

Benoit Liquet

*Professor at University of
Pau et Pays de L'Adour*

✉ benoit.liquet@univ-pau.fr
<http://benoit-liquet.github.io>



Education

- 2009 **HDR (PhD Supervisor diploma)**, *Bordeaux Segalen Univ.*, Bordeaux.
- 2002 **PhD Biostatistics**, *Bordeaux Segalen Univ.*, Bordeaux.
- 1999 **MD Public Health**, *Bordeaux Segalen Univ.*, Bordeaux.
- 1998 **MD Stochastic modelling & Operational research**, *University Bordeaux I*, Bordeaux.

Position

- 2015 - **Professor**, *University of Pau et Pays de l'Adour*, (France), Member of LMAP.
- 2015 - **Affiliated to ACEMS**, *Queensland University Technology*, (QUT).
- 2013 - 2015 **Senior Lecturer**, *School of Mathematics and Physics (SMP)*, The University of Queensland (UQ).
- 2012 - 2013 **Senior Investigator Statistician**, *Medical Research Council Biostatistics*, Cambridge.
- 2012 - Sept **Sabbatical visitor researcher**, *Medical Research Council Biostatistics*, Cambridge.
- 2011 - 2012 **Sabbatical visitor researcher**, *Queensland Facility for Advanced Bioinformatics*, Brisbane.
- 2011 - Oct **Sabbatical visitor researcher**, *Department of Biostatistics*, Copenhagen.
- 2007 - 2011 **Associate professor**, *Bordeaux Segalen Univ.*, Bordeaux, ISPED.
- 2004 - 2007 **Associate professor**, *University Pierre Mendès France*, Grenoble.
- 2003 - 2004 **Lecturer**, *Mathematics Department*, University Montpellier II.
- 2002 - 2003 **Lecturer**, *Mathematics Department*, University Bordeaux I.
- 2000 - 2002 **Assistant/Lecturer**, *Bordeaux Segalen Univ.*, Bordeaux, ISPED.

Administrative responsibilities

- 2016 - **Board Member of the committee of the LMAP** (Laboratory of Mathematics and Their Applications) from University of Pau et Pays de l'Adour.
- 2016 - **Board Member of the committee of the CT3** (Commission Thématique Applications Scientifiques) from University of Pau et Pays de l'Adour.
- 2016 - **In charge of the dissemination of the new pedagogic tools** (Interaction learning, e-learning, ..) at Anglet campus from University of Pau et Pays de l'Adour.
- 2015 - 2018 **Board Member of the academic consultative committee** section 25/26 University of Pau et Pays de l'Adour.
- 2015 - **Board Member of MIRA** (Milieux et Ressources Aquatiques) University of Pau et Pays de l'Adour.
- 2014 - 2015 **Coordinator** of the statistics centre at UQ.
- 2014 - 2015 **Representative** of SMP for collaboration and student exchange with Ecole Centrale (consortium of Engineering Universities in France).
- 2013 - 2015 **Treasurer** of the SFB (French Biometrics Society).
- 2012 - **Board Member of the R Committee** (French organization for coordinating R conferences).
- 2010 - 2015 **Board Member of the SFB**.

- 2010 - 2013 **Board Member of the academic consultative committee** section 26 of Bordeaux University.
- 2009 - 2012 **Board Member of the Sport Department** - University of Bordeaux 2.
- 2008 - 2011 **Board Member of the coordination and development committee on distance learning** -ISPED.

Research Management

- 2017 - June **President of the Organization Committee** - “Les sixièmes Rencontres R Anglet 2017” (<http://angletr2017.com/>).
- 2015 - 2016 **Member of the Scientific Committee**, 31th International Workshop on Statistical Modelling (Rennes).
- 2014 - 2015 **Co-organisator** of Statistics seminar at SMP.
- 2012 - July **President of the Scientific Committee** - “Rencontres R BoRdeaux 2012” (Bordeaux).
- 2011 - April **Organization Committee Member**, International Biometrics Society Channel Network (Bordeaux).
- 2009 - May **Organization Committee Secretary**, XXXXIth Conference of SFdS (Bordeaux).
- 2004 - May **Organization Committee Member**, XXXVIth Conference of SFdS (Montpellier).
- 2005 - **Member** of SFDS, of the SFB, and of the IBS (International Biometrics Society).
- 2004 - **Reviewer**, for the following journals: Biometrics, Statistics, Statistica Sinica, Journal of Multivariate Analysis, Journal of Statistical Theory and Practice, Biometrical Journal, Revue d’Epidémiologie et de Santé Publique, Journal de la Société Française de Statistique, Bioinformatics, Australian & New Zealand Journal of Statistics.
- 2012 - 2013 **Expertise for IReSP** (French institute in public health) regarding grant project about Mathematics and Statistics research applied in oncology.

Industrial Collaborations and Grants

- 2016 - 2021 Investigator in “MICROPOLIT” project funded by Aquitaine Region.
- 2016 - 2019 "ASMAH" (Advanced Statistical Methods for the analysis of High-dimensional data) project granted by joint call from UPPA and UPV/EHU for funding a Phd.
- 2015 - 2017 Partner investigator in “Mechanomics” project granted by the Cancer Research UK calls
- 2015 - 2016 “EOLE” project, Funded by UPPA as a BQR (“Bonus Qualité Recherche”)
- 2014 - 2014 Two teaching & Learning grants from School of Mathematics and Physics at UQ.
- 2014 - 2015 Advanced statistical methods for analysis of multidimensional databases of human brain Imaging from IdEx Bordeaux Centre InterLabex CPU-TRAIL.
- 2013 - 2013 Grant Visiting Lecturer FMIPA UNS from Ministry Education Indonesia.
- 2010 - 2013 Public Health ANR project: Dynamic Biostatistics Models for Epidemiology.
- 2010 - 2013 Grant from Danone for a Phd Studentship.
- 2011 - Expert for Danone Research on statistical methodology.
- 2009 - 2010 Contract with Voies Navigables de France: “modelling of waiting time at locks on Canal du Midi”.
- 2009 - 2010 Courses on multiple comparison procedure for statisticians from Danone Research.
- 2006 - 2007 Statistical Consultant to BioArtificial Gel Technologies (Skin and pharmaceutical company in Montréal).
- 2003 - 2004 Statistician in the governmental project (Ministry of Food, Agriculture, Fishing and rural affairs).

