

**ALLEGATO B**

UNIVERSITÀ DEGLI STUDI DI MILANO

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**Silvio Collani**

## **CURRICULUM VITAE**

**INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)**

COGNOME	COLLANI
NOME	SILVIO
DATA DI NASCITA	18.08.1981

**INSERIRE IL PROPRIO CURRICULUM  
(non eccedente le 30 pagine)**

**First and last name:** Silvio Collani  
**Date of birth:** August 18, 1981  
**Nationality:** Italian  
**Address:** Morkullevägen 18L, lgh 1001  
90651 Umeå  
Sweden  
**Mobile phone:** +46 722498890  
**e-mail:** [silvio.collani@umu.se](mailto:silvio.collani@umu.se)

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## Education

2012 PhD in Plant Biotechnology, University of Padova (Italy).  
2008 Master Degree *cum laude* in Plant and Environmental Biotechnology, University of Perugia (Italy).  
2006 Bachelor Degree *cum laude* in Biotechnology, University of Perugia (Italy).

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## Work experiences

Oct 2019 – to present *First Research Engineer permanent position.* Umeå University, Umeå (Sweden)  
Oct 2017 – Sep 2019 *First Research Engineer.* Umeå University, Umeå (Sweden)  
Oct 2015 – Sep 2017 *Postdoctoral Research Fellow.* Umeå University, Umeå (Sweden)  
Jul 2012 – Sep 2015 *Postdoctoral Research Fellow.* Max Planck Institute for Developmental Biology, Tübingen (Germany)  
Jan 2009 – Apr 2012 *PhD student.* University of Padova, Padova (Italy)  
Nov 2010 – Jul 2011 *Visiting Research Fellow.* Harvard University, Cambridge (Massachusetts, USA)  
May 2010 – Aug 2010 *Visiting Research Fellow.* Wageningen University, Wageningen (The Netherlands)  
Sep 2008 – Feb 2009 *Graduate Research Fellow.* Molecular Biology Institute of Barcelona, Barcelona (Spain)  
Sep 2006 – Jan 2007 *Erasmus student.* KVL University, Copenhagen (Denmark)  
2001 - 2003 *Research assistant.* Forestry Research Centre, Arezzo (Italy)

## Awards and fellowships

2015 (2013-)	Alexander Von Humboldt postdoctoral fellowship
2013 (2012-)	Max Planck postdoctoral fellowship
2011 (2009-)	PhD Ministerial fellowship
2009	SIGA AWARD 2009, <b>Italian Society of Agricultural Genetics</b>
2009 (2008-)	“Leonardo da Vinci” fellowship: “UniPharma Graduates 4” project, University “La Sapienza”, Roma (Italy)
2007 (2006-)	“Erasmus” fellowship, University of Perugia (Italy)

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## Courses and trainings

2014	July 7th - August 1st. Summer school: "Integrated structural cell biology, from molecules to cells and organisms: thinking out of the box". École De Physique des Houches. Les Houches (France)
2010	5-9 July. Training School on Apomixis: theory and practice. Wageningen UR (The Netherlands). E-COST Action FA0903
2008	February-July. Training on apomixis in <i>Poa pratensis</i> L. Applied Biology Department, University of Perugia (Italy)
1999	June-September. Training on micropropagation and isoenzymatic analyses. Forestry Research Centre, Arezzo (Italy)

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## Supervision activities

### Undergraduate mentoring

- Diana Saez Chica. (Fall 2016 – Spring 2017). Co-supervisor in her Master thesis titled: Characterization of FD target genes and their role in flowering time. Supervisor: Prof. Markus Schmid
- Giovanna Capovilla. (Winter 2011 – Spring 2012). Co-supervisor in her Master thesis titled: Identification of molecular markers and candidate genes for male sterility in leaf chicory (*Cichorium intybus* L.). Supervisor: Prof. Gianni Barcaccia
- Francesca Moretto. (Fall 2009 – Spring 2010). Co-supervisor in her Master titled: Self-incompatibility in olive (*Olea europaea* L.). Supervisor: Prof. Gianni Barcaccia

### PhD and Postdoc lab supervisor

- Dennis Berg Holt (Spring 2014). PhD at Aarhus University, Aarhus, Denmark.

