TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 5864**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Agrarie ed Ambientali - Produzione, Territorio, Agroenergia**

Scientist- in – charge: **Prof.ssa Gabriella De Lorenzis**

Valentina Ricciardi

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Ricciardi
Name	Valentina

PRESENT OCCUPATION

Appointment	Structure
PhD Student	Depertment of Agricultural and Environmental Sciences, University of Milan

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
PhD	Agriculture, Environment and Bionergy – XXXVI Cycle	University of Milan	Expected to defend in January 2024
Master	Plant, food and agro-environmental Biotechnology Master's Degree	University of Milan	2019
Degree	Biotechnology Bachelor's Degree	University of Milan	2017

FOREIGN LANGUAGES

Languages	level of knowledge
English	C1
French	A1
Italian	Mother tongue

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2021	KeyGene DNA-day contest
2023	ISHS "Young mind award" for best oral presentation. XIII Conference in Grapevine Breeding, Genetics and Management.

TRAINING OR RESEARCH ACTIVITY

PhD student (November 1, 2020 – Ongoing)

Project title: Identification of genes related to biotic stress resistance in grapevine

Tutor: Prof. Gabriella De Lorenzis

Research:

- Identification and analysis of downy mildew resistance loci into the genome of the first identified downy mildew resistant *Vitis vinifera* variety.
- Design and assembly of CRISPR-Cas9 vectors for the knock-out of a candidate gene of susceptibility to grape downy mildew.
- dsRNA assay for the screening of candidate genes of susceptibility to grape downy mildew.
- Genome Wide Association (GWAS) study for the identification of new resistance loci to grape downy mildew and powdery mildew.

In vitro culture:

- Micropropagation of grapevine explants for in vitro conservation of germplasm and production of materials to be used for screening.
- Production of grapevine calluses, somatic embryos and cells cultures for their application in Genetic Engineering projects based on the New Plant Breeding Technologies.

Laboratory assistant (2021, 2022, 2023)

Tutoring of students during laboratory activities

Course: REE CRISPRes Lab, Science of Production and Protection of Plants, Prof. Carlo Pozzi

Visiting PhD Student – University of California, Davis (USA) (September 2022 – February 2023)

Supervisor: Prof. Dario Cantù

Application of Genomics and Bioinformatics techniques to identify resistance loci and genes into the genome of the first *Vitis vinifera* variety resistant to downy mildew.

Skills acquired:

- Identifying loci regions through SNP probes and genome alignment.
- Conducting whole genome comparisons to detect structural variants (SVs) and SNPs.
- Analyzing specific loci of interest, encompassing genomic region comparisons to reference genomes, gene content analysis, assessment of SVs' impact on gene content, and gene expression analysis.
- Performing RNA sequencing analysis on grapevine leaves, sampled at four different time points during infection with *Plasmopara viticola*.
- Engaging in manual curation of genome annotations for the identified loci, based on RNA-seq data.
- Participating in DNA sequencing library preparation

Laboratory Assistant (December 2021)

Tutoring of students during laboratory activities

Course: *In vitro* plant genetic improvement, Prof. Gabriella De Lorenzis.

Biotechnology BSc.

Laboratory Assistant (December 2020)

Tutoring of students during laboratory activities

Course: *In vitro* plant genetic improvement, Prof. Gabriella De Lorenzis.

Biotechnology BSc.

Research Fellow (Type B) (November 2019 – October 2020)

Referent: Prof. Lucio Brancadoro

Research:

- Evaluation of transcriptomic responses of grapevine to water stress conditions.
- dsRNA assay for the validation of grapevine candidate genes of susceptibility to *Plasmopara viticola*.
- Genetic characterization of grapevine germplasm.

In vitro culture:

- Micropropagation of grapevine explants for in vitro conservation of germplasm and production of materials to be used for screening.
- Production of grapevine calluses for their application in Genetic Engineering projects based on the New Plant Breeding Technologies

Attending Graduate (July 2019 – September 2019)

Research:

- Evaluation of the synthesis of volatile compounds in grapevine as a response to the attack of *Plasmopara viticola*.

Master's degree in Plant, food and agroenvironmental Biotechnology

University of Milan, Milan (Italy) (October 2017 - July 2019)

Title of the thesis:

Identification of genes involved in the response to drought stress in *Vitis* spp. rootstocks for the subsequent application of genome editing protocols: preliminary data.