Student Supervision

- 2017 - Co-Supervision of a Phd candidate (Sophie Defontaine) at University of Pau et Pays de L’Adour
- 2016 - Co-Supervision of a Phd candidate (Camilo Broc) at University of Pau et Pays de L’Adour
- 2016 - Co-Supervision of a Phd candidate (Matthew Sutton) at Queensland University Technology.
- 2014 - Supervision of a Phd candidate (Yifan Jiang) at the University of Queensland.

- 2013 - Co-supervision of a Phd candidate (Azam Asanjarani) at the University of Queensland.
- 2016 - Co-supervision of a Master Student regarding the EOLE project (Anglet campus from UPPA).
- 2013 - Supervision Honours and Master students at the University of Queensland.
- 2010 - 2013 Supervision of a PhD candidate (J  r  mie Riou) on the topic of "Multiple testing in clinical studies" (Defended in December 2013).
- 2006 - 2009 Supervision of a PhD candidate (Moliere N'Guile Makao) on the research topic of "Prediction of nosocomial pneumonia using multi- state models".
- 2007 - Supervision of first and second year Master of Public Health trainees.
- 2004 - 2007 Supervision of undergraduate students in Statistics and Computer Science (IUT-STID).

--- Educational responsibilities

- 2016 - Coordinator of "Advanced Data Mining" for the MSID Master at UPPA.
- 2016 - Coordinator of all the courses in Mathematics and Statistics at the Ecology Department from Anglet Campus (UPPA).
- 2014 - 2014 Coordinator of the course "Analysis of Scientific Data" for 900 undergraduate students (UQ).
- 2013 - 2015 Coordinator of the course "Experimental Design" (UQ).
- 2007 - 2011 Coordinator of several statistical courses from the Master of Public Health (ISPED).
- 2009 - 2010 Coordinator of all the statistical courses of the first year of the the Master of Public Health.
- 2008 - 2010 Coordinator of statistical courses for distance learning (ISPED).
- 2010 - 2011 Coordinator of the course "R software" during the summer school (ISPED).

--- Research development

- sgPLS **Maintainer of the R package** on Sparse Group Partial Least Square regression models. (with Pierre Lafaye de Micheaux)
- CEoptim **Maintainer of the R package** on cross-entropy method for optimization problem (with Tim Benham, Qibin Duan and Dirk P. Kroes).
- mixOmics **Contributor of the R package** on statistical integrative techniques to analyse highly dimensional data sets (with Sebastien Dejean, Ignacio Gonzalez and Kim-Anh Le Cao).
- ClustOfVar **Developer of the R package** on cluster analysis of a set of variables. Variables can be quantitative, qualitative or a mixture of both (with Marie Chavent, Vanessa Kuentz and J  r  mie Saracco).
- PCAmixdata **Contributor of the R package** on multivariate analysis of mixed data (with Marie Chavent, Vanessa Kuentz, Amaury Labenne and J  r  mie Saracco).
- lcmm **Developer of the R package** on estimation of various latent class mixed models and joint latent class mixed models, available on CRAN (with C  cile Proust-Lima).
- edrGraphicalTools **Maintainer of the R package** which provides tools for dimension reduction methods (with J  r  mie Saracco and Raphael Coudret).
- ConvergenceConcept **Developer of the R package** to check and visualize convergence of a sequence of random variables in law, in probability, in r-th mean and almost surely (with Pierre Lafaye de Micheaux).
- PIGE **Maintainer of the R package** on Pathway Interaction Gene Environment which is an extension on the ARTP method (with Th  r  se Truong).
- R2GUESS **Maintainer of the R package** on Bayesian variable selection regression of multiple correlated phenotypes (with Marc Chadeau-Hyam, Gianluca Campanella and Sylvia Richardson).
- CPMCGLM **Contributor of the R package** on the correction of the pvalue after multiple coding in generalized linear model (with J  r  mie Riou).
- rPowerSampleSize **Contributor of the R package** on the sample size determination with multiple correlated endpoints (with J  r  mie Riou and Pierre Lafaye de Micheaux).
- CPMTL **Developer of the Fortran program** to correct the p-value after multiple coding of an explanatory variable in a logistic regression.

Language **Programming in many languages** (C, Fortran 77, 90, Delphi) and advanced use of statistical software: R (<http://www.biostatisticien.eu/springerR>) SPlus, SPSS, SAS, Minitab.

