

UNIVERSITÀ DEGLI STUDI DI MILANO

Procedura di valutazione per la chiamata a professore di I fascia da ricoprire ai sensi dell'art. 24, comma 6, della Legge n. 240/2010 per il settore concorsuale 05/A2 - Fisiologia Vegetale, (settore scientifico-disciplinare BIO/04 - Fisiologia Vegetale) presso il Dipartimento di BIOSCIENZE, Codice concorso 4074

Alex Costa

CURRICULUM VITAE

INFORMAZIONI PERSONALI

COGNOME	COSTA
NOME	ALEX
DATA DI NASCITA	08/08/1975

ORCID

orcid.org/0000-0002-2628-1176

a) Attività di ricerca e pubblicazioni scientifiche

SCIENTIFIC INTERESTS

My main scientific interest is the study of the role played by calcium ions (Ca^{2+}) in plant signal transduction pathways in response to developmental and environmental stimuli. My work is mainly based on the use of the state of the art of imaging tools which I have also contributed to develop (e.g. Costa et al., 2010; Bonza et al., 2013; Costa et al., 2013; Loro et al., 2012; 2013; 2016). Most of the tools I have developed have been instrumental in establishing fruitful national and international collaborations and in answering important biological questions in the field of Ca^{2+} transport and homeostasis in plants (e.g. Wagner et al., 2015; Corso et al., 2018; Shkolnik-Inbar et al., 2018). The tools developed in my lab have been requested and used by approx. 80 laboratories worldwide (USA, Israel, Asia, Russia, Australia, South America, China, Japan, etc.).

The following list of scientific topics in the field of Plant Physiology summarizes most of my research interests:

- Ca^{2+} signaling in different plant signal transduction pathways;
- Study and identification of molecular mechanisms involved in the transport of Ca^{2+} across plant membranes (Ca^{2+} -ATPase, Ca^{2+} /cation transporters, Ca^{2+} -permeable channels, regulatory proteins for the Ca^{2+} transport across membranes);
- *In vivo* molecular imaging of different second messengers and metabolites (pH; RedOx status of GSH; Reactive Oxygen Species; Reactive Nitrogen Species; ATP);
- Development of new imaging technologies (e.g. Light Sheet Fluorescent Microscopy for FRET detection);
- Role of Ca^{2+} and other second messengers in Plant Pathogen interaction;
- Study of the role of Ca^{2+} , ROS and RedOx status of GSH in response to biotic and abiotic stress;
- Study of the role of Ca^{2+} signaling in the salt stress response in *Arabidopsis thaliana*;
- Study of salt tolerance mechanisms in *Oryza sativa*;
- Study of ions transport in plant cells (K^+ , Na^+ , Ca^{2+} , H^+).

SCIENTIFIC RESEARCH ACTIVITIES

- 2019 Invited to become adjunct professor for the Shanxi Normal University, China together with Prof. June Kwak, Dr. Sébastien Thomine and Prof. Rainer Hedrich. Documents still need to be filled.
- 2019 Visiting Scholar at Faculty of Textile Science and Technology, Shinshu University, Ueda, Nagano, Japan (3 weeks).
- 2015-ongoing Associate Professor (BIO/04), Department of Biosciences, University of Milan, Italy. Present employment.**
- 2014 Visiting Scholar at Faculty of Textile Science and Technology, Shinshu University, Ueda, Nagano, Japan (4 months).
- 2011-15 Assistant Professor (BIO/04), Department of Biosciences, University of Milan, Italy.
- 2010-11 Research fellow (Assegno di Ricerca), Department of Biology, University of Padova, Italy.
- 2009 Research fellow (Co.Co.Co), Department of Biology, University of Padova, Italy.
- 2007-9 Research fellow (Assegno di Ricerca), Department of Biology, University of Padova, Italy.
- 2007 Research fellow, Department of Biology, University of Padova, Italy.
- 2007 Research fellow, Department of Biology, University of Bologna, Italy.
- 2005-6 Postdoctoral fellow, Division of Biological sciences, University of California San Diego (UCSD), USA.
- 2004-6 Postdoctoral fellow, Department of Biology, University of Padova, Italy.
- 2004 PhD Degree (Doctoral) in Plant Biotechnologies, Department of Biology, University of Padova, Italy. Supervisor Prof. Fiorella Lo Schiavo. Date of award 23/01/2004.
- 2003-4 Research fellow, Department of Biology, University of Padova, Italy.
- 2003 Visiting Doctoral Student, INRA Institute de Biochimie et Physiologie Moléculaire des Plantes, Montpellier, France (4 months).
- 2000-3 Doctoral student in Plant Biotechnologies, University of Padova, Italy.
- 2000 Magna cum laude "Laurea" (equivalent to master degree) in Natural Science. Department of Biology, University of Padova. Date of award 18/07/2000.

SCIENTIFIC EDUCATION AND QUALIFICATION

- 2018 School of Pure and Applied Biophysics. "Intracellular ion channels and transporters in plant and animal cells". Venice, Italy.
- 2009 School of Pure and Applied Biophysics. "Electrogenic transport in plant cells and organelles". Venice, Italy.
- 2004 School of Pure and Applied Biophysics. "Ion channels and transporters in plant cells". Venice, Italy.
- 2004 PhD Degree (Doctoral) in Plant Biotechnologies, Date of award 23/01/2004.
- 2002 EMBO Practical Course. "Plant Development: Molecular and Cellular Basis" Oeiras, Portugal.
- 2000 Magna cum laude "Laurea" (equivalent to masters degree) in Natural Science. Department of Biology, University of Padova. Date of award 18/07/2000.

PRIZES AND AWARDS

- 2017 **Awarded the National Habilitation to the position of Full Professor of Plant Physiology (BIO/04-A5/02).**
- 2016 **Assunta Baccharini Melandri Award.** SIBV Society award for young scientists which have provided a substantial contribution for the development of the Italian Plant Physiology (<http://www.sibv.eu/bando-dei-premi>).
- 2014 **Awarded the National Habilitation to the position of Associate Professor of Plant Physiology (BIO/04-A5/02).**
- 2011-14 **VQR Evaluation. Excellent. 1.00 Score for every presented publication.**

