

UNIVERSITÀ DEGLI STUDI DI MILANO

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presso il Dipartimento di Bioscienze,

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Vittoria Brambilla

CURRICULUM VITAE

INFORMAZIONI PERSONALI

COGNOME	BRAMBILLA
NOME	VITTORIA FRANCESCA
DATA DI NASCITA	23 SETTEMBRE 1979

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CURRENT POSITION AND RESEARCH INTERESTS

- November 2017- present
Researcher on a fixed-term (RTD-A), at the University of Milan (Italy), Department of Agricultural and Environmental Sciences.
The research topics of my group are the genetic and molecular bases of flowering time in rice and the hormonal control of rice plant architecture. We also aim at applying the results from our basic plant developmental biology research for implementing rice breeding programs.

POST-DOCTORAL RESEARCH EXPERIENCES

- December 2015- October 2017
Post-doctoral researcher at the University of Milan, Department of Agricultural and Environmental Sciences. In the group of prof. Laura Rossini, I continued plant developmental biology research on rice reproduction and I also started technology transfer projects in collaboration with local rice breeding companies based on the knowledge from basic research.
- June 2011- November 2015
Post-doctoral researcher at the University of Milan, Department of Biosciences. In the ERC-funded research group of prof. Fabio Fornara, I carried our basic research on rice flowering and reproduction, and I uncovered novel molecular mechanisms that control flowering in rice. I joined prof. Fornara's lab to fulfill my growing interest in crops.
- February 2008 - April 2011
Post-doctoral researcher at the Max Planck Institute for Plant Breeding Research, Cologne (Germany). I worked in the group of Wim Soppe and prof. Maarten Koornneef where I contributed in revealing the role of alternative splicing in the control of seed development in Arabidopsis. My post doc at the MPI was supported by a personal fellowship from the Alexander von Humboldt Foundation that granted me independence in leading the project.

EDUCATION

- November 2004 - January 2008
PhD in Plant Biology at University of Milan, Department of Biology.

Dissertation title: Transcription factors controlling ovule and carpel development in Arabidopsis.
Supervisor: Prof. Lucia Colombo.

- November 2006 - December 2007
I was granted 1 year Research Fellowship at Düsseldorf University (Germany) in the lab of prof. Ruediger Simon.
During this time, I studied the role of the hormone auxin in ovule identity determination in Arabidopsis, by molecular biology and confocal tools.
- December 2003
Master degree in Biology (5 years degree) at the University of Milan.
Thesis title: MADS-BOX transcription factors controlling ovule identity in Arabidopsis.
Supervisor: Prof. Lucia Colombo.
- July 1998
Classical High School Degree at Ginnasio Liceo Classico Statale C. Beccaria, Milan.

PUBLICATIONS IN PEER-REVIEWED SCIENTIFIC JOURNALS

(As July 2019 h-index: 11, Total citations: 525, source Scopus; h-index: 12, Total citations: 725, source Google Scholar)