Research Output

- Topics My research topics since 1999 have focused on model selection, multi-state models, survival analysis, multiple testing problems, and dimension reduction methods applied to a combination of clinical, health and biological data mainly from epidemiological studies. All of these have a large degree of relevance to my recent interest (from 2011) in the analysis of “Omics” data and to research on advanced methods for analysis of high-dimensional data.
- Award (2009) **Scientific Excellence Award** from the University of Bordeaux II.
- Award (2016) **PEDR** which is equivalent to Scientific Excellence Award from the University of Pau et Pays de L’Adour.
- Publications **42 articles in international peer-reviewed journals**. In addition, 1 revised, 1 submitted, 3 book sections and 7 articles in preparation.
- Books **Two books on R software** (one in French and one in English), of which the Chinese and the Indonesian version is now available. The French version **Le logiciel R: maitriser le langage: effectuer des analyses statistiques** has been nominated in 2011 for the Roberval prize which recognises the best books for the category “university education”. This book is currently a best seller in mathematics applied to informatics (Amazon.fr; number one in November 2013). **Two Books on Dynamical Biostatistical models** (one in French and one in English).
- Publication Metrics My publication and citation rate are clearly increasing since 2008. My h-index is 17 (Google scholar, October, 2016).
- Conferences - Seminar I presented my research as invited speaker in four conferences (France, Canada, Indonesia, England). Since 2009, I have been invited to present my research in different universities (UNSW, Macquarie University New South Wales, University of Auckland, Queensland University of Technology, MRC Cambridge, University of Copenhagen, The George Institute for Global Health (Sydney)).
- Collaborations I have been invited to work with international research teams by Sylvia Richardson (MRC Cambridge), Thomas Gerds (Copenhagen University), Pierre Lafaye de Micheaux (Université Montréal), Desgagné Alain (Université du Quebec, Montréal), Christian Léger (Université de Montréal), Kim Ahn Le Cao (QFAB, The University of Queensland) and Su Sutanto (University of Sebalas, Indonesia).
- Some current projects (since 2015) Since my new position as Professor at “Université de Pau et Pays de l’Adour” (UPPA), I am an active member of the LMAP (“Laboratory of Mathematics and Their Applications-UMR CNR 5142”) and a member of MIRA (“Milieux et ressources aquatiques”). The research federation (MIRA) aims to promote collaborative links between research teams from different institutions (UPPA, CNRS, INRA, IFREMER) sharing common interests on aquatic environments and their resources. In the following, I list some collaborative projects related to the LMAP and/or MIRA:
- 2015-2016. “EOLE” project Funded by UPPA as a BQR (“Bonus Qualité Recherche”) EOLE aims to introduce particularly innovative action that involves the synthesis of knowledge and analysis of metadata on the environment and fishery resources of the “Golf de Gascogne”. Co-supervision with Noelle Bru (LMAP), Gilles Morandeau and Nathalie Caill-Milly (Ifremer) of a research internship student (6 months).
- 2016-2021. “MICROP-OLIT” project This projet supported by all teams from MIRA aims to “revisit” the concept of quality of the coastal environment in a multi-disciplinary approach and spatio-temporal to construct indicators, allowing managers a more global view, more ecosystem and thereby foster a more meaningful management. It aims to assess the past and current quality of the environment, but also to predict future changes and to propose possible remedies measures. I am involved in several actions of this project and the coordinator of one action (“ Modelisation and Simulation”)
- 2016-2019 “ASMAH” project ASMAH “Advanced Statistical Methods for the analysis of High-dimensional data” aims to boost and enhance the current toolkit for integrative analysis of massive datasets, especially for longitudinal design. Using high resolution/ high quality real data this project will generate innovative methodologies that overcome the big data challenge in a real-life context and thus help the full exploration of existing and yet under exploited data.

- 2017-2020 Principal Investigator of project entitled “Cross Cancer Genomic Investigation of Pathway analysis
“CCGIP” and GxE interactions: application to breast and thyroid cancers” which has been submitted to the
project 2017 call for proposals from “Plan Cancer 2014-2019” (INSERM). This project involves 3 teams:
InsERM U1018 (Epidemiology of cancers: genes and environment), LMAP and Imperial College
London (Department of Mathematics). The MRC Biostatistics Unit in Cambridge is also a partner
of this project. I will be responsible of the team 2 for the development of statistical methods on
polygenic effects, on multivariate approach and selection methods.
- 2015-2017 “Investigating molecular mechanisms involved in smoking-induced lung cancer”. This project granted
“Mechanomics” by the Cancer Research UK calls will extend novel mathematical modelling approaches to integrate
project exposure history, genetic variants, and identify the pathological stage(s) at which they exert their
effects, and if/when they contribute to the dynamics of disease progression. Our international project
involves partners from Europe (UK, The Netherlands, France) and from the USA. In this project I
am in charge, in collaboration with Marc Chadeau (Leader of the project from Imperial College,) of
the statistical developments of two aims of the project including the implementation of multi-state
models and in the development of computationally optimised methods to handle high-dimensional
data.