Main accomplishments of the thesis project:

▪ In vitro maintenance of a grapevine rootstocks collection and setting up of a protocol for acclimatization.
▪ Axillary bud culture and somatic embryogenesis to obtain plant material suitable for genetic engineering.
▪ Design of a CRISPR/Cas vector for the knock-out of candidate genes involved in the drought resistance mechanism of grapevine rootstocks.

Laboratory Assistant (November 2018)

Tutoring of students during laboratory activities, with groups of 15-20 students.

Course: Chemistry of natural organic substances, Professor E. Ragg.

Herbal Sciences and Technologies BSc.

Bachelor's degree in Biotechnology (Agroenvironmental and Food curriculum)

University of Milan, Milan (Italy) (October 2014 – October 2017)

Title of the thesis:

Functional study of transcriptional factor *ZmMYB94/Fused Leaves 1* involved in cuticle deposition in *Zea mays*.

Main accomplishments of the thesis project:

▪ Functional annotation of candidate genes involved in the cuticle deposition, resulting differentially expressed between WT and mutant genotype in a RNA seq experiment.

▪ Validation of some of the results of the RNA seq experiment by Real time PCR.

▪ Functional analysis of the transcriptional factor activity under drought stress conditions, by Real time PCR.

Production and protection of plants Bachelor Course (1st Year) (October 2013 – September 2014)

High school diploma (September 2008 – June 2013)

Istituto di Istruzione Superiore L. Cobianchi, Intra (VB) (Italy)

Humanities and Social sciences

SKILLS ACQUIRED DURING TRAINING AND RESEARCH ACTIVITIES

Technical skills:

▪ Solid knowledge and application of Molecular Biology and Genetic techniques, in particular: DNA and RNA extraction and purification, proteins purification, proteins quantification with Bradford's method, separation of plant organelles based on density gradient, gel electrophoresis, PCR, Real- time RT-PCR, cloning, assembly of CRISPR-Cas9 vectors by golden gate protocol, dsRNA assay.

▪ Good knowledge and utilization of some Bioinformatics tools for primer design and functional annotation, manual annotation of genomes, genome alignments, variant calling, genomic mapping, RNA-seq data analysis, DNA-seq data analysis, utilization of R for basic statistical analysis and Population Genetics studies based on SSR and SNP analysis. Use of Apollo platform for manual curation of PN40024v4 genome annotation. Familiarity with the command line.

▪ Experience in laboratory, greenhouse and field plant cultivation (Corn, Grapevine).

▪ Knowledge and application of in vitro culture techniques: preparation of media, micropropagation, axillary bud culture, flowers, anthers and ovaries culture, callus culture, somatic embryos cultivation and regeneration, plants acclimatization.

▪ Good knowledge and application of some Organic Chemistry procedures and techniques such as steam distillation of plants essential oils, saponification, extraction of plant secondary metabolism molecules (i.e. caffeine).

▪ Basic knowledge of the Gas Chromatography technique and analysis of the resulting chromatograms.

▪ Good command of Office suite (word processor, spread sheet, presentation software).

▪ Good command of Genomics and Proteomics softwares and databases, such as: IGV, MaizeGDB, TAIR, KEGG Pathway, NCBI, Geneious, Clustal W, UniProt, PDB, NDB, SiFi, SignalP, EffectorP, SMURF, antiSMASH.

▪ Basic command of VMD for structural analysis of molecules.

▪ Good knowledge of R for analysis of biological data.

▪ Basic knowledge of SPSS for plots creation.

Interpersonal skills:

▪ Good communication skills with peer and younger students gained through my experience as laboratory assistant, research fellow and PhD student, active participation to open day events (two) and membership in Teaching Staff - Student Joint Committee. The Committee is involved in the improvement of the degree course, by allowing direct communication between a group of student representatives and a group of professors.

▪ Excellent contact skills with children gained through different experiences during my

high school training and working time.

▪ Good tutoring skills of groups of 15 - 20 students, gained through my experience as laboratory assistant.

▪ Good organizational and managerial skills gained through my experiences with laboratory activities and with children: management of small budgets (1500-20000€) and planning of structured educational activities, supervision of groups of 20-30 people.

▪ Good team-leading skills acquired during my time as a laboratory assistant and activities related to my role in the Teaching Staff - Student Joint Committee.

▪ Good supervisory skills acquired through my experience as thesis co-supervisor of both bachelor's and master's students.

