

CURRICULUM VITAE

Dr. POLYDEFKIS HATZOPOULOS, *Professor*
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PERSONAL

MARITAL STATUS	MARRIED
DATE OF BIRTH	11-1-1957
PLACE OF BIRTH	THESSALONIKI, GREECE
NATIONALITY	GREEK

EDUCATION

Ph. D. In Molecular Biology and Biochemistry, 1984, Biology Department, New York University, New York.
USA. Ph. D Thesis title: "Isolation, characterization and structural analysis of the vitellogenin genes
from *Drosophila grimshawi*"

Bachelor's Degree in Biology, 1979 Department of Biology, Aristotelian University of Thessaloniki, Greece

ACADEMIC POSITIONS

2001-present Professor at the Department of Agricultural Biotechnology, Agricultural University of Athens,
Greece

1991-2001 Associate Professor at the Department of Agricultural Biotechnology, Agricultural University of
Athens, Greece

1990-1991 Assistant Professor at Aristotelian, Department of Biology, University of Thessaloniki, Greece

ADMINISTRATIVE POSITIONS

2017-2019 Chairman of the Biotechnology Department, AUA

2014-present Director of MSc program in "Systems Biology".

2012-2017 Board of Trustees of AUA.

2002-2011 Director of "Biochemistry, Enzyme Technology, Microbiology and Molecular Biology"
Division of the Department of Agricultural Biotechnology, AUA

2001-2011 Member of the ELKE (Research Committee of AUA) committee.

2011 Vice-Chairman of the ELKE, AUA.

RESEARCH POSITIONS

1987-1990 Postdoctoral Research Fellow in Dr. Renee Sung's Laboratory, Department of Plant Biology,
Berkeley University, California, USA

1985-1987 Postdoctoral Research Fellow in Dr. C. Louis Laboratory, Institute of Molecular Biology and
Biotechnology, Crete, Greece

1984-1985 Postdoctoral Research Fellow in Dr. Mat Meselson's Laboratory, Department of Biochemistry and
Molecular Biology, Harvard University, MA, USA

1984 Postdoctoral Research Fellow in Dr. M. Kambysellis' Laboratory, Department of Biology, New
York University, NY, USA

AWARDS

Fellowships

1976-1979 University of Thessaloniki, National Fellowship Organization (NFO), Greece

Awards

1981 Dr. George Papanicolaou Grant issued from the Hellenic University Club of New York

TEACHING

Undergraduate (BSc level)

- New York University
1979-1983, Biology, Genetics
- Agricultural University of Athens
1991- present, Molecular Biology
1991- present, Plant Biotechnology
2001 – present, Genes and Environment
2001 – present, Recombinant DNA technology
2008 – present, Development

Graduate (MSc level)

- New York University
1984, Molecular Biology
- MAICH (Mediterranean Agricultural Institute of Chania, Crete, Greece).
1998- present, Arabidopsis transformation and Molecular Biology
- Aristotelian University of Thessaloniki
2000- 2002, Plant Biotechnology
- University of Crete
1998 – present, Plant Genome Analysis: Structure, mapping, regulation and cloning
- Agricultural University of Athens
1999 – present, Molecular Biology, and Molecular Techniques for detection of GMO

SUPERVISION

Postdoctoral Research fellows

Dr. Lydia Bouza, Dr. Dimitra Milioni, Dr. Stamatis Rigas, Dr. Ioanna Soufleri, Dr. Konstantinos Prasinos, Dr. Dimosthenis Kizis, Dr. Anoula Mavridou, Dr. Anna Martsinkovskaya, Dr. Zaruhi Poghosyan, Dr. Eglantine Lobstein, Dr. George Banilas, Dr. Andreas Katsiotis, Dr. Fotis Gazis, Dr. Efi Kosmidou, Dr. Despina Samakovli, Dr. Theoni Margaritopoulou, Dr. Christos Michaelidis, Dr. Anastasios Alatzas

