

Personal details

Lab address:

Instituto de Biotecnología, Instituto Nacional de Tecnología Agropecuaria (INTA). Dr N. Repetto y De los Reseros, B1686IGC – HURLINGHAM. ARGENTINA. Phone: 54+11-4621-1127/1278/1447/1676 -172-. Principal Investigator.

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Visiting Professor.

Emails: carrari.fernando@inta.gob.ar; carrarifernando@gmail.com

Date of birth: May 05, 1968.

Marital status: married. 1 daughter.

Nationality: argentine

Research interest: Plant Molecular Genetic & Physiology; Central Metabolism.

Employment details

Since May **2017** Visiting Professor at the Bioscience Institute of the **University of Sao Paulo** (Brazil). CAPES's fellow.

Since April **2011** Principal Investigator at **Biotechnology Institute** of the **National Institute for Agricultural Technology (INTA)**. Castelar, Buenos Aires, Argentina.

Since March **2008** Adjunct Professor at Genetic Dept. Agronomy School. **Buenos Aires University**. (2011: Category II).

2006-2008 Lectureship at Genetic Dept. Agronomy School. **Buenos Aires University**.

Since Nov. **2004**. Researcher of the National Council of Science and Technology (**CONICET**) (Current position: Principal Researcher).

Oct. **2001**-Oct. **2004**. Postdoctoral position at **Max Planck Institute for Molecular Plant Physiology**. Willmitzer Dpt. MPI of Molecular Plant Physiology Am Mühlberg 1. (14476) Golm – Germany.

1994-1996. Technician at Biotech Institute, National Institute of Agricultural Technology (**INTA**). Buenos Aires. Argentina.

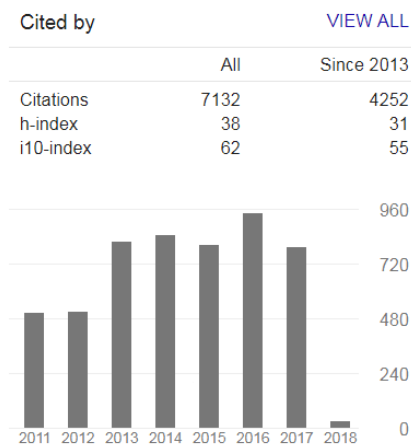
1986-1990. Technician at **Pioneer Overseas Corporation** in Maize Breeding Program. Argentine Branch.

Academic details

July **2001**. PhD of the Buenos Aires University. Area Biological Sciences. Thesis: Involvement of *vp1* and *GA20-oxidase* genes in the hormonal control of seed germination. Grade: Outstanding.

August **1997**. Engineer in Agronomy. Buenos Aires University. Thesis: Biotechnology applications to sunflower breeding. Transgenics plants resistant to *Lepidopterae* insects. Grade: Outstanding.

Google scholar citation indices: <https://scholar.google.com/citations?user=4IKg6V0AAAAJ&hl>



Research Grants, Awards and Fellowships

2016-2019 Research grant of the **European Union** as partner of the **TomGEM (H2020)** project participating as INCO country in two work packages.