Courses:

- Thermo Fisher Scientific "HighResolutionMelt Training".
- "Transcriptome: from the experimental design to the biological interpretation of data" – XVII SIGA (Italian Society of Agricultural Genetics).
- Summer school "Insights on the plant biosystem: enemies, friends or just biomes" (2020-2021)
- "Annot'Training school" – INTEGRAPE (June, 28 – July 1, 2022). Hybrid Training School in Gene Annotation and Manual Curation of the Grape Reference Genome.

PROJECT ACTIVITY

Year	Project
2019-2020	ADAM – Adattamento al cambio climatico con irrigazione multifunzionale per la viticoltura
2020	In.VINI.VE.RI.TA.S. - PSR 2014/2020 – Innovare la viti-vinicoltura lucana: verso la rigenerazione varietale
2020	ResVite - Dal phenotyping al genome editing: strategie per limitare i danni da peronospora e legno nero in vite
2020-2021	FREECLIMB - Fruit Crops Resilience to Climate Change in the Mediterranean Basin
2023	Grape4vine - Grape for vine: recycling grape wastes to protect grapevine from fungal pathogens

CONGRESSES AND SEMINARS

Date	Title	Place

February 18-19, 2021	**V. Ricciardi**, D. Marcianò, E. Marone Fassolo, A. Passera, P. A. Bianco, O. Failla, P. Casati, G. Maddalena, G. De Lorenzis, S. L. Toffolatti. "RNAi per il silenziamento di un gene candidato di suscettibiltà a *Plasmopara viticola* come strategia alternativa di controllo del patogeno". **Poster**.	AISSA under 40. Sassari - Online.
July 5-7, 2021	**V. Ricciardi**, C. Pozzoli, L. Caramanico, C. Mandelli, D. Grossi, M. Pindo, E. Stefani, A. Cestaro, V. Shariati J., E. Tavakol, O. Failla, A. Scienza, L. Brancadoro, G. De Lorenzis. "EFFETTO DELLE INTERAZIONI NESTO-PORTAINNESTO SULLA RISPOSTA ALLO STRESS IDRICO IN *Vitis vinifera*". **Poster**.	Convegno Nazionale di Viticoltura Italiana - CONAVI. Udine - Online.
July 10-17, 2022	**V. Ricciardi**, D. Marcianò, G. Maddalena, E. Marone Fassolo, S. Masiero, O. Failla, G. De Lorenzis, S. L. Toffolatti. "Can nitrogen nutrition affect the grapevine resistance to downy mildew?". **Poster**.	International symposium of Grapevine Breeding and Genetics – GBG 2022. Landau, Germany
January 13-18, 2023	**V. Ricciardi**, M. Massonnet, A. Minio, L. Blommers, P. van Koert, A. H.J. Wittenberg, H. Schneiders, D. Maghradze, S. L.Toffolatti, O. Failla, D. Cantú, G. De Lorenzis. "The Genome of Mgaloblishvili, a *Vitis vinifera* variety resistant to grape downy mildew. **Presentation**.	Plant and Animal Genome Conference (PAG). San Diego, CA (USA)
June 4, 2023	**V. Ricciardi**, M. Massonnet, A. Minio, E. Sergi, L. Blommers, P. van Koert, A. H.J. Wittenberg, H. Schneiders, D. Maghradze, S. L.Toffolatti, O. Failla, D. Cantú, G. De Lorenzis. "Il Genoma di Mgaloblishvili, una varietà di *Vitis vinifera* resistente alla peronospora della vite". **Presentation.**	Workshop "Le ricerche dei dottorandi in viticoltura si presentano". Bologna.
August 21-24, 2023	**V. Ricciardi**, M. Massonnet, A. Minio, E. Sergi, L. Blommers, P. van Koert, A. H.J. Wittenberg, H. Schneiders, D. Maghradze, S. L.Toffolatti, O. Failla, D. Cantú, G. De Lorenzis. "The Genome of Mgaloblishvili, a *Vitis vinifera* variety resistant to grape downy mildew. **Presentation.**	XIII International Conference of Grapevine Breeding, Genetics and Management. Avanos, Turkey.

