

# PRESS RELEASE

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PRESS RELEASE  
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## Innovator and Communicator

**A memorial in honor of Prof. Bernd Fischer, founder of *Fraunhofer MEVIS Project Group Image Registration* and director of the *Institute of Mathematics and Image Computing* will be held at the *Universität zu Lübeck*.**

Lübeck, October 1, 2014 – He was one of the most influential figures at the Fraunhofer Institute for Medical Image Computing MEVIS: Mathematician Prof. Bernd Fischer established the Project Group Image Registration in Lübeck. He died in July of last year after an acute, severe period of illness. A memorial will take place on October 10<sup>th</sup> at the Universität zu Lübeck, where employees, colleagues, and companions will honor the innovative researcher and science manager.

Fischer, born in 1957, obtained his doctoral degree in mathematics at the University of Hamburg. After his research stays in the USA and his habilitation, he became one of the first lecturers in the newly created Informatics major at the Universität zu Lübeck in 1993. In 1996, he accepted a professorship in numerical analysis. He devoted his work to medical image processing and made major contributions to one of its key technologies, image registration.

Image registration combines different medical images in a way that gives doctors the maximum amount of information needed for diagnoses, therapy, and interventions. It allows, for example, data from a CT image to be fused with the data of a PET scan. As a result, tumors can be precisely localized, regardless of the patient's position during the image acquisition or the impact of his or her breathing on the image. During surgical procedures, image registration helps adjust preoperative planning to the current situation in the operating room. During follow-up, it serves to determine whether a tumor has enlarged or become smaller during the course of treatment.

In 2004, Bernd Fischer brought his expertise to "Fusion", a joint research project from the Federal Ministry of Education and Research (BMBF) aimed at improving the planning and execution of liver surgeries. The project marked the first collaboration with MEVIS. It quickly became apparent that both facilities worked well together. Fischer's team in Lübeck specialized in image registration, and the MEVIS experts in Bremen contributed their comprehensive knowledge of medical image computing.

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**FRAUNHOFER INSTITUTE FOR MEDICAL IMAGE COMPUTING**

In 2008, the idea of merging the two facilities and combining the skills and expertise was discussed for the first time. The subsequent merger occurred in April 2010. The Fraunhofer MEVIS Project Group Image Registration was created under Fischer's leadership in Lübeck. "Bernd Fischer was able to excite people about how modern mathematics could help clinicians and patients", said Prof. Jan Modersitzki, longtime colleague and companion, who commends Fischer's science management skills. Today, the group includes around 20 specialists. Their expertise includes mathematical modeling of problems, programming software prototypes, developing professional, certified programs, and integrating solutions in clinics.

Among other applications the Project Group has developed software for registering lung images. This software helps diagnose chronic obstructive pulmonary disease (COPD), a lung disease that affects approximately three to five million people in Germany alone. Furthermore, the group works in close collaboration with industrial partners as part of the Lübeck medical technology cluster. For one of the companies, they have developed an algorithm for compensation of motion artifacts. It is used, for instance, when horses move excessively during X-ray. The group also developed software to support radiation therapy. If the patient loses weight over several weeks during the course of treatment, image registration ensures that the tumor can still be optimally reached. "All of this progress would not have been possible without Bernd Fischer's ideas," says Modersitzki.

The memorial on October 10<sup>th</sup> is a joint event of Fraunhofer MEVIS and the Universität zu Lübeck. The first part honors Bernd Fischer as a person. The list of speakers include former employees and colleagues, his doctoral supervisor Gerhard Opfer, and Heinz-Otto Peitgen, founder and former director of Fraunhofer MEVIS, as well as University president Hendrik Lehnert. The second part of the event honors Fischer's achievements in the spheres of research and management. In addition to international scientists, Cristian Lorenz from the Philips Medical Research will look back on the productive collaboration with his company, and Markus Kleemann from the surgical clinic of the University Medical Center Schleswig-Holstein will recognize Fischer's contributions to the clinical practice.

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Embedded in a worldwide network of clinical and academic partners, **Fraunhofer MEVIS** develops real-world software solutions for image-supported early detection, diagnosis, and therapy. Strong focus is placed on cancer as well as diseases of the circulatory system, brain, breast, liver, and lung. The goal is to detect diseases earlier and more reliably, tailor treatments to each individual, and make therapeutic success more measurable. In addition, the institute develops software systems for industrial partners to undertake image-based studies to determine the effectiveness of medicine and contrast agents. To reach its goals, Fraunhofer MEVIS works closely with medical technology and pharmaceutical companies, providing solutions for the entire chain of development from applied research to certified medical products. [www.mevis.fraunhofer.de/en](http://www.mevis.fraunhofer.de/en)

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