- 2016-2018 Research grant of the **National Agency of Science and Technology (ANPCyT)**: Genetics and epigenetics determinants of vitamin E metabolism in plants. In collaboration with Dr Ramón Asis.
- 2015-2017 Research grant for international collaboration of the **Minsitry of Science and Technology and ECOS (France)**: Genome reprogramming associated with transgressive phenotypes of plant hybrids. In collaboration with Dr. Mathilde Causse, INRA Avignon, France.
- 2015-2017 Research grant for international collaboration of the **CONICET and FAPESP (Brazil)**: Desvendando a regulação do metabolismo de vitamina E em *Solanum lycopersicum*. In collaboration with Dr. Magdalena Rossi, USP, Brazil.
- 2012-2014 Research grant for international collaboration of the **Minsitry of Science and Technology and ECOS (France)**: Functional analyses of the genetic determinants of vitamin E in tomato fruits. In collaboration with Dr. Christophe Rothan, INRA Bordeaux, France.
- 2012-2014 Research grant of the **National Agency of Science and Technology (ANPCyT)**: Genetic dissection of vitamin E content determinants in tomato fruits. In collaboration with Dr Ramón Asis.
- 2012-2014 Research grant of the **CONICET PIP 112 20110100745**: Identification and characterization of transcription regulatory elements associated to fruit quality and biotic stresses in Solanaceae plant species. In collaboration with: Dr Mariana del Vas, Sebastian Asurmendi, Nicolas Frankel and Hernán Lorenzi.
- 2009- 2012 Research grant from the **Max Planck Society**: Sequencing *Solanum pennellii* – the wild parent of tomato introgression lines which harbor an unprecedented access to systems biology in crop plant species. In collaboration with Ralph Bock, Alisdair Fernie, Bjoern Usadel, Mark Stütt and Lothar Willmitzer.
- 2009-2010 Research grant of the **National Agency of Science and Technology (ANPCyT) - CABBIO**: Utilización de germoplasma silvestre para aplicaciones biotecnológicas: caracterización de genes de *Solanum pennellii* para el mejoramiento de tomate. In collaboration with: Dr Laura Kamenetzky and Dr. Magdalena Rossi (**USP Brazil**).
- 2009-2011 Research grant of the **CONICET PIP 112 20080102126**: Genetic determinants of the tomato fruit quality. In collaboration with: Dr Laura Kamenetzky.
- 2009-2011 Research grant of the **National Agency of Science and Technology (ANPCyT)**: Recovery of native genetic resources of Solanaceae plant species with biotechnological potentialities. In collaboration with: Drs Iris Peralta, Ramón Asis and Estela Valle.
- 2008-2010 Research grant of the **National Agency of Science and Technology (ANPCyT)**: Development of rapid strategies for testing of candidate crop QTLs. In collaboration with: Dr. Alisdair Fernie.
- (12/2007) Meeting grant of the **National Council of Science and Technology (Conicet)** to organize a **Workshop of Argentine-Germany Cooperation in Plant Sciences** in Buenos Aires, Dec. 2007.
- 2007-2009 Research grants of the **National Institute for Agricultural Technology (INTA)**: Postgenomics technologies applied to raw material characterization.
- (02/2006) Travel grant of the **Tsukuba University -Japan-** to attend the international tomato genome symposium during February 4th-5th, 2006 held at Tsukuba University.
- 2006-2010 Research grant of the **European Union** as partner of the **EU-SOL project** participating as **INCO country** in two work packages: “Sequence and analysis of the tomato mitochondrial genome” and “Biodiversity exploitation: Identification of metabolic QTLs using wild species tomato”.
- 2005 Re-entry grant of the **World University Service (WUS)**.
- 2005- 2008 Start up grant to establish a research partner group of the **Max Planck Institute** for Plant Molecular Physiology in Golm, Germany at the Instituto de Biotecnología INTA, Argentina.
- 2005-2006 Research grant from **CONICET PIP 5788**: Caracterización funcional de genes relacionados con respuestas a estreses bióticos y abióticos mediante técnicas genómicas y transformación genética de leguminosas y solanácea. In collaboration with Drs. R. Heinz, M. del Vas, C. Vazquez-Rovere, S. Asurmendi and N. Paniego.
- (06-08/2005) **EMBO** (European Molecular Biology Organization) short-term fellowship for a research visit to the Max Planck Institute of Plant Molecular Physiology, Golm, Germany.
- 2001 -2004. Post-doctoral fellow of **Max Planck Society**. Project: System biology in plants: Molecular and metabolic implications of genetic manipulation of Krebs cycle

- enzymes within the tomato fruit. AG: Prof. Dr. Lothar Willmitzer / Dr. Alisdair Fernie.
- (03/2000) Fellow of the National Council of Science and Technology (**CONICET**) for PhD students. Supervisor: Prof. Dr. Norberto Iusem. Resigned.
- 1998- 2001. Fellow of **Buenos Aires University**, Argentina for PhD students. Supervisor: Prof. Dr. Norberto Iusem.
- (01/1998) Fellow of the International Society for Plant Molecular Biology (**ISPMB**). Student travel award to attend the International Plant & Animal Genome VI Conference. San Diego, California, USA.
- (04-06/1998) Fellow of the Buenos Aires State Council for Scientific Research (**CIC**). Supervisor: Prof. Dr. H. Esteban Hopp. Resigned.
- (02-06/1996) Fellow of **UNESCO** (Biotechnology Education and Training Center -**BETCEN**-) for short-term training at Centro de Investigación y Estudios Avanzados del IPN. Unidad Irapuato. México, Supervisor: Prof. Dr. Luis Herrera-Estrella.
- 1993 –1996. Fellow of Buenos Aires University, Argentina. Financial support for undergraduate students.