HONORS

- 2019 “Systemic Calcium Wave Propagation in *Physcomitrella patens*” and “Light Sheet Fluorescence Microscopy quantify Calcium oscillations in root hair of *Arabidopsis thaliana*” have been cited in the Plant Cell and Physiology for their editorial entitled “**Sixty Years of Plant and Cell Physiology**”.
- 2019 “Identification of novel inhibitors of auxin-induced Ca^{2+} signaling via a plant-based chemical screen” has been cited by Dr. Francesca Resentini in the ASBP rubric “**What We’re Reading**” (February the 22th, <https://plantae.org/identification-of-novel-inhibitors-of-auxin-induced-ca2-signaling-via-a-plant-based-chemical-screen-plant-physiol/>).
- 2018 “Cellular Ca^{2+} Signals Generate Defined pH Signatures in Plants” has been reviewed by Dr. Kathleen L Farquharson, Science Editor for Plant Cell, in the **In Brief** article: “Small Talk: Protons Help Calcium Get the Message Across”, (December, <http://www.plantcell.org/content/30/12/2885?rss=1>).
- 2017 “The kinase ERULUS controls pollen tube targeting and growth in *Arabidopsis thaliana*” has been cited by Dr. Alecia Biel in the ASBP rubric “**What We’re Reading**” (November the 28th, <https://plantae.org/the-kinase-erulus-controls-pollen-tube-targeting-and-growth-in-arabidopsis-thaliana/>).
- 2017 “Light Sheet Fluorescence Microscopy quantify Calcium oscillations in root hair of *Arabidopsis thaliana*” has been chosen for the **Cover Image** of the July Issue (<https://academic.oup.com/pcp/issue/58/7>).of “**Plant Cell Physiology**” and selected as a **Research Highlights** for the same issue.
- 2017 “Light Sheet Fluorescence Microscopy quantify Calcium oscillations in root hair of *Arabidopsis thaliana*” has been cited by Dr. Mary Williams in the ASBP rubric “**What We’re Reading**” (April the 14th, <http://blog.aspb.org/2017/04/14/what-were-reading-april-14/>).
- 2016 “Chloroplast-specific in vivo Ca^{2+} imaging using Yellow Cameleon fluorescent protein sensors reveals organelle-autonomous Ca^{2+} signatures in the stroma” has been post-reviewed by Prof. Julian Schroeder in the “**Faculty of 1000 Biology**”.
- 2013 **Cover Image** for the August Issue of “**Cold Spring Harbor Protocols**” (<http://cshprotocols.cshlp.org/content/2013/8.toc>).
- 2012 “Targeting of Cameleon to different subcellular compartments reveals a strict cytoplasmic/mitochondrial Ca^{2+} handling relationship in plant cells” has been chosen for the **Cover Image** of the July Issue of “**The Plant Journal**” (<https://onlinelibrary.wiley.com/toc/1365313x/2012/71/1>).
- 2012 “Targeting of Cameleon to different subcellular compartments reveals a strict cytoplasmic/mitochondrial Ca^{2+} handling relationship in plant cells” has been selected as **Featured Articles** of the July Issue of “**The Plant Journal**” (<https://onlinelibrary.wiley.com/toc/1365313x/2012/71/1>).
- 2010 “ H_2O_2 in plant peroxisomes: an in vivo analysis uncovers a Ca^{2+} -dependent scavenging system” has been post-reviewed by Dr. Martin Robert McAinsh in the “**Faculty of 1000 Biology**”.
- 2010 “ H_2O_2 in plant peroxisomes: an in vivo analysis uncovers a Ca^{2+} -dependent scavenging system” has been selected as “**Paper Of the Month**” (June 2010) on the international website: “**The Illuminated Plant Cell**”.

EDITORIAL ACTIVITY FOR INTERNATIONAL JOURNALS

- 2019 **Faculty Member of the Plant Cell Biology Section in F1000Prime** (<https://f1000.com/prime/thefaculty/plant?sections=9187>). Position accepted from July.
- 2019 **Associate Editor of Plant Cell & Environment. ISI Journal Citation Reports © Ranking: 2017:13/223 (PLANT SCIENCES)** (<https://onlinelibrary.wiley.com/page/journal/13653040/homepage/editorialboard.html>).
- 2015-18 Editorial Board Member of Journal of Plant Research.
- 2013 Topic Editor For “Frontiers in Plant Cell Biology”: Functional Imaging in living Plants - Cell Biology meets Physiology.

INVITED SPEAKER FOR INTERNATIONAL MEETINGS, CONGRESS AND MINISYMPOSIUM

- 2020 3rd FEBS workshop on "Plant Organellar Signalling". Primosten, Croatia. Meeting to be confirmed.
- 2019 XXVth Minisymposium on Plant Biology in Cologne. University of Cologne, Cologne, Germany.
- 2018 **SEBiology 2018, Plant Biology Session. Florence, Italy.**
- 2018 Minisymposium. Center for Plant Aging Research Institute for Basic Science Department of New Biology DGIST Daegu, Republic of Korea.
- 2017 **Organellar Channels & Transporters Gordon Research Conference (GRC). Mount Snow West Dover, Vermont, USA.**
- 2016 Calcium Signalling Meeting 2016. 13-16 September. Freising, Germany.
- 2015 **26th International Conference on Arabidopsis Research (ICAR), Paris, France.**
- 2015 6th annual meeting of the EFOR network, Paris, France.

INVITED SPEAKER FOR WORKSHOPS AND SCHOOLS

- 2020 Post Graduate Course on Plant Signal Transduction. March 2020, Mar del Plata, Argentina. Workshop to be confirmed. Role: lecturer.
- 2020 Workshop on “Understanding Plant Responses to Climate Change at the Molecular Level: Redox Based Strategies”. February-March 2020, Baeza, Spain. Workshop to be confirmed. Role: lecturer.
- 2019 **EMBO Course on Live Plant Imaging. May 2019, Nagoya, Japan.** Role: lecturer.
- 2018 11th International PhD School in Plant Development 2018. October 2018, Retzbach-Zellingen, Germany. Role: lecturer.
- 2018 Workshop: “The MISTRAL summer school on ion and water transport in plants”. Department of Biochemistry and Molecular Physiology of Plants. July 2018, Montpellier, France. Role: lecturer.
- 2018 School of Pure and Applied Biophysics. Intracellular ion channels and transporters in plant and animal cells. January 2018, Venice, Italy. Role: lecturer.
- 2017 Workshop. “Functional imaging of living organisms”. Institute for Integrative Biology of the Cell (I2BC), May 2017, Gif-sur-Yvette, France. Role: lecturer.
- 2017 **Workshop: “Advanced Imaging Workshop for Pollen and Tip-growth Biology” sponsored by the NSF-Supported Pollen Research Coordination Network”. April 2017, Washington DC, USA.** Role: lecturer and instructor.
- 2016 Workshop: “The MISTRAL summer school on ion and water transport in plants”. Department of Biochemistry and Molecular Physiology of Plants. July 2016, Montpellier, France. Role: lecturer and instructor.

PARTECIPATION TO MEETINGS AND CONGRESS

- 2019 Plant, Cell & Environment 40th Anniversary Symposium. Glasgow, Scotland 4-6 September. Chairman and Poster.
- 2018 XV Congress FISV Italian Federation of Life Science. Rome, Italy 18-21 September. Chairman and Oral presentation.
- 2018 SEBiology 2018, Plant Biology Session. Florence, Italy. 3-6 July. Invited speaker.
- 2017 SIBV-SIGA Joint Meeting. Pisa, Italy, 19-22 September. Poster presentation.
- 2017 Plant Calcium Signaling 2017. John Innes Centre, Norwich, UK, 5-7 September. Oral presentation.
- 2017 Organellar Channels & Transporters Gordon Research Conference (GRC). Mount Snow West Dover, VT. USA. 30 July-4 August. Invited speaker.**
- 2016 XIV Congress FISV Italian Federation of Life Science. Rome, Italy 20-23 September. A. Baccarini Melandri Lecture.**
- 2016 Calcium signaling meeting 2016. Freising, Germany. 13-16 September. Invited speaker.
- 2015 SIBV-SIGA Joint Meeting, "Feeding the planet: plant science and breeding for the future of agriculture" Milan, Italy, 8-11 September. Oral presentation.
- 2015 26th International Conference on Arabidopsis Research (ICAR), Paris, France 5-9 July. Invited speaker.
- 2015 12th International Conference on Reactive Oxygen and Nitrogen Species in Plants: from model systems to field. Verona, Italy 24-26 June. Chairman and Poster.
- 2015 6th annual meeting of the EFOR network, 10th March 2015. Paris, France. Invited speaker.
- 2014 SEB Plant Transport Group. 2014. Systems and Synthetic Biology, Glasgow, Scotland 5-7 December. Oral presentation.
- 2014 XIII Congress FISV Italian Federation of Life Science. Pisa, Italy 24-27 September. Poster.
- 2013 5th SIBV National Meeting of Italian Society of Plant Biology. Foggia, Italy 18-20 September. Oral presentation.
- 2012 XII Congress FISV Italian Federation of Life Science. Rome, Italy 24-27 September. Oral presentation.
- 2012 12th Symposium of the European Calcium Society Toulouse, France, 9-12 September. Poster.
- 2011 Conference 'Molecular Basis of Plant Stress' Varna, Bulgaria, 21-23 September. Oral presentation.
- 2010 Plant Calcium Signaling 2010. Münster, Germany, 31 August-4 September. Oral presentation.
- 2010 2nd SIBV National Meeting of Italian Society of Plant Biology. Roma, Italy, 12-14 July. Poster.
- 2010 FESPB XVII Congress of the Federation of European Societies of Plant Biology. Valencia, Spain, 4-9 July. Poster.
- 2009 Plant ROS Meeting. Helsinki, Finland, 8-10 July. Poster.
- 2009 1st SIBV National Meeting of Italian Society of Plant Biology. Verona, Italy, 30 June-2 July. Oral presentation.
- 2008 2nd NO group meeting Dijon, France 21-22 July. Oral presentation.
- 2008 XLVII SIFV National Meeting of Italian Society of Plant Physiology. Pisa, Italy 30 June-2 July. Poster.
- 2007 9th Congress FISV Italian Federation of Life Science. Riva del Garda (TN), Italy 20-23 September. Oral presentation.
- 2005 Convegno SIFV. 43 anni e mezzo di Fisiologia Vegetale: Il punto della situazione. Bertinoro (FC) (Italia) 25-26 February 2005. Oral presentation.
- 2004 13th International Workshop on Plant Membrane Biology. Montpellier, France 6-10 July. Poster.
- 2003 7th International Congress of Plant Molecular Biology. Barcelona, Spain 23-28 June. Poster.
- 2002 4th Congress FISV Italian Federation of Life Science. Riva del Garda (TN), Italy 20-23 September. Poster.
- 2001 SIFV National Meeting of Italian Society of Plant Physiology. Abano Terme (PD), Italy 17-19 September. Poster.
- 2001 5th National Meeting of Biotechnology CNB5. L'Aquila, Italy 13-15 September. Oral presentation.

