

# Corentin Ségalas

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Born on the 9th March 1993

French Nationality

Professional page

## RESEARCH EXPERIENCE

### Research Fellow in Statistics

Université de Bordeaux

Feb 2023 – Now

- Area of research: longitudinal data, sparse functional data, random survival forest, survival analysis, dynamic prediction.

### Research Fellow in Statistics

Université Paris-Cité

Jan 2022 – Oct 2022

- Area of research: causal inference, observational data, personalized medicine, machine learning, individualized treatment regime, dynamic treatment regime.

### Research Fellow in Medical Statistics

London School of Hygiene and Tropical Medicine

Feb 2020 – Dec 2021

- Area of research: pharmaco-epidemiology, high dimension, machine learning, causal inference, confounding, propensity score, missing data, electronic health record data.

### PhD in Biostatistics

Université de Bordeaux & Bordeaux Population Health Research Center

Oct 2016 – Dec 2019

- Area of research: dementia, neuro-degenerative diseases, longitudinal data, non-linear mixed models, changepoint models, hypothesis test, observational data.

## EDUCATION

### MSc – Statistics

Université de Bordeaux

Sept 2014 – Jun 2016

### BSc – Mathematics

Université de Bordeaux

Sept 2011 – Jun 2014

## ORAL COMMUNICATIONS

### INVITED TALKS

#### Bordeaux Public Health Data Science Network Conference, Bordeaux

July 2023

Longitudinal data analysis with dropout: mixed models or functional principal component analysis?

#### Annual French Biometric Society Young Researcher Conference, Paris

Oct 2020

Inference for random changepoint models: application to the pre-dementia cognitive decline, Daniel Schwartz Award talk

## CONTRIBUTED TALKS

<b>Annual French Biometric Societies Conference</b> , Toulouse <i>Robustness to missing data: a comparison between linear mixed models and functional principal component analysis</i>	Nov 2023
<b>Annual French Statistical Society Conference</b> , Brussels <i>Propensity score matching after multiple imputation when a confounder has missing data</i>	July 2023
<b>Annual ISCB Conference</b> , Lyon <i>Multiple imputation in propensity score matching: obtaining correct confidence intervals</i>	July 2021
<b>Annual IWSM Conference</b> , Bilbao <i>A semi-latent class model for estimating the time of differentiation of cognitive decline between cases and controls</i>	July 2020
<b>Annual ISCB Conference</b> , Leuven <i>Inferential methods for random changepoint models</i>	July 2019
<b>IBS Channel Network Conference</b> , Rothamstead Research <i>Curvilinear bivariate mixed model with random changepoint to compare times of change between cognitive markers in Alzheimer's disease</i>	July 2019
<b>IBS Conference</b> , Barcelona <i>Testing the Existence of a Random Changepoint in a Mixed Model</i>	July 2018
<b>Annual French Statistical Society Conference</b> , Paris <i>Testing the Existence of a Random Changepoint in a Mixed Model</i>	May 2018
<b>Annual French Biometric Societies Conference</b> , Bordeaux <i>Testing the Existence of a Random Changepoint in a Mixed Model</i>	Oct 2017

## WORKSHOPS AND SEMINARS

<b>BPH Biostatistics seminar</b> , Bordeaux <i>Robustness to dropout: a comparison of linear mixed model and functional principal component analysis</i>	Apr 2023
<b>LSHTM Medical Statistics team seminar</b> , London <i>Multiple imputation and propensity score matching</i>	Jun 2021
<b>BPH Biostatistics seminar</b> , Bordeaux <i>Score test for the changepoint on a mixed model</i>	May 2017
<b>ANR SMALA Research meeting</b> , Bordeaux <i>Inference in random changepoint models</i>	Mar 2017

## SCIENTIFIC PUBLICATIONS

### PREPRINTS

- **Ségalas C**, Helmer C, Genuer R, Proust-Lima C. [Functional principal component analysis as an alternative to mixed-effect models for describing sparse repeated measures in presence of missing data. \*arXiv preprint\*.](#)