PUBLICATIONS

Books
L. Caramanico, **V. Ricciardi**, G. De Lorenzis, O. Failla, L. Brancadoro, A. Scienza. "Primi steps verso la trasformazione genetica dei portainnesti di vite tramite le nuove tecnologie di miglioramento genetico". Sanguis Jovis - I quaderni, 3. La ricercar scientifica Sanguis Jovis. Lavori 2017-2019. **2020**. (**Chapter**)

Articles in reviews
"Drought-Responsive ZmFDL1/MYB94 Regulates Cuticle Biosynthesis and Cuticle-Dependent Leaf Permeability". G. Castorina, F. Domergue, M. Chiara, M. Zilio, M. Persico, **V. Ricciardi**, D. S. Horner, G. Consonni. *Plant Physiology*, 184(1), 266-282. **2020**. DOI: 10.1104/pp.20.00322
"Georgian Grapevine Cultivars: Ancient Biodiversity for Future Viticulture". M. Sargolzaei, L. Rustioni, G. Cola, **V. Ricciardi**, P. A. Bianco, D. Maghradze, O. Failla, F. Quaglino, S. L. Toffolatti, G. De Lorenzis. *Frontiers in Plant Science*. **2021**. DOI: 10.3389/fpls.2021.630122
"From plant resistance response to the discovery of antimicrobial compounds: The role of volatile organic compounds (VOCs) in grapevine downy mildew infection". **V. Ricciardi** †, D. Marcianò †, M. Sargolzaei, G. Maddalena, D. Maghradze, A. Tirelli, P. Casati, P. A. Bianco, O. Failla, D. Fracassetti, S. L. Toffolatti, G. De Lorenzis. *Plant Physiology and Biochemistry*, 160: 294-305. **2021.** DOI: 10.1016/j.plaphy.2021.01.035
"RNAi of a putative grapevine susceptibility gene as a possible downy mildew control strategy". D. Marcianò †, **V. Ricciardi** †, E. Marone Fassolo, A. Passera, P. A. Bianco, O. Failla, P. Casati, G. Maddalena, G. De Lorenzis, S. L. Toffolatti. *Frontiers in Plant Science*. **2021**.DOI: 10.3389/fpls.2021.667319
"Climate change impacts on plant phenology: Grapevine (*Vitis vinifera*) bud break in wintertime in southern Italy". D.G. Dinu, **V. Ricciardi**, C. Demarco, G. Zingarofalo, G. De Lorenzis, R. Buccolieri, G. Cola, L. Rustioni. *Foods*, 10 (11). **2021.** DOI: 10.3390/foods10112769
"Influence of Nitrogen on Grapevine Susceptibility to Downy Mildew". D. Marcianò †, **V. Ricciardi** †, G. Maddalena, A. Massafra, E. Marone Fassolo, S. Masiero, P. A. Bianco, O. Failla, G. De Lorenzis, S. L. Toffolatti. *Plants*, 12(2), 263. **2023**. DOI: 10.3390/plants12020263
"Physiological and Transcriptomic Evaluation of Drought Effect on Own-Rooted and Grafted Grapevine Rootstock (1103P and 101-14MGt)". D. Bianchi, **V. Ricciardi**, C. Pozzoli, D. Grossi, L. Caramanico, M. Pindo, E. Stefani, A. Cestaro, L. Brancadoro, G. De Lorenzis. *Plants*, 12(5), 1080. **2023**. DOI: 10.3390/plants12051080

Congress proceedings
"Dissecting the susceptibility/resistance mechanism of *Vitis vinifera* for the future control of downy mildew". **V. Ricciardi**, D. Marcianò, M. Sargolzaei, E. Marrone Fassolo, D. Fracassetti, M. Brilli, M. Moser, S. J. Vahid, E. Tavakole, G. Maddalena, A. Passera, P. Casati, M. Pindo, A. Cestaro, A. Costa, M. C. Bonza, D. Maghradze, A. Tirelli, O. Failla, P. A. Bianco, F. Quaglino, S. L. Toffolatti and G. De Lorenzis. *BIO Web of Conferences*, 44. **2022. CONAVI 2022.** DOI: 10.1051/bioconf/20224404002

OTHER INFORMATION

Member and vice-president of the Plant, food and agroenvironmental Biotechnology master's degree Teaching Staff - Student Joint Committee (2018 - 2019).
Member of the Italian Society of Horticulture (Società di Ortoflorofrutticoltura Italiana – SOI).
Member of the International Society for Horticultural Science (ISHS).
Certification IELTS Academic 7.0 (CEFR C1). British Council. Released date: September 2019.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and

sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

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Place and date: Milano, 17/09/2023

Università degli Studi di Milano – Direzione Trattamenti Economici e Lavoro Autonomo
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
assegni.ricerca@unimi.it DTELA_M_CVAssegniENG_rev. 00 del 02/09/2021