

## PERSONAL INFORMATION

## Claudio Varotto



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## PERSONAL STATEMENT

I am the head (permanent position) of the Ecogenomics group at the Edmund Mach Foundation (FEM), a no-profit research Institute in Italy. The focus of my group is the dissection of evolution and adaptive traits in both mountain wild plants and crop relatives through a variety of complementary approaches, ranging from next generation sequencing, to computational and evolutionary biology, physiology and molecular biology.

I am a certified university teacher (associate professor) in Botany (05/A1) from 05/12/2017 to 05/12/2023

## WORK EXPERIENCE

08/2003–Present

**Biologist**

Edmund Mach Foundation, San Michele all'Adige (TN) (Italy)

From 2009 until present: Head of the Ecogenomics Group

- Scientific and administrative coordination of research projects
- Fund raising
- Scientific publication
- Personnel management

08/1998–07/2003

**Biologist**

Max-Planck-Institute for Plant Breeding, Cologne (Germany)

PhD student and postdoc

- Implementation of research projects
- Student supervision
- Scientific publication

02/1998–07/1998

**Biologist**

University of Verona - Faculty of Biotechnology, Verona (Italy)

Laboratory course assistant:

- setup of experimental activities of molecular biology
- supervision of students in the laboratory
- teaching

## EDUCATION AND TRAINING

08/1998–01/2002

**Philosophy Doctor (PhD)**

University of Cologne, Cologne (Germany)

Genetics, molecular biology, biochemistry, biophysics, physiology, biotechnology, bioinformatics, functional genomics

EQF level 8

10/1992–03/1998

**Master degree in Biotechnology**

EQF level 7

University of Verona - Faculty of Biotechnology, Verona (Italy)

Mathematics, statistics, physics, calculus and numerical computation, informatics, bioinformatics, inorganic and organic chemistry, physical chemistry, biology, botany, biochemistry, physiology, phytopathology, entomology, microbiology, genetics, biotechnology, molecular biology, economy.

**PERSONAL SKILLS**

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C2	C2
German	B1	B1	B1	B1	B1
French	B1	C1	B1	B1	B1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
Common European Framework of Reference for Languages

Communication skills

- excellent communication skills learned from delivery of conferences, presentation of proposal, participation to management meetings, interaction with sales specialists
- good contact skills with students and junior researchers gained through multiple years of supervision and mentoring
- good contact skills with colleagues gained through personnel management and specific courses

Organisational / managerial skills

- leadership (currently responsible for a team of 9 people)
- good organisational skills gained as responsible of scientific projects
- good team-leading skills gained as group leader

Job-related skills

- I have a solid expertise in:
- targeted (amplicons) and untargeted (transcriptome, genome, genome skimming, environmental samples) methods of next generation sequencing;
  - high throughput sequencing data management and analysis
  - molecular detection of both model and non-model species;
  - development of molecular markers;
  - phylogeny, phylogenomics and molecular evolution;