## PEER-REVIEWED

- Bouvier F, Peyrot E, Balendran A, **Ségalas C**, Roberts I, Petit F, Porcher R. Do machine learning methods lead to similar individualized treatment rules ? A comparison study on real data, *Statistics in Medicine*, 2024.
- Thurin N, Jové J, Lassalle R, Rouyer R, Lamarque S, Bosco-Levy P, **Ségalas C**, Schneeweiss S, Blin P, Droz-Perroteau C. Strong instrumental variables biased propensity scores in comparative effectiveness research: A case study in oncology, *Journal of Clinical Epidemiology*, 2023.
- **Ségalas C**, Leyrat C, Carpenter JR, Williamson E. Propensity score matching after multiple imputation when a confounder has missing data, *Statistics in Medicine*, 2023.
- **Ségalas C**, Leyrat C, Williamson E. Pulling Unmeasured Confounding Out by your Bootstraps: Too Good to be True?, *Journal of Statistical Research*, 2022.
- Mulot M, **Ségalas C**, Leyrat C, Besançon L. Re : Subramanian and Kumar. Vaccination rates and COVID-19 cases, *European Journal of Epidemiology*, 2021.
- Besançon L, Peiffer-Smadja N, **Ségalas C**, Jiang H, Masuzzo P, Smout C, Billy E, Deforet M, Leyrat C. Open science saves lives : Lessons from the COVID-19 pandemic, *BMC Medical Research Methodology*, 2020.
- **Ségalas C**, Helmer C, Jacqmin-Gadda H. A curvilinear bivariate random changepoint model to assess temporal order of markers *Statistical Methods in Medical Research*, 2020.
- Gosse P, **Ségalas C**, Rubin S, Boulestreau R, Jacqmin-Gadda H, Leffondre K, Combe C, Cremer A. Long term evolution of renal function in essential hypertensive patients with no baseline proteinuria, *Journal of Human Hypertension*, 2020.
- **Ségalas C**, Amieva H, Jacqmin-Gadda H. A hypothesis testing procedure for random Changepoint mixed models, *Statistics in Medicine*, 2019.

## PROCEEDINGS

- **Segalas C**, Jacqmin-Gadda H. A semi-latent class model for estimating the time of differentiation of cognitive decline between cases and controls, *Proceedings of the 35th International Workshop on Statistical Modelling*, 2020.

## GRANT & AWARDS

**Daniel Schwartz PhD Award**  
*French Biometrics Society*

2020

**PhD Grant**  
*Université de Bordeaux*

2016

## SCIENTIFIC ANIMATION

- Animator of the Statistical bibliography seminar
- Animator of the PhD book club

Mar 2023 – Now  
Sept 2018 – Jun 2019

# TEACHING ACTIVITIES

## COURSES

**Université de Bordeaux** 2023-2024

- MSc in Public Health Data Science  
*Introduction to machine learning: CART and Random Forests (6h)*

**Université Paris-Cité** 2022-2023

- MSc in Biotechnology  
*Introduction to Statistical inference (3h)*

**London School of Hygiene and Tropical Medicine** 2021-2022

- MSc in Health Data Science  
*Linear and logistic regression (9h)*

**London School of Hygiene and Tropical Medicine** 2020-2021

- MSc in Health Data Science  
*Linear and logistic regression (9h)*

**Université de Bordeaux** 2018-2019

- MSc in Epidemiology  
*Introduction to R and RStudio (3h)*
- MSc in Public Health  
*Linear regression models (14h)*  
*Hypothesis testing (16h)*
- MSc in Psychology  
*Multidimensional data analysis (32h)*

**Université de Bordeaux** 2017-2018

- BSc in Psychology  
*Introduction to data analysis (24h)*
- MSc in Psychology  
*Multidimensional data analysis (8h)*

## SUPERVISION AND EVALUATION

- Co-supervision of several second year MSc students
- Supervision of first year MSc students research projects
- Co-supervision of a PhD student on a paper
- Academic supervisor of a second year MSc student
- Member of several juries for MSc students research communications