

Xavier Grand

MS. in Bioinformatics

1568 rue de la Gare
01150 Leyment.
+33(0)6 11 22 19 60
xavier.grand30@gmail.com



WORK EXPERIENCE

- 3.2021 - Today* **Research Engineer in Bioinformatics**, CRCL & ENS Lyon.
Bioinformatician, RNAseq, ChIP-seq, alternative splicing analysis, Human and HBV.
Supervision: Barbara Testoni, Senior Scientist (CRCL) & Cyril Bourgeois, Research Scientist (ENS).
- 4.2020 - 08.2020* **Bioinformatics Internship**, Institut de Mathématiques de Toulouse.
Use of kernel methods to analyse heterogenous biological data.
Supervision: Sébastien Déjean, Biostatistics Research Engineer (IMT) & Jérôme Mariette, Bioinformatics Research Engineer (INRAe).
- 5.2016 - 11.2017* **Research scientist**, Biogemma Toulouse.
Genetic and biological characterization of sunflower resistance against Orobanche cumana.
Supervision: Marie Coque, Sunflower Project Lead & Oilseeds genetics and phenotyping coordinator.
- 9.2014 - 4.2015* **Biostatistician, research scientist**, Limagrain Europe.
Simulation of plant breeding strategies.
Supervision: Nicolas Heslot, Head of Biostatistics.
- 5.2014 - 8.2014* **Bioanalyst, research scientist**, Limagrain Europe.
Barley genome browser development.
Supervision: Anne-Marie Bochard, Barley molecular breeding Project Leader.
- 10.2012 - 3.2014* **Bioanalyst, research scientist**, Biogemma Auvergne.
Candidate gene discovery process for plant traits and breeding by analyzing complex datasets in the context of biological pathways and omics data.
Supervision: Stéphane Lafarge, Gene Discovery Project Leader.
- 10.2008 - 12.2011* **Ph.D research studies**, INRA Montpellier/Bayer CropScience Gent
Biological, genetic and molecular analysis of partial resistance of rice to Magnaporthe oryzae.
Supervision: Jean-Benoît Morel, Group Leader (INRA) & John Jacobs, Senior Scientist (Bayer).

LANGUAGES

<i>French</i>	Native.
<i>English</i>	Fluent.

SKILLS AND QUALIFICATIONS

PLANT BIOLOGY

<i>Molecular genetics</i>	Forward genetics and cloning (molecular mapping, GWAS, QTLs).
<i>Reverse genetics</i>	Mutant analysis.
<i>Omics</i>	NGS, Expression analysis.
<i>Laboratory</i>	Molecular biology (PCR, qPCR, DNA/RNA library, NGS).
<i>Plant Biology</i>	Plant inoculation and phenotyping, Cellular biology.

COMPUTER PROGRAMMING

<i>Programming languages</i>	R, Python, (Java, C++).
<i>Database Management</i>	SQL, MySQL and NoSQL, Neo4J/CYPHER.
<i>Data Mining</i>	Scikit-learn, Numpy, Scipy, Pandas.
<i>Development env.</i>	UNIX, tmux, VSCode, Rstudio, PyCharm.
<i>Container/pipeline</i>	Nextflow, singularity, docker.
<i>UI development</i>	R-shiny, R-shiny Dashboard, tkinter, Django (in progress).

BIOINFORMATICS & STATISTICS

<i>NGS data analysis</i>	Minimap2, STAR, StringTie2, Salmon, FastQC, SamTools...
<i>RNA-seq</i>	Illumina, Nanopore (Direct-mRNA, genomic, cDNA).
<i>Biology dedicated tools</i>	Bioconductor, Biopython, NCBI and biological databases.
<i>MultiOmics</i>	mixOmics, mixKernel.