Publications: refereed journal articles

- [A42] Picat M. Q., Pellegrin I., Bitard J., Wittkop L., Proust-Lima C., Lique B., Moreau J. F., Bonnet F., Blanco P., Thiebaut R., Integrative analysis of immunological data to explore chronic immune activation in successfully treated HIV patients. *Plos One* (Accepted in December 2016).
- [A41] Proust-Lima C., Philipps V., Lique B., Estimation of Extended Mixed Models Using Latent Classes and Latent Processes: the R package lcmm. *Journal of Statistical Software* (Accepted in 2016).
- [A40] Delorme P., Lafaye de Micheaux P., Lique B. and Riou J., Type-II Generalized Family-Wise Error Rate Formulas with Application to Sample Size Determination. *Statistics in Medicine* 35,1 (2016).
- [A39] Lique B., and Saracco J., BIG-SIR a Sliced Inverse Regression Approach for Massive Data. *Statistics and Its Interface* 9, 4 (2016).
- [A38] Lique B., Lafaye de Micheaux P., Hejblum B., Thiebaut R., Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context. *Bioinformatics* 32:1, 35-42 (2016).
- [A37] Benham T., Duan Q., Kroese D.P., Lique B., CEoptim: Cross-Entropy R package for optimization. *Journal of Statistical Software* (Accepted in 2016) .
- [A36] Chong H., Cordeaux Y., Froen F., Richardson S., Lique B., Charnock-Jones S. and Smith G. C., Age-related changes in murine myometrial transcript profile are mediated by exposure to the female sex hormones. *Aging Cell* 15, 1 (2016).
- [A35] Lique B., Bottolo L., Campanella G., Richardson S. and Chadeau-Hyam M., R2GUESS: GPU-based R package for Bayesian variable selection regression of multivariate responses. *Journal of Statistical Software* 69, 2 (2016).
- [A34] Lique B., and Nazarathy Y., A dynamic view to moment matching of truncated distributions. *Statistics and Probability Letters* 104 87-93 (2015).
- [A33] Commenges D., Proust-Lima C., Samieri C., and Lique B., A universal approximate cross-validation criterion and its asymptotic distribution. *The International Journal of Biostatistics* 11:1, 51-67 (2015).
- [A32] Truong T., Lique B., Menegaux F., Plancoulaine S., Laurent-Puig P., Mulot C., Cordina-Duverger E., Sanchez M., Arveux P., Kerbrat P., Richardson S., Guénel P., Breast cancer risk, nightwork, and circadian clock gene polymorphisms. *Endocr Relat Cancer* 21:4, 629-38 (2014).
- [A31] Chavent M., Girard S., Kuentz V., Lique B., Nguyen T. M. N., Saracco J., A sliced inverse regression approach for data stream. *Computational Statistics* 29:5, 1129-1152 (2014)
- [A30] Coudret R., Lique B., Saracco J., Comparison of sliced inverse regression approaches for underdetermined cases. *Journal de la Société Française de Statistique* Vol 155:2 (2014).
- [A29] Lafaye de Micheaux P., Lique B., Marques S. and Riou J., Power and sample size determination in clinical trials with multiple primary continuous correlated end points. *Journal of Biopharmaceutical Statistics* 24:2, 378-97, (2014).

- [A28] Bottolo L., Chadeau-Hyam M., Hastie D. I., Zeller T., Liquet B., Castagne R., Wild P. S., Schillert A., Munzel T., Tregouet D., Cambien F., Petretto E., Blankenberg S., Tiret L. and Richardson S., GUESS-ing polygenic associations with multiple phenotypes using a GPU-based Evolutionary Stochastic Search algorithm. *Plos Genetics* 9:8, (2013).
- [A27] Chadeau-Hyam M., Jombart T., Campanella G., Bottolo L., Vineis P., Liquet B., Vermeulen R., Deciphering the complex: Methodological overview of statistical models to derive OMICS-based biomarkers. *Environmental and Molecular Mutagenesis* 54:7, 542-557, (2013).
- [A26] Liquet B., and Riou J., Correction of the significance level after multiple coding of an explanatory variable in generalized linear model. *BMC Medical Research Methodology* 13:75, (2013).
- [A25] Liquet B., Le Cao K., Hocini H., and Thiebaut R., A novel approach for biomarker selection and the integration of repeated measure experiments from two platforms. *BMC, Bioinformatics* 13:325, (2012).
- [A24] Liquet B., Rondeau V., and Timsit J. F., Investigating hospital heterogeneity with a multi-state frailty model: application to nosocomial pneumonia disease in intensive care units. *BMC Medical Research Methodology* 12:79, (2012).
- [A23] Coeurjolly J.F., Makao M., Timsit J.F. and Liquet B., Attributable risk estimation for adjusted disability multistate models: application to nosocomial infections. *Biometrical Journal* 54:5, 600-616, (2012).
- [A22] Chavent M., Kuentz V., Liquet B., and Saracco J., ClustOfVar: An R Package for the Clustering of Variables. *Journal of Statistical Software* 50:13, 1-16, (2012).
- [A21] Josse J., Chavent M., Liquet B., and Husson F., Handling missing values with Regularized Iterative Multiple Correspondence Analysis. *Journal of Classification* 29:1, 91-116, (2012).
- [A20] Commenges D., Liquet B. and Proust-Lima C., Choice of prognostic estimators by estimating difference of expected conditional Kullback-Leibler risks. *Biometrics* 68:2, 380-387, (2012).
- [A19] Liquet B. and Saracco, J., A graphical tool for selecting the number of slices and the dimension of the model in SIR and SAVE approaches. *Computational Statistics* 27:1, 103-125, (2012).
- [A18] Chavent M., Kuentz V., Liquet B. and Saracco J., A sliced inverse regression approach for a stratified population. *Communications in Statistics - Theory and Methods* 40:21, (2011).
- [A17] Liquet B. and Commenges D., Choice of estimators based on different observations : Modified AIC and LCV criteria. *Scandinavian Journal of Statistics* 38, 268-287, (2011).
- [A16] Liquet B., Choix d'estimateurs basé sur le risque de Kullback-Leibler. *Journal de la Société Française de Statistique* 151:1, (2010).
- [A15] Chavent M., Liquet B. and Saracco J., A semiparametric approach for a multivariate sample selection model. *Statistica Sinica* 20:2, 513-536, (2010).
- [A14] Kuentz V., Liquet B. and Saracco J., "Bagging" version of Sliced Inverse Regression. *Communications in Statistics- Theory and Methods* 39, 1985-1996, (2010).
- [A13] Lafaye de Micheaux P. and Liquet B., ConvergenceConcepts: an R package to investigate various modes of convergence. *The R Journal* 1, 18-25, (2009).
- [A12] Lafaye de Micheaux P. and Liquet B., Understanding Convergence Concepts: A Visual-Minded and Graphical Simulation-Based Approach. *The American Statistician* 63:2, 173-178, (2009).
- [A11] Commenges, D. and Liquet B., Asymptotic distribution of score statistics for spatial cluster detection with censored data. *Biometrics* 64, 1-8, (2008).
- [A10] Cenier T., Amat C., Litaudon P., Garcia S.StatLearn 2013, Lafaye de Micheaux P., Liquet B., Roux S. and Buonviso N., Odor vapor pressure and quality modulate local field potential oscillatory patterns in the olfactory bulb of the anesthetized rat. *European Journal of Neuroscience* 27:6, 1432-1440, (2008).
- [A9] Liquet B. and Saracco, J. Application of the bootstrap approach to the choice of dimension and the α parameter in the SIR $_{\alpha}$ method. *Communication in Statistics - Simulation and computation* 37:6, 1198-1218, (2008).

