

News in Brief:

- First workshop in Leeds was a success
- Abstract submitted for ORS Conference
- Anybody Technology releases new software and model library (Q4)
- New researchers to the project recruited

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August 2010

Volume 1, Issue 1

Training workshop in Leeds

First training workshop took place at Devonshire Hall, University of Leeds, on 'Research Management Skills for the Biomedical Engineer', 13th to 16th July 2010.

The SpineFX project provides training and research in the area of spinal biomechanics and medical engineering associated with vertebral fracture. Over the four-year study ten workshops will be provided.

Participants travelled from around UK, Europe and even the USA, to attend this week-long workshop. The residential workshop was beneficial to many as an opportunity to network with their peers. One Research Fellow commented:

"I wanted to gain a more in-depth background knowledge of the topics covered.

I also wanted to meet fellow researchers, and actually spend time to get to know them. This networking opportunity was an excellent aspect of this course."

This first workshop concentrated on research management skills, and had sessions on; ethics, statistics, intellectual property, project management, posters and presentations. The sessions were well-received with many scoring 'very good' on the feedback forms.

23 participants attended, around a third were post-doctoral researchers, and most were PhD students. A Facebook group has since been set up where the dele-



**SpineFX Delegates,
Devonshire Hall,
University of Leeds,**

gates plan to keep in touch with one another*. This reflects the Marie Curie spirit of movement of researchers, establishing new connections.

*Search 'SpineFX' under Facebook groups.

Welcome Fellow Medical Engineer

It is my pleasure to introduce you to SpineFX. As many of you already know osteoporosis, metastases and trauma all have a significant role to play in undermining the functioning of the spine largely through fracture and the resulting bone pain but also more subtly through acceleration of disc degeneration following end-

plate fracture. The consortium will undertake nine work-packages that aim to translate research from fundamental engineering science to clinical application. The consortium will, subject to protection of its intellectual property, produce periodic reports and other outputs that will be of interest to the wider community (please

see: <http://www.spinefx.eu/>). Exciting advances have already been made, for instance see P2. abstract submission to ORS by Early Stage Research, Galibarov.

Prof. Richard M. Hall
University of Leeds

New Researchers Appointed

SpineFX is well on it's way to recruiting it's full contingent of researchers.

At University of Leeds, **Ondrej Holub** began work as an Early Stage Researchers (ESR) in May 2010 (p.3). New appointee **Antony Francis**, ESR, will start in September 2010, and we are currently advertising for a Clinical ESR (CESR) to start on or before 1st November 2010.

Anybody Technology employed **Pavel Galibarov**, May 2010, as an Experienced Researcher (ER). They are now finalizing the recruitment

of a second ER.

Technical University of Vienna brought in the first researchers, **Hadi Hosseini** and **Ghislain Maquer**, both ESRs, who began work in January 2010. A CESR post will also become available.

University of Bern employed **Giacomo Marini**, March 2010. They also have a CESR post available from May 2011 and an ESR post to start on or before 1st November 2010.

Newest recruit is at Technical University of Hamburg-Harburg where interviews have concluded for the ESR



L-R: Hadi Hosseini, Giacomo Marini, Ondrej Holub, Ghislain Maquer

post and the candidate will be announced very soon.

Ulrich Medical have an ER post to advertise for 2011.

http://www.spinefx.eu/index.php/fellowship_opportunities

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**Delegate at
Devonshire Hall,
Leeds, Workshop
July '10 (Page 1)**

Galibarov submitted abstract for ORS Conference

Pavel Galibarov has recently submitted an abstract to the Orthopaedic Research Society (ORS) Conference based on his recent work.

Galibarov works on the SpineFX project as an Experienced Researcher working at Anybody Technology.

Summary:

The lumbar spine model of Anybody Modelling System

developed by De Zee et al. 2006 and later validated by Rasmussen et al. 2009 was improved by subdividing the functional spinal units (FSU) into two groups of components: the intervertebral disc and posterior elements, i.e. functional ligaments. In order to validate this modification, the predictive capability was tested using published materials on a scale of the FSU and a full body scale. The results show a good agreement with experiments and another

computational model described in Meijer et al. 2010 on the FSU scale and an improved prediction for loading regimes in the spine on the full body scale for the physical activities (Wilke et al. 1999) which require introduced ligaments.

To receive the full abstract or to discuss this topic further then please contact Pavel Galibarov.

Email: peg@anybodytech.com

Paper of interest: VCF Survival

Mortality Risk for Operated and Non-Operated Vertebral Fracture Patients in the Medicare Population

Edidin, A A; Ong, K L; Lau, E; Kurtz, S M (Abstract at the Orthopaedic Research Society 2009)

These authors present a poster with the one year survival analysis on 213'000 Medicare patients that sustained a vertebral compression fracture (VCF). Among them, 40'000 underwent either ver-

tebroplasty or kyphoplasty treatment. The one year survival rate for non operated patients was 78%, for the patients that underwent surgical treatment the survival rate at 12 months was 85%. The difference shown here is highly significant. Although a detailed analysis for the reasons for the premature deaths is lacking, the numbers are alarming on one hand demonstrating the health burden related with VCF and the impact of cement reinforcement on the other hand. It puts into question further-

more the external validity of the two RCT's on this topic published in the NEJM 2009.

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SpineFX is focused on providing training and research in the area of spinal biomechanics and medical engineering associated with vertebral fracture. The project is a Marie Curie Initial Training Network (ITN), Project Number 238690, and is funded by the European Commission. The network comprises of four leading research universities and three companies with a track record in innovation.

The SpineFX ITN will deliver research in three domains; basic science, oriented research and applied research whilst focusing on three underlining pathologies; osteoporosis, metastases and trauma. Training is provided by 'experience through research', network-wide workshops and local professional development provision.



WE'RE ON THE WEB!

[HTTP://WWW.SPINEFX.EU/](http://www.spinefx.eu/)

Focus on Early Stage Researcher: Ondrej Holub



Ondrej was born in Prague, Czech Republic. He graduated from Mechanical Engineering with a specialisation in Biomechanics at Czech Technical University in 2008. During his undergraduate studies he spent an academic year at Superior Institute of Engineers at University of Franche-Comté in France. For Ondrej's Master Degree he focused his studies on biomechanics of the spine. Later, in 2009, Ondrej went for an internship at the Laboratory of Biomechanics of ENSAM, Paris working on 3D kinematic analysis of the cervical spine.

Currently Ondrej is part of the Initial Training Network (ITN) work-scheme based at

the University of Leeds, UK, as a Marie Curie researcher. Since he started work in May 2010, Ondrej feels proud to be a part in the framework of multidisciplinary training programme, Spine FX, where he has registered for a PhD under the supervision of Prof. Richard M. Hall and Dr. Nik Kapur. His research concerns biomechanics of the spine affected by cancer metastases, relationship with fracture prediction and how to improve the mechanical properties using augmentation techniques.

When not working on the SpineFX project Ondrej enjoys meeting new people, travelling and exploring the countryside of Yorkshire.

Ondrej also enjoys photography and outdoor activities. Ondrej got married recently and is enjoying spending his free-time with his wife. Ondrej says they are fully enjoying their stay in Leeds, where with the help of the University he has had no difficulties in settling in. After meeting other researchers during the first of the ITN workshops, 'Research Management Skills for the Biomedical Engineer', Leeds July 2010, he feels excited to be part of the scientific community.