

Professor Michael Biehl



Professor Biehl is Professor of Computing Science at the University of Groningen. He will be with us 1 April - 15 June 2014 and will be hosted by **Professor Wiebke Arlt** (<http://www.birmingham.ac.uk/research/activity/mds/centres/cedam/staff/record.aspx?Referenceld=6808>) from **Centre for Endocrinology, Diabetes and Metabolism (CEDAM)** (<http://www.birmingham.ac.uk/research/activity/mds/centres/cedam/index.aspx>).

Michael Biehl is an internationally leading expert in the fields of Scientific Computing and Machine Learning. His current research focuses on the design of efficient similarity-based methods for classification, clustering and visualization of complex and high-dimensional data sets, systems science approaches to biomedical large scale data.

He is not only a cutting edge computer scientist but an outstanding communicator of science, which has enabled him to overcome boundaries and engage in truly productive inter-disciplinary collaboration and we are planning a number of events including an inter-disciplinary lecture, research seminar, a think tank seminar for postdoctoral researchers. The overall aim of the visit is to enhance inter-disciplinary interaction and create broad exposure to cutting edge bioinformatics strategies as innovative research tools.

In collaboration with Wiebke Arlt, Professor Biehl has applied novel machine learning approaches to steroid metabolome data from patients with adrenal tumours. This has led to the identification of a malignancy-specific steroid fingerprint (1, 2), with subsequent IP protection of a novel diagnostic tool currently undergoing commercialisation. He also interacts with the UoB Centre for Translational Inflammation Research (CTIR; Dagmar Scheel-Toellner, Karim Raza, Chris Buckley), applying his methods to outcome prediction and early diagnosis of chronic inflammatory disease. Links are also already established with **Peter Tino** (<http://www.cs.bham.ac.uk/about/people/Peter%20Tino>) from the School of Computer Science, through a strong interest in machine learning, modelling techniques and their inter-disciplinary applications. Contacts regarding collaborative projects are also under way in interaction with the **Systems Science for Health Initiative** (<http://www.birmingham.ac.uk/research/activity/ssfh/index.aspx>), the **NIHR Trauma Centre** (<http://www.srmrc.nihr.ac.uk/>) and **MRC/ARUK Centre for Musculoskeletal Ageing**. (<http://www.birmingham.ac.uk/research/activity/mds/centres/mrc-musculoskeletal-ageing/index.aspx>)

Full details of the plan for Professor Biehl's visit will be available soon but will include a large-scale project on phenome analysis in polycystic ovary syndrome, novel biomarker approaches to early arthritis and the endocrine and immune response to severe trauma. We also intend to explore Michael Biehl's significant expertise regarding multi-disciplinary integration of bioinformatics and to exchange ideas on how we could enhance embedding of bioinformatics to facilitate highly synergistic multi-disciplinary interactions and the generation of translational outcomes of systems science.