



CV: Maria Beatrice BITONTI

Official Address

Department of Biology, Ecology and Earth Sciences (DiBEST)
University of Calabria
Ponte Bucci, Cubo 6B
I-87036 Arcavacata di Rende (CS)- Italy
Tel: + 39 0984 492965
Fax: + 39 0984 492964
E-Mail: b.bitonti@unical.it
<http://www.unical.it/portale/>

Nationality

Italian

Degree

Laurea in Scienze Biologiche cum laude at the University of Rome, Italy, November 1972

Positions

Professor of Plant Biology at the University of Calabria, Italy (from 2000)
Past-President Vicariant (2012-2014) and Member of Scientific Committee of Società Botanica Italiana (SBI);
Past-Head Vicariant of the Department of Biology, Ecology and Earth Sciences University of Calabria (2012-2013);
Past Coordinator of the PhD Course in Plant Biology, belonging to the Life Sciences School of University of Calabria (2012-2013);
Past-Head of the Department of Ecology- University of Calabria (2003-2012);
Past- Member of Senato Accademico (2006 - 2012) and Comitato di Coordinamento e Programmazione of University of Calabria (2003 – 2012);
Past-Member of the Scientific Committee of the University of Calabria for the scientific activities assessment by CIVR (2004-2008) and ANVUR (2004-2010);
Past-Head Delegate for Courses Organization in the Faculty of Mathematic, Phisic and Natural Sciences (2000-2003);

Teaching

Botany, Plant Biology and Plant Physiology (for Degree in Biology and Biotechnology) ; Botany (for Degree in Natural Sciences).

Scientific activities

External examiner (Opponent) for Ph.D. dissertations in Italy and United Kingdom; Organizer of symposia, workshops and meetings on Plant Developmental Biology; Supervision of Ph.D students; Supervision of Post-doctoral fellows

Research field

Plant developmental and adaptive biology

She works in this field since more than forty years. Currently, she coordinates a research group of more than 8 members: three of them have a permanent position belonging to the DiBEST Department of the University of Calabria; the other components are early researchers (Ph.D students and post- Doc).

Research interest deals with the cytophysiological and molecular bases of plant development and plant growth plasticity in response to environmental cues. For long time in seventies the research focus was on meristem activity and cell commitment and differentiation. Many complementary aspects have been investigated in various species (mainly in wheat and onion) and several approaches have been applied: from cytological and autoradiographic studies to cytophotometric analysis of nuclear components. From nineties the attention has been largely addressed towards the relationship between hormone circuitry and genetic network underlying cell fate and developmental processes, as well as towards the involvement of methylation-related epigenetic mechanisms in modulating plant response to developmental stimuli and environmental/stressful factors. Beside *A. thaliana* model plant, most of these studies have been carried out in species of agronomic (olive, peach, citrus) or ecological relevance (*P. oceanica* seagrass and psammophyte plants) in relation to aspects dealing with plant productivity/product quality and environment monitoring/restoration, respectively.

The applied approaches include: optical and confocal microscopy; immunocitochemistry detection of hormone distribution and cytological pattern of DNA methylation; MSAP analysis; gene expression analysis through qRT-PCR, GUS analysis, single- and multi-probe *in situ* hybridisation and recently, the hightthroughput NGS technology.

The expertise on plant cellular and molecular biology is certified by more than 80 original scientific papers and several international collaborations.

Scientific production

Paper in refereed journals: more than 80, among them more than 70 listed in ISI WEB of Knowledge; 3 book chapters; Invited Lectures and Communications to Congress more than 20.

Editorial activities

Referee for different journals (Annals of Botany, Planta, Plant Journal, Plant Physiology, Journal of Experimental Botany, Plant Cell, Plant Physiology and Biochemistry, Genome, Journal of Plant Growth

Regulator, Heredity, Functional Plant Biology; Marine Genomics, PLant Cell Reports, Chemosphere)
Referee for MIUR projects and for Scientific European and American Agencies

Main Projects

- PON RICERCA E COMPETITIVITA' 2007/2013 - ASSE I SOSTEGNO AI MUTAMENTI STRUTTURALI OB. OPERATIVO 4.1.1.4 : SILA project (Integrated System of Laboratories for Environment). (*Member of Scientific Committee and Co-coordinator of Line Laboratory "Omic integrated platform"*)
- PON RICERCA E COMPETITIVITA' 2007/2013- Progetto Spread Bio Oil cod. 01_00293. WP. Plant Biology: gene functional characterization). (*Coordinator of Work-package*)
- PON RICERCA E COMPETITIVITA' 2007/2013- Progetto SIGIEC, (Integrated system for coast erosion prevention) cod. 01_02651 (*Partecipant to Research Unit*)
- POR-FSE 2007/2013 - AQP Atto I, Azione 2, Laboratorio "Mission oriented" Agribiotech LAB Calabria. (*Member of Scientific Committee and Coordinator of Research Unit of University of Calabria*).
- POR-FSE 2007/2013 - AQP Atto I, Azione 3 – Project “My Darling Clementine” of AZIENDA AGRICOLA SAN MAURO. (*Coordinator of Work-package n°3*)
- Programs of National relevance - PRIN 2004-2006 (Prot. 2004071108_002) and 2006-08 (Prot. 2004071108_002). (*Coordinator of Research Unit of University of Calabria*).
- PON “Ricerca Scientifica, Sviluppo Tecnologico e Alta Formazione” 2000-2006, ambito tematico “ Analisi e prevenzione del rischio ambientale. (*Coordinatore di un' unità operativa del sottонodo regionale del Centro di Competenza Tecnologica “Impresa Ambiente”*)
- PON “Ricerca Scientifica, Sviluppo Tecnologico e Alta Formazione” 2000-2006, ambito tematico “ Biologia avanzata”. (*Partecipante ad un' unità operativa del sottонodo regionale del Centro di CompetenzaTecnologica*)
- PON “Ricerca Scientifica, Sviluppo Tecnologico e Alta Formazione” 2000-2006, ambito tematico 2 " Tecnologie Agroalimentari" (*Coordinatore di un unità operativa del sottонodo regionale del Centro di Competenza Tecnologica Ce.R.T.A)*