Digital competence

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

Digital competences - Self-assessment grid

## PUBLICATIONS (peer reviewed)

- De Luca C., Varotto C., Svendsen I., Polverino De Laureto P., Bassi R. (1999) Multiple light-harvesting II polypeptides from maize mesophyll chloroplasts are distinct gene products. *J. Photochem. Photobiol. B.* 49: 50-60 (I.F.: **1.919**)
- Croce R., Remelli R., Varotto C., Breton J., Bassi R. (1999) The neoxanthin binding site of the major light harvesting complex (LHCII) from higher plants. *FEBS Lett.* 456: 1-6 (I.F.: **3.263**)
- Leister D., Varotto C., Pesaresi P., Niwergall A., Salamini F. (1999) Large-scale evaluation of plant growth in *Arabidopsis thaliana* by non-invasive image analysis. *Plant Physiol. Bioch.* 37: 671-678 (I.F.: **1.669**)
- Remelli R., Varotto C., Sandona D., Croce R., Bassi R. (1999) Chlorophyll binding to monomeric light-harvesting complex. A mutation analysis of chromophore-binding residues. *J. Biol. Chem.* 274: 33510-33521 (I.F.: **5.581**)
- Varotto C., Pesaresi P., Maiwald D., Kurth J., Salamini F., Leister D. (2000) Identification of photosynthetic mutants of *Arabidopsis* by automatic screening for altered effective quantum yield of photosystem II. *Photosynthetica* 38: 497-504 (I.F.: **0.976**)
- Varotto C., Pesaresi P., Meurer J., Oelmüller R., Steiner-Lange S., Salamini F., Leister D. (2000) Disruption of the *Arabidopsis* photosystem I gene *psaE1* affects photosynthesis and impairs growth. *Plant J.* 22: 115-124. (I.F.: **6.751**)
- Pesaresi P., Varotto C., Richly E., Kurth J., Salamini F., Leister D. (2001) Functional genomics of *Arabidopsis* photosynthesis. *Plant Physiol. Biochem.* 39: 285-294 (I.F.: **1.669**)
- Pesaresi P., Varotto C., Meurer J., Jahns P., Salamini F., Leister D. (2001) Knock-out of the plastid ribosomal protein L11 in *Arabidopsis*: effects on mRNA translation and photosynthesis. *Plant J.* 27: 179-189. (I.F.: **6.751**)
- Varotto C., Richly E., Salamini F., Leister D. (2001) "GST-PRIME" – a software package for genome-wide primer design suitable for the generation of gene sequence tags. *Nucleic Acids Res.* 29: 4373-4377. (I.F.: **6.954**)
- Graßes T., Pesaresi P., Schiavon F., Varotto C., Salamini F., Jahns P., Leister, D. (2002) The role of  $\Delta$ pH-dependent dissipation of excitation energy in protecting photosystem II against light-induced damage in *Arabidopsis thaliana*. *Plant Physiol. Biochem.* 40: 41-49. (I.F.: **1.669**)
- Kurth J., Varotto C., Pesaresi P., Biehl A., Richly E., Salamini F., Leister D. (2002) Gene-sequence-tag expression analyses of 1800 genes related to chloroplast functions. *Planta* 215:101-9. (I.F.: **3.058**)
- Varotto C., Pesaresi P., Jahns P., Leßnick A., Tizzano M., Schiavon F., Salamini F., Leister D. (2002) Single and double knock-outs of the genes for photosystem I subunits PSI-G, -K and -H of *Arabidopsis thaliana*: effects on PSI composition, photosynthetic electron flow and state transitions. *Plant Physiol.* 129:616-24. (I.F.: **6.367**)
- Varotto C., Maiwald D., Pesaresi P., Jahns P., Salamini F., Leister D. (2002) The metal ion transporter IRT1 is necessary for iron homeostasis and efficient photosynthesis in *Arabidopsis thaliana*. *Plant J.* 31:589-99. (I.F.: **6.751**)
- Pesaresi P., Lunde C., Jahns P., Tarantino D., Meurer J., Varotto C., Hirtz R.D., Soave C., Scheller H.V., Salamini F., Leister D. (2002) A stable LHCII-PSI aggregate and suppression of photosynthetic state transitions in the *psae1-1* mutant of *Arabidopsis thaliana*. *Planta* 215:940-8. (I.F.: **3.058**)
- Varotto C., Leister D. (2002) Maize in the genomics era (2002) *Maydica* 43: 203-211. No I.F.
- Pesaresi P., Varotto C., Richly E., Lessnick A., Salamini F., Leister D. (2003) Protein-protein and protein-function relationships in *Arabidopsis* photosystem I: cluster analysis of PSI polypeptide levels and photosynthetic parameters in PSI mutants. *J. Plant Physiol.* 160:17-22. (I.F.: **2.239**)
- Weigel M.\*, Varotto C.\*, Pesaresi P., Finazzi G., Rappaport F., Salamini F., Leister D. (2003) Plastocyanin is indispensable for photosynthetic electron flow in *Arabidopsis thaliana*. *J. Biol. Chem.* 278:31286-9. (I.F.: **5.581**)
- Ihnatowicz A., Pesaresi P., Varotto C., Richly E., Schneider A., Jahns P., Salamini F., Leister D. (2004) Mutants for photosystem I subunit D of *Arabidopsis thaliana*: effects on photosynthesis, photosystem I stability and expression of nuclear genes for chloroplast functions. *Plant J.* 37:839-52. (I.F.: **6.751**)
- Li M.A., Wunder J., Bissoli G., Scarponi E., Gazzani S., Barbaro E., Saedler H., Varotto C. (2008) Development of COS genes as universally amplifiable markers for phylogenetic reconstructions of closely related plant species. *Cladistics* 24(5):727-745. (I.F.: **3.515**)
- Gazzani\* S., Li\* M., Maistri S., Scarponi E., Graziola M., Barbaro E., Wunder J., Furini A., Saedler H. and Varotto C. (2009) Evolution of MIR168 paralogs in Brassicaceae. *BMC Evolutionary Biology.* 9:62 (I.F.: **4.050**)
- Gentili R., Abeli T., Rossi G., Li M., Varotto C., Sgorbati S. (2010) Population structure and genetic diversity of the threatened quillwort *Isoetes malinverniana* and implication for conservation. *Aquatic Botany.* 93(3):147-152. (I.F.: **1.129**)
- Ometto L., Li M., Bresadola L., and Varotto C. (2012) Rates of evolution in stress-related genes are associated to habitat preference in two *Cardamine* lineages. *BMC Evolutionary Biology* 12:7. doi:10.1186/1471-2148-12-7. (I.F.: **3.702**)