Ph. D. Graduates

- Dimitra Milioni, 1997 “Molecular Analysis of heat-shock genes in plants”
- Kosmas Haralampidis, 1998 “Molecular analysis of: a) $\Delta 9$ stearoyl-ACP desaturase gene from olive, b) promoter analysis of heat-shock gene hsp81.1 in transformed *Arabidopsis* plants”
- Stamatis Rigas, 2001 “Molecular Analysis of genes involved in the root development of *Arabidopsis thaliana*”
- Katerina Giannoulia, 2004 “Isolation and characterization of genes involved in oil formation in olive (*Olea europaea*)”
- Despina Samakovli, 2007 “Molecular and functional subcellular localization of Hsp90s from *Arabidopsis thaliana*”
- Gerasimos Daras, 2011 “Systems Molecular Mechanisms in plant development”
- Kostantinos Koudounas, 2017
- Margarita Thomopoulou, in progress
- Loukia Roka, in progress

M.Sc. Students

At least 35 MSc students the last 17 years

Honor’s Degree Undergraduate Students

At least 50 Honor’s degree students (BSc) the last 27 years

RESEARCH ACTIVITIES – INTERESTS

The major aim of our research is to understand general principles of developmental trajectories and communication of organelles within the cell for canonical growth under normal or stress conditions, and the biochemical machinery of olive antioxidant molecule production. The main activities of the lab fall into four overlapping areas and an endeavor reaching for advancement of olive bio-technology.

Abiotic-biotic convergence to advance plant development

The molecular chaperones are involved heavily in the cellular homeostasis, a crucial parameter for canonical development. A major class of molecular chaperone is the Heat Shock Protein 90 (HSP90) system, a highly conserved system throughout all kingdoms. The genes are induced (abiotically) by heat stress and heavy metals. We used a combination of genetic, molecular, biochemical and reverse genetics to investigate the role of this chaperone system in plant development, as a crosstalk system of convergence of abiotic and biotic signaling pathways. We discovered, that the HSP90 system is involved in cellular homeostasis of protein activities that lead into canonical development in general and in highly ordered developmental pathways. This is attributed due to its protagonist role in signaling circuits such as Brassinosteroid (BR) signaling pathway from the hormonal perception (plasma membrane) to downstream nuclear response. The TRH1 (a potassium transporter) system also represents a convergence point of abiotic (external potassium milieu) to biotic (auxin hormone) homeostasis in root cell morphogenesis.

Epigenetics and development

Epigenetic phenomena are crucial determinants at cellular and organismal level. The HSP90 system in Arabidopsis is involved in the epigenetic landscape at the DNA level. We use reverse genetics and molecular approaches to shed light on the counteraction of HSP90 system in the epigenetic landscape. We discovered that even at the elimination of HSP90 proteins in the cell elicits global and specific changes at the level of DNA methylation. This change remains for a number of Arabidopsis generations and affects positively flowering processing.

Abiotic (heat) plant tolerance

The HSP90 system, as a heat inducible system plays a central role in abiotic stress tolerance. As it plays a crucial role in development (in plants and animals), this system could be considered a convergence hub of abiotic and biotic signaling. We use genetic and molecular approaches, and physiological analysis to study the HSP90 role in seedling heat-stress tolerance. We found that contrary to the predictions, the HSP90 canalizing canonical plant development restricts the number of phenotypic outcomes therefore the number of potential individuals to overcome the stress. Mutants of the HSP90 gene family have shown that have a higher tolerance towards heat increases than wild type Arabidopsis plants. Even though this at a superficial glance gives contradictory outcomes, it actually emphasizes the restriction of phenotypes, hence potential tolerant plants, since the HSP90 system narrows the plasticity and evolvability.

Developmental genetics and organelle communication

Compartmentalization is an integral part of a cell. In a plant cell three distinctive organelles such as nucleus, chloroplast and mitochondria all have to communicate to each other for the coordination of diverse functions to achieve normal growth. We use a number of approaches such as biochemistry, genetic, molecular, cellular and computational analysis to uncover how these organelles communicate. We discovered that protein quality control proteins such as proteases should be targeted to both mitochondria and chloroplast in order to achieve a normal developmental status and growth of Arabidopsis. Moreover, specific proteins are targeted to nucleus to function at the RNA processing level of mRNAs that synthesize in the cytoplasm proteins targeted to chloroplasts. These specific nuclear-localized proteins after their job completion exported from the nucleus and entered chloroplasts to function at the transcription and RNA processing level. Therefore these specific proteins entail the communication scheme between nucleus and chloroplast, giving signals to each other for proper functional competence prior to embryo development.