Publications (in the last five years)

1. Bitonti M. B. A. , Chiappetta A. A. C. , (2010)" Root apical meristem pattern: hormone circuitry and transcriptional networks". In *Progress in Botany*, Luttge U., Beyschlag W., Büdel B., Francis D. (a cura di), : Springer-Verlag, 2010, Vol. 72, pp. 37-71.
2. Bruno A. , Bruno L. , Chiappetta A. A. C. , Giannino D. , Bitonti M. B. A. (2010). PoCHL P expression pattern in Posidonia oceanica is

- related to critical light conditions". *Marine Ecology Progress Series*, 415: 61-71.
3. Layton B. , Boyd M. B. , Tripepi M. , Bitonti M. B. A. , Dollahon M. N. R. , Balsamo R. (2010). Dehydration-induced expression of a 31-kDa dehydrin in *Polypodium polypodioides* (Polypodiaceae) may enable large, reversible deformation of cell walls". *American Journal of Botany*, 97: 1-10.
 4. Nelissen H. , De Goeve S. , Fleury D. , Neyt P. , Bruno L. , Bitonti M. B. A. , Van Der Straeten D. , Vandenbussche F. , Yamaguchi T. , Tsukaya H. , Witters E. , De Jaeger G. , Houben A. , Van Lijsebettens M. (2010). Plant Elongator regulates auxin-related genes during RNA polymerase II transcription elongation. *Proc. Natl. Acad. Sci. USA*, 107: 1678-1683.
 5. Tripepi M., Pöhlschroder M., Bitonti M.B. (2011). Diversity of Dehydrins in *Olea europaea* Plants Exposed to Stress". *The Open Plant Science Journal*, Vol. 5, pp. 9-13
 6. Chiappetta A. A. C. , Bruno L. , Salimonti A. , Muto A. , Jones J. , Rogers H. J. , Francis D. , Bitonti M. B. A. (2011). Differential spatial expression of A- and B-type CDKs, and distribution of auxins and cytokinins in the open transverse root apical meristem of *Cucurbita maxima*. *Annals of Botany*, 107: 1223-1234.
 7. Spadafora D. N. , Doonan J. , Herbert R. , Bitonti M. B. A. , Wallace E. , Rogers H. J. , Francis D. (2011). *Arabidopsis* T-DNA insertional lines for *CDC25* are hypersensitive to hydroxyurea but not to zeocin or salt stress". *Annals of Botany*, 107 (7): 1183-1192.
 8. Bruno L. , Muto A. , Spadafora D. N. , Iaria D. L. , Chiappetta A. A. C. , Lijsebettens M. , Bitonti M. B. A. (2011). Multi-probe in situ hybridization to whole mount *Arabidopsis* seedlings". *International Journal Plant Developmental Biology Biol*, 55: 197-203.
 9. Greco M. , Chiappetta A. A. C. , Bruno L. , Bitonti M. B. A. (2012). In *Posidonia oceanica* cadmium induces changes in DNA methylation and chromatin patterning. *Journal of Experimental Botany*, Vol. 63 (2): 695-709.
 10. Spadafora N. D. , Parfitt D. , Marchbank A. , Sherong L. , Bruno L. , Vaughan R. , Nieuwland J. , Buchanan-wollaston V. , Herbert R. J. , Bitonti M. B. A. , Doonan J. , Albani D. , Prinsen E. , Francis D. , Rogers H. J. (2012). Perturbation of cytokinin and ethylene-signalling pathways explain the strong rooting phenotype exhibited by *Arabidopsis* expressing the *Schizosaccharomyces pombe* mitotic inducer, *cdc25*. *BMC Plant Biology*, Vol. 12(45): 1-25.
 11. Testone G., Condello E, Verde I, Nicolodi C., Caboni E., Dettori M.T., Vendramin E., Bruno L, Bitonti M.B. G. , Giannino D. (2012). The peach (*Prunus persica* L. Batsch) genome harbours 10 KNOX genes, which are differentially expressed in stem development, and the class 1 KNOPE1 regulates elongation and lignification during primary growth. *Journal of Experimental Botany*, 63 (15): 5417-5435, doi: 10.1093/jxb/ers194
 12. Iaria D. L. , Bruno L. , Macchione B. , Tagarelli A. , Sindona G. , Giannino D. , Bitonti M. B. A. , Chiappetta A. A. C. , " The aroma