- Lega\* M., Fior\* S., Prosser F., Bertolli A., and Varotto C. (2012) Application of the unified species concept reveals distinct lineages for disjunct endemics of the *Brassica repanda* (Brassicaceae) complex. *Biological Journal of the Linnean Society*. 106:482–497. (I.F.: **2.166**)
- Gilardelli F., Gentili R., Prosser F., Bonomi C., Varotto C., Sgorbati S. (2013) Ecological and biodiversity gradients across alpine dry grassland habitats: implications for an endangered species. *Nordic Journal of Botany*. 31: 225–238. (I.F.: **0.868**)
- Fior S., Li M., Oxelman B., Viola R., Hodges S., Ometto L. and Varotto C. (2013) Spatiotemporal reconstruction of the *Aquilegia* rapid radiation through next-generation sequencing of rapidly evolving cpDNA regions. *New Phytologist*. 198(2):579-92. (I.F.: **6.645**)
- Ometto L., Cestaro A., Ramasamy S., Grassi A., Revadi S., Siozios S., Moretto M., Fontana P., Varotto C., Pisani D., Dekker T., Wrobel N., Viola R., Pertot I., Cavalieri D., Blaxter M., Anfora G., Rota-Stabelli O. (2013) Linking genomics and ecology to investigate the complex evolution of an invasive *Drosophila* pest. *Genome Biol Evol*. 2013;5(4):745-57. (IF: **4.759**)
- Sablok G., Wu X., Kuo J., Nayak K.C., Baev V., Varotto C., Zhuo F. (2013) Combinational effect of mutational bias and translational selection for translation efficiency in tomato (*Solanum lycopersicum*) cv. Micro-Tom. *Genomics*. 101(5):290–295 (IF: **2.998**).
- Sablok G., Milev I., Minkov G., Minkov I., Varotto C., Yahubyan G., Baev V. (2013). isomiRex: Web-based identification of microRNAs, isomiR variations and differential expression using next-generation sequencing datasets. *FEBS letters*, 587(16), 2629-2634. (IF: **3.582**)
- Lega\* M., Fior\* S., Li M., Leonardi S., Varotto C. (2014) Genetic drift linked to heterogeneous landscape and ecological specialization drives diversification in the Alpine endemic *Aquilegia thalictrifolia*. *Journal of Heredity*. *J Hered* 105 (4): 542-554. (IF: **1.995**)
- Campisano A., Ometto L., Compant S., Pancher M., Antonielli L., Varotto C., Anfora G., Pertot I., Sessitsch A., Rota-Stabelli O. (2014) Interkingdom Transfer of the Acne-Causing Agent, *Propionibacterium acnes*, from Human to Grapevine. *Mol Biol Evol* (2014) 31 (5): 1059-1065. doi: 10.1093/molbev/msu075 (IF: **10.353**)
- Sablok G., Fu Y., Bobbio V., Laura M., Rotino G.L., Bagnaresi P., Allavena A., Velikova V., Viola R., Loreto F., Li M., Varotto C. (2014) Fuelling genetic and metabolic exploration of C<sub>3</sub> bioenergy crops through the first reference transcriptome of *Arundo donax* L. *Plant Biotechnology Journal* 12(5): 554–567. DOI: 10.1111/pbi.12159. (IF: **6.279**)
- Hu\* S., Sablok\* G., Wang B., Qu D., Barbaro E., Viola R., Li M., Varotto C. (2015). Plastome organization and evolution of chloroplast genes in *Cardamine* species adapted to contrasting habitats. *BMC Genomics*. 16:306 doi:10.1186/s12864-015-1498-0 (I.F.: **4.040**)
- Ometto L., Li M., Bresadola L., Barbaro E., Neteler M., Varotto C. (2015) Demographic history, population structure, and local adaptation in Alpine populations of *Cardamine impatiens* and *Cardamine resedifolia*. *PLOS ONE*. 10(5):e0125199. doi: 10.1371/journal.pone.0125199. eCollection 2015 (I.F.: **3.534**)
- Ahrar M., Doneva D., Koleva D., Romano A., Rodeghiero M., Tsonev T., Biasioli F., Stefanova M., Wohlfahrt G., Loreto F., Varotto C., Velikova V. (2015) Isoprene emission, carbon gain and water use in different genera of Arundineae. *Environmental and Experimental Botany*. 119 (2015) 87–95. doi:10.1016/j.envexpbot.2015.04.010 (I.F.: **3.003**)
- Fu \* Y., Poli\* M., Sablok G., Wang B., Liang Y., La Porta N., Velikova V., Loreto F., Li M., Varotto C. (2016) Dissection of early transcriptional responses to water stress in *Arundo donax* L. by unigenic-based RNA-Seq. *Biotechnology for Biofuel*. 9: 54. doi: 10.1186/s13068-016-0471-8 (I.F.: **6.04**)
- Qu D., Yan F., Li M., Varotto C., Zhao Z.Y. (2016) Comparative analysis of MIR168 promoters in three plant species. *Genet Mol Res*. 15(2). doi: 10.4238/gmr.15027684. (5-years I.F.: **0.912**)
- Velikova V., Brunetti C., Tattini M., Doneva D., Ahrar M., Tsonev T., Stefanova M., Ganeva T., Gori A., Ferrini F., Varotto C., Loreto F. (2016) Physiological significance of isoprenoids and phenylpropanoids in drought response of Arundinoideae species with contrasting habitats and metabolism. *Plant, Cell & Environment*, DOI: 10.1111/pce.12785 (IF **6.169**)
- Doneva D., Ahrar M., Tsonev T., Loreto F., Varotto C., Velikova V. (2017) The role of isoprene emission in two Arundineae species exposed to progressive drought stress. *Compt. rend. Acad. bulg. Sci.* (accepted protocol 5/31.05.2016), 2016 (5-years IF **0.214**)
- Fasani E., DalCorso G., Varotto C., Li M., Visioli G., Mattarozzi M., Furini A. (2017) The MTP1 promoters from *Arabidopsis halleri* reveal cis-regulating elements for the evolution of metal tolerance. *New Phytologist* 214(4):1614-1630. doi: 10.1111/nph.14529. (5-years I.F.: **7.857**)
- Sablok G., Chen T.W., Lee C.C., Yang C., Gan R.C., Wegrzyn J.L., La Porta N., Nayak K.C., Huang P.J., Varotto C., Tang P. (2017) ChloroMitoCU: Codon patterns across organelle genomes for functional genomics and evolutionary applications. *DNA Research*. doi: 10.1093/dnares/dsw044. (5-years I.F.: **5.524**)
- Ahrar M., Doneva D., Tattini M., Brunetti C., Gori A., Rodeghiero M., Wohlfahrt G., Biasioli F., Varotto C., Loreto F., Velikova V. (2017) Phenotypic differences determine drought stress responses in ecotypes of *Arundo donax* adapted to different environments. *Journal of Experimental Botany*. doi: 10.1093/jxb/erx125. (5-years I.F.: **6.538**)
- Li M., Xu J., Algarra Alarcon A., Carlin S., Barbaro E., Cappellin L., Velikova V., Vrhovsek U., Loreto F., Varotto C. (2017) *In planta* recapitulation of isoprene synthases evolution from ocimene synthases. *Molecular Biology and Evolution* 34(10):2583–2599 doi:10.1093/molbev/msx178. (5-years I.F.: **14.558**)
- Poli M., Salvi S., Li\* M., Varotto C. (2017) Selection of reference genes suitable for normalization of qPCR data under abiotic stresses in bioenergy crop *Arundo donax* L. *Scientific Reports* 7 (1), 10719 (5-years I.F.: **4.847**)