Teaching experience

- Since July 2017 Visiting Professor at the Bioscience Institute, **Sao Paulo University**.
- Since May 2008 Adjunct Professor at Agronomy Science School, **Buenos Aires University**.
- Since Nov. 2006 Senior track lecturer at Agronomy Science School, **Buenos Aires University**.
- 2011, 2012, 2013 Invited professor at the **Science Faculty** of **Buenos Aires University**. Course: Applied Genomics: Lectures for under- and graduate students on applications of metabolomics.
- August 2009 Professor of the Argentine-Brazil Biotechnology Centre (**CABBIO**). Course: *Spectrometric methods applied to metabolism and flux analyses in bacteria and plants*.
- 2006, 2008 Visiting professor at the **Mar del Plata University**.
- 2007 Invited professor at **Vicosa University**, Brazil.
- 2005 Visiting professor at the GaTE lab of the Bioscience Dept at the **Sao Paulo University**, Brazil. (Sept, 2005).
- 2000 and 2001 Teacher Assistant at **Science Faculty** of **Buenos Aires University**. Courses for undergraduate students: Introduction to Molecular and Cellular Biology and Agro-biotechnology.
- 1995, 1998, 2006 Teacher assistant of Master and PhD programs at **Buenos Aires University** in the following courses: Plant genetic transformation and Molecular Genetics.
1994. Teacher assistant in "Introduction to Experimental Sciences". Course of National High Schools.

Human capacities building

Fellows supervision

- MsSc Mariana Conte, **technician** INTA. 2005-up to now.
- Dr. Ramón Asís, EU-SOL **postdoctoral fellow**. Research topic: Biodiversity exploitation: Identification of metabolic QTLs using wild species tomato. 2006-2007.
- MsSc Ursula Urias, **graduate student**, **CONICET** fellow. Project: Functional analysis of linked genes to QTL for tomato fruit nutritional quality. 2007.
- Dr. Laura Kamenetzky, **CONICET postdoctoral fellow**. Research topic: Metabolomic approach applied to the characterization of genetic resources of *Solanum lycopersicon* (tomato). 2007-2008.
- Dr. Laura Kamenetzky, **CONICET Assistant researcher**. Research topic: Metabolomic approach applied to the characterization of genetic resources of *Solanum lycopersicon* (tomato). Identification and analysis of genes involved in tomato primary metabolism. 2008-2010.
- MsSc Agustin Arce, **graduate student**, **CONICET** fellow. Project: Relationship between different signal transduction pathways involving HD-Zip transcription factors from plants. 2007-2008. In collaboration with Dr. Raquel Chan, Universidad Nacional del Litoral.
- Dr. Mariana Lopez, **CONICET postdoctoral fellow**. Research topic: Metabolomic approach applied to tomato breeding using domesticated and wild species. 2008-2012.
- Dr. Mariana Lopez, **CONICET Assistant researcher**. Research topic: Metabolomic approach applied to tomato breeding using domesticated and wild species. 2012-2013.
- MsSc Guadalupe Dominguez, Max Planck fellow, **graduate student**. Project: Gene functional analysis underlying tomato fruit quality. 2007-2008. **CONICET** 2009-up to now. **PhD thesis defended in Nov, 2014**.
- MsSc Leandro Quadrana, ANPCyT fellow, **graduate student**. Project: Development of rapid strategies for testing of candidate crop QTLs. 2008-2011. **CONICET** 2009-2012. **PhD thesis defended in May, 2013**.

