

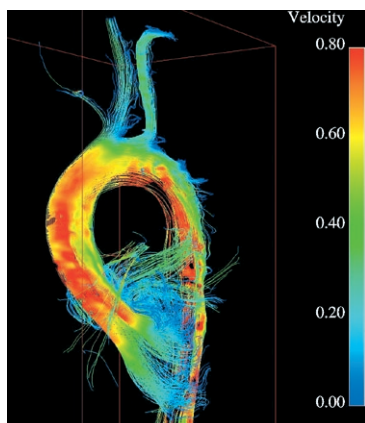
Unique MR images of blood flow in the heart

The flow of blood through the aortic root – where the aorta exits the heart – is very important for the function and life of the aortic valve. 3D images of this flow are now available for the first time, thanks to researchers at Linköping University who are using magnetic resonance (MR) technology.

Comparisons between healthy test subjects and patients who have had a tube surgically inserted to replace damaged tissue reveal substantial differences in the blood flow around the aortic valve. Besides high-resolution images, the method also provides exact values for the rate of blood flow.

The study is described in a doctoral thesis by Dr John-Peder Escobar Kvitting from Clinical Physiology at the Department of Medicine and Care. "People have been curious to know what these flows look like ever since Leonardo da Vinci's time," he says. "Thanks to our unique MR technology, developed by research engineer Lars Wigström, we've been able to show them in 3D. We can also quantify the flow."

New MR technology and quantifiable ultrasound technology can also make for safer diagnosis and treatment strategy in cases of coronary heart disease – for example, when choosing between bypass surgery and angioplasty. The new technologies also provide a better basis for assessing the outcome of treatment. "We now have a chance to improve our insights into the movements in the heart, which could transform our view of circulatory physiology," says Professor Bengt Wranne from the Centre for Medical Image Science and Visualization (CMIV), which will be installing a new MR system for research purposes during the spring.



Streamline visualization of the blood flow pattern in the human aorta at peak systole, based on time-resolved 3D phase contrast MRI data. Color coded according to the velocity data.

Source: www.liu.se

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BioMedley invites biotech entrepreneurs

To disseminate experience and establish new contacts, BioMedley is launching a series of talks where experienced entrepreneurs in the life science/biotechnology field discuss specific projects, such as how to build up a management team, how to sell yourself to investors, and how to break into a new market. First up are Peter Larsson and Johan Martinsson, managing directors of the pharmaceutical start-ups Damavand Wound AB and Selectica Pharmaceuticals AB, who will be presenting their companies and their experiences at the new Mjärdevi Centre on 25 March. Following them are Bengt Dahlström, well-known researcher and entrepreneur in the pharmaceutical field, and Anna W. Jiffer, managing director of Ellen AB, who will be visiting Berzelius Science Park on 19 April.

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Latest news

Linköping's first two pharmaceutical companies!

Two new pharmaceutical companies have been started up on the basis of research at Linköping University Hospital. Selectica Pharmaceuticals AB and Damavand Wound AB, both currently in the build-up phase, are being led by experienced management teams from Uppsala and Stockholm. Selectica is developing an anti-inflammatory medicine while Damavand is working with a new method for healing leg ulcers. The two companies will be presented in more detail at the Mjärdevi Centre in Linköping on 25 March.

For further information, please contact:

Niklas Paulsson (see below)

Atrophus AB pioneers new analytical method

A new analytical method known as "gastroserology" is being developed by Linköping University Hospital, as a complement to the considerably more expensive gastroscopic examination technique. Patients suffering from stomach ailments can now supply a blood sample for analysis at their local health centre. So far 2,100 samples have been analysed, including those from 150 patients with stomach cancer.

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Sectra's mammography system approved by FDA

Sectra's breast-imaging station has been cleared by the US Food and Drug Administration (FDA) for sale in the US market.

www.sectra.se/medical

Spray-on skin cheaper and better

"Spraying" skin cells onto the surface of wounds makes the treatment of burns patients cheaper and more effective.

