

Sano Computational Medicine Seminars

Monday, 5 October 2020, 14:00-15:30 (CEST)

Join us via Zoom: <https://seminar.sano.science/>

D. Rodney Hose

Department of Infection, Immunity and Cardiovascular Disease
and Insigneo Institute for In Silico Medicine,
University of Sheffield, United Kingdom

<https://www.sheffield.ac.uk/medicine/people/iicd/rod-hose>

Progress in Personalised Computational Models of Physiology for Clinical Application

Abstract

In this talk I will examine some of the challenges of translation of computational physiological models to applications in clinical medicine and in personal health management. I will include discussion of the whole pipeline, from data collection through to model personalisation and results interpretation. I am convinced that, to maximise impact, our models need to represent the physiology of the patient in a range of situations as they live their lives (their physiological envelope). I will review the history, challenges and progress in perhaps the most successful translational application of computational haemodynamics, in coronary application, including fractional flow reserve computations and beyond.


Medical Engineering and Physics 72 (2019) 38–48



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Medical Engineering and Physics

journal homepage: www.elsevier.com/locate/medengphy



Cardiovascular models for personalised medicine: Where now and where next?



D. Rodney Hose^{a,b,c,*}, Patricia V. Lawford^{a,c}, Wouter Huberts^d, Leif Rune Hellevik^e, Stig W. Omholt^b, Frans N. van de Vosse^f

^aDepartment of Infection, Immunity and Cardiovascular Disease, University of Sheffield, Sheffield S10 2TN, UK

^bDepartment of Circulation and Medical Imaging, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

^cInsigneo Institute for in silico Medicine, University of Sheffield, Sheffield, UK

^dDepartment of Biomedical Engineering, Maastricht University, Maastricht, The Netherlands

^eDepartment of Structural Engineering, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

^fDepartment of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands

[More information on our website: sano.science](https://sano.science)