- MsSc Luisa Bermúdez, FAPESP fellow **graduate student**. Project: Caracterização de determinantes genéticos envolvidos na qualidade de fruto de *Solanum pennellii*, com ênfase em genes que afetam o conteúdo de carotenóides e vitamina E. **PhD thesis defended June, 2011**. Co-supervision with Dr. Magdalena Rossi.
- Miss. Carla Coluccio, Max Planck fellow, **undergrad student**. Project: Análisis genómico y funcional de una invertasa (β -D-fructofuranósido fructohidrolasa) de *Arabidopsis thaliana* involucrada en la producción de biomasa radical. 2008-2009. **Thesis defended March, 2010**. Co-supervision with Dr. Laura Kementzky.
- MsSc Fabiana de Godoy, FAPESP fellow **graduate student**. Project: Estudo de regiões genômicas envolvidas no metabolismo de aminoácidos e na determinação da estrutura da parede celular no tomateiro. **PhD thesis defended June, 2013**. Co-supervision with Dr. Magdalena Rossi.
- MsSc Carla Coluccio, CONICET fellow **graduate student**. Project: Acumulación de biomasa y calidad de frutos: el rol de las invertasas en caracteres de interés biotecnológico. 2011-2015. **PhD thesis defended Dec, 2016**.
- Mr Jose Diaz Cirpolo, Fundación ArgenINTA internship program. Project: Análisis genómico y funcional de una invertasa (β -D-fructofuranósido fructohidrolasa) de *Arabidopsis thaliana* involucrada en la producción de biomasa radical. 2009. Co-supervision with Dr. Laura Kementzky.
- MsSc Gabriel Lichtenstein, **graduate student** CONICET fellow. Research topic: The sequence of the wild parent *S. pennellii*. 2011-up to now.
- Dr. Tomás Duffy, CONICET **postdoctoral fellow**. Research topic: Searching cis-regulatory elements in tomato genes expressed during the fruit development. 2011-2013.
- MsSc Estanislao Burgos, ANPCyT y CONICET fellow, **graduate student**. Project: Functional analyses of the genetic determinants of the vitamin E biosynthesis in plants. 2013-2018. **PhD thesis defended March 2018**.
- Biochem Belén De Lucca, ANPCYT fellow, **graduate student**. Project: Epigenetic effects on nutritional quality in tomato. 2016-up to now.
- Dr. Andrés Cernadas, EU-TomGEM, postdoctoral fellow. Project: A holistic multi-actor approach towards the design of new tomato varieties and management practices to improve yield and quality in the face of climate change. 2016-2017.
- Dr. Andrés Cernadas, CONICET, **postdoctoral fellow**. Project: Application of genetic editing tools, TALEN and CRISPR / Cas9, to the functional genomics of crop plants for use in breeding programs. 2017-up to now.
- Dr. Luis de Haro, CONICET **postdoctoral fellow**. Project: A multi-holistic approach towards the understanding of the (epi)genetic bases that determine productivity and quality traits of the tomato crop and the variability of response of Creole cultivars to heat stress.
- Dr. Estanislao Burgos, CONICET **postdoctoral fellow**. Project: Identification of the genetic basis of variation in vitamin E content in tomato fruits: functional characterization of the genes involved.
- Dr. Ricardo Bianchetti, FAPESP postdoctoral fellow. Project: Effects of phytochrome-dependent temperature perception in tomato fruit metabolism through epigenetic regulation.

Member of evaluation committees

PhD thesis submitted by MsSc. Franco Santín. Title: Estudio transcripcional y post-transcripcional de la quinasa de proteínas dependiente de calcio, StCDPK1 en *Solanum tuberosum* y análisis de sus potenciales blancos de acción. PhD of the Buenos Aires University (2015).

PhD thesis submitted by MsSc. Cecília Décima Oneto. Title: Estudio del comportamiento de plantas transformadas de maíz (*Zea mays* L.) con el gen *ipt* (isopentenil-transferas) de *Agrobacterium tumefaciens* bajo la regulación del promotor *sark* (receptor protein-quinasa asociado a senescencia) de *Phaseolus vulgaris*. PhD of the Buenos Aires University (2014).

PhD thesis submitted by MsSc. Rubén Gustavo Schlaen. Title: GEMIN2, su rol en el splicing alternative, los ritmos circadianos y la tolerancia al frío. PhD of the Buenos Aires University (2014).

PhD thesis submitted by MsSc. Renata Cantoro. Title: Identificación de QTL para dormición y análisis molecular de la interacción ABA-Gas en cariopses de sorgo granífero. PhD in Agronomical Sciences. Buenos Aires University (2014).

PhD thesis submitted by MsSc. Matias Rugnone. Title: Identificación de genes involucrados en la transducción de la señal lumínica y su interacción en distintos aspectos del crecimiento y desarrollo de *Arabidopsis thaliana*. PhD in Biological Sciences of the University of San Martín (2013).

