

## The Fourth Frontier

Welcome to the fourth newsletter of the ESF Frontiers of Functional Genomics research network programme, or FFG. We are now half way through our 5 year term and so far have supported 38 individuals travelling throughout Europe to learn new techniques, and 31 science meetings with topics ranging from software development to the ethics of biobanking - with lots of 'omics in between.

One recent highlight was our 3<sup>rd</sup> Functional Genomics and Disease conference where 450 delegates enjoyed excellent science, delicious food and great company in a beautiful setting. The good news is that we plan to do it all again in Dresden in April 2010!

Further details on this fourth conference will be available in the next newsletter - The Fifth Frontier - which will also bring news of more events for 2009 following the current call. In the meantime, enjoy some images from Innsbruck, read of cellular dynamics from Kjetil Taskén and of course as promised, find out which eminent member of our programme steering committee started out as a rock and roll writer!

## Apply for science meetings and travel grants

FFG invites proposals from organisers of science meetings to be held in 2009 on topics with a clear connection to the programme. Priority is given to events taking place in countries that financially support the programme and especially those who have not yet hosted a meeting: Denmark, Luxembourg, Poland and Switzerland.

FFG is also offering a number of **Short Visits** and **Exchange Grants** (up to 6 months). Projects must be within the scope of the programme and start during 2008 or 2009. Priority is given to applicants coming from and intending to visit labs in countries that support the programme.

Countries currently supporting the programme are Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Luxembourg, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, Turkey & UK.

**Deadline for submission of proposals is Friday 17 April 2009 17:00 CET.** There will be another call for proposals in autumn 2009. For further details and to apply online go to [www.esf.org/ffg](http://www.esf.org/ffg) or for regular updates on events and funding opportunities join our email list at [www.functionalgenomics.org.uk/sections/contact/join.htm](http://www.functionalgenomics.org.uk/sections/contact/join.htm) or contact [cheryl.smythe@bbsrc.ac.uk](mailto:cheryl.smythe@bbsrc.ac.uk).

## Future Events 2009

The Computational Challenges of the Next Generation DNA Sequencing, Uppsala, Sweden 15-16 Jan 2009

Affinity Proteomics: 4<sup>th</sup> workshop on ligand binders against the human proteome, Alpbach, Austria 23-25 March 2009

Harmonised Biobank Research: maximising value - maximising use, Brussels, Belgium 25-27 March 2009

Innovative Mouse Models IMM2009, Leiden, Netherlands 23-24 April 2009

Advances in Molecular Mechanisms of Disease, Oslo, Norway 8-12 June 2009

Computational Methods for RNA Analysis, Benasque, Spain 26 July - 8 August 2009

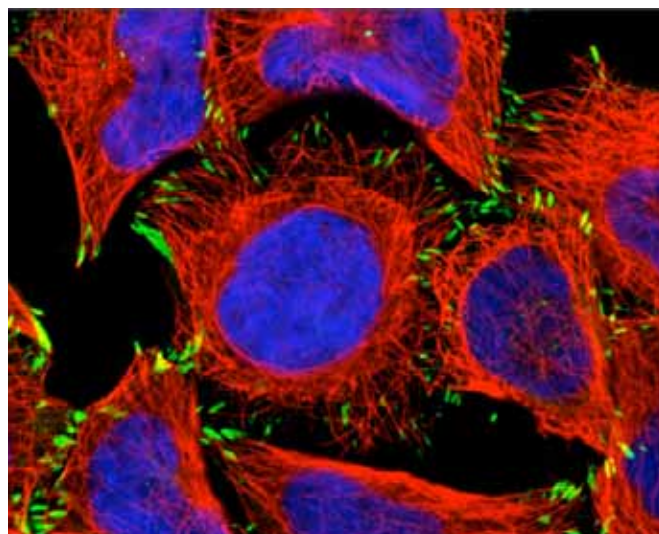
For scientific reports from our past events, please go to our website [www.functionalgenomics.org.uk](http://www.functionalgenomics.org.uk).

## Inspirational Innsbruck

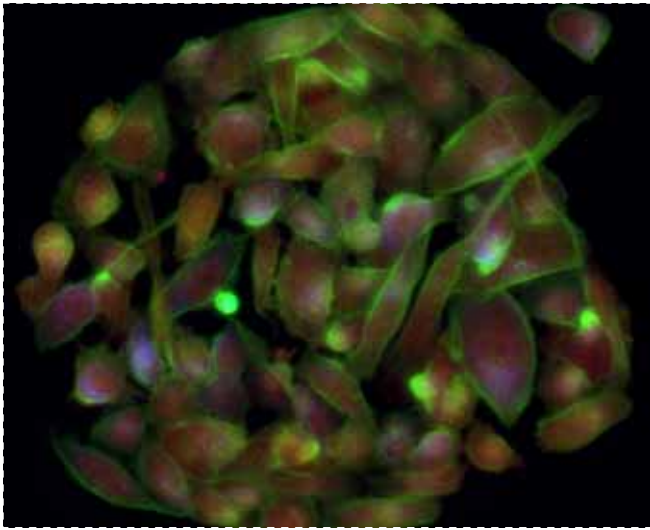
Cheryl Smythe

The enormity of the surrounding Alps made for a stunning and appropriate setting for the recent 3<sup>rd</sup> ESF conference on Functional Genomics and Disease. One of the threads that ran through the entire meeting was the enormous scale and experimental power of functional genomics: the ambitious Human Protein Atlas Project purifies 30 polyclonal antibodies and generates 400 gigabytes of data per day; in Oxford, genome wide association data from 120,000 individuals will be used to further the understanding of metabolic disease; the International Cancer Genome Consortium plans to sequence 50,000 genomes.

