

Scientific interests

Post-selection inference: Inference for latent variable models. Uniform validity of confidence sets. Model selection.

Mixed-effects models: Non-linear mixed-effects models and linear mixed-effects models. Regularization method. Asymptotic theory for misspecified linear mixed-effects models.

Academic Background

PhD student in Mathematics | 2025–present
EDMITT, Toulouse University, CNRS, Toulouse, France

Subject: *Post-selection inference for latent variable models*

Supervisors: François Bachoc, Juliette Chevallier.

PhD in Public Health (Biostatistics) | 2023–2025
EDSP2, Bordeaux University, Inria, BPH, Bordeaux, France

Subject: *Regularization Methods for Integrating High-Dimensional Data into Mechanistic Models: Applications for Vaccine Development.* (Manuscript 📄 | Slides 📄)

Supervisors: Mélanie Prague, Cécile Proust-Lima.

Jury: Julien Chiquet and Emmanuelle Comets (reviewers), Hélène Jacqmin-Gadda (president), Sébastien Benzekry and Pierre Neuval (examiners), Mélanie Prague (supervisor), Cécile Proust-Lima (co-supervisor).

Magistère de Mathématiques | 2020–2023
Paris-Saclay University, Orsay, France

Additional coursework: algorithmics, mathematical physics and symbolic computation (L3); mathematics for AI, optimization (M1); model selection, missing data and causality (M2).

M2 – Mathematics for Life Sciences | 2022–2023
Master's internship (6 months): *High-Dimension Mechanistic Model Building using Lasso Approaches*, supervised by Mélanie Prague (Inria, SISTM).

M1 – Fundamental Mathematics | 2021–2022
Supervised research project (TER): *Introduction to Microlocal Analysis* (with Claire Plateaux and Enguérand Tamagna), supervised by Patrick Gérard.

L3 – Mathematics (LDD3) | 2020–2021
Supervised research project (TER): *Transcendence of e and π* (with Ales Brahiti and Antoine Removille), supervised by Stéphane Fischler.

CPGE, MP* | 2017–2020
Lycée Georges Clémenceau, Reims, France
Engineering Sciences option.

Some skills

Languages: French (native), English (B2)

Software: R, R Markdown, Python 🐍, Jupyter, Git/GitHub, Monolix suite

Others: L^AT_EX

Awards

– 🏆 09/2023. Best Poster Award, 2nd Young Researchers' Day, Bordeaux Population Health.

– 🏆 2022/2023. Sophie Germain Master's Scholarship (Jacques Hadamard Foundation).

– 🏆 2019/2020. Lemaesquier Prize (Association of former students of Lycée Clémenceau).

Scientific outreach and associations

Current activities:

– **Young Statisticians Group**, Société Française de Statistique (SFdS) – elected member since 05/2024; Vice-President 2025–2026; President since 06/2026.

– **TFJM²** (French Tournament of Young Mathematicians, Animagh) – jury member since 2021 and jury president for 2 tournaments (2025–2026); member of the problem committee since 2024; member of the regional organizing committees of Bordeaux (since 2025) and Toulouse (since 2026).

Past activities:

– **EGMO 2026** (European Girls' Mathematical Olympiad, Bordeaux) – member of the organizing team and *Chief Guide*.

– **BBPH**, young researchers' association of Bordeaux Population Health – co-head of the communication unit, 04/2024 – 04/2025.

– Vice-President, Mathematics Student Union, Paris-Saclay University – 2021–2022.

– Student ambassador, Paris-Saclay University, 2021–2023.

– Temporary employee, Graduate School of Mathematics, Paris-Saclay University, ~30h, 2020–2021.