INVITED SEMINARS

- 2019 **Prof. Markus Schwarzländer.** Institut für Biologie und Biotechnologie der Pflanzen Westfälische Wilhelms-Universität Münster, Germany.
- 2019 **Prof. Francesco Licausi.** Scuola Superiore Sant'Anna, Pisa, Italy.
- 2019 **Dr. Alessandra Astegno.** Lecture for the Doctoral School on Natural and Engineering Sciences. University of Verona, Verona, Italy.
- 2019 **Dr. Arun Sampathkumar.** Max Planck Institute of Molecular Plant Physiology. Potsdam, Germany.
- 2019 **Prof. Kochi Takayuki.** Graduate School of Biostudies, Kyoto University. Kyoto, Japan.
- 2019 **Prof. Nubuyuki Uozumi.** Department of Biomolecular Engineering. Biofunctional Chemistry. Tohoku University. Sendai, Japan.
- 2018 **Prof. Andrea Schubert.** Dipartimento di Scienze Agrarie, Forestali e Alimentari. Univeristy of Turin. Turin, Italy.
- 2018 **Dr. Gioia Lenzoni and Prof. Edward Farmer.** Department of Plant Molecular Biology. University of Lausanne, Lausanne, Switzerland.
- 2018 **Dr. Diana Santelia.** Department of Plant and Microbial Biology. Univeristy of Zurich, Zurich, Switzerland.
- 2018 **Dr. Maurizio Chiurazzi.** Istituto di Bioscienze e Biorisorse (IBBR) CNR, Naples, Italy.
- 2017 **Prof. Dirk Inzé and Prof. Steffen Vanneste.** VIB DEPT OF PLANT SYSTEMS BIOLOGY, UGent Gent, Belgium.
- 2017 **Prof. Marc Knight.** Department of Biosciences, Durham University. Durham, UK.
- 2017 **Dr. Alexander Jones.** Sainsbury Laboratory, University of Cambridge. Cambridge, UK.
- 2017 **Dr. Markus Schwarzländer.** INRES - Chemical Signalling, University of Bonn. Bonn, Germany.
- 2017 **Dr Maria Rosa Antognazza.** Center for Nanoscience and technology, IIT@PoliMi. Milan, Italy.
- 2016 **Prof Hillel Fromm and Dr. Doron Shkolnik-Inbar.** Molecular Biology & Ecology of Plants Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel.
- 2016 **Prof Alex Webb.** Department of Plant Science, University of Cambridge. England.
- 2016 **Prof Natalie Verbruggen.** Laboratory of Plant Physiology and Molecular Genetics, Université Libre de Bruxelles, B-1050, Brussels, Belgium.
- 2016 **Proff. Paolo Bernardi, Fiorella Lo Schiavo and Andrea Pilastro.** Lecture for the Doctoral School of Biosciences and Biotechnology, Department of Biology, University of Padova, Padova, Italy.
- 2016 **Prof. Marcella Bracale.** Dipartimento di biotecnologie e scienze della vita (DBSV). Unveristà dell'Insubria. Varese, Italia.
- 2016 **Prof. June Kwak.** Center for Plant Aging Research Institute for Basic Science Department of New Biology DGIST Daegu, Republic of Korea.
- 2016 **Dr. Andrea Pompa.** Istituto di Bioscienze e Biorisorse (IBBR) CNR, Perugia, Italy.
- 2015 **Dr. Anne Aliénor Very.** B&PMP Biochemistry and Plant Molecular Physiology. Montpellier, France.
- 2014 **Prof. Tomoaki Horie.** Division of Applied Biology, Faculty of Textile Science and Technology, Shinshu University, Ueda, Nagano, Japan.
- 2014 **Prof. Toshinori Kinoshita.** Institute of Transformative Bio-Molecules (WPI-ITbM), Nagoya University, Chikusa, Nagoya, Japan.
- 2014 **Prof. Maki Katsuhara.** Institute of Plant Science and Resources, Okayama University, Kurashiki, Okayama, Japan.
- 2014 **Dr. Patrice Thuleau.** Laboratoire de Recherche en Sciences Végétales, Université de Toulouse, France.
- 2014 **Dr. Steffen Vanneste.** VIB DEPT OF PLANT SYSTEMS BIOLOGY, UGent Gent, Belgium.
- 2013 **Dr Luigi Cattivelli.** CRA-Fiorenzuola D'Arda, Italy.

- 2013 **Dr. Fiorella Lo Schiavo.** Seminar for the PhD day 2013, University of Padova, Italy.
- 2013 Henry Stewart Talks Ltd. The Biomedical & Life Sciences Collection, (talk online at <http://hstalks.com/?t=BL0293546>).
- 2012 **Prof. Antonella Furini.** Lecture for the Doctoral School in Life Sciences and Health. Short Course on Molecular Biology. University of Verona, Verona, Italy.
- 2012 **Dr Matteo Binda.** Plant Biology. Department of Biology. University of Fribourg, Switzerland.
- 2012 Lecture for the Doctoral School in Molecular and Biological Sciences. Short course on: IMAGING: From Molecules to Organisms. Department of Biosciences. University of Milan, Milan, Italy.
- 2012 **Prof. José Feijo.** Instituto Gulbenkian Ciência, Oeiras, Portugal.
- 2012 **Dr. Francesco Licausi.** Scuola Superiore Sant'Anna, Pisa, Italy.
- 2011 **Prof. Gerhard Thiel.** Technische Universität Darmstadt, Germany.
- 2011 **Prof. Joerg Kudla.** Institut für Biologie und Biotechnologie der Pflanzen Westfälische Wilhelms-Universität Münster, Germany.
- 2010 **Dr. Tou Cheu Xiong and Dr. Jean-Baptiste Thibaud.** B&PMP Biochemistry and Plant Molecular Physiology. Montpellier, France.
- 2010 **Dr. Salma Balazadeh and Prof. Bernd Müller-Röber.** Max-Planck-Institut für Molekulare Pflanzenphysiologie. Golm, Germany.