1. Gomez-Ariza, J, Brambilla, V, Vicentini, G, Landini, M, Cerise, M, Carrera, E, Shrestha, R, Chiozzotto, R, Galbiati, F, Caporali, E, Lopez-Diaz, I, Fornara, F. A transcription factor coordinating internode elongation and photoperiodic signals in rice. *Nature Plants* Volume 5, Issue 4, Pages 358-3621 April 2019.
2. Borrelli, V, Brambilla, V, Rogowsky, R., Marocco, A., Lanubile, A. The Enhancement of Plant Disease Resistance Using CRISPR/Cas9 Technology. *Front Plant Sci.*, 24 August 2018.
3. Brambilla, V., Martignago, D., Goretti, D., Cerise, M., Somssich, M., de Rosa, M., Galbiati, F., Shrestha, R., Lazzaro, F., Simon, R., Fornara, F. (2017). Antagonistic Transcription Factor Complexes Modulate the Floral Transition in Rice. *The Plant Cell* 29 (11), pp. 2801-2816 (2017).
4. Brambilla V, Gomez-Ariza, Cerise, M, Fornara, F. The Importance of Being on Time: Regulatory Networks Controlling Photoperiodic Flowering in Cereals. *Front Plant Sci.* 8,665 2017.
5. Goretti D, Martignago D, Landini M, Brambilla V, Gomez-Ariza J, Gnesutta N, Collani S, Galbiati F, Takagi H, Terauchi R, Mantovani R, Fornara F. Transcriptional and post-transcriptional mechanisms limit Heading Date 1 (Hd1) function to adapt rice to high latitudes. *PLOS Genetics* 13(1),e1006530. (2017).
6. Brambilla V and Fornara F. Y flowering? Regulation and activity of CONSTANS and CCT-domain proteins in Arabidopsis and crop species. *Biochim Biophys Acta.* 1860(5), pp. 655-660 (2016).
7. Srinivasan, A, Jiménez-Gómez, J M, Fornara, F, Soppe, WJJ, and Brambilla, V. Alternative splicing enhances transcriptome complexity in desiccating seeds. *J Integr Plant Biology*, 58(12), pp. 947-958 (2016).
8. Gómez-Ariza J, Galbiati F, Goretti D, Brambilla V, Shrestha R, Pappolla A, Courtois B, Fornara F. Loss of floral repressor function adapts rice to higher latitudes in Europe. *Journal of Experimental Botany* 66(7), pp. 2027-2039 (2015).
9. Shrestha R, Gómez-Ariza J, Brambilla V, Fornara F. Molecular control of seasonal flowering in rice, Arabidopsis and temperate cereals. *Annals of Botany* 114(7):1445-5 (2014).

10. Brambilla V, Fornara F. Molecular control of flowering in response to day length in rice. *J Integr Plant Biology* 55(5):410-8 (2013).
11. van Zanten M, Koini M A, Geyer R, Liu Y, Brambilla V, Bartels D, Koornneef M, Fransz P, Soppe W J. Seed maturation in *Arabidopsis thaliana* is characterized by nuclear size reduction and increased chromatin condensation. *Proc Natl Acad Sci U S A* 108(50): 20219-24 (2011).
12. Sugliani M, Brambilla V, Clerckx EJ, Koornneef M, Soppe WJ. The conserved splicing factor SUA controls alternative splicing of the developmental regulator ABI3 in *Arabidopsis*. *The Plant Cell*, 22(6):1936-46 (2010).
13. Losa A, Colombo M, Brambilla V, Colombo L. Genetic interaction between AINTEGUMENTA (ANT) and the ovule identity genes SEEDSTICK (STK), SHATTERPROOF1 (SHP1) and SHATTERPROOF2 (SHP2). *Sex Plant Reprod*, 23(2):115-21 (2010).
14. Colombo M, Brambilla V, Marcheselli R, Caporali E, Kater MM, Colombo L. A new role for the SHATTERPROOF genes during *Arabidopsis* gynoecium development. *Dev Biol*, 337(2):294-302 (2010).
15. Brambilla V, Kater MM, Colombo L. Ovule integument identity determination in *Arabidopsis*. *Plant Sign and Behavior*, 3(4):246-247 (2008).
16. Battaglia R, Brambilla V, Colombo L. Morphological analysis of female gametophyte development in the *bel1 stk shp1 shp2* mutant. *Plant Biosystems*, 142(3):643-649 (2008).
17. Brambilla V, Battaglia R, Colombo M, Masiero S, Bencivenga S, Kater MM, Colombo L. Genetic and molecular interactions between BELL1 and MADS box factors support ovule development in *Arabidopsis*. *The Plant Cell*, 19(8):2544-56 (2007).
18. Battaglia R, Brambilla V, Colombo L, Stuitje AR, Kater MM. Functional analysis of MADS-box genes controlling ovule development in *Arabidopsis* using the ethanol-inducible Alc gene-expression system. *Mechanisms of Development*, 123(4):267-76 (2006).

