

Seminari Carlo Emanuele e Maria Rosa Tiscornia 2018

Venerdì 23 marzo, ore 15
Salone di rappresentanza di villa Cambiaso

prof. **Oliver Jensen**

“Flow and transport in the human placenta”

Abstract

The placenta is a versatile organ that exchanges blood gases and essential nutrients between a mother and her growing fetus. Within the placenta, fetal and maternal blood are brought into close proximity, while avoiding direct contact: fetal blood passes through elaborate capillary networks within the branches of so-called villous trees, while maternal blood percolates outside the branches of the trees.

Fluid mechanics and transport processes have an important role to play in understanding the relationship between the elaborate structure of the placenta and its function, in health and in disease.

I will describe how recent advances in imaging and computation have spurred recent advances in simulations of this remarkable life-support system.

Oliver Jensen's biography:

- Sir Horace Lamb Professor, School of Mathematics, University of Manchester, 2012 to present
- Professor of Applied Mathematics, School of Mathematical Sciences, University of Nottingham, 2000-2012; Head of School 2005-2009
- Assistant Director of Research, DAMTP and Fellow & Director of Studies, Gonville & Caius College; University of Cambridge, 1996-2000
- Lecturer, School of Mathematics and Statistics, Newcastle University, 1992-1996
- Postdoctoral Research Fellow, Department of Biomedical Engineering, Northwestern University, 1990-1992
- PhD, University of Cambridge, 1991