- [A8] Rondeau V., Michiels S., Liquet B. and Pignon J. P., Investigating trial and treatment heterogeneity in an individual patient data meta-analysis of survival data by means of the penalized maximum likelihood approach. *Statistics in Medicine* 27, 1894-1910, (2008).
- [A7] Commenges D., Joly P., Gégout-Petit A. and Liquet B., Choice between semi-parametric estimators of Markov and non-Markov multi-state models from generally coarsened observations. *Scandinavian Journal of Statistics* 34, 33-52, (2007).
- [A6] Liquet B. and Saracco, J., Pooled marginal slicing approach via SIR_α with discrete covariables. *Computational Statistics* 22:4, 599-617, (2007).
- [A5] Liquet B., Saracco, J. and Commenges D., Selection between proportional and stratified hazards models based on Expected Log-likelihood. *Computational Statistics* 22:4, 619-634, (2007).
- [A4] Liquet B. and Commenges D., Computation of the p-value of the maximum of score tests in the generalized linear model; application to multiple coding. *Statistics & Probability Letters* 71, 33-38, (2005).
- [A3] Liquet B. and Commenges D., Estimating the expectation of the log-likelihood with censored data for estimator selection. *Lifetime data analysis* 10, 351-367, (2004).
- [A2] Liquet B., Sakarovitch C. and Commenges D., Bootstrap choice of estimators in non-parametric families: an extension of EIC. *Biometrics* 59, 172-178, (2003).
- [A1] Liquet B. and Commenges D., Correction of the p-value after multiple coding of an explanatory variable in logistic regression. *Statistics in Medicine* 20, 2815-2826, (2001).

Publications: refereed conference papers

- [RC1] Thiebaut R., Liquet B., Hocini H., Hue S. Richert L. Raimbault M. Le Cao K. and Levy Y. A new method for integrated analysis applied to gene expression and cytokines secretion in response to LIPO-5 vaccine in HIV-negative volunteers. *Retrovirology* 9:2, 121, (Poster presentation at AIDS Vaccine 2012).

Publications: scholarly books

- [B1] Commenges D., Jacqmin-Gadda H.(eds), Alioum A., Joly P., Leffondre K., Liquet B., Proust-Lima C., Rondeau V., and Thiébaut R. Dynamical Biostatistical models, *Series: Chapman & Hall/CRC Biostatistics Series*, (2015).
- [B2] Commenges D., Jacqmin-Gadda H.(eds), Alioum A., Joly P., Leffondre K., Liquet B., Proust-Lima C., Rondeau V., and Thiébaut R. Modèles Biostatistiques pour l'Epidémiologie. *De Boeck Supérieur*, (2015).
- [B3] Lafaye de Micheaux P., Drouilhet R., and Liquet B., The R software. Fundamentals of Programming and Statistical Analysis, *Springer*, (2014). Translation of [B4] with additional chapters.
- [B4] Lafaye de Micheaux P., Drouilhet R., and Liquet B., Le logiciel R, Maîtriser le langage, Effectuer des analyses statistiques. 565 pages. *Springer*, 2011.

Publications: book sections

- [C3] Saracco J., Gannoun A., Guinot C. and Liquet B., A semiparametric approach to estimate reference curves for biophysical properties of the skin. In *Statistical Methods for Biostatistics and Related Fields*. Berlin: Springer, 181-205, (2007).
- [C2] Gannoun A., Liquet B., Saracco J. and Wolfgang U., A kernel method in analysis of replicated micro-array experiments. In *Statistical Methods for Biostatistics and Related Fields*. Berlin: Springer, 45-61, (2007).
- [C1] Liquet B. and Commenges D., Selecting a semi-parametric estimator by the expected log-likelihood. In *Probability, Statistics and Modelling in Public Health*, Springer, 332-349, (2005).

Other publication: articles submitted

- [S1] Smith G. C, Froen F., Richardson S., Liquet B., Chong H., Charnock-Jones S. and Chong H. P., Age at menarche and the risk of operative delivery. Revision in Paediatric and Perinatal Epidemiology.

- [S2] B. Lique, K. Mengersen, A. N. Pettitt, and M. Sutton. Bayesian Variable Selection Regression Of Multivariate Responses For Group Data. Submitted.