- biogenesis-related *Olea europaea* ALCOHOL DEHYDROGENASE gene is developmentally regulated in the fruits of two *Olea europaea* L. cultivars". *Food Research International*, 2012, Vol. 49, pp. 720-727.
13. Spadafora N., Perrotta L., Nieuwland J., Albani D., Bitonti M.B., Herbert R.J., Doonan J.H., Marchbank A.M., Siciliano I., Gronlund A.L., Francis D. Rogers. H. (2012). Gene dosage effect of WEE1 on growth and morphogenesis from arabidopsis hypocotyl explants . *Annals of Botany*:110(8): 1631-1639.
 14. Cozza R. , Bruno L. , Bitonti M. B. A. (2013). Expression pattern of a type-2 metallothionein gene in a wild population of the of the psammophyte *Silene nicaensis*. *Protoplasma*, 1: 381-389 DOI 10.1007/s00709-012-0425-3.
 15. Greco M., Chiappetta A., Bruno L., Bitonti M.B. (2013). Effects of light deficiency on genome methylation in *Posidonia oceanica*. *Marine Ecology Progress Series*, 473: 103-114 , doi: 10.3354/meps09955
 16. Cook G. S., Lentz Gronlund A. , Siciliano I., Spadafora N., Amini M., Herbert R.J., Bitonti M. B., Graumann K., Francis D., Rogers H. J. (2013) Plant WEE1 kinase is cell cycle regulated and removed at mitosis via the 26S proteasome machinery. *Journal of Experimental Botany* , 64:2093-2106.
 17. Chiappetta A. A. C. , Gagliardi C. , Bruno L. , Bitonti M. B. A. , " In Vitro Culture Conditions and OeARF and OeH3 Expressions Modulate Adventitious Root Formation from Oleaster (*Olea europaea* L. subsp. *europaea* var. *sylvestris*) Cuttings". *The ScientificWorldJournal*, 2014, pp. 1-9.
 18. Bruno L. , Spadafora D. N. , Iaria D. L. , Chiappetta A. A. C. , Bitonti M. B. A. (2014). " Developmental stimuli and stress factors affect expression of ClGLP1, an emerging allergen-related gene in *Citrus limon*". *Plant Physiology and Biochemistry*, 79: 31-40
 19. Greco M. G. , Saez C. A. , Brown M. T. , Bitonti M. B. (2014). "A Simple and Effective Method for High Quality Co-extraction of Genomic DNA and Total RNA from Low Biomass Ectocarpus siliculosus, the Model Brown Alga"". *PLOS ONE*, 9: 1-13.
 20. Gonzalez-Perez L., Perrotta L., Acosta A., Orellana E. , Spadafora N., Bruno L., Bitonti M.B., Albani D., Cabrera J.C. ,Francis D., Rogers H.J. (2014). In tobacco BY-2 cells xyloglucan oligosaccharides alter the expression of genes involved in cell wall metabolism, signalling, stress responses, cell division and transcriptional control. *Mol Biol Rep*, 4(7): 1-16 DOI 10.1007/s11033-014-3566-y
 21. Roncarati F, Sáez C.A., Greco M., Gledhill M., Bitonti M.B., Brown M.T. (2015). Response differences between Ectocarpus siliculosus populations to copper stress involve cellular exclusion and induction of the phytochelatin biosynthetic pathway. *Aquatic Toxicology* 159: 167-175
 22. Sáez C.A., Ramesh K., Greco M., Bitonti M.B., Brown M.T. (2015) Enzymatic antioxidant defences are transcriptionally

- regulated in Es524, a copper-tolerant strain of *Ectocarpus siliculosus* (Ectocarpales; Phaeophyceae) *Phycologia*, 54(4): 425-429
23. Testone G., Condello E., Di Giacomo E., Nicolodi C., Caboni E., Rasori A, Bonghi C., Bruno L., Bitonti M.B., Giannino G. (2015). The *knotted*-like genes of peach (*Prunus persica* L. Batsch) are differentially expressed during drupe growth and the class 1 *KNOPE1* contributes to mesocarp development. *Plant Science*, 237: 69-79
24. Chiappetta A., Muto A., Bruno L., Van Lijsebettens M., Bitonti M.B. (2015). A dehydrin gene isolated from feral olive enhances drought tolerance in *Arabidopsis* transgenic plants. *Frontiers in Plant Science*, 6:1-15 doi: 10.3389/fpls.2015.00392
25. Bruno L., Ronchini M., Gagliardi O., Corinti T., Chiappetta A., Gerola P., Bitonti M.B. (2015). Spatial and temporal regulation of *AtGUS1* and *AtGUS2* expression detected in *Arabidopsis thaliana* root apex by a highly sensitive TSA-MISH method. *International Journal of Developmental Biology*, 59:221-228.

Maria Beatrice Siliquidi