**GIOVANNI GIULIANO: Curriculum vitae**

Born: 22/08/1958 in Athens (Greece)

Italian citizen

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**Education and titles**

-1976: Baccalaureate degree, “Visconti” Classical Lyceum, Rome (with full honors).

-1981: Laurea degree in Biology, University of Pisa (with full honors).

-1981: Diploma in Biology, Scuola Normale Superiore, Pisa, Italy.

-1987: Ph.D. in Plant Biology, Rome, Italy.

-1995: "Abilitation aux fonctions de professeur" in the French Universities, sectors “Biochemistry and Molecular Biology” and “Physiology”.

-2014: “Abilitazione scientifica nazionale” as full professor in the Italian Universities, sectors “Molecular Biology”, “Plant Physiology”, “Applied Biology” and “Agricultural Genetics”.

**Honors and Awards**

-1976: Student fellowships at two university colleges: the S. Anna College, Pisa, Italy (in Agricultural Sciences) and at the Scuola Normale Superiore, Pisa, Italy (in Biology). Opts for the Scuola Normale.

-1981: “Cremona-Scoffone” thesis award by the Italian Society of Biophysics and Molecular Biology.

-2016: Prize of the Italian Minister for Cultural Affairs, assigned by the Accademia Nazionale dei Lincei.

**Positions held**

-1981-1985: Predoctoral fellow in the lab. of Prof. Mario Terzi, Istituto di Mutagenesi e Differenziamento, Italian Research Council, Pisa, Italy.

-1985-1986: Postdoctoral fellow in the lab. of Dr. Pablo Scolnik, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA.

-1987-1988: Postdoctoral fellow in the lab. of Prof. Anthony Cashmore, Plant Science Institute, Univ. of Pennsylvania, Philadelphia, PA, USA.

-1988-present: Research scientist (since 1997 Senior Scientist, since 2003 Research Director) ENEA (Italian Agency for New Technologies, Energy and Sustainable Development), Casaccia Research Center, Rome, Italy.

-2010 – 2015: Head, Green Biotechnology Laboratory, ENEA (Italian Agency for New Technologies, Energy and Sustainable Development).

# Teaching

1998 Invited course in Plant Photomorphogenesis, Université Pierre et Marie Curie, Paris, France.

1999 Invited course in Molecular Biology, University of Catania, Italy.

2015 Invited course in Plant Biotechnology, University of Rome, Italy

2018 Invited course on Phytonutrients, Mediterranean Agronomic Institute of Chania, Greece.

**Supervision of Ph.D. students (w year of graduation)**

* Alessia Fiore: *Functional analysis of xanthophylls in Arabidopsis thaliana*. University of L'Aquila, 2006.
* Gianfranco Diretto: *Metabolic engineering of xanthophyll biosynthesis in Solanaceae*. University of L'Aquila, 2006.
* Claudia Catalanotti: *Metabolic engineering in Chlamydomonas reinhardtii for hydrogen production*. University of Siena, 2009.
* Giulia Falcone: *Genetic evolution of the pathway controlling fruit carotenoid content in tomato (S. lycopersicum) and its wild relatives*. University of Verona, 2010.
* Elio Fantini: *Genetic selection for flowering time traits during speciation in tomato*. University of Verona, 2010.
* Marco Pietrella: *Genome and transcriptome sequencing and analysis in Solanum species.* Scuola Superiore di Studi Universitari S. Anna, Pisa, 2013.
* Maria Sulli: *Genetic improvement of nutritional quality in Solanaceae species.* Scuola Superiore di Studi Universitari S. Anna, Pisa, 2015.

**Research interests**

1980-1985: Genetic-biochemical analysis of carrot somatic embryogenesis.

1985-present: Molecular genetics of carotenoid biosynthesis.

1985-present: Molecular genetics of plant light responses.

2000-present: Plant and algal metabolic engineering, genomics and bioinformatics.

