

## Curriculum Vitae

### Personal information

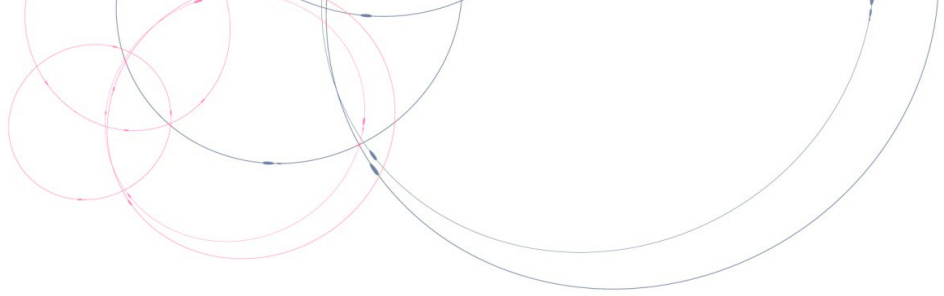
First name / Family name	Sandra PLANCADE		
Address(es)	professional: INRA, Domaine de Vilvert, 78352 Jouy-en-Josas cedex, France		
Telephone			
Mobile			
E-mail	sandra.plancade@inra.fr		
Nationality	French		
Date of birth			
Gender	Female		

### Personal statement

After a higher education in mathematics, I completed a PhD in theoretical statistics in which I developed non-parametric methods in various regression and survival analysis frameworks. Then I chose to move to applications and after a post-doctoral experience in molecular epidemiology at the University of Tromsø (Norway), I was recruited as a junior researcher (CR2) in the mathematics department of INRA in September 2013. At INRA, I developed collaborations with several teams of biologists, in particular in omics and meta-omics data analysis, using diversified large dimension methods. I recently enlarged my topics of applications to the domain of plant dynamics, through the ITEMIZE project which aims at investigating the environmental and genetic determinants of maize flowering time, and raises survival analysis questions. My involvement in various projects allowed me to clear some general statistical problematics, and my medium-term career plan is to combine my mathematical skills and my understanding of biological issues to develop adapted statistical tools.

Through this mobility, I aim at developing methods adapted to some recurrent problematics in plant development and initiate long term collaborations on methodological aspects, which would be complementary with my network in the biologists community. More precisely, my project is to develop statistical tools in survival analysis adapted to the settings and problematics of plant development study. Indeed, while most survival analysis methods originate from biomedical problematics, specificities of plant development experiments call for an adaptation of existing methods and the developments of new ones. In complement to this project, I aim at taking the best of the skills at the proposed hosting lab to clear methodological questions related to omics and meta-omics data analysis.

Thus, the Institute of Statistics, Biostatistics and Actuarial Sciences (ISBA) of the Catholic University of Louvain, which develops research from theoretical to applied statistics in various field including survival analysis, time series and multiblock data analysis, constitutes an especially stimulating environment. Exchanges with members of the institute at the occasion of a one-week invitation confirmed the convergence between our questions of interest.



### Education and training

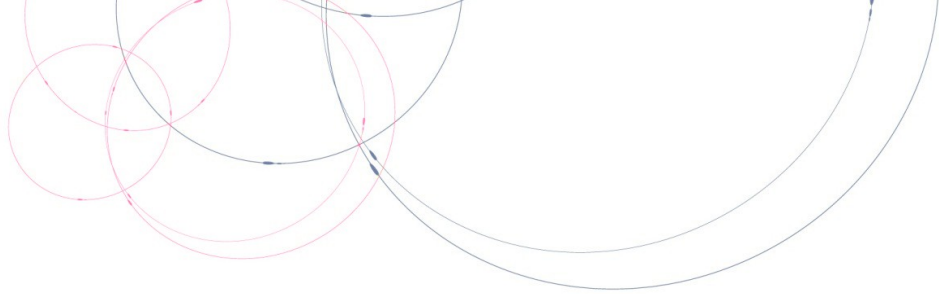
Location and dates	September 2007- September 2010 Location: Institute of Applied Mathematics (MAP5), Paris, France
Title of qualification awarded	<b>PhD in mathematics</b> (defended on the 23rd of sept. 2010)
Principal subjects/occupational skills covered	<u>Title</u> : Estimation by pointwise and global model selection from partially observed data. <u>Keywords</u> : non-parametric statistics, survival analysis, hazard rate, interval censoring, current status data, error in regression, adaptive methods, minimax bounds
Name of Institute	University Paris-Descartes

Location and dates	September 2006-September 2007 Location: Orsay, France.
Title of qualification awarded	<b>Second year of master's degree (M2) in statistics</b>
Principal subjects/occupational skills covered	Theoretical and applied statistics
Name of Institute	Department of Mathematics, University Paris-Sud, France.

