



**Participant:** Professor Peter Hunter, Auckland Bioengineering Institute, University of Auckland  
**Project Title:** Virtual Physiological Human Network of Excellence (**VPH NoE**)  
**URL:** [www.vph-noe.eu](http://www.vph-noe.eu)  
**Research Area:** ICT  
**Research Programme:** FP7, Network of Excellence (NoE)  
**Coordinator:** University College London, UK  
**NZ Role:** VPH NoE Core Member  
**Period Covered:** 54 months from 01/06/2008 to 30/11/2012  
**Total Project Funds:** €7 999 367

### (i) Introduction

The **Virtual Physiological Human Network of Excellence (VPH NoE)** constitutes a leading group of universities, institutes and organisations, which represent centres of excellence in physiological modelling; data processing and analysis; high performance computing; genomics; bioinformatics and medical informatics. The member organisations aim to support and contribute to European research in biomedical modelling and simulation of the human body by improving the ability to predict, diagnose and treat diseases. In doing so, they seek to promote the creation of an environment that actively supports and nurtures interdisciplinary research, education, training and strategic development.

### (ii) New Zealand participation



**Professor Peter Hunter** and **Dr. Catherine Lloyd** from the **Auckland Bioengineering Institute (ABI)** at the University of Auckland represent NZ's contribution to VPH NoE, with core membership in the initiative. Professor Hunter leads the University's participation in the project whilst Dr. Lloyd acts as Project Manager. Both researchers possess strong connections to the **University of Oxford** and have engaged in collaboration with staff there in the past.



One of the main contributions of the ABI to the VPH NoE is the development of modelling standards and software tools. Mathematical models play an essential role in the interpretation of complex biological processes. However, as these mathematical models themselves become increasingly complex and numerous, there has arisen a need for defined modelling standards to facilitate model exchange and reuse by the research community.

Through the VPH NoE the ABI works with the European Community in the future development of the Institute's [CellML](#) project, which is a well-defined mark-up language which can be used to describe a wide range of physiological processes occurring at the molecular and cellular scales. [FieldML](#), which is used for describing spatial information in models, is also being focused upon and these modelling languages will be further supported by the development of improved tools, which will allow a wider community to adopt these modelling standards.

### (iii) The wider picture

The strength of the ABI's connections with Oxford provided the impetus for the Auckland team's involvement in VPH NoE. In addition, the opportunity to be part of such a sizeable initiative in terms of the associated prestige, the scope of funding and the chance to work alongside top European researchers also provided the rationale for the researchers' bid to be involved. Moreover, the ABI is the only non-European group included in the initiative, as the skills and tools available in Auckland were considered unique. Participation in the project has already extended the ABI's existing research network beyond Oxford and, assisted by their interaction within VPH NoE, the Auckland team is now looking to put forward a 2009 **International Research Staff Exchange Scheme (IRSES)** bid involving researchers based at **Cambridge** and **Paris**.