BOOK CHAPTERS

1. Galbiati F, Martignago D, Landini M, Gomez-Ariza J, Brambilla V and Fornara F. More food road to survival. Book Chapter: *Genome Editing in Crop Species*. Editors: Roberto Pulu and Giuseppe Gavazzi ISBN: 978-1-68108-468-8 Bentham eBooks (2017).
2. Liu Y, Geyer R, Brambilla V, Nakabayashi K, Soppe, W J. Seed Dormancy. Chapter: *Chromatin dynamics during seed dormancy*. Editor: Allison R. Kermode ISBN 978-1-61779-231-1 Methods Mol Biol 773: 239-57 (2011).
3. Salviamo la Scienza Verde (Save the Green Science) in the book "Proibisco Ergo Sum" edited by Perduca and Gallo (2018). ISBN : 8860445302

SPEAKER IN CONFERENCES (only in the last three years)

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- Cerise M, Martignago D, Chiara M, Galbiati F, Mineri L, Coppini L, Gomez-Ariza J, Spada A, Horner D, Fornara F Brambilla V. CRISPR/Cas9 mutagenesis of florigen targets at the shoot apical meristem of rice Riunione dei Gruppi di Biologia Cellulare e Molecolare, Biotecnologie e Differenziamento della Società Botanica Italiana (SBI), Napoli (Italy) (<https://differenziamentosbi.wordpress.com>). Speaker 12-14.6.2019.
 - Brambilla V, Cerise M, Martignago D, Galbiati F, Horner D, Chiara M, De Rosa M, Spada A and Fornara F. The paralogous rice florigens Hd3a and RFT1 have partially redundant functions during the floral transition. LXII SIGA Annual Congress, Verona (Italy) Selected speaker 25-8.9.2018.
http://www.geneticagraria.it/congress_comunicazione.asp?a_pag=4&id=62&Indice=288Verona

- Brambilla V, Cerise M, Martignago D, Galbiati F, Horner D, Chiara M, De Rosa M, Spada A and Fornara F. The paralogous rice florigens Hd3a and RFT1 have partially redundant functions during the floral transition. 16th International Symposium on Rice Functional Genomics. Tokyo (Japan). Selected speaker 5-7.9.2018. (<http://nodaiweb.university.jp/isrfg2018/eng/program.html>).
- Brambilla V, New Plant Breeding Technologies. Invited speaker in Workshop SOI, la filiera dell'innovazione varietale in frutticoltura. Bologna (Italy) 19.6.2018. (http://kp.eufirin.eu/index.php?id=107&tx_eufrinkb_pi1%5Bactivity%5D=1088&cHash=f744ecbe8ef2baa60ad72e76e963b8e).
- Brambilla V, Cerise M, Martignago D, Aldrovandi M, Vicentini G, Galbiati F, de Rosa M, Fornara F. The paralogous rice florigens Hd3a and RFT1 have partially redundant functions during the floral transition. Riunione dei Gruppi di Biologia Cellulare e Molecolare, Biotecnologie e Differenziamento della Società Botanica Italiana (SBI), Sanremo (Italy) (<https://differenziamentosisbi.wordpress.com>). Selected speaker 15-18.6.2018.
- Brambilla V, CRISPR/Cas9, recenti applicazioni per il miglioramento genetico in agricoltura. ASSOSEMENTI meeting. Invited speaker. (<http://www.sementi.it/articoli/487/comunicare-innovazione-incontro-aperto-assosementi-19-aprile-2018>). Bologna (Italy) Invited speaker 19.4.2018.
- Brambilla V, Plant genome editing. Event organized by AISSA (Italian Society of Scientific Agrarian Societies) Bologna (Italy). Invited speaker 13.7.2017.
- Brambilla V, CRISPR in plants: from basic research to agriculture - XIV ALC Conference - Turin (Italy). Invited speaker 30.7.2017.
- Brambilla V, New Plant Breeding Technologies. The Permanent Italian Mission at the United Nations in Geneva (Switzerland). Invited speaker 30.6.2017.
- Brambilla V, Floral transition in rice is fine-tuned by antagonistic transcription factor complexes. Riunione dei Gruppi di Biologia Cellulare e Molecolare, Biotecnologie e Differenziamento della Società Botanica Italiana (SBI), Bicocca University, Milan (Italy). Selected speaker 14.6.2017.
- Brambilla V, Plant Genome Editing. Italian Parliament, Chamber of Deputies, Rome (Italy). Invited speaker 28.1.17.
- Brambilla V, Repression of flowering by alternative florigen-containing complexes in rice. International Symposium on Rice Functional Genomics, Montpellier (France). Selected speaker 26-29.9.2016

