Giuseppe Diego Puglia

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Researcher at CNR-ISAFOM, Catania (IT) **from Sept 2014 – to the present**

My activity is principally focused on the investigation of gene expression regulation associated with the seed germination physiology in non-model species at National Research Council of Italy – Institute for Agricultural and Forestry Systems in the Mediterranean, section of Catania.

Relevant work experiences

Visiting researcher at Agricultural Research Organization, Israel **from Mar to Apr 2023**
Analysis of transcriptome and metabolome interaction in non-model species. Department of Aromatic Plants, Newe Ya'ar Research Center, Israel, Dr. Efraim Lewinsohn

Visiting researcher at Universität Hohenheim (GER) **from Dec 2015 to Mar 2016**

Analysis of transcriptome of *Cynara cardunculus* var. *altilis* during flowering and seed germination processes using RNAseq methodology. Institute of Plant Breeding, Seed Science and Population Genetics, prof. Karl Schmid – Hohenheim University.

Visiting research fellow at Millennium Seed Bank (UK) **2012 and 2013**

Analysis of seed germination physiology through molecular approach on wild populations of *Leucanthemum vulgare* and *Glebionis coronaria* at Millennium Seed Bank Seed Conservation dept. – Kew Gardens - Dr. Peter Toorop

Research fellow as Bioinformatician at IBM (IT) **from Sep 2008 to Dec 2009**

Relational database designing for biodiversity data obtained with DNA-Barcode technology at IBM of Bari. Title of the project: "Molecular Biodiversity Laboratory (MB-LAB)"

Visiting PhD student at IPK (GER) **from Sep 2007 to May 2008**

Analysis of genetic variability on wild populations of *Arabidopsis thaliana* relative species at IPK-Leibniz Institut für Pflanzengenetik und Kulturpflanzenforschung - Dr. Karl Schmid

Funded projects

PI of the PRIN: PROGETTI DI RICERCA DI RILEVANTE INTERESSE NAZIONALE **from Nov 2023 to Nov 2024**
Project title: "RES2OX - Investigating Specialized Metabolism as an integral factor to improve oxidative stress resilience in native plants exposed to metalloid naturally contaminated soils".

Total Funded budget € 249.191,00.

Scientific Responsible for CNR-ISAFOM of "MOBILES" HORIZON project **from Sept 2024 to Dec 2027**
"MOBILES - MONITORING AND DETECTION OF BIOTIC AND ABIOTIC POLLUTANTS BY ELECTRONIC, PLANTS AND MICROORGANISMS BASED SENSORS"; Call: HORIZON-CL6-2023-ZEROPOLLUTION-0.

Total Funded budget € € 4.644.952,50.

Editorial experience

Associated Editor for the journal APPS, Application in Plant Science **2023 - present**

Guest Associate Editor in "Genomics of Plants and the Phytoecosystem", **2021 - 2022**
section of *Frontiers in Genetics* journal, electronic ISSN 1664-8021. Now preparing Vol. 2

Research Topic: Plant Transcription Factors Associated with Abiotic Stress Tolerance in Crop and Wild-Relatives

Review Editor in "Computational Genomics", **present**
section of *Frontiers in Genetics* journal, electronic ISSN 1664-8021.

Guest Editor in *Plants* journal, ISSN 2223-7747 **2022 - 2023**
Special Issue: Plant Computational Biology

Participation to most recent international conferences

- Oral presentation at the "**XIV International Society for Seed Science biennial conference",** 3-7 July 2023, Sorbonne Université, Paris (France)
- Oral presentation at "**COST EPICATCH - CA19125 – Workshop, Epigenetics of Temperature & Light Responses in Plants"**, 15-16 March 2023, Volcani Center, Tel-Aviv (Israel).
- Oral presentation at the **"Plant Specialized Metabolism Symposium"**, March 30th, Newe-Ya'ar Research Center (Israel).
- Oral presentation at "**BIENNIAL Association of Applied Biologists (AAB) PRESIDENTIAL LOOK-FORWARD: NATURE- BASED AND ENGINEERED BIOLOGY SOLUTIONS TO CLIMATE MITIGATION".** 1-2 November 2022, Rothamsted Research (UK).

Teaching

- **Visiting Professor of "Molecular Methods in Plant Biology"** **2023/2024**
  at University of Catania
- **Visiting Professor of "Plant Biology" (BIO/01)** **2022/2023**
  at University of Messina
- **Assistant Professor of "Plant Morphology and Physiology"** **2022/2023**
  at University of Catania

Education

Certificate in Advanced English, level C1 **Dec 2015**
Cambridge English Language Assessment at Advanced level.

Ph.D. in Environmental and Evolutionary Biology **from 2010 to 2014**

Final dissertation thesis title: "Physiological and molecular mechanisms of seed germination weed species" at University of Catania, Botanical dept.

Ph.D. in Molecular Biology **form 2005 to 2009**

Final dissertation thesis title: "Genetic and metabolic characterization of plants of agronomic and conservational interest" at University of Catania, Sciences dept.

Master Degree in Molecular Biology with honours **Jul 2005**

Final dissertation thesis title: "cDNA cloning and in vitro expression of *Carnosinase* 1 and 2 in bacterial and in eukaryotic cells" at University of Catania, Sciences dept.

