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François Grolleau

MD, MPH, PhD

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Education

2019-2023 **Ph.D. in Statistics and Computer Science**, Université Paris Cité.
Thesis: "Causal inference methods for personalized medicine: an application to the timing of renal replacement therapy initiation." Adviser: Prof. Raphaël Porcher.

2013-2019 **M.D. Graduation**, Université de Caen Normandie.
Full Board Certification (France) in Anesthesiology and Critical Care Medicine.

2017 **MSc. in Public Health**, Université Paris Cité, *summa cum laude*.
Biostatistics and Methods in Comparative Effectiveness Research.

2015 **BSc. in Biostatistics**, Université de Caen Normandie, *summa cum laude*.

2007-2013 **Medical School**, Université Toulouse III — Paul Sabatier.

Professional positions

2024–Present **Post-Doctoral Scholar**, Stanford Center for Biomedical Informatics Research, Prof. Jonathan Chen, Department of Medicine, Stanford University.

12/2023-03/2024 **Post-Doctoral Scholar**, Paris Artificial Intelligence Research Institue, France, Prof. Raphaël Porcher and Prof. François Petit, Université Paris Cité.

2019-2023 **Fellow in Biostatistics and Epidemiology**, Université Paris Cité, France.

2020 **Fellow in Critical Care Medicine**, Université Paris Cité, France.
During COVID-19, I resumed clinical practice and worked at Bichat Hopital's Medical ICU.

2013–2019 **Resident in Critical Care Medicine, Anesthesiology, and Nephrology**, France.
University Hospital of Caen and Hôpital Européen Georges-Pompidou (AP-HP, Paris).

2017 **Research Fellow**, McMaster University, Canada.
Clarity Research attendee (led by Prof. Gordon Guyatt).

Scientific publications

Citations: 230 *h*-index: 7

Preprints

- F. Grolleau, R. Tibshirani and JH. Chen. Estimating complier average causal effects with mixtures of experts. *arXiv:2501.03155.*
- F. Grolleau, E. Goh, SP. Ma et al. Systematic exploration of hospital cost variability: a conformal prediction-based outlier detection method for electronic health records. *medRxiv:2025.01.10.25320349.*
- F. Grolleau, C. Beji, F. Petit and R. Porcher. Estimating complier average causal effects with mixtures of experts. *arXiv:2405.02779.*
- F. Grolleau, F. Petit and R. Porcher. A comprehensive framework for the evaluation of individual treatment rules from observational data. *arXiv:2207.06275.*

Peer Reviewed

- F. Grolleau, F. Petit, S. Gaudry et al. Personalizing renal replacement therapy initiation in the intensive care unit: a reinforcement learning-based strategy with external validation on the AKIKI randomized controlled trials. *Journal of the American Medical Informatics Association*. 2024.
- F. Grolleau, R. Porcher, S. Barbar et al. Personalization of renal replacement therapy initiation: a secondary analysis of the AKIKI and IDEAL-ICU trials. *Critical Care*. 2022.
- S. Gaudry, F. Grolleau, S. Barbar et al. Continuous renal replacement therapy versus intermittent hemodialysis as first modality for renal replacement therapy in severe acute kidney injury: a secondary analysis of AKIKI and IDEAL-ICU studies. *Critical Care*. 2022.
- D. Nezam, R. Porcher, F. Grolleau, et al. Authors' reply: Kidney histopathology can predict kidney function in ANCA-associated vasculitides with acute kidney injury treated with plasma exchanges. *Journal of the American Society of Nephrology*. 2022.
- D. Nezam, R. Porcher, F. Grolleau, et al. Kidney histopathology can predict kidney function in ANCA-associated vasculitides with acute kidney injury treated with plasma exchanges. *Journal of the American Society of Nephrology*. 2022.
- S. Goursaud, SM. de Lizarrondo, F. Grolleau, et al. Delayed cerebral ischemia after subarachnoid hemorrhage: is there a relevant experimental model? A systematic review of preclinical literature. *Frontiers in Cardiovascular Medicine*. 2021.
- R. Bey, R. Goussault, F. Grolleau, et al. Fold-stratified cross-validation for unbiased and privacy-preserving federated learning. *Journal of the American Medical Informatics Association*. 2020.
- F. Grolleau, GS. Collins, A. Smarandache et al. The fragility and reliability of conclusions of anesthesia and critical care randomized trials with statistically significant findings: A systematic review. *Critical Care Medicine*. 2019.

Book Chapter F. Grolleau. Hypnotics, opioids, and myorelant agents. Principles and protocols in neuro-anesthesia and neuro-critical care. C. Gakuba *Edition Arnette*. 2019 (in French).

Referee JAMA Network Open, BMJ Open, Annals of epidemiology etc.

Conferences and workshops

Statistics
Gustave Roussy biostatistics seminar, Paris FR 2024 (invited oral communication).
MAP5 statistics seminar, Paris FR 2023 (invited oral communication).
CNRS Causality in practice symposium, Paris FR 2023 (invited oral communication).
Talk at HealthRex Lab, Stanford University BMIR 2023 (online communication).
EPICLIN/JSCLCC conference, Nancy, 2023 (oral communication).
International society for clinical biostatistics, Newcastle, UK, 2022 (oral communication).
American causal inference conference, UC Berkeley, CA 2022 (poster).
Paris artificial intelligence research institute day, Paris, FR 2022 (poster).
EPICLIN/JSCLCC conference, Paris FR 2022 (oral communication).

Medicine
International symposium on intensive care, Brussels, BEL 2022 (poster).
French intensive care society congress, Paris, FR 2019 (poster).
European anesthesiology congress, Copenhagen, DE 2018 (moderator).
French society of anesthesia and intensive care, Paris, FR 2018 (poster).
Canadian pain society conference, Montreal, CAN 2018 (poster).

Grants

2022 PHRC-21-0167 "Intermittent hemodialysis versus continuous renal replacement therapy for severe acute kidney injury in critically ill patients" (PI: Stephane Gaudry, € 830'000).

2021 Action exploratoire (AEx) "Precision medicine using topology" (PI: Steve Oudot, € 235'000).

Teaching

2021–2024 **Denis-Diderot Engineering School**, Paris, France.
Course instructor for a series of courses on *Survival Analysis* (Master level).

2019–2024 **Université Paris Cité**, France.

- Joint seminar with Maastricht University "AI in Medicine": course instructor.
- University Diploma "Artificial Intelligence for Health": course instructor.
- 1^{st} year medial students: teaching assistant for probability and statistics.
- 3^{rd} year medial students: teaching assistant for methods in clinical research.
- M.P.H. students: teaching assistant for prediction models and personalized medicine.
- BSc. students: course instructor for critical thinking in comparative effectiveness research.

Supervision of 1 M.P.H. student and 2 M.D. student for their thesis.

Technical skills

Packages Tidyverse, Shiny, PyTorch, JAX, Keras, Sklearn, Git, AWS, Google Compute Engine.

Programming Proficient: Python, R, LaTeX, Good: SQL, Basic: JavaScript, C++.

Software CRAN: Mestim, Pypi: Speedboot, Shiny apps: powerROC, dynamic-rrt.eu, rrt-personalization.eu