Olive biochemical machinery and antioxidant production and tolerance

Sessile organisms like plants produce a wide variety of secondary metabolites as a general strategy of chemical defence to tolerate biotic and abiotic stress. The olive plant contains a number of unusual secoiridoids commonly known as oleosides that are unique to Oleaceae. We used molecular and biochemical approaches to study the oleuropein β -glucosidase gene and enzyme. We showed that this protein is a rate limiting enzyme in the catabolism of oleuropein-glucose to oleuropein aglycon molecule, a highly antioxidant and cross-linking agent. The glycosidic defence compounds along with their hydrolytic enzymes often form a dual-partner defence

system against biotic stress. In olive we also have determined molecularly the regulation of gene expression of oil biosynthesis enzymes and have also genotyped a number of Greek, Cypriot and Turkish olive varieties.

RESEARCH GRANTS

1. "Isolation and molecular analysis of hsp90 genes from genomic library of *Arabidopsis thaliana* and induction of gene expression under different temperature conditions" PENED-91, GSRT1993-1995, Greece
2. "Extension of biotechnological methodologies from rapeseed research in Britain to the agricultural improvement of the olive crop in Greece" GSRT-BC 1994-1996, Greece-UK
3. "Hellenic plant molecular biology network- An interdisciplinary research and training initiative" EU DGXII BIOTECHNOLOGY PROGRAM-93, 1994-1996
4. "European Scientists Sequencing Arabidopsis" EU DGXII BIOTECHNOLOGY PROGRAM-94, 1995-1997
5. "GR-Revegetation: New approaches for improving vegetation in far degraded Mediterranean ecosystems" NATO Science for Stability, 1993-
6. "Root formation in *Arabidopsis thaliana* and crop improvement by manipulation of root organogenesis" EU DGXII BIOTECHNOLOGY PROGRAM-96, 1997-2000
7. "Molecular Analysis of cellular differentiation in *Arabidopsis*" PENED 95 GSRT 1996-1998, Greece
8. "Isolation of oleosin genes from olive and stable transformation for olive biotechnology application" YPER, GSRT 1997-1999, Greece
9. "Development and application of biotechnological methodologies for taxol production and related compounds" EPETII, GSRT, 1998-2001,
10. "Functional analysis and use of plant genes and proteins involved in abiotic stress and cell apoptosis" PENED 99, 1999-2001, GSRT, Greece
11. "Application of molecular markers in identification and the study of physiology of fruit ripening of Greek vitis cultivars . In vitro and in vivo production of verified cultivars" EPETII, GSRT, 2000-2001, Greece
12. Molecular analysis and functional involvement of genes and proteins during differentiation, heat tolerance and ion transfer (tolerance in high salinity)" PENED-01EΔ148- 2001, 2002-2007, GSRT, Greece
13. "Molecular and cellular mechanisms of tip growth in plant cells- Tip-growth In Plants :from Nucleus to Expanding Tip- TIPNET" EU-HPRN-CT-2002-00265, 2002-2004
14. PPA (Undegraduate Programm Sudy-Education): Agricultural Biotechnology, EKT and ETPA, Ministry of Education, 2003, EPEAK II
15. "Genes and Environment: plant and animal response under acute environmental conditions and molecular ecology" Ministry of Education, PYTHAGORAS I, 2004
16. PYTHAGORAS II, 2006
17. "The role of PESCADILLO in cell cycle progression and xylogenesis" EU-QLK5-CT-2002-51571 (MCFI-2002-01571) 2002-2003
- 18 "Genomics and root development and molecular physiology of potassium transport in root hairs of *Arabidopsis thaliana*" Bilateral BC(UK)-GSRT(Gr), 2003-2004
19. "Functional analysis and genomics approach in Hsp90 chaperone activity during plant development and photomorphogenesis" Bilateral USA-Greece (GSRT), 2005-2006
20. "Olive oleosins as vehicles in high added value polypeptide purification through biotechnological means and novel antioxidant biosynthetic pathways in olive" Bilateral Canada- Greece (GSRT) 2005-2006
21. "Genomic approaches in peach-tree architecture" INTERNATIONAL COLLABORATION IN INDUSTRIAL RESEARCH and DEVELOPMENT at PRE-COMPETATIVE STAGE, GSRT 2005
22. «Understanding Tolerance of Plants to Abiotic Stress : Crossstalk- of Polyamine derived-Hydrogen Peroxide, Heat Shock proteins and Polyphenols in Tolerance of Transgenic Plants to Salinity, Heat and Heavy Metals" ABISTOLE, Thales 2011, GSRT, GREECE
23. "A systems approach into the production of plant and algal diterpenes with high industrial and pharmaceutical value» SysTerp, SYNERGASIA I 2012, GSRT, GREECE
24. "Molecular analysis and biotechnological applications of phenolic molecules in olive fruit with antioxidant activity" CYPRUS (Research Promotion Foundation, RTDI), 2011 (cooperation)
24. «Multi-strain indigenous Yeast starters for 'Wild-ferment' Wine production» MYWine, SYNERGASIA II, 2013, GSRT, GREECE
25. "Developmental Signaling Pathways Determining the Beginning and the End of Plant's Life Cycle" BELiCy, ARISTEIA (EXCELLENT) 2012, GSRT, GREECE
26. BEFORE, EU, Horizon, 2014-2018,
27. ESPA, EREVNO_KAINOTOMO, Hellenios, GSRT, 2018