Buti M., Moretto M., Barghini E., Mascagni F., Natali L., Brilli M., Lomsadze A., Sonogo P., Giongo L., Alonge M., Velasco R., Varotto C., Šurbanovski N., Borodovsky M., Ward J.A., Engelen K., Cavallini A., Cestaro A., Sargent D.J. (2018) The genome sequence and transcriptome of *Potentilla micrantha* and their comparison to *Fragaria vesca* (the woodland strawberry). *GigaScience*. giy010, <https://doi.org/10.1093/gigascience/giy010> (5-years I.F.: **10.644**)

\* Shared first authorship; §shared corresponding author

#### BOOKS AND BOOK CHAPTERS

Leister D., Varotto C. (2007) GST-PRIME: an algorithm for genome-wide primer design. In: *Methods Mol. Biol.* 402:141-58. Book chapter.

Rocchini D., Balkenhol N., Delucchi L., Ghisla A., Hauffe H.C., Imre A.R., Jordán F., Nagendra H., Neale D., Ricotta C., Varotto C., Vernesi C., Wegmann M., Wohlgemuth T., Neteler M. (2012). *Spatial Algorithms Applied to Landscape Diversity Estimate from Remote Sensing Data*. In: Jordán F., Jørgensen S.E. (Eds), *Models of the Ecological Hierarchy: From Molecules to the Ecosphere*. Elsevier B.V., pp. 391–411. Book chapter. ISBN: 9780444593962

Sablok G., Kumar S., Ueno S., Kuo J., Varotto C. (Eds.) (2015) *Advances in the Understanding of Biological Sciences Using Next Generation Sequencing (NGS) Approaches*, Springer International Publishing, Book of 241 pages. DOI: 10.1007/978-3-319-17157-9.

Autorizzo il trattamento dei miei dati personali ai sensi del D.lgs. 196 del 30 giugno 2003.

Data 28.02.2018

Firma