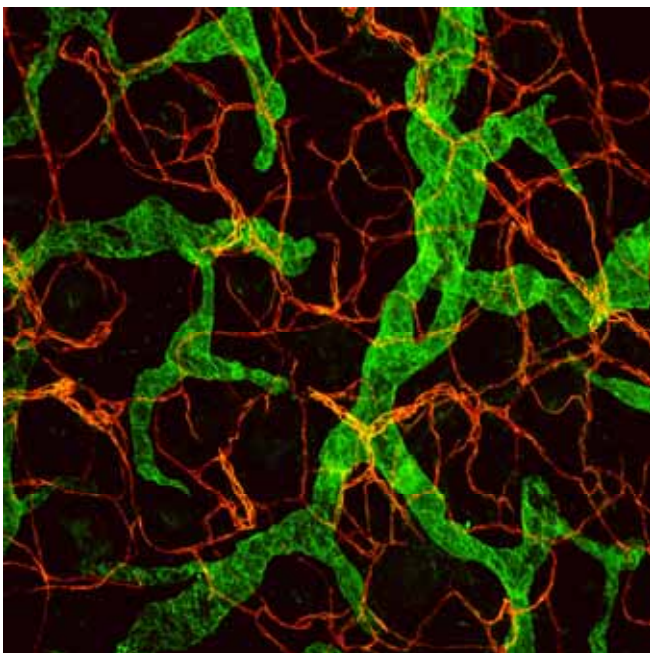
Stunning images captured the imagination both outside and inside the conference centre:



Confocal image showing immunostained A-431 cells. The protein zyxin is demonstrated to be localized at the focal adhesion sites of the cell, as detected by an HPA generated antibody (HPA004835, [www.proteinatlas.org](http://www.proteinatlas.org)), shown in green. To further outline the structure of the cell, the cytoskeleton (tubulin) and the nucleus are stained and shown in red and blue respectively. With kind permission of Emma Lundberg, KTH, Stockholm



Cell microarray spot: PC-3 prostate cancer cells grown on the array spot for 48h were stained for F-Actin (green), active ITGB1 (blue) and ITGA2 (red). Image courtesy of Juha K. Rantala and Olli Kallioniemi, VTT Medical Biotechnology



Lymphatic vessels in a whole mount preparation of the mouse ear are visualised with LYVE-1 immunostaining (green), and the blood vessels with antibodies to PECAM-1 (red). The image was acquired using confocal microscopy. With kind permission of Tuomas Tammela, University of Helsinki

And finally, both our speakers and delegates excelled themselves not only in the conference halls, but also on the dance floor, at the truly memorable conference party.



## Dynamics of cell signal systems

Kjetil Taskén

The ESF and FEBS co-sponsored workshop on 'Cell Signal Systems' was held in Oslo Norway at the end of September '08 with more than 110 participants. The objective of the workshop was to address spatiotemporal organisation of signalling and the use of systems biology to integrate numerous data sets and parallel signalling events into an overall integrated understanding of networks of signals. The workshop featured 32 talks and selected short talk with speakers from across Europe and from the US. Furthermore, over 50 posters were presented in lively sessions with much discussion and facilitating interactions between participants at all levels. Highlights of the programme were opening lectures by Tony Pawson and John Scott on interaction networks and dynamics of signalling respectively. The programme continued by sessions on immune cell signalling, mitogenic signalling, trafficking of signal proteins and signal termination. Signal regulation of polarisation and migration in normal and cancer cells was discussed as well as cardiovascular and metabolic signal processes and their dynamics. A much appreciated session encompassed modelling and computational approaches to understand transcriptional networks as well as protein phosphorylation cascades and organisation of interactome data. Feed-back from the participants on the meeting was very positive and the organising committee was pleased and therefore plan to organise another meeting on signalling events in 2 years – so watch this space.

## Steering committee spotlight

Gertjan van Ommen is the Dutch representative on the FFG steering committee and must be one of the very few scientists who has never moved away from his home town, now living only 15 minutes walk from where he was born. He is currently the head of the Department of Human Genetics at Leiden University Medical Centre and the director of the Centre for Medical Systems Biology. His science reflects a 25 year passion for the understanding and treatment of Duchenne muscular dystrophy - recently his group successfully developed an anti-sense oligonucleotide treatment which is now moving towards phase II clinical trials. His scientific career began in Amsterdam where he studied biochemistry and then as a hard-working graduate student in Leiden, Gertjan's work involved blood, sweat and tears – this did not just reflect his work ethic, or his foresight for biobanking, but in fact was the band: as a rock critic for the Times Nationwide Daily Journal, Gertjan met many of the 1970's greats – Blood, Sweat and Tears, Pink Floyd and Lou Reed! Today however, he is probably better known in his capacity as the editor of the European Journal of Human Genetics, but was recently spotted taking a "Walk on the Wild Side" on our conference dance floor!

*Compiled and created by Cheryl Smythe, FFG Co-ordinator*