PhD thesis submitted by MsSc. Ezequiel Marchionni. Title: Una aproximación proteómica a la madurez del fruto de tomate. PhD in Agronomy of the University of Rosario (2013).

PhD thesis submitted by MsSc. Victoria Romero. Title: Caracterización genómica y taxonómica de ajíes del complejo *Capsicum annum* (*C. annum*, *C. chinense*, *C. frutescens*). PhD in Biological Sciences of the University of Córdoba (2013).

PhD thesis submitted by MsSc. Maximiliano Sánchez-Lamas. Title: Disección de las vías de señalización de los fotorreceptores en plantas e interacciones con las vías de respuesta a la temperatura. PhD of the Buenos Aires University (2014).

PhD thesis submitted by Eng Ezequiel Marchionni Basté . Title: Una aproximación proteómica a la madurez del fruto de tomate. PhD in Agronomic Sciences of the Rosario University. (2012).

PhD thesis submitted by Biol. María Victoria Romero . Title: Caracterización genómica y taxonómica de ajíes del complejo *Capsicum annum* (*C. annum*, *C. chinense*, *C. frutescens*). PhD in Biological Sciences. Córdoba University (2012).

PhD thesis submitted by Eng David Liberatti. Title: Variabilidad genética en líneas recombinantes de *Solanum* obtenidas con un cruzamiento interespecífica: Identificación de las combinaciones génicas favorables para caracteres de interés agronómico. PhD in Agronomic Sciences of the Rosario University. (2011)

PhD thesis submitted by MsSc. Pablo Asprelli. Title: Recuperación, evaluación morfoagronómica y caracterización molecular de una colección de germoplasma de tomate criollo en Argentina. PhD in Biological Sciences of the University of Cuyo (2011).

PhD thesis submitted by MsSc. Mariana Gil. Title: Efecto de la radiación ultraviolet-B en las vías del metabolismo secundario que conducen a la síntesis de terpenos en tejidos de vid (*Vitis vinifera* L) cv. Malbec. PhD in Biological Sciences of the University of Cuyo (2011).

PhD thesis submitted by MsSc. Florencia Lucca. Title: Búsqueda de genes candidates que controlen QTLs involucrados en la Resistencia al estrés hídrico mediante el análisis de perfiles transcripcionales en especies silvestres de *Solanum*. PhD in Biological Sciences of the Buenos Aires University (2011).

PhD thesis submitted by MsSc. Romina Sellaro. Title: Dynamic network of environmental signals in *Arabidopsis thaliana*. PhD in Biological Sciences of the University of Buenos Aires (2010).

PhD thesis submitted by MsSc. Wagner Camargos Antunes. Title: Engineering for drought avoidance: antisense of sucrose transporter in tobacco specifically on guard cells results in reduced stomatal conductance and increased water use efficiency. Doctor Scientiae degree in Plant Physiology, Vicosia University (Brazil) (2009).

Member of the Evaluation committee for PhD Thesis Awards of the Sta. Fe Province (2009).

PhD thesis project submitted by Eng. Natalia Iliina to the Postgraduate School of the Agronomy Faculty, Buenos Aires University (2009).

PhD thesis submitted by MsSc. Daniela Ma. Del Valle Moreno. Title: Study on the role of ABA and GAs in the metabolic regulation of *Arabidopsis* and grape. PhD in Biological Sciences of the University of Cuyo (2009).

PhD thesis submitted by MsSc. Noemi Colombo. Title: Molecular characterization of mutants derived from a barley chloroplast mutator. PhD in Biological Sciences of the Buenos Aires University (2008).

PhD thesis submitted by MsSc. Telma Eleonora Scarpeci. Title: Identification of novel components participating in plant antioxidant responses. PhD in Biological Sciences of the Rosario University (2007).

PhD thesis submitted by Eng Gustavo Rodriguez. Title: New sources of genetic variability applied to tomato (*Lycopersium esculentum* MILL) breeding. PhD in Agronomic Sciences of the Rosario University. (2006)

PhD thesis project submitted by Eng. Hernán Ghiglione to the Postgraduate School of the Agronomy Faculty, Buenos Aires University (2006).

Member of fellowship evaluation program CONICET. Biology Area. (2012-2013).

Member of the Evaluation Committee of R&T grant (PICT) Ministry of S&T. Systems and Organisms Area (2013).

