fr/**en**

Amandine PEPIOT

PhD candidate

E-mail. *see the contact form on my webpage*
Website. *apepiot.github.io*

Research

Research engineer, IPLESP, Paris, France 2019
Analysis of the feasibility of using statistical models to obtain estimates of epidemiological indicators of HIV infection in West Africa (Togo, Burkina Faso, Mali)
Skills: R, SAS

Research engineer, IPLESP, Paris, France 2018 - 2019
Estimation of incidence, hidden epidemic and time between infection and diagnosis of HIV based on departmental data on new diagnoses.
Skills: back-calculation model, R, C++, Matlab

Intern, IPLESP, Paris, France 2018
Subject: « Evaluating the impact of hometests on the HIV epidemic of men who have sex with men in France » [report]
Supervisors: Virginie Supervie (Inserm) and Romulus Breban (Institut Pasteur)
Skills: epidemic models, numerical analysis, Matlab

Intern, Terres Inovia, Grignon, France 2017
Sujet : « Analysis and implementation of linear models to predict the average yield of rapeseed in France »
Supervisor: Sébastien Gervois (Terres Inovia)
Compétences: times series, R, Shiny (RStudio)

Teaching

Teaching assistant at INSA Toulouse, France 2022-*en cours*
Theoretical and applied mathematics for 1st, 2nd and 3rd years of engineering study. *Full time*
Lab: GMM INSA Toulouse - IMT (UMR 5219)

Teaching mission as a PhD student, Sorbonne Université, Paris, France 2019-2021
Tutorials of biostatistics for first- and second-year medical students (2×64 hrs).

Education

PhD 2019-*en cours*
Under the supervision of Romulus Breban (Institut Pasteur) and Virginie Supervie (Inserm)
Lab: IPLESP, UMR-S 1136 Inserm-Sorbonne Université, France
Subject: *Infectious disease elimination using self-testing? Game-theoretical approach and application to the HIV epidemic.*
Skills: epidemic models, numerical analysis, Matlab, utility theory
Funding: Sidaction
Doctoral school: Pierre Louis de santé publique (ED 393)

Academic exchange 2017-2018
Technische Universität Dresden, Germany
Theory and applications of partial differential equations, finite elements, mathematical applications in biology and risk modeling

Engineering school - applied mathematics 2015-2018
National Institutes of Science and Technology (INSA), Rennes, France
Theoretical and applied mathematics

Classe préparatoire aux grandes écoles MPSI-MP 2013-2015
Lycée Victor Hugo, Besançon, France
Mathematics, physics and industrial sciences

Publications

Article, Pepiot A, Supervie V. and Breban R. *Impact of voluntary testing on infectious disease epidemiology: A game theoretic approach.* PLOS ONE, 18(11): e0293968, November 2023 [paper]

Talks

Poster, Pepiot A., Supervie V. and Breban R. *Can self-testing end infectious disease epidemics? A tentative answer through game theory*, ECMTB, Heidelberg, septembre 2022 [poster]

Poster, Pepiot A., Supervie V. and Breban R. *Can self-testing end infectious disease epidemics? A tentative answer through game theory*, Journée Scientifique Sidaction, Paris, mars 2022

Presentation, Pepiot A., Supervie V. and Breban R. *Can self-testing end infectious disease epidemics? A tentative answer through game theory*, Journée des Jeunes Chercheurs Sidaction, en ligne, novembre 2021

Poster, Pepiot A., Supervie V. and Breban R. *Can self-testing end infectious disease epidemics? A tentative answer through game theory*, Séminaire annuel de l'école doctorale Pierre Louis de santé publique, Saint Malo, octobre 2021 [poster]

Presentation, Pepiot A., Supervie V. and Breban R. *Impact of voluntary testing on infectious disease epidemiology: a game theoretic approach*, Journée des Jeunes Chercheurs Sidaction, Paris, novembre 2020

Poster, Pepiot A., Supervie V. and Breban R. *Impact de l'auto-dépistage sur l'épidémiologie des maladies infectieuses : Approche par la théorie des jeux*, Séminaire annuel de l'école doctorale Pierre Louis de santé publique, Saint Malo, octobre 2020 [poster]

Poster, Pepiot A., Supervie V. and Breban R. *Vers une élimination des maladies infectieuses avec l'auto-dépistage ? Approche par la théorie des jeux et application à l'épidémie du VIH*. Université des Jeunes Chercheurs Sidaction, Carry-le-Rouet, novembre 2019 [poster]

Skills

Languages

French - native
English - proficient
German - basic/intermediate

Programming

R, Matlab, Python

Others

LaTeX, Office, Git

last update of this CV: November 2023

PhD subject - Infectious disease elimination using self-testing? Game-theoretical approach and application to the HIV epidemic.

Over the past two decades, remarkable progress has been made in the fight against HIV. The life expectancy of people living with HIV has dramatically increased since effective combination antiretroviral treatment (cART) has been made broadly available and continues to be improved. Additionally, effective cART prevents onward HIV transmission, by reducing the HIV viral load in body fluids to undetectable levels. Today, it is believed that early HIV diagnosis and treatment has the potential to end the HIV epidemic. However, this will require reducing the time interval between HIV infection and HIV diagnosis, which remains very long. For instance, in France, 50infection. This may largely be due to the fact that the HIV infection can remain asymptomatic for years and the infected individual does not find much motivation to get tested for HIV. There is an urgent need to improve HIV-testing practices. Two recent tools for HIV self-testing could offer new opportunities to increase testing frequency: 1) the HIV home self-test and 2) the selfsampling kit for screening for multiple sexually transmitted infections. The HIV home self-test entered the French market in 2015, while the self-sampling kit is still under investigation in a large study in France. Using data from research surveys on these self-testing tools, innovative mathematical models, accounting for decision-making about testing and perception of the HIV epidemic, we propose to determine whether and under what conditions self-testing could avert the HIV epidemic. The key determinants to be considered for self-testing are: the course of the HIV epidemic, the convenience, price and reliability of self-tests, and how well individuals apply self-tests (for example, the HIV home self-test). The results that we will obtain can be translated into new public health policies to improve HIV testing recommendations, better meet the testing needs of individuals, and increase the acceptability of HIV testing tools. The ultimate goal is to decisively contribute to sooner diagnosis of HIV, which is essential to reduce HIV-related mortality and curb down the epidemic.