- Andreas Hecker (Fall 2014 – Spring 2015). PhD at Tübingen University, Tübingen, Germany. This work has been published in Shanks *et al.*, 2018.
  - Corinna Speth (Spring 2015 – Summer 2015). Postdoc at Tübingen University, Tübingen, Germany. This work has been published in Speth *et al.*, 2018.
  - Prathibha Muralidhara (Summer 2016). PhD at Würzburg University, Würzburg, Germany. This work is in preparation for submission.
  - Marina Silvestre Vaño (Summer 2017 – Fall 2017). PhD at the Instituto de Biología Molecular y Celular de Plantas, Valencia, Spain. This work has been published in Goretti *et al.*, 2020.
  - Aime Jaskolowski (Winter 2018 – Spring 2019). PhD at Fundación Instituto Leloir, Buenos Aires, Argentina.
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## Participation in scientific conferences

### Oral communications:

- LIV Congresso Annuale della Società Italiana di Genetica Agraria. Matera (Italy).  
Collani S, Galla G, Alagna F, Caceres ME, Baldoni L, Muleo R, Colao MC, Perrotta G, Barcaccia G. Recent molecular findings lead to a new hypothesis on the self-incompatibility system in olive. 27-30 September 2010
- Max Planck Institutes Triangle Meeting. Cologne (Germany).  
Collani S. Unraveling the molecular mechanisms of FD and FT interaction. 23-24 September 2013
- Workshop on Molecular Mechanisms Controlling Flower Development. Padova (Italy).  
Collani S, Neumann M, Yant L, Schmid M. New insights on the bZIP transcription factor FD promoting flowering in *Arabidopsis thaliana*. 03-07 September 2017
- Workshop on Molecular Mechanisms Controlling Flower Development. Cote d'Azur (France).  
Collani S, Schmid M. Atypical DNA-binding site could reveal new FD interactors in *Arabidopsis thaliana*. 18-22 June 2019

### Poster presentations:

- LIII Congresso Annuale della Società Italiana di Genetica Agraria. Torino (Italy).  
Collani S, Galla G, Baldoni L, Barcaccia G. Self-incompatibility in olive. 16-19 September 2009
- LIV Congresso Annuale della Società Italiana di Genetica Agraria. Matera (Italy).  
Facella P, Alagna F, Colao M.C, Lopez L, Carbone F, Galla G, Collani S, Barcaccia G, Baldoni L, Rugini E, Perrotta G, Muleo R. Comparative 454 pyrosequencing of transcripts from three olive genotypes during flower development. 27-30 September 2010

- LIV Congresso Annuale della Società Italiana di Genetica Agraria. Matera (Italy).  
Ambrosi DG, Galla G, Collani S, Barbi T, Purelli M, Fabbri A, Barcaccia G. Genetic diversity analysis of *Jatropha curcas* L. using SNP based haplotypes for genes controlling fatty acid biosynthesis and lipid break down in seeds. 27-30 September 2010
- LV Congresso Annuale della Società Italiana di Genetica Agraria. Cittadella di Assisi (Italy).  
Collani S, Alagna F, Caceres ME, Colao MC, Galla G, Ramina A, Baldoni L, Muleo R, Perrotta G, Barcaccia G. Cytological and molecular evidences support a sporophytic self-incompatibility system in olive. 19-22 September 2011
- LV Congresso Annuale della Società Italiana di Genetica Agraria. Cittadella di Assisi (Italy).  
Barcaccia G, Collani S, Galla G, Ghedina A, Tiozzo S, Tiozzo R. Discovery of nuclear male-sterility in red chicory: genetic analysis and methods for the marker-assisted breeding of F1 hybrid varieties. 19-22 September 2011
- Flower Development Workshop. Aiguablava (Spain).  
Costa Galvão V, Collani S, Horrer D, Schmid M. Regulation of flowering time by high ambient temperature. 07-11 June 2015
- UPSC Days. Umeå (Sweden).  
Collani S, Schmid M. Characterization of transcription factors: a pipeline. Experimental evidence on the transcription factor FD in *Arabidopsis thaliana*. 30-31 May 2016
- 9th Bonn Humboldt Award Winners' Forum "Frontiers in Biogeography, Ecology, Anthropology, and Evolution. Humboldt and the 'Cosmos' revisited in the 21st Century". Bonn (Germany).  
Collani S. To flower or not to flower: the Hamletic question of plants. 16-20 October 2019