Invited conferences/lectures

- [IV15] 2016 (December), Lafaye de Micheaux P., Lique B. and Riou J., “Type-II generalized family-wise error rate formulas with application to sample size determination”, 9th International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Spain.
- [IV14] 2016 (December), “Bayesian Variable Selection Regression Of Multivariate Responses For Group Data”, Invited to the Big Bayes Session at the Australian Statistical Conference.
- [IV13] 2016 (December), “Statistical Methods For Analysing High-Dimensional Data and Massive Data”, International Conference on Mathematics : Education, Theory, and Application (ICMETA). Universitas Sebelas Maret (Indonesia).
- [IV12] 2016 (December), Two invited lectures: “A tutorial for penalized regression models” and “A tutorial for PLS and Bayesian Variable Selection”. Short course on “Stat-XP: statistics to analyse OMICs data and characterise the exposome”, organized Imperial College London, England.
- [IV11] 2016 (December) Sutton M., Lique B., and Thiébaut R. “Sparse Group Subgroup PLS for Genomics”. International Symposium for Big Data Visualisation Analytics (BDVA) Sydney.
- [IV10] 2016 (October) Lafaye de Micheaux P., Lique B. and Sutton M., “A Unified Regularized Group PLS Algorithm Scalable to Big Data”, journée STATistique de Rennes (jSTAR), 13rd edition on Big Data, Rennes, France.
- [IV9] 2016 (July) Dimension Reduction approaches for BIG-DATA. Workshop on Big-Data organized by ACEMS at Queensland University of Technology.
- [IV8] 2016 (February) Statistical Methods for Analysing High-dimensional Data and Massive Data. Lecture at the University of Melbourne.
- [IV7] 2015 (December), Multivariate approaches: Dimension reduction for big data sets. Short course on “Statistical approaches to characterize the exposome: Overview and Perspective”, organized Imperial College London, England.
- [IV6] 2014 (December), Multivariate approaches: Dimension reduction for big data sets. Short course on “Statistical approaches to characterize the exposome: Overview and Perspective”, organized Imperial College London, England.
- [IV5] 2014 (November), R2GUESS: A Graphic Processing Unit-Based R Package for Bayesian Variable Selection Regression of Multivariate Responses, Bayes on the Beach conference organized in Gold Coast, Australia.
- [IV4] 2013 (October), Multi-state models and nosocomial infections. Workshop on “dynamic predictions for repeated markers and repeated events: models and validation in cancer”, organized in Bordeaux, France.
- [IV3] 2013 (April), Strategies to analyse 'omics' data: From standard T-tests in genomics to a more general Bayesian approach. Workshop Statlearn'13. Bordeaux University (France).
- [IV2] 2009 (November), Choice of estimators based on different observations: Modified AIC and LCV criteria. Colloque CRM-ISM-GERAD de Statistique. McGill University (Canada).
- [IV1] 2009 (October), Choix d'estimateurs basés sur des observations différentes. GDR “Statistique et Santé”, Université Paris-Descartes.

Invited seminar (2011-2016)

- [IS26] 2016 (November) A Unified Regularized Group PLS Algorithm Scalable to Big Data. ISG (Intelligent Systems Group) seminar at UPV/EHU University (Spain).
- [IS25] 2016 (November) Type-II Generalized Family-Wise Error Rate Formulas with Application to Sample Size Determination. LMAP seminar, Université de Pau et Pays de l'Adour.
- [IS24] 2016 (October) Bayesian Variable Selection Regression Of Multivariate Responses For Group Data. Seminar at the OMMAS team from the IMB (Institute Matheématiques de Bordeaux) University of Bordeaux.

- [IS23] 2016 (August) BIG-SIR a Sliced Inverse Regression Approach for Massive Data. Seminar at the Centre for Statistics from The University of Queensland.
- [IS22] 2016 (May) BIG-SIR a Sliced Inverse Regression Approach for Massive Data. LMAP, Université de Pau et Pays de l'Adour.
- [IS21] 2016 (February) Type-II Generalized Family-Wise Error Rate Formulas with Application to Sample Size Determination. Victorian Centre For Biostatistics Seminar, Melbourne.
- [IS20] 2016 (February) Semi-parametric regression approach for massive data. Maths seminar series at Queensland University of Technology.
- [IS19] 2016 (February) Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context. SSAI Queensland Branch Event.
- [IS18] 2015 (November) Statistical Methods for the Analysis of High-dimensional data Applied in Biostatistics Context. MIRA, Milieux et ressources aquatiques. Université de Pau et Pays de l'Adour.
- [IS17] 2015 (October) Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context. ISPED, University of Bordeaux.
- [IS16] 2015 (October) Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context. LMAP, Université de Pau et Pays de l'Adour.
- [IS15] 2015 (August) BIG-SIR a Sliced Inverse Regression Approach for Massive Data. ACEMS seminar, Queensland University of Technology.
- [IS14] 2015 (August) Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context. Queensland Brain Institute, Australia.
- [IS13] 2015 (June) Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context. Imperial College, London.
- [IS12] 2015 (June) Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context. ACEMS seminar, University of Queensland.
- [IS11] 2015 (January) R2GUESS: A Graphic Processing Unit-Based R Package for Bayesian Variable Selection Regression of Multivariate Responses. Queensland Brain Institute, Australia.
- [IS10] 2014 (December) Strategies to analyse 'omics' data. Grenoble University, France.
- [IS9] 2013 (November) Type-II Generalized Family-Wise Error Rate Formulas with Application to sample Size Determination. Universitas Sebelas Maret, Indonesia.
- [IS8] 2012 (April) Multi-state approaches to model nosocomial infection in intensive care units. Universitas Sebelas Maret, Indonesia.
- [IS7] 2012 (March) On Akaike and likelihood cross-validation criteria for model selection. Queensland University of Technology (QUT), Brisbane.
- [IS6] 2012 (March) A novel approach for the integration of repeated measures experiments and biomarker selection . University Queensland Seminar Series - Computational Biology.
- [IS5] 2012 (March) Choice of Estimators by Estimating Differences of Expected Kullback-Leibler Risks, Faculty of Science Macquarie University New South Wales.
- [IS4] 2012 (March) Multistate approaches to model nosocomial pneumonia disease in intensive care units. The George Institute for Global Health, Sydney.
- [IS3] 2012 (March) On Akaike and likelihood cross-validation criteria for model selection. School of Mathematics and Statistics. The University of New South Wales, Sydney.
- [IS2] 2012 (February) On Akaike and likelihood cross-validation criteria for model selection. Department of Statistics. The University of Auckland.
- [IS1] 2011 (September) On Akaike and likelihood cross-validation criteria for model selection. Department of Biostatistics. University of Copenhagen.

International and national communications, proceeding (2007-2016)

- [CO30] Liqueur B., Bayesian Variable selection regression of multivariate responses for group data, ISBA 2016 World Meeting International Society for Bayesian Analysis, Sardinia (Italy) June 2016.