Research and Teaching Activities

Teaching Activities

Period	Course Title	Target Audience	Lectures/Exercises(h)	Comp. lab(h)	Total
2023–2024	EPISTA101 – Quantitative Approaches in Public Health	M1 Public Health, ISPED	12	2	14
2023–2024	Statistical Modeling and Introduction to R	Medical residency, 1 st year	0	9	9
2023–2024	Statistics and practicals in R	L3 Maieutics	12	0	12
2023–2025	STG101 – Tutoed project (supervision, then tutor-reader)	M1 Public Health, ISPED	6	0	6
2024–2025	Statistics and Epidemiology (course coordinator, statistics part)	L2 Orthoptics	20	0	20
Total cumulative hours			50	11	61

Publications

– Gabaut, A., Thiébaud, R., Proust-Lima, C., Prague, M. *A Stability-Enhanced Lasso Approach for Covariate Selection in Non-Linear Mixed Effects Model. Statistics in Medicine* 45(1–2), 2026: e70407. (DOI )

Software

- **LSAMBA** – R package for the Lasso-SAMBA algorithm (Stochastic Approximation Model Building Algorithm with Lasso regression for covariate selection). (CRAN )
- **REMixed** – R package for Regularized Estimation in MIXed effects models. (CRAN  | Vignette )

Talks

International conferences:

32nd PAGE meeting

Gabaut, A., Prague, M. – High-dimension Mechanistic Model Building using Lasso Approaches: Application to Ebola Vaccination.  26–28/06/2024  Rome, Italy

10th Channel Network Conference (CNC)

Gabaut, A., Bercu, A., Prague, M., Proust-Lima, C. – Regularized estimation of non-linear mixed effect models in the presence of high-dimensional biomarkers.  19–21/05/2025  Liège, Belgium

National conferences:

Journées de Biostatistique, GDR Stat & Santé

Gabaut, A., Prague, M. – High-dimension Mechanistic Model Building using Lasso Approaches: Application to Ebola Vaccination.  16–17/11/2023  IMT, Toulouse, France

55th Journées de Statistique (SFdS)

Gabaut, A., Prague, M. – Construction de modèles mécanistes en grande dimension avec une approche par Lasso : application à la vaccination contre le virus Ebola.  27–31/05/2024  Bordeaux, France

Journée Scientifique Annuelle, RRI PHDS

Gabaut, A., Prague, M. – Construction de modèles mécanistes en grande dimension avec une approche par Lasso : application à la vaccination contre le virus Ebola.  03/07/2024  Bordeaux, France

56th Journées de Statistique (SFdS)

Gabaut, A., Bercu, A., Prague, M., Proust-Lima, C. – Regularized estimation of non-linear mixed effect models in the presence of high-dimensional biomarkers.  02–06/06/2025  Aix-Marseille, France

Poster:

2nd journée des Jeunes Chercheurs, Bordeaux Population Health

Gabaut, A., Prague, M. – High-dimension Mechanistic Model Building using Lasso Approaches: Application to Ebola Vaccination. *Best Poster Award.*  25/09/2023  Bordeaux, France

Organized events

With the Young Statisticians Group (SFdS):

Journées YSP (Young Statisticians and Probabilists)

Co-organization of the day (invited speakers, program)

📅 07/02/2025, 14/01/2026 📍 Institut Henri Poincaré, Paris, France

Journées de Statistique – Youth program

Logistics for the scientific lunch and speaker meet-ups (Bordeaux, 2024); scientific lunch (Marseille, 2025); special session and speaker meet-ups (Clermont-Ferrand, 2026)

📅 2024 – 2026 📍 France

RJS 2026 (11th Rencontres des Jeunes Statisticien.ne.s)

Participation in the scientific committee on behalf of the Young Statisticians Group

📅 17–21/05/2026 📍 Porquerolles, France

With the BBPH association:

Seminar – “Bien s’informer en santé publique”

With Geneviève Chêne and Priscille Rivière as invited speakers.

📅 13/05/2025 📍 Bordeaux, France

Seminar – “Société et chercheurs : co-construire la science de demain”

With Cécile Walter and Florence Francis-Oliviero as invited speakers.

📅 28/11/2024 📍 Bordeaux, France