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## Reviewing activity for scientific journals

- Journal of Experimental Botany  
<https://academic.oup.com/jxb> IF 5.9
- Nature Plants  
<https://www.nature.com/nplants/> IF 13.3
- New Phytologist  
<https://nph.onlinelibrary.wiley.com/journal/14698137> IF 8.5
- Plant Cell  
<http://www.plantcell.org/> IF 9.6
- Plant Physiology  
<http://www.plantphysiol.org/> IF 6.9
- PNAS  
<https://www.pnas.org/> IF 9.4

- Science  
<https://www.sciencemag.org/> IF 41.8
  - The Plant Journal  
<https://onlinelibrary.wiley.com/journal/1365313x> IF 6.1
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### **Responsibility for scientific studies and researches funded by public or private institutions**

- Responsible of one “Max Planck Postdoctoral fellowship” allocated from Max Planck Institute for Developmental Biology in Tübingen (Germany) of euro 27300 (salary). From 1 July 2012 to 30 September 2013.
  - Responsible of one “Alexander von Humboldt Postdoctoral Fellowship” allocated from Alexander von Humboldt Stiftung (Germany), of euro 31800 (salary) and euro 19800 (research), total of euro 51600. From 1 October 2013 to 30 September 2015.
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### **Participation in research activities with national or international collaborations**

- Collaboration with the research groups headed by Prof. Catherine Bellini (Umeå University, Sweden) and Prof. Karin Ljung (Swedish University of Agricultural Science, Sweden). Aim: Study of the mechanism of auxin inactivation to regulate cellular homeostasis in conifer (Brunoni *et al.*, 2020).
- Collaboration with the research groups headed by Prof. Catherine Bellini (Umeå University, Sweden) and Prof. Karin Ljung (Swedish University of Agricultural Science, Sweden). Aim: Develop of a new system to study the catabolic activity of enzymes involved in auxin inactivation processes (Brunoni, Collani *et al.*, 2019).
- Collaboration with the research group headed by Prof. Francisco Madueño (Universitat Politècnica de Valencia, Spain). Aim: Study of intracellular mobility of TFL1 and its role in the regulation of floral transition and inflorescence development in *Arabidopsis thaliana* (Goretti, Silvestre, Collani *et al.*, 2020).
- Collaboration with the research groups headed by Prof. Fabio Fornara and Prof. Roberto Mantovani (Università degli Studi di Milano, Italy), Prof. Ryohei Terauchi and Prof. Hiroki Takagi (Kyoto University, Japan). Aim: Study of key genes involved in floral transition in rice and how some allelic variants of these genes allowed the adaptation of rice to northern latitudes (Goretti *et al.*, 2017).
- Collaboration with the research group headed by Prof. Sascha Laubinger (University of Tübingen). Aim: Identification and characterization of *PORCUPINE* (*PCP*), gene involved in alternative mRNA splicing in response to different ambient temperatures. (Capovilla *et al.*, 2018).
- Collaboration with the research groups headed by Prof. Joseph Kieber (University of North Carolina, USA), Prof. Klaus Harter (University of Tübingen, Germany), Prof. Dierk Wanke (Saarland University, Germany) and Prof. Eric Schaller (Dartmouth College in Hanover, USA). Aim: Characterization of key genes involved in the response to cytokinins in *Arabidopsis thaliana* (Shanks *et al.*, 2018).