In the future it may be possible to use the new method, which has been developed at the Faculty of Health Sciences at Linköping University and Linköping University Hospital, for large patient groups not currently considered for skin grafts.

"This is our great mission right now," says Gunnar Kratz, Professor of Experimental Plastic Surgery at the Faculty of Health Sciences. "Some 30,000 people in Sweden, most of them elderly, suffer from chronic wounds and sores that are not operated on. This new concept could make it possible to treat these people at local health centres."

Professor Kratz's laboratory is one of three worldwide that have mastered the new method. So far around a dozen patients have been treated with good results. Unlike traditional transplants, where large patches of the patient's own skin are cultured, the new method requires a far smaller number of skin cells, which are distributed over the surface of the wound and grow into colonies that gradually fuse together.

The treatment is not only substantially cheaper, but also appears to give cosmetically superior results without unsightly "seams".

Source: www.liu.se

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Linköping spearheads EU research into medical informatics

A "network of excellence" under the EU's Sixth Framework Programme is to be led from Linköping. The project in the medical informatics field will involve some 100 researchers and 30 to 40 PhD students from 11 countries.

The network has been awarded funding of EUR 5 million over three years and is being coordinated by Associate Professor Hans Åhlfeldt at the Department of Medical Technology at Linköping University. "We will be looking at how clinical information can be combined with bioinformatics," Professor Åhlfeldt says.

The network, which goes under the name of Semantic Interoperability and Data Mining in Biomedicine, includes both university departments and authorities such as Sweden's National Board of Health and Welfare. While the main aim is to strengthen European research collaboration,

Hans Åhlfeldt hopes that the project will also lead to practical applications, such as:

- Higher-quality statistics when following up medical treatment
- Better utilisation of information from patients' medical records
- More concrete use of preclinical information at clinical level: for example, gene analyses.

Researchers from three different parts of Linköping University are participating in the network: Medical Informatics at the Department of Biomedical Engineering, the Natural Language Processing Laboratory at the Department of Computer and Information Science, and Clinical Microbiology at the Department of Molecular and Clinical Medicine.

Source: www.liu.se

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Successful participation in Biotech Forum

For the third year in a row BioMedley organised a joint stand for companies from Linköping/Östergötland at the Nordic region's largest biotechnology/life science fair, Biotech Forum in Stockholm.

The fair is growing every year and attracted more than 200 companies and 6,500 visitors in 2003.

The Linköping/Östergötland stand showcased seven established life science companies along with

the Berzelius Institute/Linköping University and a number of spin-off projects, as well as our regional sponsors: Delphi Law, Ernst & Young, Sankt Kors Fastigheter and Östgöta Enskilda Bank.

An exclusive investor seminar was also arranged in conjunction with the fair, where four Linköping companies were presented to a selection of venture capitalists. The event provided not only a chance to meet new busi-

Faculty of Health Sciences chooses new research fields

From 1 July 2004 up to SEK 30 million of existing research funding is to be redistributed to five strategic fields at the Faculty of Health Sciences at Linköping University.

These are (in no particular order):

1. Medical image science and visualisation: The development of new methods for making diagnoses and planning treatment with the help of images.
2. Medical materials with the emphasis on the musculoskeletal system: Better healing of wounds and fractures, building up tissues, etc. This is a collaborative venture with the Institute of Technology.
3. Prevention of diabetes and its complications: The causes of the disease, new methods for screening antibodies, the effects of insulin, etc.
4. Health and society: A newly created multidisciplinary department looking at the twin roles of social change and the environment in human health.
5. Inflammation, atherosclerosis and ischaemic heart disease: Mechanisms behind the inflammatory process, optimisation of diagnosis and treatment, etc.

Linköping University has now fulfilled its agreements with Östergötland County Council. "This is one of several ways of strengthening our research," says Vice Chancellor Mille Millnert. "Other programmes currently under way involve strengthening preclinical research, primarily through the life science initiative and the Berzelius Institute."

Source: www.liu.se

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ness partners, but also an excellent opportunity for networking between the exhibitors on the joint stand. Planning for Biotech Forum 2004 in Copenhagen on 5-7 October is already in full swing.

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