TEACHING ACTIVITIES

- Holder of the Course in Biology 1 -Botany (4 CFU) within the Bachelor Degree in Agro-Technologies for the Environment and the Landscape, (www.agraria.unimi.it/G26/presentazione.php) academic year 2018-2019.
- Holder of the Practical Course in Botany academic year 2018-2019.
- Lecturer for the “Walter Tobagi” school of journalism of the University of Milan. 30.5.19
- Teacher at Pavia Prison, Pavia (Italy). “History of agriculture and how agriculture is changing today” 13.5.19.
- Teaching activity for a School-Work project at the high school R. Cartesio Cinisello Balsamo (Milano) “Plant breeding and biotechnologies” 7.2.2019
- Lectures on “Seed development and seed dormancy” within the Course in Plant Developmental Biology within the Master Course in Biodiversity and Evolution at the University of Milan, academic years 2014-2015, 2015-2016, 2016-2017 and 2017-2018.

- Lectures on “CRISPR/Cas9 for rice breeding” within the Course in Plant Biotechnology at Western Piedmont University, Vercelli, academic year 2016-2017.
- Supervision of Undergraduate Students at Milan University and at the Max Planck Institute for Plant Breeding Research, Cologne (2006-present): 11 master students, 2 PhD students.
- Holder of the Practical Course in Botany, academic years 2004-2005 and 2005-2006.

CONFERENCE ORGANIZER

- Green Biotechnology Commission during Associazione Coscioni Annual Meeting 5-7.10.2018 at the University of Milan. <https://www.radioradicale.it/scheda/553802/xv-congresso-dellassociazione-luca-coscioni-quarta-commissione-modificazione-genetica>
- Rice Days Workshop at the University of Milan 10-11.7. 2018.

SCIENTIFIC COMMISSIONS

- Member of the PhD School in Agriculture, Environment and Bioenergy of the University of Milan, 2018.
- Judging Committee for the final exam of the PhD School in Agrisystem- Catholic University of Piacenza, Piacenza, Italy 14.12.2018.

OUTREACH ACTIVITIES

- Part of the TV program “Presi Diretta” - on the Italian television “RAI TRE” on the topic of Plant Genome Editing - on TV in September 2019.
- Invited speaker at “Mantova Food and Science Festival” [https://www.foodsciencefestival.it/en/-Mantova \(Italy\) 18.5.19](https://www.foodsciencefestival.it/en/-Mantova%20(Italy)%2018.5.19)
- Founding member of the group “SeTA -Science and Technology for Agriculture” / <https://www.setanet.it/chi-siamo/>). SeTA is a group of experts in Agriculture with the aim of disseminating a correct scientific information.
- Invited speaker at the meeting “New sustainable agriculture” at the Italian Senate, Rome Italy 19.3.2019 <https://www.radioradicale.it/scheda/568449/la-nuova-agricoltura-sostenibile-innovazione-a-sostegno-del-settore-agricolo-per-la>
- Invited speaker at the meeting “Freedom and Fundings for the Italian Scientific Research”, Sala Parlamentino Consiglio Nazionale dell’Economia e del Lavoro (CNEL), Rome, Italy 20.2.2019
- Invited speaker at the meeting “An analysis of modern agriculture” organized by the group Agrarian Sciences, Florence <https://agrariansciences.blogspot.com/2019/01/agricoltura-contemporanea-unanalisi.htm> 27.1.2019
- Speaker at HUG Milano - “Feed the Future” - <https://www.facebook.com/events/2473701145990163/> 17.12.2018
- Author of “Hybrid rice will be biotech” in the blog of the Luca Coscioni Association <https://www.associazionelucacoscioni.it/notizie/blog/arrivo-riso-ibrido/> 13.12.2018
- Participant in the Research Open Day at the University of Milan for Students enrolled in the Faculty of Food and Environmental Sciences. 19.11.2018.
- Speaker at Milano BOOKCITY #BCM18 during the event organized by Università degli Studi di Milano, Università Bicocca - Biotechnologies, fears, expectations, hopes (<https://bookcitymilano.it/eventi/2018/bioteconologie-paure-aspettative-e-speranze>). 16.11.2018.
- Invited speaker at the Science Festival in Fasano 2018 in Fasano (Brindisi), Italy 20.10.2018.