28. ESPA, EREVNO_KAINOTOMO, Vegprotect, GSRT, 2018
29. EMBLEMATIC ACTION, Olive road, GSRT, 2018
30. OMICS ENGINE_INFRASTRUCTURE, GSRT, 2014-2020

REVIEWER FOR RESEARCH PROPOSALS AND JOURNALS

1. EPETII, 1995, GREECE
2. PEP, Crete, 1995, EPET II, Greece
3. In different projects from GSRT, Greece, from USA (BART)
4. Journals: *Physiologia Plantarum J.*, *Genome*, *Plant Physiology*, *Plant Physiology and Biochemistry*, *J. Proteomics*, *Plant J.*, *J. Exp. Bot.* etc
5. ELIDEK, 2018, GSRT, Greece

Editorial Board:

Member of Editorial Board of *Plant Physiology and Biochemistry J.*

PUBLICATIONS

1. Kambysselis, M.P., **Hatzopoulos, P.** and Craddock, E.M. (1984). "Rapid in vitro incorporation of radioactive amino acids into vitellogenin proteins of *Drosophila grimshawi*" *DIS* 60, 126-128.
2. **Hatzopoulos, P.** (1984). "Isolation, Characterization and Structural Analysis of the Vitellogenin Genes from *Drosophila grimshawi*" Ph. D. Dissertation, New York University, New York, USA
3. Kambysselis, M.P., **Hatzopoulos, P.** Seo, E.W. and Craddock, E.M. (1986). "Non-coordinate synthesis of vitellogenin proteins in tissue of *Drosophila grimshawi*" *Devel. Genet.* 7, 81-97.
4. **Hatzopoulos, P.** and Loucas, M. (1986). "Differentiation of the vitellogenin proteins in species of the *Drosophila obscura* group" *Genetica* 71, 119-122.
5. **Hatzopoulos, P.** and Kambysselis, M.P. (1987). "Isolation and structural analysis of the vitellogenin genes from *Drosophila grimshawi*" *Mol. Gen. Genet.* 206, 475-488.
6. Yannopoulos, G., Stamatis, N., Monastiriotti, M., **Hatzopoulos, P.** and Louis, C. (1987). "The mobile element hobo is responsible for the induction of hybrid dysgenesis by strains of *Drosophila melanogaster* bearing the male recombinant factor 23.5 MRF" *Cell* 49, 487-495.
7. **Hatzopoulos, P.**, Monastiriotti, M., Yannopoulos, G. and Louis, C. (1987). "The instability of the TE like mutation *Dp(2:2)GYL* of *Drosophila melanogaster* is ultimately associated with the hobo element" *EMBO J.* 6, 3091-3096.
8. **Hatzopoulos, P.** and Kambysselis, M.P. (1987). "Differential and temporal expression of the vitellogenin genes in *Drosophila grimshawi*" *Mol. Gen. Genet.* 210, 564-571.
9. Monastiriotti, M., **Hatzopoulos, P.**, Stamatis, N., Yannopoulos, G. and Louis, C. (1988). "Cohabitation of KP and full length p-elements in the genome of MR strains inducing P-M like hybrid dysgenesis in *Drosophila melanogaster*" *Mol. Gen. Genet.* 215, 94-99.
10. **Hatzopoulos, P.** and Kambysselis, M.P. (1988). "Comparative biochemical and immunological analysis of the three vitellogenins of *Drosophila grimshawi*" *Comp. Biochem. Physiol.* 89B, 557-564.
11. Kambysselis, M.P., **Hatzopoulos, P.** and Craddock, E.M. (1989). "The temporal pattern of vitellogenin synthesis in *Drosophila grimshawi*" *J. Exp. Zool.* 251, 330-348.
12. **Hatzopoulos, P.**, Craddock, E. M. and Kambysselis, M.P. (1989). "DNA length variants contiguous to the 3' end of the vitellogenin genes in *Drosophila grimshawi* laboratory stocks from different Hawaiian islands" *Biochem. Genet.* 27, 363-377.
13. Borkid, C., Choi, H., Jin, Z.-H., Franz, G., **Hatzopoulos, P.**, Chorneau, R., Bonas, U., Pelegri, F. and Sung, Z.R. (1988). "Developmental regulation of embryonic genes in plants" *Proc. Natl. Acad. Sci. USA* 85, 6399-6403.
14. Franz, G., **Hatzopoulos, P.**, Jones, T.J. Krauss, M. and Sung, Z.R. (1989). "Molecular and genetic analysis of an embryonic gene DC8 from *Daucus carota* L." *Mol. Gen. Genet.* 218, 143-151.
15. **Hatzopoulos, P.**, Fong, F. and Sung, Z.R. (1990). "Abscisic acid regulation of DC8, a carrot embryonic gene" *Plant Physiol.* 94, 690-695.
16. **Hatzopoulos, P.**, Franz, G., Choy, L. and Sung, Z.R. (1990). "Interaction of nuclear factors with upstream sequences of a lipid body membrane protein gene from carrot" *The Plant Cell* 2, 457-467.