NATIONAL AND INTERNATIONAL COLLABORATIONS

Proff. Andrea Bassi and Gianluca Valentini Dipartimento di Fisica, Politecnico di Milano, Milan, Italy.

Prof. Ildiko Szabò. Department of Biology. University of Padova. Padova, Italy.

Proff. Fiorella Lo Schiavo and Michela Zottini. Department of Biology. University of Padova. Padova, Italy.

Proff. Paolo Trost, Francesca Sparla and Mirko Zaffagnini. Department of Pharmacy and Biotechnology. University of Bologna. Bologna, Italy.

Prof. Armando Carpaneto. Department of Earth, Environment and Life Sciences (DISTAV), University of Genoa, Genova, Italy.

Dr. Alessandro Alboresi. Department of Biology. University of Padova. Padova, Italy.

Dr. Maurizio Chiurazzi. Istituto di Bioscienze e Biorisorse (IBBR) CNR, Naples, Italy.

Proff. Martino Bolognesi and Marco Nardini. Department of Biosciences, University of Milan, Milan, Italy.

Prof. Markus Schwarzländer. Institut für Biologie und Biotechnologie der Pflanzen Westfälische Wilhelms-Universität Münster, Germany.

Prof. Joerg Kudla. Institut für Biologie und Biotechnologie der Pflanzen Westfälische Wilhelms-Universität Münster, Germany.

Prof. Tomoaki Horie. Division of Applied Biology, Faculty of Textile Science and Technology, Shinshu University, Ueda, Nagano, Japan.

Prof. Nobuyuki Uozumi. Department of Biomolecular Engineering. Biofunctional Chemistry. Tohoku University. Sendai, Japan.

Prof. Keitaro Tanoi. Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo, Japan.

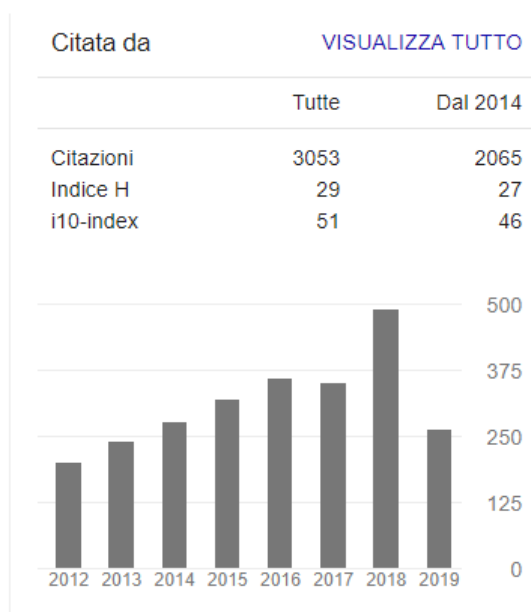
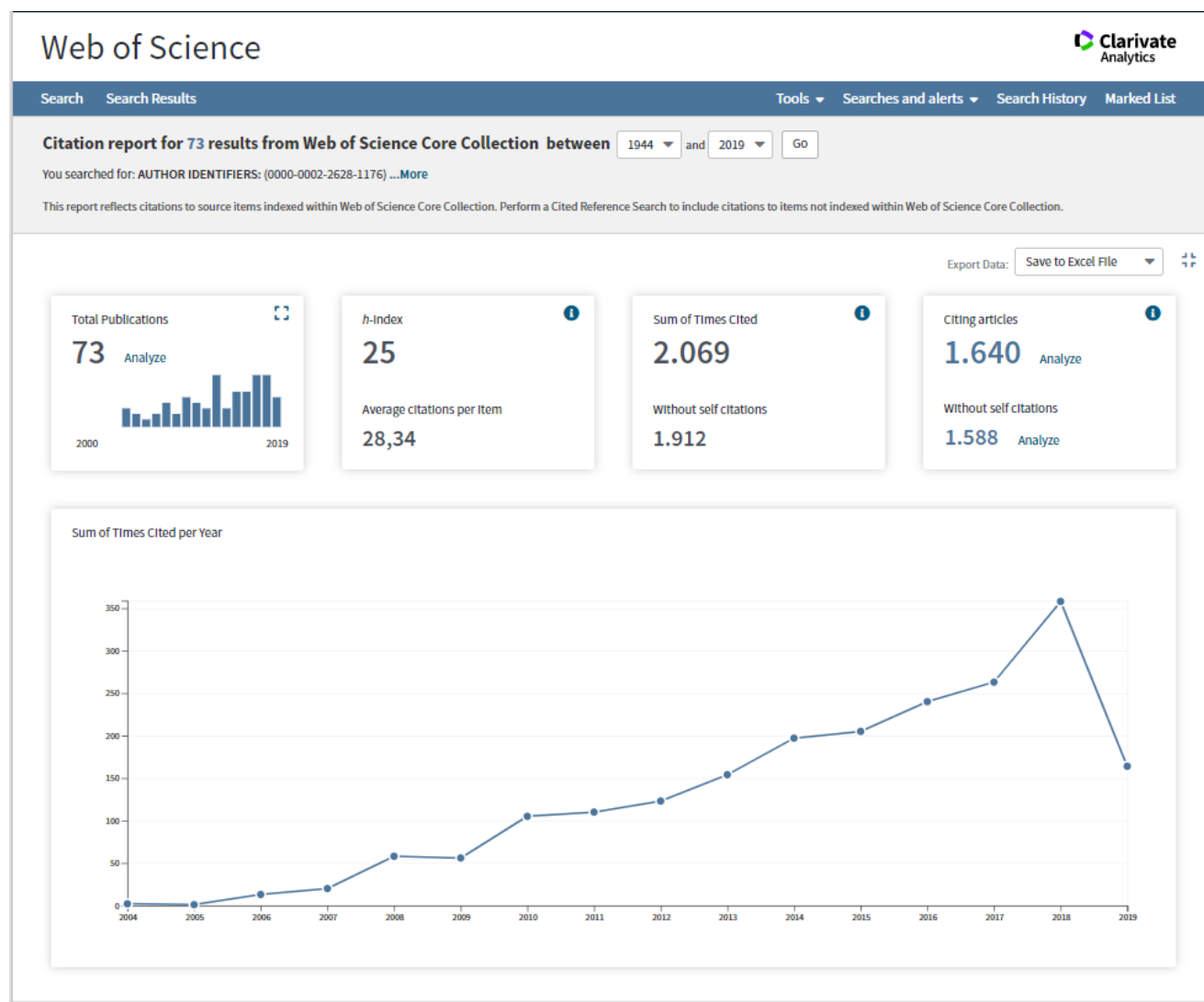
Prof. Steffen Vanneste. VIB DEPT OF PLANT SYSTEMS BIOLOGY, UGent Gent, Ghent, Belgium.

Prof. Kris Vissmberg. Integrated Molecular Plant Physiology Research, Biology Department, University of Antwerp, Antwerp, Belgium.

Prof. Natalie Verbruggen. Laboratory of Plant Physiology and Molecular Genetics, Université Libre de Bruxelles, Brussels, Belgium.

Prof. Hillel Fromm. Molecular Biology & Ecology of Plants Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel.

Prof. Julia Davies. Department of Plant Science, University of Cambridge, Cambridge, England.