- Author in the blog Agrarian Sciences (<https://agrariansciences.blogspot.com>) 27.7.2018.
- Organizer of the Solstice Party at Città Studi Botanical Garden, Milan 21.6.2018.
- Author of The Plant Cell In a Nutshell : How Signals in Plant Leaves Influence Flowering <https://plantae.org/leaves-influence-flowering/> 17.12.2017.
- Organizer of the event Race to Flowering, within the event Meet Me Tonight, the Researchers' Night in Milan 29.9.2017.
- Part of the TV show on the public Italian television (RAI) Superquark on Plant Breeding and New Plant Breeding Technologies in Agriculture 25.7.2015.
- Organizer of laboratories for children to explain the DNA structure for EPSO Fascination of Plants Day 2015 and 2017, Città Studi Botanical Garden, Milan.
- Invited speaker at Accademia Italiana della Cucina to talk about Rice history and breeding, Capracotta (Isernia) Italy. <http://www.capracotta.com/en/node/1715> 16.10.2014.
- Organizer and speaker of the event at “aperitivo” per EXPO, Milan 2014. Breeding rice for flowering.

FUNDINGS AND FELLOWSHIPS

- Torno Subito - Regione Lazio- 6 months fellowship for a visiting scientist from La Sapienza University.
- 2019-2020 “Piano di Sostegno alla Ricerca” of the Department of Agricultural Sciences of the University of Milan. Project title: COAT - La cuticola, un target per il miglioramento genetico in mais.
- 2018-2019 “Piano di Sostegno alla Ricerca” of the Department of Agricultural Sciences of the University of Milan. Project title: SORRISO - Rice Crop Impairment by Abiotic and Biotic Stresses.
- 2017-2019 Funding from BASF Italia supporting rice molecular breeding programs.
- 2016-2018 Funding from Lugano Sementi rice seed company supporting rice molecular breeding programs.
- 2009-2011 Alexander von Humboldt Foundation (Germany) fellowship for post-doc researchers including funding for research. Project title: Characterization of SUA, a splicing factor active during seed development in Arabidopsis.
- 2005-2007 Fellowship for graduate students (Italy).
- 2004 Fellowship for supporting the training of young researchers at the University of Milan, Department of Biology.
- 2001 Socrates/Erasmus fellowship for Master students at Utrecht University, Department of Biology (the Netherlands).

SCIENTIFIC EDITOR

- Frontiers in Plant Science - Plant Development and Evo Devo (<https://www.frontiersin.org/journals/plant-science/sections/plant-development-and-evodevo#>)

REVIEWER FOR SCIENTIFIC JOURNALS

- The Plant Cell (USA) (<http://www.plantcell.org/>)
- Plant Biosystems (Italy) - Official Journal of the Società Botanica Italiana (<https://www.tandfonline.com/toc/tplb20/current>)
- BMC Plant Biology (UK) (<https://bmcplantbiol.biomedcentral.com>)
- Journal of Experimental Botany (UK) (<https://academic.oup.com/jxb>)
- Plant Cell Reports
- Frontiers in Plant Science
- The Plant Journal
- International Journal of Molecular Sciences (CH) (<http://www.mdpi.com/journal/ijms>)

REVIEWER FOR FUNDING AGENCIES

- Czec Science Foundation <http://www.gacr.cz/en/>
- Referee for Italian Grants (from the REPRISE database)

ABILITAZIONI SCIENTIFICHE NAZIONALI

- 2019-2025 (#6991) Settore Concorsuale 05/A1, Botanica Generale Fascia :2
- 2018-2024 (#73649) Settore Concorsuale: 07/E1, Chimica Agraria, Genetica Agraria, Pedologia Fascia: 2.
- 2018-2024 (#73648) Settore Concorsuale: 05/A2, Fisiologia Vegetale Fascia: 2

RESEARCH TECHINCAL SKILLS

- Plant developmental biology (rice, Arabidopsis), microscopy (Confocal, FRET/FLIM, SEM) molecular biology (DNA, RNA; proteins), rice genetics, plant in vitro culture and regeneration, rice transformation (Agrobacterium-mediated and biolistic), genome editing by CRISPR/Cas9 -SDN1 and SDN2 application, Genomics (RNA-seq, QTL-seq, Mut-map).

LANGUAGES

- Italian (native),
- English (excellent),
- German (good).

Data

04/08/2019

Luogo

Milano