17. Goupil, P., **Hatzopoulos, P.**, Franz, G., Hempel, D.F., You, R.L. and Sung, Z.R. (1992) "Transcriptional regulation of a seed-specific carrot gene, DC8". *Plant Mol. Biol.* 18, 1049-1063.
18. **Hatzopoulos, P.** (1992). "Developmental and Abscisic acid regulation of gene expression during embryogenesis" In "Morphogenesis in Plants Molecular Approaches" NATO ASI Series, Eds K.A. Roubelakis-Angelakis and K. Tran Thanh Van
19. Keddie, J.S., Tsiantis, M., Piffanelli, P., Cella, R., **Hatzopoulos, P.** and Murphy, D.J. (1994) "A seed-specific *Brassica napus* oleosin promoter interacts with a G-box protein and may be bi-directional" *Plant Mol. Biol.* 24, 327-340
20. Slocombe, S.P., Piffanelli, P., Fairban, D., Bowra, S. **Hatzopoulos, P.**, Tsiantis, M. and Murphy, D.J. (1994) "Temporal and Tissue specific regulation of a *Brassica napus* steroyl-Acyl carrier protein desaturase gene". *Plant Physiol.* 104, 1167-1176
21. Kourti, A. and **Hatzopoulos, P.** (1995) "Latitudinal clines of allelic frequencies in Mediterranean populations of *Ceratitis capitata* (Wiedemann)" *Genet. Sel. Evol.* 27, 201-210
22. Hong, H.P., Ross, J.H.E., Gerster, J. L., Rigas, S. Datlal, R.S.S. **Hatzopoulos, P.**, Scoles, G. Keller, W. Murphy, D.J. Robert L.S. (1997) "Promoter sequences from two different *Brassica napus* tapetal-like genes direct tapetal expression of beta-glucuronidase in transgenic *Brassica* plants" *Plant Mol. Biol.* 34, 549-555.
23. Milioni, D. and **Hatzopoulos, P.** (1997) "Genomic organization of hsp90 gene family in *Arabidopsis*". *Plant Mol. Biol.* 35, 955-962
24. Stavarakakis, M.N., Biniari, K. and **Hatzopoulos, P.** (1997) "Identification and discrimination of eight Greek grape cultivars (*Vitis vinifera* L.) by random amplified polymorphic DNA markers" *Vitis* 36: 175-178
25. Katsiotis, A., Douka, A. and **Hatzopoulos, P.** "Genomic organization of a highly repetitive sequences in *Olea europaea*". *Genome* 41, 527-534 (1998)
26. Bevan, M., Bancroft, I., Bent, E., Love, K., Goodman, H. Dean, C., Bergkamp, R., Dirkse, W., Van Staveren, M., Stiekema, W., Drost, L., Ridley, P., Hudson, S.A., Patel, K., Murphy, G., Piffanelli, P., Wedler, H., Wedler, E., Wambutt, R., Weitzenegger, T., Pohl, T.M., Terry, N., Gielen, J., Villarroel, R., De Clerck, R., Van Montagu, M., Lecharny, A., Auborg, S., Gy, I., Kreis, M., Lao, N., Kavanagh, T., Hempel, S., Kotter, P., Entian, K.-D. Rieger, M., Schaeffer, M., Funk, B., Mueller-Auer, S., Silvey, M., James, R., Montfort, A., Pons, A., Puigdomenech, P., Douka, A., Vouklatou, E., Milioni, M., **Hatzopoulos, P.