**Competitive Research Grants (Italian)** **CO=Coordinator**

1. 1991-1995: Italian Research Council, special project RAISA: "Photoperception and light signal transduction: transcription factors for plant light-regulated genes".
2. 1992-1995: Italian Ministry of Agriculture: "Carotenoid biosynthesis in higher plants: isolation of genes able to confer herbicide resistance".
3. 1996-1998: Italian Ministry of Agriculture: "Isolation and analysis of genes involved in major metabolic pathways in crop plants".
4. 2002-2005: Italian Ministry of Research: “Development and Characterization of Native Genetic Resources in Hortofruitculture (SCRIGNO)”
5. (\*)2003-2004: Italian Ministry of Research, Post-Genomics program: “Genes and their functions: an integrated approach”.
6. 2003-2005: Italian Ministry of Research, Special Fund for Basic Research: “Molecular mechanisms of Photosynthesis”.
7. 2003-2005: Italian Ministry of Research, Special Fund for Basic Research: “Network on the genomics of plant stress”
8. 2003-2005: Italian Ministry of Research, Special Fund for Basic Research: “Virtual Laboratory for Genomics, Proteomics, Bioinformatics”
9. 2004-2007: Italian Ministry of Research, “Innovative methodologies for hydrogen production from biological processes (IDROBIO)”.
10. 2005-2011: Italian Ministry of Research: “National Laboratory for genomics and postgenomics of agricultural plants” (CO).
11. 2005-2011: Italian Ministry of Research: “Parallelomics: massively parallel transcriptional and metabolic profiling approaches for plant improvement” (CO).
12. 2006-2009: Italian Ministry of Research: “ITALYCO: Advanced biology for the improvement of Italian processing tomatoes”.
13. 2009-2013: Italian Ministry of Agriculture. “Physical mapping and survey sequencing of wheat chromosome 5A”.
14. 2009-2012: Lazio Region: “Public-private Laboratory for High-Throughput Omic Sciences (ATOMICS)”
15. 2010-2012: “Improvement of nutritional and phytosanitary properties of commodities for human and animal nutrition (ALISAL)”.
16. -2009-2013: Italian Ministry of Agriculture. “Optimization of biological hydrogen production from Chlamydomonas- HYDROBIO”.
17. 2011-2014: AGER private consortium. “Durum wheat adaptation to global change: effect of elevated CO2 on yield and quality traits - DUCO”.
18. 2011-2015. Italian Ministry of Economic Development. “Pasta and new, high quality products from Italian cereals – PAQ”.
19. 2011-2014: Italian Ministry of Agriculture. “Improvement of the utilization and digestibility of agricultural residues for biofuel production - BIOMASSVAL”.
20. 2012-2015: Italian Ministry of Agriculture. “Italian-Israeli Initiative for the nutritional improvement of Solanaceous crops (IT-IL-NUTRI-SOL)”.
21. 2014-2017. Italian Ministry of Research: “Food product identification and their territorial origin – IDENPREPT” (CO).
22. 2018-2020. Lazio Region: “Production of saffron bioactive compounds in yeast (PROBIOZAFF)” (CO).

**Competitive Research Grants (European) CO=Coordinator**

1. 1991-1993: EU, BRIDGE program: "Isolation and functional characterization of genes controlling major metabolic pathways in higher plants".
2. 1994-1996 EU, BIOTECH program: "Genes and enzymes for carotenoid biosynthesis: structure, regulation and heterologous expression".
3. 1997-2000: EU, BIOTECH program: "The photoregulation of plant architecture and performance".
4. 1997-2000: EU, BIOTECH program: "Mechanisms for the regulation of carotenoid production and accumulation in plants".
5. 1997-2000: EU, FAIR program: "Genetic engineering of carotenoid metabolism: a novel route to vitamins, colours and aromas for the European market (CAROTENE PLUS)” (CO).
6. 2001-2004: EU, 5th FP: “Production of high value-added carotenoids and provitamin A in cell factory crops (PROVITA)” (CO).
7. 2006-2011: EU, 6th FP: “High Quality Solanaceous Crops for Consumers, Processors and Producers by Exploration of Natural Biodiversity (EU-SOL)”.
8. 2007-2010: EU, 6th FP: “Development of High Throughput Approaches to Optimise the Nutritional Value of Crops and Crop-Based Foods (DEVELONUTRI)”.
9. 2009-2013: EU, 7th FP: “Development of tools and effective strategies for the optimisation of useful secondary METAbolite PROduction in planta (METAPRO)”.
10. 2013-2017: EU, 7th FP: “From DISCOvery to products: A next generation pipeline for the sustainable generation of high-value plant products (DISCO)".
11. 2015-2018: EU, H2020: “Traditional tomato varieties and cultural practices: a case for agricultural diversification with impact on food security and health of European population (TRADITOM)".
12. 2016-2021: EC H2020: “Linking genetic resources, genomes and phenotypes of Solanaceous crops (G2P-SOL)” (CO).
13. 2018-2021: CE, H2020: “Developing Multipurpose Nicotiana Crops for Molecular Farming using New Plant Breeding Techniques (NEWCOTIANA)”.

