-Consistency of assessment performed by experts from six European countries. *Ecological Indicators* 45, 63-67.

Ferretti, M., Bussotti, F., Cristofolini, F., Cristofori, A., Gottardini, E., Rocchini, D., Finco, A., Marzuoli, R., Gerosa, G., 2014. Some remarks on "New functions for estimating AOT40 from ozone passive sampling" by De Marco et al. (2014). *Atmospheric Environment* 98, 707-710.

Gottardini, E., Cristofolini, F., Cristofori, A., Ferretti, M., 2014. Ozone risk and foliar injury on *Viburnum lantana* L.: A meso-scale epidemiological study. *Science of the Total Environment* 493, 954-960.

Gottardini, E., Cristofori, A., Cristofolini, F., Nali, C., Pellegrini, E., Bussotti, F., Ferretti, M., 2014. Chlorophyll-related indicators are linked to visible ozone symptoms: Evidence from a field study on native *Viburnum lantana* L. plants in northern Italy. *Ecological Indicators* 39, 65-74.

Salvatori, E., Fusaro, L., Gottardini, E., Pollastrini, M., Goltsev, V., Strasser, R.J., Bussotti, F., 2014. Plant stress analysis: Application of prompt, delayed chlorophyll fluorescence and 820 nm modulated reflectance. Insights from independent experiments. *Plant Physiology and Biochemistry* 85, 105-113.

Brunialti, G., Frati, L., Cristofolini, F., Chiarucci, A., Giordani, P., Loppi, S., Benesperi, R., Cristofori, A., Critelli, P., Di Capua, E., Genovesi, V., Gottardini, E., Innocenti, G., Munzi, S., Paoli, L., Pisani, T., Ravera, S., Ferretti, M., 2012. Can we compare lichen diversity data? A test with skilled teams. *Ecological Indicators* 23, 509-516.

Ferretti, M., Cristofolini, F., Cristofori, A., Gerosa, G., Gottardini, E., 2012. A simple linear model for estimating ozone AOT40 at forest sites from raw passive sampling data. *Journal of Environmental Monitoring* 14, 2238-2244.

Gerosa, G., Finco, A., Marzuoli, R., Ferretti, M., Gottardini, E., 2012. Errors in ozone risk assessment using standard conditions for converting ozone concentrations obtained by passive samplers in mountain regions. *Journal of Environmental Monitoring* 14, 1703-1709.

Bussotti, F., Pollastrini, M., Cascio, C., Desotgiu, R., Gerosa, G., Marzuoli, R., Nali, C., Lorenzini, G., Pellegrini, E., Carucci, M.G., Salvatori, E., Fusaro, L., Piccotto, M., Malaspina, P., Manfredi, A., Roccotello, E., Toscano, S., Gottardini, E., Cristofori, A., Fini, A., Weber, D., Baldassarre, V., Barbanti, L., Monti, A., Strasser, R.J., 2011. Conclusive remarks. Reliability and comparability of chlorophyll fluorescence data from several field teams. *Environmental and Experimental Botany* 73, 116-119.

Cristofolini, F., Cristofori, A., Gottardini, E., Maccherini, S., Ferretti, M., 2011. Constraints in the identification and interpretation of ozone as a significant predictor of effects on the supersensitive indicator *Nicotiana tabacum* Bel-W3 in biomonitoring studies. *Ecological Indicators* 11, 1065-1073.

Cristofori, A., Cristofolini, F., Gottardini, E., 2010. Twenty years of aerobiological monitoring in Trentino (Italy): assessment and evaluation of airborne pollen variability. *Aerobiologia* 26, 253-261.

Dell'Anna, R., Cristofori, A., Gottardini, E., Monti, F., 2010. A CRITICAL PRESENTATION OF INNOVATIVE TECHNIQUES FOR AUTOMATED POLLEN IDENTIFICATION IN AEROBIOLOGICAL MONITORING NETWORKS 273-288 pp.

Gottardini, E., Cristofori, A., Cristofolini, F., Bussotti, F., Ferretti, M., 2010. Responsiveness of *Viburnum lantana* L. to tropospheric ozone: field evidence under contrasting site conditions in Trentino, northern Italy. *Journal of Environmental Monitoring* 12, 2237-2243.

- Gottardini, E., Cristofori, A., Cristofolini, F., Ferretti, M., 2010. Variability of ozone concentration in a montane environment, northern Italy. *Atmospheric Environment* 44, 147-152.
- Dell'Anna, R., Lazzeri, P., Frisanco, M., Monti, F., Campeggi, F.M., Gottardini, E., Bersani, M., 2009. Pollen discrimination and classification by Fourier transform infrared (FT-IR) microspectroscopy and machine learning. *Analytical and Bioanalytical Chemistry* 394, 1443-1452.
- Gottardini, E., Cristofolini, F., Cristofori, A., Vannini, A., Ferretti, M., 2009. Sampling bias and sampling errors in pollen counting in aerobiological monitoring in Italy. *Journal of Environmental Monitoring* 11, 751-755.
- Longhi, S., Cristofori, A., Gatto, P., Cristofolini, F., Grando, M.S., Gottardini, E., 2009. Biomolecular identification of allergenic pollen: a new perspective for aerobiological monitoring? *Annals of Allergy Asthma & Immunology* 103, 508-514.
- Cristofolini, F., Giordani, P., Gottardini, E., Modenesi, P., 2008. The response of epiphytic lichens to air pollution and subsets of ecological predictors: A case study from the Italian Prealps. *Environmental Pollution* 151, 308-317.
- Gottardini, E., Cristofori, A., Cristofolini, F., Maccherini, S., Ferretti, M., 2008. Ambient levels of nitrogen dioxide (NO<sub>2</sub>) may reduce pollen viability in Austrian pine (*Pinus nigra* Arnold) trees - Correlative evidence from a field study. *Science of the Total Environment* 402, 299-305.
- Gottardini, E., Rossi, S., Cristofolini, F., Benedetti, L., 2007. Use of Fourier transform infrared (FT-IR) spectroscopy as a tool for pollen identification. *Aerobiologia* 23, 211-219.
- Gottardini, E., Cristofolini, F., Paoletti, E., Lazzeri, P., Pepponi, G., 2004. Pollen viability for air pollution bio-monitoring. *Journal of Atmospheric Chemistry* 49, 149-159.
- Pepponi, G., Lazzeri, P., Coghe, N., Bersani, M., Gottardini, E., Cristofolini, F., Clauser, G., Torboli, A., 2004. Total reflection X-ray fluorescence analysis of pollen as an indicator for atmospheric pollution. *Spectrochimica Acta Part B-Atomic Spectroscopy* 59, 1205-1209.

PATENTS -

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

Place, date

San Michele a/A, 01/12/2022

Signature