**, Pivarandi, E., Obermaier, B., Hilbert, H., Duesterhoeft, A., Moores, T., Jones, J.D.G., Eneva, T., Palme, K., Benes, V., Rechman, S., Anson, W., Cooke, R., Berger, C., Delseny, M., Voet, M., Volekaert, G., Mewes, H.-W., Klosterman, S., Schueller, C., and Chalwatzis, N. (1998) "Analysis of 1.9 Mb of contiguous sequence from chromosome 4 of *Arabidopsis thaliana*" *Nature* 391, 485-488
27. Haralampidis, K., Milioni, D., Sanchez, J., Baltrusch, M., Heinz, E. and **Hatzopoulos, P.** (1998) "Temporal and transient expression of stearoyl-ACP carrier protein desaturase gene during olive fruit development". *J. Exp. Botany* 49, 1661-1669
28. Z. Poghosyan, K. Haralampidis, K. Giannoulia, D.J. Murphy and **P. Hatzopoulos**, 1998 "Developmental regulation and spatial expression of an $\omega 3$ fatty acid desaturase from *Olea europaea*" pp. 155-158. In "Advances in Plant Lipid Research, The Proceedings of the 13th International Symposium on Plant Lipids", Sevilla, Spain, July 5-10, 1998, Ed. J. Sanchez, E. Cerda-Olmedo and E. Martinez-Force, University of Sevilla
29. **P. Hatzopoulos**, Z. Poghosyan, K. Haralampidis, A. Martsinkovskaya, K. Giannoulia and D.J. Murphy, 1998 "Spatial, temporal and developmental regulation of expression of genes involved in oil biosynthesis during flower and fruit development" pp. 637-640. In "Advances in Plant Lipid Research, The Proceedings of the 13th International Symposium on Plant Lipids", Sevilla, Spain, July 5-10, 1998, Ed. J. Sanchez, E. Cerda-Olmedo and E. Martinez-Force, University of Sevilla
30. Poghosyan, Z., Haralampidis, K., Martsinkovskaya, A. Murphy, D.J. and **Hatzopoulos, P.** (1999) "Developmental regulation and spatial expression of a plastidial fatty acid desaturase from *Olea europaea*" *Plant Physiol. and Biochem.* 37, 109-119 (**Cover Page**)
31. Gherraby, W. Makris, A., Pateraki, I., Sanmartin, M., Hatzopoulos, P. and Kanellis, A. 1999. "Manipulation of the expression of heme activated protein HAP5c gene in transgenic plants" pp. 321-326. In "Biology and Biotechnology of the Plant Hormone Ethylene II" (Eds) Kanellis, A., Chang, C., Klee, H., Bleeker, A.B., Pech, J.P. and Grierson, D. Kluwer Academic Publishers, Dordrecht, Netherlands
32. Martsinkovskaya A., Poghosyan Z., Haralampidis K., Murphy D.J. and **Hatzopoulos P.** "Temporal and spatial gene expression of cytochrome b5 during flower and fruit development in olives" *Plant Mol. Biol.* 40: 79-90 (1999)