SUBMITTED MANUSCRIPTS AND MANUSCRIPTS IN PREPARATION

1. Ruberti C, Wagner S, Xu Z, Fuchs P, Bacerowicz D, Schoenars S, de la Torre C, Magni A, Meyer AJ, Wirtz M, Vissenberg K, **Costa A**, Schwarzländer M. (2019) *The MITOCHONDRIAL CALCIUM UNIporter protein family dominates Ca^{2+} transport into mitochondria in Arabidopsis*. Manuscript in preparation.
2. Dell'Aglio E, Giustina C, Kraut C, Coutéc Y, **Costa A**, Gibone Y, Mazars C, Matringe M, Finazzi G, Curien Gilles. (2019) *Identification of the Calmodulin-dependent NAD^+ kinase sustaining the elicitor-induced oxidative burst in plants*. Manuscript in preparation.
3. Calisesi G, Candeo A, Farina A, D'Andrea C, Valentini G, Pistocchi A, Doccia FG, **Costa A**, Bassi A. (2019) *Removal of diffraction artifacts in Optical Projection Tomography with Bright-Field Multi-view Reconstruction*. Manuscript in preparation.
4. Alfieri A, Doccia FG, Pederzoli R, Grenzi Matteo, Bonza MC, Luoni L, Candeo A, Romano Armada N, Barbiroli A, Valentini G, Schneider TR, Bassi A, Bolognesi M, Nardini M, **Costa A**. (2019) *Genetics and structure reveal Arabidopsis thaliana GLR3.3 as a promiscuous amino acid receptor*. **Revision for PNAS due on 29th of July**.
Corresponding author
5. Tadini L, Peracchio C, Trotta A, Colombo M, Mancini I, Jerana N, **Costa A**, Faoro F, Marsoni M, Vannini C, Aro E-M, Pesaresi P. (2019) *GUN1 controls the accumulation of NEP-dependent transcripts and chloroplast protein import in Arabidopsis cotyledons*. **In revision for Plant Journal**.
6. Vigani G, **Costa A**. (2019) *Harnessing the new emerging imaging technologies to uncover the role of Ca^{2+} signaling in plant nutrient homeostasis*. **Plant Cell & Envir**. Accepted with minor revisions. **Corresponding author**

PUBLICATIONS

2019

7. Fasani E, Dal Corso G, **Costa A**, Zenoni S, Furini A. (2019) *Arabidopsis thaliana transcription factor MYB59 regulates calcium signalling during plant growth and stress responses*. **Plant Mol Biol**. 99: 517-534
8. De Vriese K, Himschoot Ellie, Dünser Kai, Nguyen LS, Drozdzecki A, **Costa A**, Kleine-Vehn J, Audenaert D, Beekman T, Vanneste S. (2019) *Auxin regulates vacuolar morphology through a Ca^{2+} sensitive mechanism*. **Plant Physiol**. 180: 480-496
9. Sabetta W*, Vandelle E*, Locato V*, **Costa A* (first Co-Author)**, Cimini S, Bittencourt Moura A, Luoni L, Graf A, Viggiano L, De Gara L, Bellin D, Blanco E, de Pinto MC. (2019) *The genetically buffering of cyclic AMP in Arabidopsis thaliana compromises plant immune response triggered by an avirulent strain of Pseudomonas syringae pv. Tomato*. **Plant J**. 98: 590-606
10. Matthus E, Wilkins KA, Swarbreck SM, Doddrell NH, Doccia FG, **Costa A**, Davies JM. (2019) *Phosphate starvation alters abiotic stress-induced cytosolic free calcium increases in Arabidopsis roots*. **Plant Physiol**. 179: 1754-1767
11. Nietzel T, Elsässer M, Ruberti C, Steinbeck J, Ugalde J, Fuchs P, Wagner S, Ostermann Lara, Moseler A, Lemke P, Fricker M, Mueller-Schuessele S, Moerschbacher B, **Costa A**, Meyer A, Schwarzländer M. (2019) *The fluorescent protein sensor roGFP2-Orp1 monitors in vivo H_2O_2 and thiol redox integration and elucidates intracellular H_2O_2 dynamics at elicitor-induced oxidative burst in Arabidopsis*. **New Phytol**. 221: 1649-1664

12. Zaffagnini M, Fermani S, Marchand CH, **Costa A**, Sparla F, Rouhier N, Geigenberger P, Lemaire SD, Trost P. (2018) *Redox homeostasis in photosynthetic organisms: novel and established molecular mechanisms*. **ARS**. doi: 10.1089/ars.2018.7617
13. Behera S, Xu Z, Luoni L, Bonza MC, Doccu FG, De Michelis MI, Morris RJ, Schwarzländer M, **Costa A**. (2018) *Cellular Ca^{2+} signals generate defined pH signatures in plants*. **Plant Cell**. 30: 2704-2719. **Corresponding author**
14. Peretti M, Raciti FM, Carlini V, Verduci I, Sertic S, Barozzi S, Garrè M, Pattarozzi A, Daga A, Barbieri F, **Costa A**, Florio T, Mazzanti M. (2018) *Mutual influence of ROS, pH and CLIC1 membrane protein in the regulation of G1/S phase progression in human glioblastoma stem cells*. **Mol Cancer Ther**. 17: 2451-2461
15. Toffolatti SL, De Lorenzis G, **Costa A**, Maddalena G, Passera A, Bonza MC, Pindo M, Stefani E, Cestaro A, Casati P, Failla O, Bianco PA, Maghradzed D, Quaglino F. (2018) *Unique resistance traits against downy mildew from the center of origin of Grapevine (Vitis vinifera)*. **Scientific Reports**. 21;8(1):12523
16. Shkolnik D, Nuriel R, Bonza MC, **Costa A**, Fromm H. (2018) *MIZ1 regulates a slow long-distance calcium signal essential for root water tracking*. **PNAS**. 115: 8031-8036
17. Storti M, **Costa A (first Co-Author)**, Golin S, Zottini M, Morosinotto T, Alboresi A. (2018) *Systemic Calcium Wave Propagation in Physcomitrella patens*. **Plant Cell Physiol**. 59: 1377-1384
18. **Costa A**, Navazio L, Szabo I. (2018) *The contribution of organelles to plant intracellular calcium signalling*. **J Exp Bot**. 69: 4175-4193
19. De Vriese K, **Costa A**, Beeckman T, Vanneste S. (2018) *Pharmacological strategies for manipulating plant Ca^{2+} signalling*. **IJMB**. 18;19(5). pii: E1506
20. Tadini L, Ferrari R, Lehniger M-K, Mizzotti C, Moratti F, Resentini F, Colombo M, **Costa A**, Masiero S, Pesaresi P. (2018) *AtPPR4 is essential for embryo patterning in Arabidopsis thaliana*. **Planta**. 248: 257-265
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28. Candeo A, Doccula FG, Valentini G, Bassi A, **Costa A**. (2017) *Light Sheet Fluorescence Microscopy quantify Calcium oscillations in root hair of Arabidopsis thaliana*. **Plant Cell Physiol.** 58: 1161-1172. **Corresponding author**
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32. Candeo A, Doccula FG, Valentini G, **Costa A**, Bassi A. (2016) *Light sheet microscopy allows rapid and long-term acquisition of calcium dynamics*. **Imaging & Microscopy. August Issue**. <http://www.imaging-git.com/science/light-microscopy/calcium-imaging-plants>
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53. Loro G, **Costa A**. (2013) *Imaging of Mitochondrial and Nuclear Ca²⁺ Dynamics in Arabidopsis Roots*. **Cold Spring Harb Protoc.** doi:10.1101/pdb.prot073049. **Corresponding author**

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62. Valerio C, **Costa A**, Marri L, Issakidis-Bourguet E, Pupillo P, Trost P, Sparla F. (2011) *Thioredoxin-regulated β -amylase (BAM1) triggers diurnal starch degradation in guard cells, and in mesophyll cells under osmotic stress*. **J. Exp. Bot.** 62: 545-55

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73. Zottini M, **Costa A**, De Michele R, Ruzzene M, Carimi F, Lo Schiavo F. (2007) *Salicylic acid activates nitric oxide synthesis in Arabidopsis. J. Exp. Bot.* 58:1397–1405