**Invited lectures at international meetings (Since 2010)**

1. *Metabolic engineering of potato carotenoid content*. International Symposium “Perspectives on genetically modified foods and crops”, Fundacion Ramon Areces, Madrid, 2010.
2. *The genome that makes tomatoes*. 7th Solanaceae genome workshop. Dundee, 2010.
3. *The genome that makes tomatoes*. 14th International Biotechnology Symposium and Exhibition. Rimini, 2010.
4. *Carotenoid biosynthesis in tomato at the crossroad between genomics and metabolic engineering*. 16th International Symposium on Carotenoids. Krakow, 2011.
5. *New insights into carotenoid biosynthesis from the tomato genome sequence*. 8th Solanaceae genome workshop. Kobe, Japan, 2011.
6. *Saffron genes: the transcriptome of saffron*. International meeting COST action Saffronomics, Athens, Greece, May 2012.
7. *Gene mining in Saffron*. EU Seminar on Saffronomics, Cuenca, Spain, Nov 2012.
8. *Manipulating carotenoid composition in tomato and potato*. Gordon Research Conference on Carotenoids, Ventura, USA, Jan 2013.
9. *Multi-level control of carotenoids on tomato fruit ripening*. International meeting COST action QualityFruit, Chania, Crete, Sept 2013.
10. *In and out of the Solanaceae genomes: a quest for quality traits*. III International Symposium on Molecular Markers in Horticulture, Riva del Garda (Trento), Italy, Sept 2013.
11. *In and out of the Solanaceae genomes: a quest for quality traits*. XV EUCARPIA Meeting on Genetics and Breeding of Capsicum and Eggplant. Turin, Italy, Sept 2013.
12. *Multi-level control of carotenoids on tomato fruit ripening*. 10th Solanaceae genome workshop, Beijing, China, Nov 2013.
13. The coffee genome sequence reveals adaptive responses for the production and accumulation of caffeine. Plant Genomes & Biotechnology: From Genes To Networks. Cold Spring Harbor Laboratory, NY, Dec 2014.
14. *The genomic basis of red fruit color in cultivated tomato.* Solanaceae workshop, XXII Plant and animal genome meeting, San Diego, Jan 2014.
15. *In and out of the Solanaceae genomes: a quest for quality traits*. VISCEA Applied Vegetables Genomics conference. Vienna, Feb 2014.
16. *The Coffee Genome Sequence Suggests Polyphyletic Origin of Caffeine in Eudicot Evolution.* The 2nd Plant Genomics congress, London, May 2014.
17. *A novel carotenoid cleavage dioxygenase catalyzes the first dedicated step in saffron crocin biosynthesis.* 11th Solanaceae genome workshop, Porto Seguro, Brazil, Nov 2014.
18. *A high quality eggplant (Solanum melongena L.) genome draft and its use for mapping metabolic QTLs*. 11th Solanaceae conference, Porto Seguro, Brazil, Nov 2014.
19. *Dissecting the saffron stigma apocarotenoid pathway*. Final meeting, PlantEngine COST action, Sorrento, Italy, April 2015.
20. *Tomato fruit carotenoid biosynthesis: regulation and evolutionary aspects.* Symposium of the Serbian Plant Physiology Society, Petnica, Serbia, June 2015.
21. *Saffron apocarotenoid biosynthesis: a tale of three compartments.* Joint SIBV-SIGA congress, Milano, Italy, September 2015.
22. *Saffron apocarotenoid biosynthesis: a tale of three compartments.* Final meeting, Saffronomics COST action, Almagro, Spain, September 2015.
23. *Concerted transcriptional-metabolic remodelling underlies the transition from green-fruited to red-fruited tomato species.* Annual meeting, Qualityfruit COST action, Lisbon, Portugal, October 2015.
24. *Concerted transcriptional-metabolic remodelling underlies the transition from green-fruited to red-fruited tomato species.* 12th Solanaceae conference, Bordeaux, France, October 2015.
25. *Transgenic enhancement of beta-carotene content in tomato fruits results in increased fruit shelf-life.* Ethylene 2015, Chongquing, China, November 2015.
26. *The eggplant genome reveals key events in Solanaceae evolution.* Final meeting, QualityFruit COST action, Porto, Portugal, Oct 2016.
27. *Crocin biosynthesis in saffron stigmas: a tale of three compartments.* 5th International Saffron Symposium, Agadir, Morocco, November 2016.
28. *The eggplant genome reveals key events in Solanaceae evolution.* Meeting “WURomics: Technology-Driven Innovation for Plant Breeding”, Wageningen, The Netherlands, Dec 2016.
29. *The eggplant genome reveals paleopolyploid origin of fruit ripening.* 14th Solanaceae workshop, Valencia, Spain, Sept 2017.
30. *Multiple roles of cryptochromes in controlling Solanaceae physiology and development.* European photobiology congress, Pisa, Italy, Sept 2017.
31. *Saffron crocin biosynthesis: A highly compartmented pathway*. EUROCAROTEN COST Action workshop, Trogir, Croatia, Oct 2017.
32. *The G2P-SOL project: harnessing the genetic and phenotypic diversity of the four major Solanaceae crops.* 15th Solanaceae Workshop, Chiang Mai, Thailand, October 2018.