Selected publications

- Marzi, D., Brunetti, P., Saini, S. S., Yadav, G., **Puglia**, G.D., and Dello Ioio, R. (2024). Role of transcriptional regulation in auxin-mediated response to abiotic stresses. Frontiers in Genetics 15, 1394091. doi:10.3389/fgene.2024.1394091.
- Ferrigno, M., Frazzetto, P., Prjibelski, A., Tomescu, A. I., and **Puglia**, G.D. (2024). PABLOG: a Primer Analysis tool using a Bee-Like approach on Orthologous Genes. Physiologia Plantarum 176. doi:10.1111/ppl.14398.
- Pagana, I., Nava, V., **Puglia**, G.D., Genovese, C., Emma, G., Salonia, C., et al. (2024). Cystoseira compressa and Ericaria mediterranea: Effective Bioindicators for Heavy- and Semi-Metal Monitoring in Marine Environments with Rocky Substrates. Plants 13, 530. doi:10.3390/plants13040530.
- Pepe, F., Russo, G., Venuta, A., Scimone, C., Nacchio, M., Pisapia, P., et al. (2024). Non-Small Cell Lung Cancer Testing on Reference Specimens: An Italian Multicenter Experience. Oncol. Ther. 12, 73–95. doi:10.1007/s40487-023-00252-5.
- **Puglia**, G.D. (2024). Reactive oxygen and nitrogen species (RONS) signalling in seed dormancy release, perception of environmental cues, and heat stress response. Plant Growth Regulation. 103, 9–32. doi:10.1007/s10725-023-01094-x.
- **Puglia**, G.D., Frugis, G., and Yadav, G. (2024). Editorial: Plant transcription factors associated with abiotic stress tolerance in crops and wild-relatives. Frontiers in Genetics. 15, 1–3. doi:10.3389/fgene.2024.1431326.
- Pagana, I., **Puglia**, G.D., Marletta G., Alongi G. (2024). Is the typical stage of Penicillus capitatus Lamarck (Bryopsidales, Halimedaceae) a possible indicator of climate warming? Mediterranean Marine Science. 25, 3. doi: https://doi.org/10.12681/mms.37164
- **Puglia G.D.**, Balestrasse K., Bustos J.S., Huarte H.R. New Insights into the Role of Alternating Temperatures and Cyanide in the ROS-Mediated Cardoon Seed Dormancy Termination. *Horticulturae* (2022), 8. doi: 10.3390/horticulturae8100960.
- **Puglia G.D.,** Prjibelski A.D., Vitale D., Bushmanova E., Schmid K.J., Raccuia S.A. Hybrid transcriptome sequencing approach improved assembly and gene annotation in *Cynara cardunculus* (L.). *BMC Genomics* (2020), 21, 317. doi:10.1186/s12864-020-6670-5
- Prjibelski A.D., **Puglia G.D.**, Antipov D., Bushmanova E., Giordano D., Mikheenko A., Vitale D., Lapidus A. Extending rnaSPAdes functionality for hybrid transcriptome assembly. *BMC Bioinformatics* (2020), 21, 302. doi: 10.1186/s12859-020-03614-2.
- Huarte H.R., **Puglia G.D.**, Prjibelski A.D., Raccuia S.A. Seed transcriptome annotation reveals enhanced expression of genes related to ros homeostasis and ethylene metabolism at alternating temperatures in wild cardoon. *Plants*. 2020;9:1–19. doi:10.3390/plants9091225.
- Pappalardo H.D., Toscano V., **Puglia G.D.**, Genovese C., Raccuia S.A. *Cynara cardunculus* L. as a Multipurpose Crop for Plant Secondary Metabolites Production in Marginal Stressed Lands. *Frontiers in Plant Science,* (2020), 11, 240. doi: 10.3389/fpls.2020.00240.

- Arlotta C., **Puglia G.D.**, Genovese C., Toscano V., Karlova R., Beekwilder J., De Vos R.C.H., Raccuia S.A. MYB5-like and bHLH influence flavonoid composition in pomegranate. *Plant Science* (2020), 298, 110563. doi: 10.1016/j.plantsci.2020.110563
- **Puglia G.D.**, Carta A., Bizzoca R., Toorop P., Spampinato G., Raccuia S.A. Seed dormancy and control of germination in *Sisymbrella dentata* (L.) O.E. Schulz (Brassicaceae). *Plant Biology*(2018), doi:10.1111/plb.12862.
- **Puglia G.D.**, Grimaldi S., Pavone P. and Spampinato G. Genetic and morphological variability analysis revealed a complex network in South-Eastern Sicilian *Helichrysum* occurrences. Plant Biosystems (2016), doi: 10.1080/11263504.2016.1265607
- Carta A., Probert R., **Puglia G.D.**, Peruzzi L., Bedini G. Local climate explains degree of seed dormancy in *Hypericum elodes* L. (Hypericaceae). *Plant Biology* (2016), doi: 10.1111/plb.12310
- **Puglia G.D.**, Grimaldi S., Carta A., Pavone P., Toorop P. Pericarp structure of *Glebionis coronaria* (L.) Cass. ex Spach (Asteraceae) cypselae controls water uptake during germination. *Seed Science Research* (2015), doi: 10.1017/S0960258515000148
- Battagliero S., **Puglia G.D.**, Vicario S., Rubino F., Scioscia G., Leo P. An efficient algorithm for approximating geodesic distances in tree space. *IEEE/ACM Trans Comput Biol Bioinform* (2011), doi: 10.1109/TCBB.2010.121.

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