- Collaboration with the research group headed by Prof. Elena Kramer (Harvard University, USA). Aim: Investigation of the three-dimension elaboration of the *Aquilegia* petal spur (Yant *et al.*, 2015).
- Collaboration with the research group headed by Prof. Hans de Jong (Wageningen University, The Netherlands). Aim: Investigation of meiotic mutants in *Arabidopsis thaliana* and male-sterile mutants in chicory (Collani, 2012).
- Collaboration with the research groups headed by Prof. Gaetano Perrotta (ENEA Centro Ricerche Trisaia di Matera, Italy), Prof. Rosario Muleo (Università degli Studi della Tuscia) and Dr. Luciana Baldoni (CNR Istituto di Genetica Vegetale di Perugia, Italy). Aim: Study of a new hypothesis of self-incompatible system in olive (Collani *et al.*, 2012).
- Collaboration with the research groups headed by Prof. Pietro Tonutti (Scuola Superiore Sant'Anna di Pisa, Italy) and Dr. Luciana Baldoni (CNR Istituto di Genetica Vegetale di Perugia, Italy). Aim: Characterization of the transcriptome during fruit development in olive (Galla *et al.*, 2009).

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## Membership to Societies and Foundations

2021 – to present

Member of the Scandinavian Plant Physiology Society (SPPS)

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## Scientific interests and future plans

I have been always interested in functional and evolutionary biology and how living organisms interact with each other and with the surrounding environment. Since 2001 I have worked in eight different laboratories belonging to eight internationally renowned Italian and foreign institutions. From 2001 to 2003 I worked with several research contracts at the Forestry Research Centre (Arezzo, Italy), focusing on tree species and the their interaction with the environment in order to scientifically develop sustainable forestry in our territory. From 2007 to 2008 I worked with Prof. Emidio Albertini at the University of Perugia studying apomixis in *Poa pratensis*. In 2008 I spent six months at the Molecular Biology Institute of Barcelona in Spain, working on the effect of ncRNAs in the response hormone in breast cancer cells. From 2009 to 2012 I did my PhD with Prof. Gianni Barcaccia at the University of Padova (Italy), working on some of the main reproductive barriers in two important Italian crops. In details I investigated the genetic and molecular bases of self-incompatibility in olive and male-sterility in chicory. During my PhD I spent four months (2010) at the Wageningen University (The Netherlands) with Prof. Hans de Jong working on meiotic mutants of *Arabidopsis thaliana*, and nine months at the Harvard University (USA) with Prof. Elena Kramer working on the three-dimensional elaboration of the petal spur in *Aquilegia*. In 2012 I won a Max Planck Postdoctoral Fellowship and I started my postdoc at the Max Planck Institute for Developmental Biology in Tübingen (Germany) with Prof. Markus Schmid where I studied floral transition in *Arabidopsis thaliana*. From 2013 to 2015 I continued my research at the Max Planck Institute for Developmentla Biology thanks to a prestigious Alexander von Humboldt Postdoctoral Fellowship. In 2015 I received a postdoc contract at the Umeå University (Sweden) for continuing my studies in floral transition. I also started to investigate auxin metabolism in conifer and to develop new highly innovative methods to investigate protein-protein interactions. Since 2019 I have a permanent contract as First Research Engineer at the Umeå University. In the last year and a half, I have been building up a line of research consisting in

developing highly innovative methods for studying protein-protein interaction in a genome wide scale. We recently started the patenting process for the method and I am the main inventor.

Thanks to my several international experiences I have gained strong experience in reproductive aspects of both model species and crops, in molecular mechanisms and environmental clues regulating the flowering transition, in the evolution of flowers morphology and reproductive barriers in both model species and crops, in the study of hormone metabolism in conifers. I also gained experience in design, plan, execute and publish entire lines of research, applying for funding and ability to create constructive collaborations.