**Organization of international meetings (Since 2010)**

1. Discussion leader, session “Biosynthesis and regulation in plants”, Gordon research conference on carotenoids, Ventura (CA), 2010.
2. Organizer, Solanaceae workshop, XVIII Plant and animal genome meeting, San Diego, 2010.
3. Chair, session “Food Biotechnology”, 14th International Biotechnology Symposium and Exhibition, Rimini, Sept 2010.
4. Organizer, Solanaceae workshop, XIX Plant and animal genome meeting, San Diego, Jan 2011.
5. Chair, Tomato session. 8th Solanaceae Genome Workshop. Kobe, Japan, Nov 2011.
6. Organizer, Solanaceae workshop, XX Plant and animal genome meeting, San Diego, Jan 2012.
7. Organizer, Solanaceae workshop, XXI Plant and animal genome meeting, San Diego, Jan 2013.
8. Co-chair, Hormone Signaling and Development session, 10th Solanaceae Genome Workshop. Beijing, China, Nov 2013.
9. Organizer, Solanaceae workshop, XXII Plant and animal genome meeting, San Diego, Jan 2014.
10. Chair, Quality traits session, 11th Solanaceae Genome Workshop. Porto Seguro, Brazil, Nov 2014.
11. Organizer, Solanaceae workshop, XXIII Plant and animal genome meeting, San Diego, Jan 2015.
12. Vice-chair, Gordon Research Conference on Carotenoids, Barga, May 2016.
13. Chair, Gordon Research Conference on Carotenoids, Newry, USA, Jun 2018.

**Publications-patents**

Over 100 peer-reviewed publications (2 Nature, 1 Science, 2 PNAS, 1 EMBO J, 2 Plant Cell, 1 Annu Rev Plant Biol, 7 Trends, 2 Current Opinion). H-index: 54 (<http://scholar.google.it/citations?hl=en&user=Yp9Iny4AAAAJ>). 5 Italian and 2 International patent applications.

**Other**

* Good command of Modern Greek (mother tongue), English and French.
* Deputy Section Editor for BMC Plant Biology. Invited editor for PNAS. Referee for international journals (Nature, PNAS, Plant Cell, Plant Journal) and granting agencies (U.S. Dept. of Agriculture, US-Israel Agricultural Res. Fund, EU).
* From 2008 to 2010: Co-chair, International Solanaceae Project (SOL).