- [CO29] Liquet B., Statistical Methods for the Analysis of High-dimensional Data and Massive Data, Workshop on Computational and Mathematical Foundations for Big Data Analytics, QUT, Australia (July 2016).
- [CO28] Liquet B., Lafaye de Micheaux P, Hejblum B., Thiebaut R., Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context., The R User Conference 2016, Stanford, California (US), June 2016.
- [CO27] Liquet B., Lafaye de Micheaux P, Hejblum B., Thiebaut R., Group and Sparse Group Partial Least Square Approaches Applied in Genomics Context., Les cinquièmes Rencontres R, Toulouse, France, June 2016.
- [CO26] Liquet B., and Saracco J., BIG-SIR a Sliced Inverse Regression Approach for Massive Data, Quatrièmes rencontres R, Grenoble (France), June 2015.
- [CO25] Lafaye de Micheaux P., Liquet B., Perminder S., Anbupalam T. and Wei W., New Statistical tools to study heritability of the brain, Australian Statistical Conference in conjunction with the Institute of Mathematical Statistics Annual Meeting, Sydney (Australia), July 2014.
- [CO24] Delorme, P., Lafaye de Micheaux P., Liquet, B. and Riou, J., Type-II Generalized Family-Wise Error Rate Formulas with Application to Sample Size Determination, 8th International Conference on Multiple Comparison Procedures, Southampton (England), July 2013.
- [CO23] Delorme, P., Lafaye de Micheaux P., Liquet, B. and Riou, J., Package SSDDA : Sample Size Determination and Data Analysis in the context of continuous co-primary endpoints in clinical trials, Deuxièmes rencontres R, Lyon (France), June 2013.
- [CO22] Delorme, P., Lafaye de Micheaux P., Liquet, B. and Riou, J., Calcul de taille d'échantillon dans le cadre de critères de jugements multiples avec un contrôle de la r-power et du gFWER, 44 Journées de Statistique, Toulouse (France) Mai 2013.
- [CO21] Liquet B., Chadeau-Hyam M., Bottolo L., and Richardson S. R2GUESS: a GPU-based R package for a Bayesian variable selection model accommodating multivariate responses, Statistical Methods for (Post)-Genomics Data 2013, Amsterdam, January 2013.
- [CO20] Chavent M., Genuer R., Liquet B., and Saracco J., ClustOfVar: an R package for dimension reduction via clustering of variable. Application to supervised classification and variables selection for omics data (Poster presentation), Statistical Methods for (Post)-Genomics Data 2013, Amsterdam, January 2013.
- [CO19] Liquet B., Chadeau-Hyam M., Bottolo L., and Richardson S., GUESS: GPU-based C++ software for Bayesian variable selection regression of multiple responses (Poster presentation), Australasian Applied Statistics Conference 2012, Queenstown (New Zealand) December 2012.
- [CO18] Liquet B., Le Cao K., Hocini H., and Thiebaut R., A novel approach for biomarker selection and the integration of repeated measure experiments from two platforms, NZSA 2012 Conference, Dunedin (New Zealand), December 2012.
- [CO17] Delorme P., Lafaye de Micheaux P., Liquet B. and Riou J., Power and sample size computation for a control of the "r-power" (Poster presentation), NZSA 2012 Conference, Dunedin (New Zealand), December 2012.
- [CO16] Lafaye de Micheaux P., Liquet. B., Marque S. and Riou J., Power and sample size determination in clinical trials with multiple primary continuous endpoints, XXVIth International Biometric Conference, Kobe (Japan), August 2012.
- [CO15] Liquet B., Le Cao K., Hocini H., and Thiebaut R., A novel approach for biomarker selection and the integration of repeated measure experiments from two platforms, XXVIth International Biometric Conference, Kobe (Japan), August 2012.
- [CO14] Liquet B., Commenges D. and Proust-lima C., Choice of prognostic estimators in joint models by estimating differences of expected conditional Kullback-Leibler risks, Biometrics by the Blowholes, Kiama, New South Wales, December 2011, Australia.
- [CO13] Riou J., Liquet B., Correction of the significance level after multiple coding of an explanatory variable in generalized linear model., 7th International Conference on Multiple Comparison Procedures, Washington D.C., USA, August 2011.

- [CO12] Liquet B., Proust-Lima C., lcmm: an R package for estimation of latent class mixed models and joint latent class models. The R User Conference 2011. Coventry, UK.
- [CO11] Chavent M., Girard S., Kuentz V., Liquet B., Nguyen T. M. N., Saracco J., An adaptive SIR method for block-wise evolving data streams. ASMDA -XIV International Conference, Rome Italy, 2011.
- [CO10] Riou J., Liquet B., Méthodes de correction du degré de signification pour une recherche de codage optimal dans un modèle linéaire généralisé 43èmes Journées de Statistique (SFdS), Tunis, Mai 2011.
- [CO9] Chavent M., Kuentz V., Liquet B., Saracco J., Classification de variables: le package ClustOfVar. 43èmes Journées de Statistique (SFdS), Tunis, Mai 2011.
- [CO8] Liquet B., Choice of estimators based on different observations: Modified AIC and LCV criteria. XXVèmes International Biometric Conference, Florianopolis (Brazil), december 2010.
- [CO7] Chavent, M., Kuentz, V., Liquet, B., Saracco, J., Regression inverse par tranches pour une population stratifiée. 42èmes Journées de Statistique (SFdS), Marseille, Mai 2010.
- [CO6] Lafaye de Micheaux, P. and Liquet, B., Le Package R ConvergenceConcepts : un nouvel outil graphique pour l'étude de quelques modes de convergence de variables aléatoires, Marseille, Mai 2010.
- [CO5] Chavent M., Kuentz V. and Liquet B., Données manquantes en ACM : l'algorithme NIPALS. XVIèmes Rencontres de la Société Francophone de Classification, Grenoble 2009.
- [CO4] Liquet B. and Saracco J., A criterion for selecting the number of slices and the dimension of the model in SIR and SAVE approaches. ASMDA -XIII International Conference, Vilnius Lithuania, 2009.
- [CO3] Nguile Makao M., Timsit J.F., Coeurjolly J.F., and Liquet B., Prédiction de la pneumonie nosocomiale à l'aide d'un modèle multi-états., XXXXIe Journées de Statistique, Bordeaux, 2009.
- [CO2] Chavent M., Liquet B. and Saracco J., Two steps estimation in a multivariate semiparametric sample selection model XXXXe Journées de Statistique, Montréal, 2008.
- [CO1] Desjardins S., Desgagné A., Lafaye de Micheaux P., Liquet B., Generalization of the Paired T-Test for the Missing Values Case, Joint Statistical Meeting, Salt Lake City, Poster, 2007.