33. **Hatzopoulos, P.** (1999) "Transgenic plants" in "Molecular Sciences in Sustainable Agriculture" pp. 153-171. EE Nectar Montpellier, France
 34. Rigas, S., Debrosses, G., Haralampidis, K., Vicente-Agullo, F., Feldmann, A., Grabov, A., Dolan, L., and **Hatzopoulos, P.** (2001) "*TRH1* Encodes a Potassium transporter required for tip growth in *Arabidopsis* root hairs". *Plant Cell* 13, 139-151
 35. Giannoulia, K., Haralampidis, K., Poghosyan, Z., Murphy, DJ. and **Hatzopoulos P.** (2000) "Differential expression of diacyl glycerol acyltransferase (DGAT) genes in olive tissues" *Biochem. Soc. Trans.* 28: 697-699
 36. Milioni, D., Franz, G., Sung, R. and **Hatzopoulos, P.** (2001) "Gene expression during heat-shock in embryogenic carrot cell lines". *Plant Cell Tissue and Organ Cult.* 65, 221-228
 37. Beis, D., Argiros, S., Milioni, D., Rigas, S., Haralampidis, K., Samakovli, D., Douka, A. and **Hatzopoulos P.** "Sequence analysis of 66.5kb region of the chromosome IV from *Arabidopsis thaliana*" (2002) In "Genome Sequencing and Comparative Analysis" Eds. A.S. Tsaftaris and A.N. Polidoros, University Press, Thessaloniki, Greece, pp. 107-117.
 38. Haralampidis, K., Milioni, D., Rigas, S. and **Hatzopoulos, P.** (2002) "Combinatorial Interaction of cis Elements specifies the Expression of the *Arabidopsis AtHsp90-1* gene" *Plant Physiol.* 129, 1138-1149.
 39. **Hatzopoulos, P.**, Banilas, G., Giannoulia, K., Gazis, F., Nikoloudakis, N., Milioni, D. and Haralampidis, K. (2002) "Breeding, Molecular Markers and Molecular Biology of olive tree" *Eur. J. Lip. Res. Techn.* 104, 574-586
 40. Desbrosses, G., Josefsson, C., Rigas, S., **Hatzopoulos, P.** and Dolan, L., (2003) "AKT1 and TRH1 are required during root hair elongation in *Arabidopsis*" *J. Exp. Bot.* 54: in press
 41. Banilas, G., Minas, J., Gregoriou, C., Demoliou, C., Kourti, A. and **Hatzopoulos, P.** (2003) "Genetic diversity among accessions of an ancient variety of Cyprus" *Genome* 46: 370-376
 42. Nikoloudakis, N., Banilas, G., Metzidakis, J., Gazis, F. and **Hatzopoulos, P.** (2003) "Discrimination and genetic diversity among cultivated olives of Greece using RAPD markers" *J. Amer. Soc. Hort. Sci.* 128: 741-746
 43. Kavroulakis, N., Fletmetakis, E., Aivalakis, G., Dahiya, P., Brewin N.J., Fasseas, K., **Hatzopoulos, P.**, and Katinakis, P. (2003) "Tissue distribution and subcellular localization of carbonic anhydrase in mature soybean root nodules indicates a role in CO₂ diffusion" *Plant Physiol and Biochem* 41, 479-484.
 44. Vicente-Agullo, F., Rigas, S., Debrosses, G., Dolan, L., **Hatzopoulos, P.** and Grabov, A., (2004) "Potassium carrier TRH1 is required for auxin transport in *Arabidopsis* roots" *The Plant J.* 40, 523-535
 45. Grabov, A., Ashley M.K., Rigas, S., **Hatzopoulos, P.** Dolan, L., and Vicente-Agullo, F., (2004) "Morphometric analysis of root shape" *New Phytologist* , 1469-
 46. Banilas G., Moresissis, A., Nikoloudakis N., and **Hatzopoulos, P.** (2005) "Spatial and temporal expression of two distinct oleate desaturases from olive (*Olea europaea* L.)" *Plant Science* 168, 547-555.
 47. Prasinos, C., Krampis, K., Samakovli, D., and **Hatzopoulos P.** (2005) Tight regulation of expression of two *Arabidopsis* cytosolic Hsp90 genes during embryo development" *J. Exp. Bot.* 56, 633-644
 48. Owen, C.A., Bitá, E-C. Banilas, G., Hajjar, S.E., Sellinakis, V., Aksoy, U., Hepaksoy, S., Chamoun, R., Talhook, S., Metzidakis, I., **Hatzopoulos, P.**, and Kalaitzis, P., (2005) "AFLP reveals structural details of genetic diversity within cultivated olive germplasm from the Eastern Mediterranean" *Theor. Appli. Genet.* 110, 1169-1861
 49. Poghosyan Z.P., Giannoulia, K., Katinakis, P., Murphy, D.J., and **Hatzopoulos, P.** (2005) "Temporal and transient expression of olive enoyl-ACP reductase gene during flower and fruit development" *Plant Physiol. Biochem.* 43, 37-44
 50. Giannoulia, K., Banilas, G. and **Hatzopoulos, P.** (2007) "Oleosin gene expression in olive". *J. Plant Physiol.* 164, 104-107
 51. Banilas, G., Nikiforiadis, A., Makariti, I., Moresissis, A., and **Hatzopoulos P.** (2007) "Discrete roles of a microsomal linoleate desaturase gene in olive identified by spatiotemporal transcriptional analysis" *Tree Physiol.* 27, 481-490
 52. Samakovli, D., Thanou, A., Valmas, C. and **Hatzopoulos, P.** "Hsp90 canalizes developmental perturbation" *J. Exp. Bot.* (2007) 58: 3513-3524 (**Cover Page**)
 53. Prasinos, K., Haralampidis, K., Milioni, D., Samakovli, D., Krampis K. and **Hatzopoulos, P.** "Complexity of Hsp90 in organelle targeting" *Plant Mol. Biol.* (2008) 67: 323-334.
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- Paper commented by:** Nicolas L. Taylor and A. Harvey Millar, (2009). *New Phytologist* 181: 505–508