Location and dates	November 2005 - May 2006 Location: San Juan la Laguna, Guatemala
Title of qualification awarded	<b>Break</b>
Principal subjects/occupational skills covered	Voluntary work with disable children in a local organisation

Location and dates	September 2004- June 2005 Location: Lyon, France.
Title of qualification awarded	<b>Agregation of mathematics</b>
Principal subjects/occupational skills covered	National competitive examination for secondary and university teachers in mathematics.
Name of Institute	Ecole Normale Supérieure de Lyon

Location and dates	September 2003- June 2004 Locations: Lyon, France (first semester) Leiden, Netherlands (second semester in Erasmus)
Title of qualification awarded	<b>First year of master's degree (M1) in mathematics</b>
Principal subjects/occupational skills covered	Analysis, algebra, geometry, statistics
Name of Institute	Ecole Normale Supérieure de Lyon/University Lyon 1, France. University of Leiden, Netherlands



## Work experience

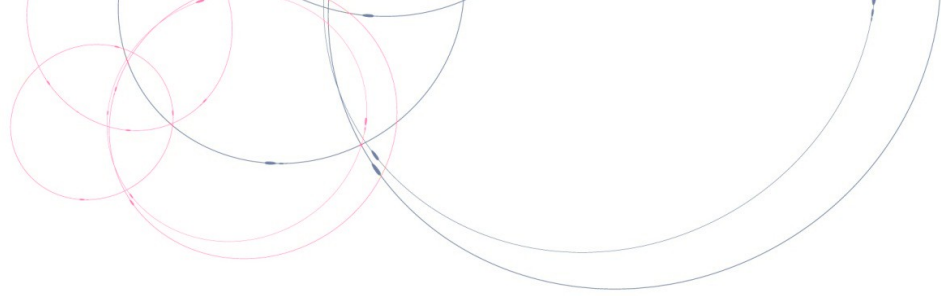
Location and dates	From september 2013 Location: Jouy-en-Josas, France
Occupation or position held	<b>Researcher</b> ("Chargé de recherche seconde classe"), permanent position.
Main activities and responsibilities	Development of applied and methodological research Supervising of students (master and PhD)
Name of employer	INRA

Location and dates	October 2010-August 2013 Location: Tromso, Norway
Occupation or position held	<b>Post-doctoral position</b>
Main activities and responsibilities	Development of statistical methods and analysis of data in the TICE project (Transcriptomics In Cancer Epidemiology) which aims at analysing the changes in transcriptomics data prior to breast cancer diagnosis
Name of employer	University of Tromso

Location and dates	September 2012-August 2013 Location: Paris, France
Occupation or position held	<b>Invited researcher</b>
Main activities and responsibilities	Exchange about epidemiology in breast cancer and bioinformatics
Name of employer	Hosting lab: Curie Institute

Location and dates	April-May 2011 Location: Haifa, Israel
Occupation or position held	<b>Invited researcher</b>
Main activities and responsibilities	Collaboration with researchers in survival analysis and multiple-testing procedures within the TICE project.
Name of employer	Hosting lab: Department of Statistics, Technion.

Location and dates	September 2007-august 2010 Location: Paris, France
Occupation or position held	<b>Lecturer</b>
Main activities and responsibilities	Teaching in mathematics and statistics for under-graduate students
Name of employer	University Paris-Descartes