Member of the advisory board of the agricultural disciplines in CONICET (2016-)

Member of the *ad hoc* advisory board of biodiversity, genetic and evolution disciplines in Agencia grants (2016-).

References

Prof. Dr. Lothar Willmitzer. Max Planck Institute for Molecular Plant Physiology. Am Mühlenberg 1. 14476 Golm. **Germany.** willmitzer@mpimp-golm.mpg.de

Prof. Dr. Norberto Iusem. Laboratorio de Fisiología y Biología Molecular. FCEyN. Ciudad Universitaria. Pabellón II. Universidad de Buenos Aires. **Argentina.** norbius@fbmc.fcen.uba.ar

Dr. Carlos Loeffler. Pioneer Hi-Bred Int. 7250 NW 62nd Ave, Johnston, IA 50131-0552. **USA.** carlos.loeffler@pioneer.com.

Publications

25 presentations in national research conferences.

37 presentations in international research conferences.

Full papers in indexed international journals:

81- D'Angelo M, Zanor MI, Sance M, Cortina PR, Boggio SB, Asprelli P, **Carrari F**, Santiago AN, Asís R, Peralta IE, Valle EM. **2018.**

Contrasting metabolic profiles of tasty Andean varieties of tomato fruit in comparison with commercial ones. *Journal of the Science of Food and Agriculture*. <https://doi.org/10.1002/jsfa.8930>

80- Cortina PR, Santiago AN, Sance MN, Peralta IE, **Carrari F**, Asís F. **2018.** Neuronal network analyses reveal novel associations between volatile organic compounds and sensory