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74. Sparla F, **Costa A**, Lo Schiavo F, Pupillo P, Trost P. (2006) *Redox regulation of a novel plastid-targeted β -amylase of Arabidopsis. Plant Physiol.* 141: 840-850

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75. Hosy E, Duby G, Very AA, **Costa A**, Sentenac H, Thibaud J-B. (2005) *A procedure for localisation and electrophysiological characterisation of ion channels heterologously expressed in a plant context. Plant Methods.* 19:1-14
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77. Formentin E, Varotto S, **Costa A**, Downey P, Bregante M, Naso A, Picco C, Gambale F, Lo Schiavo F. (2004) *DKT1, a novel K⁺ channel from carrot, forms functional heteromeric channels with KDC1. FEBS Lett.* 573:61-67

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BOOK CHAPTERS

2019

1. Romano Armada N, Doccula FG, Candeo A, Valentini G, **Costa A**, Bassi A. (2019) *In vivo Light Sheet Fluorescence Microscopy of calcium oscillations in Arabidopsis thaliana.* **Methods Mol Biol.** Humana Press, New York, NY. 1925:87-101. **Corresponding author**

2018

2. Himschoot E, Krebs M, **Costa A**, Beeckman T, Vanneste S. (2018) *Calcium Ion Dynamics in Roots: Imaging and Analysis.* In: Ristova D., Barbez E. (eds) *Root Development.* **Methods Mol Biol.** Humana Press, New York, NY. 1761:115-130
3. Doccula FG, Luoni L, Behera S, Bonza MC, **Costa A**. (2018) *In Vivo Analysis of Calcium Levels and Glutathione Redox Status in Arabidopsis Epidermal Leaf Cells Infected with the Hypersensitive Response-Inducing Bacteria Pseudomonas syringae pv. tomato AvrB (PstAvrB).* In: De Gara L., Locato V. (eds) *Plant Programmed Cell Death.* **Methods Mol Biol.** Humana Press, New York, NY. 1743:125-141. **Corresponding author**

2015

4. Wagner S, Nietzel T, Aller I, **Costa A**, Fricker MD, Meyer AJ, Schwarzländer M. (2015) *Analysis of Plant Mitochondrial Function using Fluorescent Protein Sensors.* *Methods and Protocols,* **Methods Mol Biol.** 1305: 241-252

2013

5. **Costa A**, Drago I, Zottini M, Pizzo P, Pozzan T. (2013) *Peroxisome Ca²⁺ homeostasis in animal and plant cells.* **Subcell Biochem.** 69: 111-33. doi: 10.1007/978-94-007-6889-5_7

2009

6. Zottini M, **Costa A**, De Michele R, Lo Schiavo F. (2009) *Role of Nitric Oxide in Programmed Cell Death.* In "Nitric Oxide in Plant Physiology". S. Hayat, M. Mori, J. Pichtel, and I. Ahmad (eds.) WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. pp 77-87

GRANTED PROJECTS

- 2018 MIUR. "Finanziamento delle attività base di ricerca".
- 2017 Fondo per lo sviluppo di Piattaforme Tecnologiche di Ateneo UMIL. UNITECH NOLIMITS. **Coordinator: Alex Costa.**
- 2017 PIANO DI SVILUPPO DI ATENEO (Università degli Studi di Milano): "Biochemical, structural and functional studies of Arabidopsis glutamate-like receptors". **Coordinator: Alex Costa.**
- 2017 PIANO DI SVILUPPO DI ATENEO (Università degli Studi di Milano). Transition Grant 2015/2017 – Horizon 2020" Linea 1A Progetto": "Inter-organellar orchestration of the plant light and drought stress response by dynamic regulation of intracellular channel and transporter activities". **Coordinator: Alex Costa.**
- 2016 PIANO DI SVILUPPO DI ATENEO (Università degli Studi di Milano): "Physiological characterization of Arabidopsis glutamate receptors AtGLR3.3, AtGLR3.6 and AtGLR3.7 and their involvement in plant defense-signaling and resistance to *Hyaloperonospora arabidopsidis*". **Coordinator: Alex Costa.**
- 2015 PIANO DI SVILUPPO DI ATENEO (Università degli Studi di Milano): "Functional characterization of GLR3.7 (A Glutamate-like receptor of *Arabidopsis thaliana*) through genetic, gene expression and cell biology analyses". **Coordinator: Alex Costa.**
- 2014 PIANO DI SVILUPPO DI ATENEO (Università degli Studi di Milano): "Caratterizzazione funzionale di canali ionici della famiglia dei recettori del glutammato (iGluR) di *Arabidopsis thaliana*". **Coordinator: Alex Costa.**
- 2011 PRIN: "Canali e pori intracellulari: dalla conoscenza della loro struttura e fisiologia a nuove regole di costruzione di canali artificiali". Coordinator: De Pinto Vito Nicola.
- 2010 FIRB: "Nucleotidi Ciclici Nella Risposta a Stress Biotico in Pianta". Coordinator: Alex Costa.**
- 2008 PRIN: "Studio della dinamica delle specie reattive dell'ossigeno in Arabidopsis durante il processo di senescenza" Coordinator: De Gara Laura.
- 2006 PRIN: "Ossido nitrico e senescenza in colture cellulari vegetali". Coordinator: Lo Schiavo Fiorella.
- 2003 PRIN: "Percezione e trasduzione di segnali nelle interazioni piante-funghi: un'analisi in colture cellulari". Coordinator: Lo Schiavo Fiorella.
- 2002 PRIN: "Identificazione e caratterizzazione di geni espressi nella senescenza e nella morte programmata cellulare di *Medicago truncatula*." Coordinator: Marocco Adriano.

1. PNAS
2. Plant Cell
3. Nature Plants
4. Current Opinion in Plant Biology
5. Science Signaling
6. Plant Physiology
7. New Phytologist
8. Cell Reports
9. The Plant Journal
10. Journal of Experimental Botany
11. Annals of Botany
12. Journal of Plant Physiology
13. Journal of Plant Research
14. FEBS Letters
15. BMC Plant Biology
16. The Plant Genome
17. FEBS Letters
18. Plant Cell & Physiology
19. Acta Physiologiae
20. Journal of Microscopy
21. BBA - Molecular Cell Research
22. Frontiers in Plant Physiology
23. Phytochemistry
24. Journal of Visualized Experiments
25. Molecular Plant
26. International Journal of Molecular Sciences
27. Scientific Reports
28. Plants
29. Plos ONE
30. Biotechniques

REVIEWER ACTIVITY FOR PROJECTS

- | | |
|------|---|
| 2016 | Laboratoire d'Excellence ARBRE. Recherches Avancées sur la Biologie de l'Arbre et les Ecosystèmes Forestiers
Call for Proposals 2017. |
| 2016 | 2015 Call for proposals - Research Projects - Fondazione di Sardegna. |
| 2014 | The Minerva Fellowship Program 2014. |
| 2014 | Austrian Science Fund 2014. |
| 2013 | MINISTERO DELL'ISTRUZIONE, DELL'UNIVERSITÀ E DELLA RICERCA, Dipartimento per l'Università, l'Alta
Formazione Artistica, Musicale e Coreutica e per la Ricerca, PROGRAMMA "Futuro in Ricerca 2013". |
| 2011 | ANR. L'Agence nationale de la recherche. Appel à projet Blanc - SVSE 2 - biologie cellulaire et biologie du
développement. Edition 2011ANR. L'Agence nationale de la recherche. |

b) Attività di didattica, di didattica integrativa e di servizio agli studenti

TEACHING FOR UNDERGRADUATE AND POSTGRADUATE STUDENTS

- 2018-19 Department of Biosciences, University of Milan, Italy. Master studies in Biology (BMC). Teacher for the Signal Transduction course (3 ECTS) (Class LM-6, **SSD BIO/04** BIO/10). Role: course holder.
- 2018-19 Department of Biosciences, University of Milan, Italy. Master studies in Plant Sciences. Teacher for the Plant Signal Transduction course (3 ECTS) (Class LM-6, **SSD BIO/04**). Role: course holder.
- 2018-19 Department of Biosciences, University of Milan, Italy. Graduate studies in Biotechnology. Teacher for the Tirocinio in "Biologia cellulare e funzionale delle piante" course (1 ECTS).
- 2018-19 Department of Biosciences, University of Milan, Italy. Graduate studies in Biology. Teacher for the "Tirocinio". (1 ECTS).
- 2018-19 Department of Biosciences, University of Milan, Italy. Master studies in Evolution Biology (BIOEVO). Teacher for the "Fotobiologia e Bioenergetica" course (3 ECTS) (Class LM-6, **SSD BIO/04**). Role: course holder.
-