My short-medium term plans consist in bringing my expertise to the Department of Biosciences and start to establish internal collaborations with the already active groups. This will allow me to perform research and, at the same time, to understand which aspects of the research are still not deeply investigated so I can direct my attention in that direction, therefore expanding the portfolio of the Department. I also want to continue my research on the reproductive aspects of plants, possibly transferring interesting outcomes from *Arabidopsis* to other plant species like crops with a particular focus on monocotyledon. For doing that I can count on my well established collaborations with international research groups. At the same time of the research activity, I also want to start to gain experience in teaching and supervising students. Last, but not less important, I want to start to apply immediately to grants to national/international public/private institutions/foundations, because it is well known that one of the main task of a researcher is to attract external funding to guarantee high level of research.

My medium-long term plans consist in acquiring independence for my research, optimizing my teaching skill, establish fruitful collaborations and continue to apply for funding.

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## Publications

- Brunoni F., Collani S., Casanova Saez R., Simura J., Karady M., Schmid M., Ljung K., Bellini C. Conifers exhibit a characteristic inactivation of auxin to maintain tissue homeostasis. *New Phytologist* 2019, doi: <https://doi.org/10.1111/nph.16463>.
- Goretti D.\*, Silvestre M.\*, Collani S.\*, Langenecker T., Méndez C., Madueno P., Schmid M. TERMINAL FLOWER 1 functions as a mobile transcriptional co-factor in the *Arabidopsis thaliana* shoot apical meristem. *Plant Physiology* 2020, doi: <https://doi.org/10.1104/pp.19.00867>. (\*) equally contribution
- Brunoni F.\*, Collani S.\*, Šimura J., Schmid M., Bellini C., Ljung K. A bacterial assay for rapid screening of IAA catabolic enzymes. *Plant Methods* 2019, 15:126. doi: <https://doi.org/10.1186/s13007-019-0509-6>. (\*) equally contribution
- Alagna F., Caceres M. E., Pandolfi S., Collani S., Mousavi S., Mariotti R., Cultrera N. G. M., Baldoni L., Barcaccia G. The paradox of self-fertile varieties in the context of self-incompatible genotypes in olive. *Frontiers in Plant Science* 2019, doi: 10.3389/fpls.2019.00725.
- Collani S., Neumann M., Yant L., Schmid M. FT modulates genome-wide DNA-binding of the bZIP transcription factor FD in *Arabidopsis thaliana*. *Plant Physiology* 2019, doi: <https://doi.org/10.1104/pp.18.01505>.
- Speth C., Szabo E. X., Martinho C., Collani S., Oven-Krockhaus S., Richter S., Droste-Borel I., Maček B., Stierhof YD., Schmid M., Liu C. and Laubinger S. *Arabidopsis* RNA processing factor SERRATE regulates the transcription of intronless genes. *eLife* 2018, doi: 10.7554/eLife.37078.001