- properties of tomato fruits. *Metabolomics* 14(5):57. <https://doi.org/10.1007/s11306-018-1355-7>.
- 79- Oliveira Silva FM, Lichtenstein G, Alseekh S, Rosado-Souza L, Conte M, Fuentes Suguiyama V, Lira BS, Fanourakis D, Usadel B, Lopes Bhering L, DaMatta FM, Sulpice R, Araújo WL, Rossi M, de Setta N, Fernie AR, **Carrari F** and Nunes-Nesi A. **2017**. The Genetic Architecture of Photosynthesis and Plant Growth Related Traits in Tomato. *Plant, Cell and Environment*. DOI: 10.1111/pce.13084
- 78- Raddatz-Mota D, Pérez-Flores LJ, **Carrari F**, Insani M, Asis R, Mendoza-Espinoza JA, Díaz de León-Sánchez F and Rivera-Cabrera F. **2016**. Chemical characterization and quantification of the pigment extraction yield of seven Mexican accessions of *Bixa orellana*. *Revista Mexicana de Ingeniería Química* 15(3) 727-740.
- 77- Raddatz-Mota D, Pérez-Flores LJ, **Carrari F**, Mendoza-Espinoza JA, Díaz de León-Sánchez F, Pinzón-López F, Godoy-Hernández G and Rivera-Cabrera F. **2017**. Achiote (*Bixa orellana* L.): a natural source of pigment and vitamin E. *J Food Sci Technol* 54(6):1729–1741
- 76- Müller V, Bonacci G, Batthyany C, Amé MV, **Carrari F**, Gieco JO and Asis R. **2016**. Peanut seed cultivars with contrasting resistance to *Aspergillus parasiticus* colonization display differential temporal response of protease inhibitors. *Phytopathology*. 107(4):474-482.
- 75- Coluccio Leskow C, Kamenetzky L, Dominguez PG, Díaz Zirpolo JA, Obata T, Costa H, Martí M, Taboga O, Keurentjes J, Sulpice R, Ishihara H, Stitt M, Fernie AR and **Carrari F**. **2016**. Allelic differences in a vacuolar invertase affect Arabidopsis growth at early plant development. *Journal of Experimental Botany*. 67 (14): 4091-4103 (doi: 10.1093/jxb/erw185).
- 74- Di Paola Naranjo R, Otaiza S, Saragusti AC, Baroni V, Carranza A del V, Peralta IE, Valle EM, **Carrari F** and Asis R. **2016**. Hydrophilic antioxidants from Andean tomato landraces assessed by their bioactivities in vitro and in vivo. *Food Chemistry*. 206:146-155.
- 73- Almeida J, da Silva Azevedo M, Spicher L, Glauser G, vom Dorp K, Guyer L, Carranza A, Asis R, Pereira de Souza A, Buckeridge M, Demarco D, Bres C, Rothan C, Pereira Peres L, Kessler F, Hörtensteiner S, Dörmann P, **Carrari F**, and Rossi M. **2016**. Down-regulation of tomato PHYTOL KINASE strongly impairs tocopherol biosynthesis and affects prenyl lipid metabolism in an organ-specific manner. *Journal of Experimental Botany* 67:919-934.
- 72- Rossi M, Bermudez L, **Carrari F**. **2015**. Crop yield: challenges from a metabolic perspective. *Current Opinion in Plant Biology*. 25:79-89.
- 71- López MG, Zanor MI, Pratta GR, Stegmayer G, Boggio SB, Conte M, Bermudez L, Coluccio Leskow C, Rodríguez GR, Picardi LA, Zorzoli R, Fernie AR, Milone D, Asís R, Valle EM, **Carrari F**. **2015**. Metabolic analyses of interspecific tomato recombinant inbred lines for fruit quality improvement. *Metabolomics*. 11:1416-1431.
- 70- Daloso DM, Müller K, Obata T, Florian A, Tohge T, Bottcher A, Riondet C, Bariat L, **Carrari F**, Nunes-Nesi A, Buchanan BB, Reichheld J-P, Araujo WL, Fernie AR. **2015**. Thioredoxin, a master regulator of the tricarboxylic acid cycle in plant mitochondria. *PNAS*. doi:10.1073/pnas.1424840112.
- 69- Dominguez G and **Carrari F**. **2014**. ASR1 transcription factor and its role in metabolism. *Plant Signalling and Behaviour*. 10(4):e992751.
- 68- Almeida J, Asis R, Molineri VN, Sestari I, Lira BS, **Carrari F**, Pereira Peres LE, Rossi M. **2015**. Fruits from Ripening Impaired, Chlorophyll Degradation and Jasmonate Insensitive Tomato Mutants have Altered Tocopherol Content and Composition. *Phytochemistry*. 111:72-83.
- 67- Golan I, Dominguez PG, Konrad Z, Shkolnik-Inbar D, **Carrari F**, Bar-Zvi D. **2014**. Tomato ABCISIC ACID STRESS RIPENING (ASR) Gene Family Revisited. *Plos One*. 9(10) e107117.
- 66- Llorente B, Lopez MG, **Carrari F**, Asis R, Di Paola Naranjo R, Flawia MM, Alonso GD, Bravo-Almonacid F. **2014**. Downregulation of polyphenol oxidase in potato tubers redirects phenylpropanoid metabolism enhancing chlorogenate content and late blight resistance. *Molecular Breeding*. 34 (4):2049-2063.
- 65- Bolger T, Scossa F, Bolger M, Lanz C, Maumus F, Tohge T, Quesneville H, Alseekh S, Sørensen I, Lichtenstein G, Fich E, Conte M, Keller H, Schneeberger K, Schwacke R, Ofner I, Vrebalov J, Xu Y, Osorio S, Aflitos SA, Schijlen E, Jimenez-Gomez JM, Kimura S, Kumar R, Koenig D, Headland LR, Maloof J, Sinha N, van Ham RCHJ, Klein Lankhorst R, Mao L, Arsova B, Fei Z, Rose J, Zamir D, **Carrari F**, Giovannoni JJ, Weigel D, Usadel B and Fernie AR. **2014**. The genome of the highly stress tolerant wild tomato species *Solanum pennellii*. *Nature Genetics*. 46:1034-1038.
- 64- Müller V, Amé MV, **Carrari F**, Gieco J, Asis R. **2014**. Lipoxigenase activation in peanut seed cultivars resistant and susceptible to *Aspergillus parasiticus* colonization. *Phytopathology*. 104 (12):1340-1348.
- 63- Quadrana L, Almeida J, Asís R, Duffy T, Dominguez PG, Bermúdez L, Conti G, Corrêa da Silva JV, Peralta I, Colot V, Asurmendi S, Fernie AR, Rossi M, **Carrari F**. **2014**. Natural occurring epialleles determine vitamin E accumulation in tomato fruits. *Nature Communications* 4027. doi:10.1038/ncomms5027.