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h-index : 32, (from 2014: 21),

i-index : 55, (from 2014: 36)

BOOKS (TEXT BOOKS)

1. “Plant Biotechnology” Polydefkis Hatzopoulos EMBPYO Publ. 2018 (2nd edition), Athens, pgs. 555, (in Greek)
2. “Plant Physiology” (by Taiz and Zeiger) translation in Greek, Polydefkis Hatzopoulos and others, Athens, 2012
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4. “i-Genetics” Translation in Greek, Polydefkis Hatzopoulos and others for the Greek edition, Academic Publ. IBasdra, Alexandroupoli, 2009
5. “Developmental and Molecular Plant Biology” Polydefkis Hatzopoulos and others, EMBRYO Publ., Athens, 2009, in Greek
6. “Recombinant DNA” Translation in Greek, Polydefkis Hatzopoulos and others for the Greek edition, Academic Publ. IBasdra, Alexandroupoli, 2007, pgs. 634.
7. “Genes VIII” Translation in Greek, Polydefkis Hatzopoulos and others for the Greek edition, Academic Publ. IBasdra, Alexandroupoli, 2004, pgs. 1535

TEACHING INTERESTS (there is extensive experience on these subjects)

1. Biology
2. Plant Biology
3. Molecular Biology
4. Plant Biotechnology
5. Plant Development
6. Recombinant DNA Technology

7. Genes and Environment

RESEARCH PLAN

As have been explicitly detailed (above, please see Research Activities – Interests), these subjects will be further advanced in my research plan. There is more than 20 years of experience in most of them as you could clearly depict from the Publication List and from the number of Research Grants that I have been awarded from Greece, USA, EU and International Organizations. The innovative research conducted in my lab has been awarded lately by the Research Grant “ARISTEIA” (EXCELLENCE). Only one grant was awarded in plant sciences (Greece). A detailed Research Plan could be sent upon request.

GENERAL STATEMENT

Over the 25 years of teaching experience at undergraduate and graduate levels, and the research in animals (*Drosophila*, on development and transposable elements) and plants (*Arabidopsis* and olive on development, genetic, epigenetics, biochemistry and molecular biology) with numerous Postdocs, PhD, MSc and BSc students, gave me the opportunity to encourage independent rationale of thought and gained a great deal of compassion towards teaching. It also provides me with responsibility being a supervisor for their career. This is also evident from the fact that three of my PhD students have academic careers.

The collaboration with other researchers over the world opened my horizon to new scientific thoughts and advanced to global mentality.