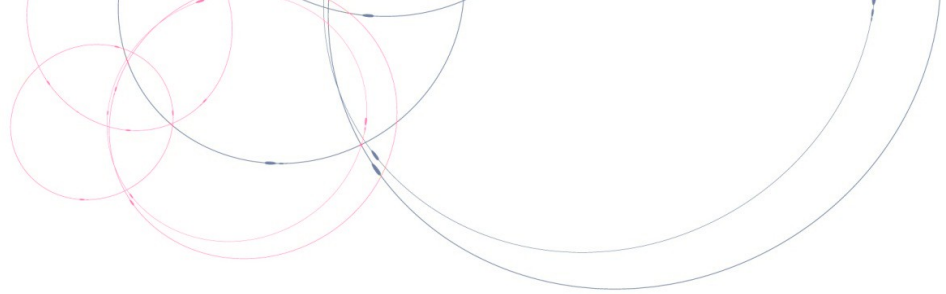


## Languages

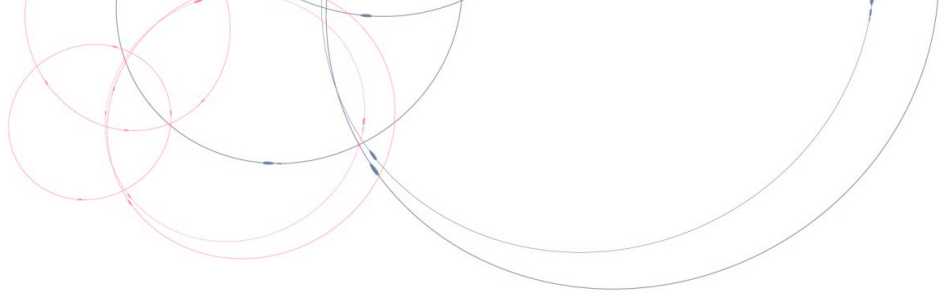
Mother tongue(s)	French				
Other language(s)	<b>Understanding</b>		<b>Speaking</b>		<b>Writing</b>
<i>European level (*)</i>	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
Spanish	B1	B2	B2	B1	B1

## Academic Record

Publications	<b>Accepted, in press and published articles / papers:</b>
	<p>[1] Raguideau, S, <b>Plancade, S</b>, Pons, N., Leclerc, M. Laroche (2016) Inferring Aggregated Functional Traits from Metagenomic Data Using Constrained Non-Negative Matrix Factorization: Application to Fiber Degradation in the Human Gut Microbiota, <i>B. PLOS Comput. Bio</i>, 12, 1–29.</p> <p>[2] Lund, E., Holden, L., Bøvelstad, H., <b>Plancade, S.</b>, Mode, N., Günther, C.-C., Nuel, G., Thalabard, J.-C., Holden, M. (2016) A new statistical method for curve group analysis of longitudinal gene expression data illustrated for breast cancer in the NOWAC postgenome cohort as a proof of principle, <i>BMC Medical Research Methodology</i>, 16(1).</p> <p>[3] Mach, N., <b>Plancade, S.</b>, Pacholewska, A., Lecardonnel, J., Rivière, J., Moroldo, M., Vaiman, A., Morgenthaler, C., Beinat, M., Nénot, A., Robert, C., Barrey, E. (2016) Integrated mRNA and miRNA expression profiling in blood reveals candidate biomarkers associated with endurance exercise in the horse, <i>Nature Scientific Reports</i>, 6, 22932.</p> <p>[4] A. Schoenauer Sebag, <b>S. Plancade</b>, C. Raulet-Tomkiewicz, R. Barouki, J.P. Vert. and T. Walter (2015) A generic methodological framework for studying single cell motility in high-throughput time-lapse data, <i>Bioinformatics</i>, 31(12), i320–i328.</p> <p>[5] Lund*, E. <b>Plancade*</b>, S., Nuel, G., Bovelstad, H. and Thalabard, J.C. (2015) A processual model for functional analyses of carcinogenesis in the prospective cohort design, <i>Medical hypotheses</i>, 85(4), 494–497.        * Shared first authorship</p> <p>[6] <b>Plancade, S.</b> (2013) Adaptive estimation of the conditional cumulative distribution function from current status data, <i>J. Statist. Plann. Inference</i>, 143(9), 1466–1485.</p> <p>[7] <b>Plancade, S.</b>, Rozenholc, Y. and Lund, E. (2012) Generalization of the normal-exponential model: exploration of a more accurate parametrisation for the signal distribution on Illumina BeadArrays, <i>BMC Bioinfo.</i>, 13(1), 329.</p> <p>[8] Lund, E., <b>Plancade, S.</b> (2012) Transcriptional output in a prospective design conditionally on follow-up and exposure – the multistage model of cancer, <i>Int. J. Mol. Epidemiol. Genet.</i>, 3(2), 107–114.</p>