- 62-Milone DH, Stegmayer G, Lopez M, Kamenetzky L and Carrari F. 2014. Improving clustering with metabolic pathway data. *BMC Bioinformatics*. 15:101.
- 61-Ricardi MM, González RM, Zhong S, Domínguez PG, Duffy T, Turjanski PG, Salgado Salter JD, Alleva K, Carrari F, Giovannoni JJ, Estévez JM, Iusem ND. 2014. Genome-wide data (ChIP-seq) enabled identification of cell wall-related and aquaporin genes as targets of tomato ASR1, a drought stress-responsive transcription factor. *BMC Plant Biology*. 14:29.
- 60-Bermúdez L, de Godoy F, Baldet P, Demarco D, Osorio S, Quadrana L, Almeida J, Asís R, Gibon Y, Fernie A, Rossi M, Carrari F. 2014. Silencing of the tomato Sugar Partitioning Affecting protein (SPA), modifies sink strength through a shift in leaf sugar metabolism. *The Plant Journal*. 77(5):676-87.
- 59-de Godoy F, Bermúdez L, Silvestre BL, de Souza A, Elbl P, Demarco D, Alseekh S, Insani M, Buckeridge M, Almeida J, Grigioni G, Fernie AR, Carrari F and Rossi M. 2013. Galacturonosyltransferase 4 silencing alters pectin composition and carbon partitioning in tomato. *Journal of Experimental Botany*. 64 (8): 2449-2466.
- 58-Dominguez PG, Frankel N, Mazuch J, Balbo I, Iusem ND, Fernie AR, Carrari F. 2013. *Asr1* mediates glucose-hormone crosstalk by affecting sugar trafficking in tobacco plants. *Plant Physiol*. 161(3):1486-1500.
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Book chapters

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Patents

Método de obtenção de uma planta com elevada produtividade, I.N.P.I./S.P. nº. BR 10 2014 026349-7, Rossi M, Carrari F, Bermúdez L, 22/10/2014.

Professional experience

1986-1990. Technician at Pioneer Overseas Corporation in Maize Breeding Program. Argentine Branch.
1994-1996. Technician at Biotech Institute, National Institute of Agricultural Technology.

Languages

Spanish: native tongue

English: good knowledge of both written and spoken (second language at high school and studies at Buenos Aires ICANA institute)

German: intermediate level of both written and spoken (Grundstufe I und II – Volkshochschule Neukölln, Berlin).

French: basic knowledge (third language at high school).

Portuguese: basic knowledge.

Other relevant information:

Coordinator of the Latino-America Solanaceae Network (Lat-SOL) (<http://cniia.inta.gov.ar/lat-sol>) (2004-2006).

Co-chairman of the International Plant Molecular Biology Conference 2015. (Iguazú, Brasil, October 2016).

Member of the fellowship evaluation committee of CONICET (2012 and 2013)

Member of the advisory commission (Agronomic Sciences) of CONICET (2016-up to now).

Scientific Literature Edition:

Editor of the Journal Metabolomics (2014)

Referee of the following scientific journals:

Journal Facultad de Ciencias Agrarias Universidad Nacional de Cuyo (2009)

Journal of Agricultural and Food Chemistry (2006-2009-2010).

New Phytologist (2006).

Plant Biotechnology Journal (2003).

Journal of the American Society of Horticultural Sciences (2005).

Physiologia Plantarum (2007-2009).

BMC Plant Biology (2008).

Euphytica (2008-2011).

Journal of Plant Physiology (2009, 2014).

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Molecular Breeding (2011).

Plos ONE (2012).

Gene (2012).

Plant Cell (2012)

Journal of Experimental Botany (2012, 2015, 2016)

Plant Molecular Biology (2013)

Nature Communications (2014, 2015)

Nature Biotechnology (2015)

Grant evaluations:

The Chilean Commission for Research and Technology (FONDECYT-CONICYT) (2011)

The National Agency for Science and Tech Promotion (ANPCYT) (2004-2005-2006-2010-2011-2012-2013-2014-2016)

The National Council for Science and Technology (CONICET) (2005-2007-2010-2011-2013-2014-2016)

To Secretary of Science and Technology of the Universidad Nacional del Litoral (2005)

To Bi-national Agricultural Research and Development Fund (Bi-national US-Israel) (2006)

To Israel Science Foundation (ISF) (2007).

To CONACYT Paraguay (2014, 2016).