Teaching activities (summary)

I have participated actively in university-level teaching in my career. Since completing my PhD studies, I have had many opportunities to give lectures at different levels for students who come from different disciplines: Mathematics, Statistics, Medicine and Biology. These experiences have allowed me to develop my teaching abilities and also a passion for this important discipline.

2015 - 2017 **Professor at Pau et Pays de l'Adour (Anglet Campus).**

Coordinator/Instructor of the course *Biostatistics 1* - L2 (undergraduate second year students).

Coordinator/Instructor of the course *Data Analysis* - L2.

Coordinator/Instructor of the course *Biostatistics 2* - L3 (undergraduate third year students).

Coordinator/Instructor of the course *Probability and Statistics* - L1 (undergraduate first year students).

Coordinator/Instructor *Advanced Data Mining* for MSID Master Students.

Instructor of the course *Time Series Analysis* for DynEA (Aquatic Ecosystem Dynamics) Master Students.

Instructor of the course *Generalized Linear Model* for DynEA Master Students.

2013 - 2015 **Senior Lecturer at The university of Queensland (Brisbane).**

Co-designer with Dirk Kroese of the new course STAT1301 *Advanced Analysis of Scientific Data*.

Coordinator of the course STAT1201 *Analysis of Scientific Data* (900 undergraduate students).

Coordinator of the course STAT3003 *Experimental Design*.

Instructor of the course STAT4401 *Advanced Statistics*.

Instructor of the course STAT1201 *Analysis of Scientific Data*.

Supervision of honours and Masters students.

2013 - 2014 **Volunteer for teaching at Sebelas Maret University at Solo (Indonesia)**

Expanding teaching activities through collaboration between SMP and the faculty of Science and Mathematics from Universitas Sebelas Maret.

Designer of a sequence of lectures on R software

Coordinator and instructor of the course STAT1301 *Advanced Analysis of Scientific Data*

Develop a web teaching activity for supporting these courses (forum, recording).

2007 - 2011 **Associate Professor Bordeaux 2 University (192 h)**

Coordinator of the course "Initiation to R software" during the summer school proposed by ISPED.

Coordinator of the course "Modelling", Master of Public Health.

Coordinator of the course "Introduction to Statistics" - Master of Public Health.

Coordinator of the course "Inferential Statistics" - Master of Public Health.

Introduction to "modelling" - Master of Public Health (face-to-face and web-based).

Coordinator of the course "Statistical methods in Health": web-based teaching - Master degree.

Instructor of the course "R software" - Master of Public Health, Biostatistics.

Instructor in the course "Algorithms and numerical methods" - Master of Public Health, Biostatistics.

Instructor in the course "Multidimensional Data Analysis" - Master of Public Health, Biostatistics.

Teaching: "Data Analysis" Master of Public Health year 2, speciality Biostatistics.

Trainee supervision Master Public Health year 1 and 2.

2004 - 2007 **Associate Professor Grenoble 2 University: IUT STID (192 h)**

Teaching at undergraduate level (IUT) : Inferential Statistics, analysis, probability, algebra, anova, linear regression; lectures, tutorials and practical courses (SAS, SPSS, MINITAB, R).

Trainee supervision students in IUT STID.

Teaching of a Master in Statistics University Pierre Mendès France: "statistic, combinatory and computing" (lecture and practical course).

Supervision (with J. F. Timsit - INSERM Grenoble) of a Master Master trainee in statistics - Grenoble (from Feb to Sept 2006).

2003 - 2004 Lecturer Montpellier 2 University (96h)

Teaching Inferential Statistics for Mathematic students (degree): tutorials and practical courses. (Splus and R software).

Teaching Statistics in Master in Applied Mathematics and Social Sciences (MASS) : tutorials and practical courses. (Splus software).

Lecture and tutorials in Discriminant analysis and Scoring (licence MASS).

Practical courses on Statistics, MASS (SAS software).

Supervision a Master trainee in Biostatistics.

2002 - 2003 Lecturer Bordeaux 1 University (96h)

Teaching Analysis and Algebra for Mathematics Students: tutorials.

Teaching Probability and Statistics in Mathematics Master.

Practical courses in Master MSRO (Stochastic Modelling and Operational Research).

Supervision of Master MSRO trainees.

2000 - 2002 Lecturer at Bordeaux 2 University (2x64h)

Statistics for first year medical students.

Lectures and practical courses in Informatics, Master of of Public Health year 1 : database and Access software.

Computer Science for medical student: Excel software, Windows, network, word.

1999 - 2000 Assistant Lecturer assistant at Bordeaux 2 University (96h)

Tutorials on Probability, algebra, statistic and informatics for biology Students.

Practical courses in Statistic for Biology students: SPSS software.

Practical courses in Informatics for Sport students: Word and Excel software.