We search a PhD candidate in Biostatistics

Title: Causality in epidemiological studies: which methodology should we use in practice among the large number of available approaches?

Starting date: October 2016

Closing date for applications: 10st September 2016

Profile:
- Master degree in biostatistics, epidemiology or medical statistics.
- Background in statistical analyses and programming.
- Strong interest in epidemiological analysis and applied research.
- Knowledge of regression models (in particular for time-to-event data).
- Skills to write research papers.
- Ability to work independently as well as part of a team.

The joint Laboratory RISCA: The joint Laboratory RISCA gathers the EA4275-SPHERE (bioStatistics, Pharmaco-epidemiology and Human sciEnces ResEarch, Universities of Nantes and Tours and the private society IDBC\A2com (www.idbc.fr). RISCA is in the framework of epidemiological studies from observational cohort data and aims to continue the development of a software solution so-called Plug-Stat®. Started three years ago with an industrial PhD student, this collaboration between the EA4275-SPHERE and IDBC-A2com has allowed the development of Plug-Stat® for the French DIVAT cohort of kidney transplant patients (www.divat.fr). This software is an ergonomic and intuitive tool to perform data extractions and statistical analyses adapted to the studied pathology.

Project summary: Within the RISCA laboratory, the objective of the present proposal is to continue the development of Plug-Stat® by adapting it to four new cohorts: ATLANREA (Multicenter prospective cohort of patients admitted to intensive care), CordaBASE (mono-centric prospective cohort of patients with a bioprosthetic heart valve implant), EVALADD (prospective cohort of patients who just started to be followed for behavioral addictions), and EKiTE (multicenter cohort of European renal transplant patients). An important axis in the roadmap of the RISCA project is the development of statistical models well suited for each cohort. We will account for the methodological challenges related to competing risks, interval censoring, joint-modeling of a longitudinal marker trajectory and a time-to-event, and the joint-modeling of life expectancy and quality of life indicators. It is in particular in this axis that you will be involved. For all these models, a central issue concerns the confounding factors. Indeed, in observational studies, exposed and unexposed patients are not directly comparable. There is a large number of statistical methods to account for these confounding factors: matching, stratification, modelling, and many propensity score-based approaches. As we performed recently in survival analysis (Le Borgne et al. Comparisons of the performance of different statistical tests for time-to-event analysis with confounding factors: practical illustrations in kidney transplantation. *Stat Med*. 2015), studies relative to the comparison of these methods are still needed to choose the most adapted ones and to formulate recommendation.

Offer:
- Full-time employment of 3 years by the Nantes University, starting 1st October 2016 with the aim of defending a PhD thesis at the end of this period.
- You will join an interdisciplinary team within the framework of European development of an innovative statistical software for studies in clinical epidemiology.

- You will be able to attend international conferences and write scientific papers.
- You will teach Biostatistics at Nantes University (64 hours per years).
- You will learn about 1,800 euros net per months.

Contact (thesis supervisor):

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Interested candidates can apply for this position by sending a detailed CV, a motivation letter, and a detailed rating in the different modules during the Master, by email to the address above.