- 2017-18 Department of Biosciences, University of Milan, Italy. Master studies in Biology (BMC). Teacher for the Signal Transduction course (3 ECTS) (Class LM-6, **SSD BIO/04** BIO/10). Role: course holder.
- 2017-18 Department of Biosciences, University of Milan, Italy. Master studies in Biology (BMC). Teacher for the Synthetic Biology course (1 ECTS) (Class LM-6, **SSD BIO/04**. BIO/10 BIO/11 BIO/18 BIO/19).
- 2017-18 Department of Biosciences, University of Milan, Italy. Graduate studies in Biology. Teacher for the "Tirocinio". (4 ECTS).
- 2017-18 Department of Biosciences, University of Milan, Italy. Master studies in Evolution Biology (BIOEVO). Teacher for the "Fotobiologia e Bioenergetica" course (3 ECTS) (Class LM-6, **SSD BIO/04**). Role: course holder.
-

- 2016-17 Department of Biosciences, University of Milan, Italy. Master studies in Biology (BMC). Teacher for the Signal Transduction course (3 ECTS) (Class LM-6, **SSD BIO/04** BIO/10) Role: course holder.
- 2016-17 **Department of Biosciences, University of Milan, Italy. Graduate studies in Biology. Teacher for the Plant Physiology course (4.5 ECTS) (Class L-13, SSD BIO/04).** Role: course holder.
- 2016-17 Department of Biosciences, University of Milan, Italy. Master studies in Biology (BMC). Teacher for the Synthetic Biology course (1 ECTS) (Class LM-6, **SSD BIO/04** BIO/10 BIO/11 BIO/18 BIO/19).
- 2016-17 Department of Biosciences, University of Milan, Italy. Master studies in Evolution Biology (BIOEVO). Teacher for the "Fotobiologia e Bioenergetica" course (3 ECTS) (Class LM-6, **SSD BIO/04**). Role: course holder.
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- 2015-16 Department of Biosciences, University of Milan, Italy. Master studies in Biology (BMC). Teacher for the Signal Transduction course (3 ECTS) (Class LM-6, **SSD BIO/04** BIO/10). Role: course holder.
-

- 2013-16 Department of Biosciences, University of Milan, Italy. Graduate studies in Biology. Teacher for the "Tirocinio". (3 ECTS).
-

- 2012-16 **Department of Biosciences, University of Milan, Italy. Graduate studies in Biology. Teacher for the Plant Physiology course (1.5 ECTS) (Class L-13, SSD BIO/04).**
-

- 2010 Department of Biology, University of Padova, Italy. Graduate studies in Biotechnology. Teacher for the class: "Model Organisms in Biology-Arabidopsis as a model Plant".
- 2008 Department of Biology, University of Padova, Italy. Graduate studies in Molecular Biology. Teacher assistant in the Molecular Biology laboratory students training.
- 2005-8-9-10 Department of Biology, University of Padova, Italy. Graduate studies in Biotechnology. Teacher assistant in the Plant Biotechnology laboratory students training.
- 2002-4 Department of Biology, University of Padova, Italy. Graduate studies in Molecular Biology. Teacher for the class: "Model Organisms in Biology-Arabidopsis as a model Plant".

TEACHING/LECTURES FOR PHD STUDENTS

- 2019 **Dr. Alessandra Astegno.** Lecture for the Doctoral School on Natural and Engineering Sciences. University of Verona, Verona, Italy.
- 2016 **Proff. Paolo Bernardi, Fiorella Lo Schiavo and Andrea Pilastro.** Lecture for the Doctoral School of Biosciences and Biotechnology, Department of Biology, University of Padova, Padova, Italy.
- 2012 **Prof. Antonella Furini.** Lecture for the Doctoral School in Life Sciences and Health. Short Course on Molecular Biology. University of Verona, Verona, Italy.
- 2012 Lecture for the Doctoral School in Molecular and Biological Sciences. Short course on: IMAGING: From Molecules to Organisms. Department of Biosciences. University of Milan, Milan, Italy.

ORGANIZATION OF PHD WORKSHOPS

- 2018 "Modern imaging techniques in biology": organized by Marco Muzi Falconi and Alex Costa for the PhD School in Molecular and Cellular Biology, UMIL, Milan, Italy. Role: lecturer and instructor.
- 2017 "Experimental methods applied to biological systems. Biology and Physics working together": organized by Alex Costa, Marco Nardini and Andrea Saponaro in Molecular and Cellular Biology, UMIL, Milan, Italy. Role: lecturer.

MEMBER OF TEACHING AND TUTOR COMMITTEES

- 2018-ongoing Professor tutor for the Master course in Plant Science (<https://www.unimi.it/it/corsi/corsi-di-laurea/plant-science>).
- 2017-ongoing Member of the committees for admission to the Master programs of Molecular Biology of the Cell and Plant Science at UMIL.

SUPERVISION OF POSTDOCTORAL FELLOWS AND VISITING SCHOLAR

- 2018 Supervision of 1 Visiting Scholar, Mr. Taiki Higashi. Dept. of Biomolecular Engineering. Biofunctional Chemistry. Tohoku University. Sendai, Japan.
- 2017-18 Supervision of 1 Visiting Scholar, Dr. Zhaolong Xu. Dept. of Biosciences, UMIL, Italy.
- 2017-19 Supervision of 1 Postdoc, Dr. Andrea Alfieri. Dept. of Biosciences, UMIL, Italy.
- 2016 Supervision of 1 Visiting Scholar, Ms. Elsa Matthus. Dept. of Plant Sciences, University of Cambridge, UK.
- 2015 Supervision of 1 EMBO Short Term Granted Researcher, Dr. Massimiliano Corso, Dept. of Biosciences, UMIL, Italy.
- 2015 Supervision of 1 EMBO Short Term Granted Researcher, Dr. Darya Pyatrikas. Dept. of Biosciences, UMIL, Italy.
- 2014-15 Supervision of 1 Postdoc, Dr. Smrutisanjita Behera. Dept. of Biosciences, UMIL, Italy.

SUPERVISION OF PHD STUDENTS

2018-21 PhD student, Dr. M. Grenzi. Dept. of Biosciences, UMIL, Italy.

2015-18 PhD student, Dr. Fabrizio G. Doccula. Dept. of Biosciences, UMIL, Italy. Date of award 1/03/2019.