- Capovilla G., Delhomme N., Collani S., Shutava I., Bezrukov I., Symeonidi E., de Francisco Amorim M., Laubinger S., Schmid M. *PORCUPINE (PCP)* regulates development in response to temperature through alternative splicing. *Nature Plants* 2018, doi: 10.1038/s41477-018-0176-z
- Shanks C. M., Hecker A., Cheng CY., Brand L., Collani S., Schmid M., Schaller G. E., Wanke D., Harter K., Kieber J. J. The BASIC PENTACYSTEINE transcription factors in a sub-set of cytokinin signaling responses. *The Plant Journal* 2018, doi: 10.1111/tpj.13962
- Goretti D., Martignago D., Landini M., Brambilla V., Gómez-Ariza J., Gnesutta N., Galbiati F., Collani S., 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 Genet* 2017, 13(1): e1006530. doi:10.1371/journal.pgen.1006530
- Costa Galvão V.\*, Collani S.\*, Horrer D., Schmid M. Gibberellic acid signaling is required for ambient temperature-mediated induction of flowering in *Arabidopsis thaliana*. *The Plant Journal* 2015, doi: 10.1111/tpj.13051. (\*) equally contribution
- Yant L., Collani S., Puzey J, Levy C, Kramer E.M. Molecular basis for three-dimensional elaboration of the *Aquilegia* petal spur. *Proc. R. Soc. B* 2015, 282: 20142778. doi: 10.1098/rspb.2014.2778
- Ambrosi D.G., Galla G., Collani S., Barcaccia G. Oil rich seeds of *Jatropha curcas* as a renewable source of biodiesel: genotyping clones of cultivated varieties and cloning genes for fatty acid biosynthesis. *The International Journal of Plant Reproductive Biology* 2013, 5(2): 102-117
- Collani S. (2012). Reproductive barriers in crop plants: understanding the genetic and molecular bases of self-incompatibility in olive and male-sterility in chicory. PhD thesis. University of Padua. Available at: <http://paduaresearch.cab.unipd.it/4615/>
- Collani S., Barcaccia G. Development of a rapid and inexpensive method to reveal natural antisense transcripts. *Plant Methods* 2012, 8:37. doi: 10.1186/1746-4811-8-37
- Collani S., Galla G., Ramina A., Barcaccia G., Alagna F., Caceres ME., Baldoni L., Muleo R., Perrotta G. Self-incompatibility in olive: a new hypothesis on the S-locus genes controlling pollen-pistil interaction. *Acta Hort. (ISHS)* 2012, 967:133-140
- Collani S., Moretto F., Galla G., Alagna F., Baldoni L., Muleo R. A new hypothesis on the mechanism of self-incompatibility occurring in olive (*Olea europaea* L.): isolation, characterization and expression studies of slg and srk genes as candidates for a sporophytic self-incompatibility system. *Journal of Biotechnology* 2010, 150 (Supplement):502. doi: 10.1016/j.jbiotec.2010.09.784
- Ambrosi DG., Galla G., Collani S., Barcaccia G. Cloning and bioinformatic characterization of genes controlling key steps of the fatty acid biosynthesis and lipid breakdown in seeds of *Jatropha curcas* L. *Journal of Biotechnology* 2010, 150 (Supplement):19. doi: 10.1016/j.jbiotec.2010.08.061

- Galla G., Barcaccia G., Ramina A., Collani S., Alagna F., Baldoni L., Cultrera N., Martinelli F., Sebastiani L., Tonutti P. Computational annotation of genes differentially expressed along olive fruit development. BMC Plant Biology 2009, 9:128. doi: 10.1186/1471-2229-9-128

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## Bibliometric indicators

	Number of articles	Number of citations	H index
Scopus	14	266	9
Web of Science	17	263	9
Google Scholar	18	383	10

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## Letters of recommendation

The following colleagues have agreed to provide letters of recommendation upon request:

**Prof. Markus Schmid**

mail: [markus.schmid@umu.se](mailto:markus.schmid@umu.se)

Dept. of Plant Physiology

Umeå University

Artedigränd 7, SE-901 87 Umeå

Sweden

**Prof. Elena Kramer**

mail: [ekramer@oeb.harvard.edu](mailto:ekramer@oeb.harvard.edu)

Dept. of Organismic and Evolutionary Biology

Harvard University

16 Divinity Ave, Biolabs 1119A, 02138 Cambridge MA

USA

**Prof. Levi Yant**

mail: [Levi.Yant@nottingham.ac.uk](mailto:Levi.Yant@nottingham.ac.uk)

Dept. Of Cells, Organisms and Molecular Genetics

University of Nottingham

Room B103 Life Sciences, Nottingham, NG7 2RD

United Kingdom

Data

16.03.2021

Luogo

Umeå, Sweden