REPOSITORIES AND TOOLS

<i>GitHub</i>	https://github.com/XavierGrand?tab=repositories
<i>Shiny Dashboard</i>	https://xavier-grand.shinyapps.io/K-PCA_Machine/

EDUCATION

<i>2019 - 2020</i>	Master in Bioinformatics University of Montpellier. <i>Bioinformatics, information systems, knowledge extraction.</i>
<i>2008 - 2011</i>	Ph.D in Integrative Plant Biology Montpellier Supagro.
<i>2006 - 2008</i>	Master in Integrative Plant Biology University of Montpellier.
<i>2006 - 2008</i>	Bachelor in Biochemistry University of Nîmes.

PUBLICATIONS AND COMMUNICATIONS

1. Calderón-González A., Pouilly N., Muños S., Grand X., Coque M., Velasco L., Pérez-Vich B. An SSR-SNP Linkage Map of the Parasitic Weed *Orobancha cumana* Wallr. Including a Gene for Plant Pigmentation. *Frontiers in Plant Science* 2019; 10, 797.
2. Grand, X., Gauthier, A., André, I., Loras, S., Legrand, L., Gouzy, J., Grezes-Beset, B., Coque, M., Muños, S. Genetic and biological approach to decipher *O. cumana* resistance in sunflower wild relatives. Presented at The 14th World Congress on Parasitic Plants, Asilomar, CA, USA (2017-06-24 to 2017-06-30). Book of abstracts (p. 23).
3. Kroj, T., Chancelud, E., Michel, C., Grand, X., Morel, J.-B. Integration of decoy domains derived from protein targets of pathogen effectors into plant immune receptors is widespread. *New Phytol* 2016.
4. Grand, X., Espinoza, R., Michel, C., Cros, S., Chalvon, V., Jacobs, J. et Morel, J.-B. Identification of positive and negative regulators of disease resistance to rice blast fungus using constitutive gene expression patterns. *Plant Biotechnology Journal* 2012, 10, 840–850.
5. Vergne, E., Grand, X., Ballini, E., Chalvon, V., Saindrenan, P., Tharreau, D., Nottéghem, J.-L., Morel, J.-B. Preformed expression of defense is a hallmark of partial resistance to rice blast fungal pathogen *Magnaporthe oryzae*. *BMC Plant Biology* 2010, 10, 206-206.
6. Grand, X., Tharreau, D., Nottéghem, J.-L., Brunner, S., Jacobs, J., Morel, J.-B. Forward and reverse genetic approaches in rice to unravel control of partial resistance to pathogens. 6th International Rice Genetics Symposium, 16-19 November 2009; Manila, Philippines.
7. Dogimont, C., Boissot, N., Chovelon, V., Tual, S., Grand, X., Rittener-Ruff, V., Giovinazzo, N., Bendahmane, A. Aphid and virus resistance triggered by the CC-NBS-LRR *Vat* melon gene. In: Genetic control of plant pathogenic viruses and their vectors: towards new resistance strategies. Book of abstracts (p. 34). Presented at International Conference, Cadiz, ESP (2008-11-23 - 2008-11-27).

INTERESTS

<i>Clarinet/Saxo</i>	XXS trio, Union musicale d'Ambérieu en Bugey.
<i>Sport</i>	Mtb: Transvolcanique 2014, bike travelling, Ski: Derby Mont-Dore 2014.
<i>Miscellaneous</i>	Animation Capacity Diploma, First Aid Certificate.
<i>Travel</i>	6.2015 - 12.2015 Working Holiday in Australia.

REFEREES

<i>Barbara Testoni</i>	Senior Scientist Cancer Research Center of Lyon, <i>e-mail:</i> barbara.testoni@inserm.fr, <i>tel:</i> +33 (0)4 72 68 19 65.
<i>Hélène Polvéche</i>	Bioinformatics Research Engineer I-STEM/ENS Lyon, <i>e-mail:</i> helene.polveche@ens-lyon.fr, <i>tel:</i> +33 (0)4 72 72 80 48.