MEMBER OF PHD THESIS JURIES

- 2019 Department of Science, University "Roma Tre". PhD Jury Member for the Phd Programme in "Biologia Molecolare Cellulare e Ambientale", December 2019.
- 2019 Faculty of Sciences-Ghent University, VIB. PhD Jury Member for the "Study Programme in Biochemistry and Biotechnology", April 2019.
- 2019 Scuola Superiore Sant'Anna Pisa. PhD Jury Member for the Phd Programme in "Agrobiosciences", May 2019.
- 2018 University of Antwerp, Department of Biology. PhD Jury Member for PhD program at the Antwerp Doctoral School, March 2018.
- 2017 Faculty of Sciences-Ghent University, VIB. PhD Jury Member for the "Study Programme in Biochemistry and Biotechnology". December 2017.
- 2015 Montpellier SupAgro. France, Jury Member for: "Docteur de l'Institut national d'études supérieures agronomiques de Montpellier Montpellier SupAgro", July 2015.
- 2015 Department of Biology, University of Padova, Italy. Jury Member for: "Esame finale per il conseguimento del titolo di Dottore di Ricerca in "BIOSCIENZE E BIOTECNOLOGIE INDIRIZZO: BIOLOGIA CELLULARE", March 2015.
- 2014 Department of Biotechnology, University of Verona, Italy. Jury Member for "Esame finale per il conseguimento del titolo di Dottore di Ricerca in "BIOTECNOLOGIE MOLECOLARI INDUSTRIALI E AMBIENTALI", March-April 2014.

STUDENTS THESIS TUTORIAL AND PHD CO-TUTORIAL

UMIL

- 2019-20 Master Student Mara Cademartori. Graduate studies in Graduate studies Molecular Biology of the Cell (BMC), A.A. 2019/2020. Univ. of Milan. Thesis title: *"Development of a new Arabidopsis sensor line for the simultaneous analysis of Ca²⁺ dynamics in the cytosol and endoplasmic reticulum"*.
- 2018-19 Master Student Ambra Parmagnani. Graduate studies in Graduate studies in Evolution Biology (BIOEVO), A.A. 2018/2019. Univ. of Milan. Thesis title: *"High resolution analyses of Ca²⁺ dynamics in phloem"*.
- 2017-18 Master Student Shahrzad Karimianshahrivar. Graduate studies in Molecular Biology of the Cell (MBC), A.A. 2017/2018. Univ. of Milan. Thesis title: *"Biochemical, structural and functional studies of Arabidopsis glutamate-like receptors GLR3.3"*. Mark: 104/110.
- 2017-18 Master Student Matteo Grenzi. Graduate studies in Evolution Biology (BIOEVO), A.A. 2017/2018. Univ. of Milan. Thesis title: *"Functional and physiological characterization of the Glutamate-Like Receptor GLR3.3 in the regulation of aminoacid-induced Ca²⁺ signaling"*. Mark: 110/110 cum Laude.
- 2016-17 Master Student Andrea Magni. Graduate studies in Molecular Biology of the Cell (MBC), A.A. 2016/2017. Univ. of Milan. Thesis title: *"In vivo study of organellar Ca²⁺ dynamics of plant cells during light to dark transition"*. Mark: 108/110.
- 2015-16 Master Student Giulia Artuso. Graduate studies in Molecular Biology of the Cell (BMC), A.A. 2015/2016. Univ. of Milan. Thesis title: *"In vivo study of the the role of Ca²⁺-ATPases in the termination of calcium transients in Arabidopsis thaliana in response to biotic and abiotic stresses"* Mark: 109/110.

2014-15 Master Student Fabrizio Gandolfo Doccia. Graduate studies in Molecular Biology of the Cell (BMC), A.A. 2014/2015. Univ. of Milan. Thesis title: *"The Arabidopsis glutamate-like receptor GLR3.7 is required for the development of root hairs"*. Mark: 110/110 cum Laude.

UNIPD

2012-15 PhD Student Giovanna Loro. PhD School of Biosciences and Biotechnology XXVII CICLO. Univ. of Padova. Thesis title: *"Studies of Ca²⁺ dynamics in intracellular compartments in plants: advanced molecular tools for in vivo imaging"*.

2009-12 PhD Student Marco Vescovi. PhD School of Biosciences and Biotechnology XXIV CICLO. Univ. of Padova. Thesis title: *"Molecular and physiological mechanisms of stress signalling in plants"*.

2010-11 Master Student Alice Lunardon. Graduate studies in Biotechnology, A.A. 2010/2011. Univ. of Padova. Thesis title: *"Vie di signaling indotte dall'ATP extracellulare in cellule radicali di Arabidopsis thaliana ed effetti sulla funzionalità mitocondriale"*.

2009-10 Master Student Giovanna Loro. Graduate studies in Biotechnology, A.A. 2010/2011. Univ. of Padova. Thesis title: *"Ruolo dei mitocondri nel calcium signature in cellule vegetali"*.

2008-09 Master Student Stefano D'Alessandro. Graduate studies in Biotechnology, A.A. 2008/2009. Univ. of Padova. Thesis title: *"Analisi funzionale della co-chaperone p23 di Arabidopsis thaliana"*.

2007-08 Master Student Marco Vescovi. Graduate studies in Biotechnology, A.A. 2007/2008. Univ. of Padova. Thesis title: *"Le citochinine possono indurre morte cellulare in pianta"*.

2004-05 Master Student Barbara Bertoncin. Graduate studies in Biotechnology, A.A. 2004/2005. Univ. of Padova. Thesis title: *"Caratterizzazione fisiologica e localizzazione cellulare del canale del potassio KDC1"*.

2004-05 Master Student Marzia Cusinato. Graduate studies in Biotechnology, A.A. 2004/2005. Univ. of Padova. Thesis title: *"Approccio molecolare per lo studio della senescenza in M. truncatula"*.

LAB ALUMNI

Dr. Andrea Alfieri, PhD. Lab manager for the Cryo-EM facility at Centre for Scientific Infrastructure University of Pavia.

Dr. Fabrizio Gandolfo Doccia, PhD. Curriculum Specialist EMEA – JoVE.

Dr. Giulia Artuso. Quality and Regulatory Manager at Maflon SpA.

c) Attività istituzionali, organizzative e di servizio

COORDINATOR AND MANAGEMENT ACTIVITIES

- 2019-ongoing Coordinator of the Plant Biology facility at the Department of Biosciences, UMIL.
- 2018-ongoing Member of the technical committee for the purchase of the new instrumentation foreseen in the “Progetto di Eccellenza” of the Department of Biosciences at UMIL (Platform for single cell RNA extraction, confocal system for High Content Screenings, Light Sheet Microscopy).
- 2017 Member of the drafting committee for “Progetto di Eccellenza” presented by Department of Biosciences at UMIL.
- 2016-ongoing **Scientific Coordinator/Director of the UMIL Bio-Imaging facility (UNITECH-NOLIMITS)** (Electron and Optical microscopy) (<https://www.unimi.it/it/node/503>). Budget: **1.956.000 €**.

MEMBER OF EVALUATION COMMITTEES

- 2019 Member of the committee for the recruitment of a PTA unit for the Plant Biology facility at Department of Biosciences, UMIL.
- 2018 Member of the committee for the selection of a RTD-A in BIO/04 at University of Rome, La Sapienza.

MEMBER OF SCIENTIFIC SOCIETIES

- 2013-17 **Councilor for the Italian Society of Plant Biology (SIBV).**
- 2012-ongoing Member of the Italian Society of Plant Biology (SIBV).

MEMBERS OF PHD SCHOOLS

- 2012-ongoing Member of the PhD school in Molecular and Cellular Biology (DBMC), UMIL.

ORGANIZATION OF NATIONAL AND INTERNATIONAL MEETINGS

- 2020 Organizer of the international Plant Calcium Signaling meeting 2020, 6-8 July 2020. Milan, Italy.
- 2018 Chairman and organizer of the FISV 2018 Session: “The Circadian Clock. A Living Organisms' Best Friend in a Spinning World”, Rome, Italy.
- 2017 Member of the scientific committee for the organization of the Annual Society Meeting SIBV-SIGA 2017, Pisa, Italy.
- 2015 Member of the organization and scientific committees for the Annual Society Meeting SIBV-SIGA 2015 and for a scientific event held at the Milan EXPO 2015.

Data

28/06/2019

 Luogo

Milano
