

Post-Doc in Cardiac Modelling at Inria Sophia Antipolis

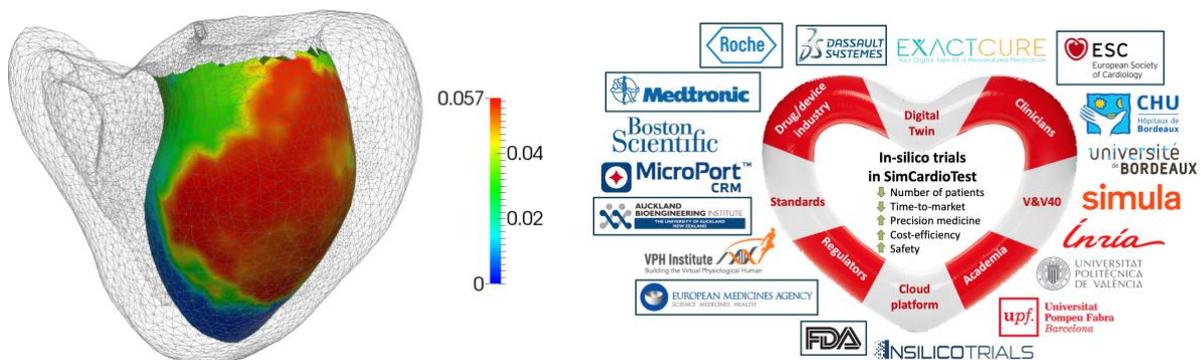
within the European Project SimCardioTest

Context

Despite massive investment in healthcare, huge R&D cost increase and regulatory pathway complexity hamper tremendously commercialisation of new devices & medicines, putting patient populations at risk of not receiving adequate therapy. At the same time, outside healthcare, computer modelling and simulation (CM&S) is precisely recognised to increase speed & agility while reducing costs of development. CM&S can create scientific evidence based on controlled investigations including variability, uncertainty quantification, and satisfying demands for safety, efficacy & improved access.

Cardiac modelling has dramatically gained maturity over the last decades, with personalisation to clinical data enabling validation. We selected a number of cardiac devices and medicines where CM&S is mature enough and that represent the most common cardiac pathologies, to demonstrate a standardised and rigorous approach for in-silico clinical trials. SimCardioTest will bring a disruptive innovation by creating an integrated and secure platform standardising & bridging model simulations, in-silico trials, and certification support. This environment will go beyond the state-of-the-art in computational multi-physics & multi-scale personalised cardiac models. Diseased conditions and gender/age differences will be considered to overcome clinical trials limitations such as under-representation of groups (e.g. women, children, low socio-economic status). Advanced big data, visual analytics & artificial intelligence tools will extract the most relevant information.

It is critical that Europe demonstrates its capacity to leverage in-silico technology in order to be competitive in healthcare innovation. SimCardioTest exploitation aims at delivering a major economic impact on the European pharmaceutical and cardiac devices industry. It will accelerate development, certification and commercialisation, and will produce a strong societal impact contributing to personalised healthcare.



Position Description

Personalised cardiac electromechanical models have been developed at Inria for the last 20 years. The objective of this project is to use such models in the design and test of cardiac devices. In collaboration with the Microport CRM company, the successful candidate will develop a realistic testing suite for pacing devices based on cardiac electromechanical models.

Searched profiles

- PhD in Applied Mathematics or Computer Science
- Good knowledge of 3D modelling, ideally cardiac
- Eager to work in the medical field
- Eager to learn and take initiatives
- Good coding skills in Python and C++

Job location: Inria Sophia Antipolis, 2004 route des Lucioles, 06 902 Sophia Antipolis, France

Start: early 2021

Duration: 2 years renewable

Salary: depending on experience.

Send your resume, references and motivation letter to: maxime.sermesant@inria.fr