	<p>[9] International Headache Society Clinical Trials Subcommittee* (2011) Guidelines for controlled trials of drugs in migraine: Third edition, <i>Cephalalgia</i>, 32(1), 6–38.        * the subcommittee is composed of 12 members, unordered in the publication</p> <p>[10] <b>Plancade, S.</b> (2010) Nonparametric estimation of hazard rate in presence of censoring, <i>Metrika</i>, 74(3), 313–347.</p> <p>[11] <b>Plancade, S.</b> (2009) Estimation of the density of regression errors by pointwise model selection, <i>Math. Methods Statist.</i>, 18(4) 341–374.</p> <p>[12] <b>Plancade, S.</b> (2008) Nonparametric estimation of the density of the regression noise, <i>C. R. Acad. Sci.</i>, 346(7-8), 461–466.</p>
<p>Presentations as invited speaker</p>	<p>Thematic school "Genomics and modelisation", Canceropôle Ile-de-France, Chantilly, 7-10 march 2011</p>
<p>Participation in open calls for proposals as contributor or leader</p>	<p><b>ANR</b> (French Research Agency)        1- ANR-AAP Generic 2016, Project Proteocardis, contributor, 2016-2019  <b>INRA</b>        2 - AP department GABI 2015, Project EcaOmics, contributor, 2015-2017        3 - AP metaprogramme MEM 2016, Project SystOmics, contributor, 2016-2018.        4 - AP metaprogramme MEM 2016, Project muBeef, contributor, 2016-2018.        5 - AP metaprogramme MEM 2016, Project Dynamics, contributor [not accepted]  <b>Labex</b>        6- BASC flagship, Project ITEMAIZE, contributor, 2016-2019.</p>
<p>Graduate teaching as lecturer or training coordinator</p>	<p><b>Lectures and practical session:</b> Introduction to non-parametric statistics.        Level: second year of master's degree (M2)        Period: from 2014 to 2016        Institute: University Paris-Saclay/ ENSIIE (School of Informatics for Industry)  <b>Supervision of master students</b>        - Abdourahim Daouda's M1 internship, co-coordination, may-september 2017, Master of Biostatistics, University Pierre et Marie Curie. Subject: <i>Modelling and estimation of the phyllochrone of maize.</i>        - Hengjia Xie's M2 internship, co-coordination, march-september 2017, Master Mathematics and applications, University Paris-Descartes. Subject: <i>Statistical analysis of metabolic changes after a perturbation in the goat.</i>        - Emile Chapuis's M1 intership, coordination, april-august 2016, Master of Applied mathematics, University Paris-Sud. Subject: <i>Analysis of technical variability in meta-proteomics measures.</i></p>



### Collaboration and Networking

Participation in collaborative projects funded by competitive programmes	Grant ERC-2008-AdG 232997, Project TICE, contributor, 2009-2014. <i>Projects [1-4,6] in "Participation in open calls for proposals as contributor or leader" are currently active.</i>
Graduate teaching as lecturer or training coordinator; PhD supervision	<b>PhD co-supervision</b> - Sebastien Raguideau (defended on december 2016). Subject: <i>Analysis of functional metagenomics data by NMF for modelling of fiber degradation by human gut microbiote.</i> - Ariane Bassignani (october 2016-). Subject: <i>Integration and analysis of shotgun quantitative meta-proteomics data to explore functionality of human gut microbiote in cardiometabolic diseases.</i>

### Research management, Technology transfer, and Communication

Consultancy for the public or private sector	Participation to the International Headache Society Clinical Trials Subcommittee (2011)
--	---

### Scientific References

Full name	Gregory NUEL
Position	Senior Researcher (DR)
Institution	CNRS / Laboratory of Probability and Stochastic Models at University Pierre et Marie Curie, Paris, France
Email address	nuel@math.cnrs.fr

Full name	Catherine JUSTE
Position	Senior scientist (CR1)
Institution	INRA, lab MICALIS, Jouy-en-Josas, France
Email address	catherine.juste@inra.fr

Full name	Christine DILLMANN
Position	Professor (Univ. Paris-Sud) Deputy director of the lab Quantitative Genetics & Evolution Head of BASE team
Institution	lab Quantitative genetics and evolution - Le Moulon (University Paris-Sud/ INRA/ AgroParis Tech), Gif-sur-Yvette, France
Email address	christine.dillmann@inra.fr

#### How did you hear about AgreenSkills programmes?

	I heard about Agreenskills program through my institution and co-workers who had applied to the program.
--	--