

Making Tumors Visible

Heinz-Peter Schlemmer, new head of the Radiology Division at the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) will concentrate his future work on the early detection of prostate, colon and lung cancers and on further developing biological imaging technologies. In doing so, Schlemmer will focus on a new ultrafast computer tomograph and on high field magnetic resonance imaging.

Radiology imaging is a key element for the diagnosis and treatment of cancer. While the primary goal used to be to find metastases and to detect precisely how a tumor is spreading, radiology research today is increasingly focused on the functional and biological characterization of tumors. To this end, physicians are capturing blood supply, metabolism, oxygen concentration and motion of a tumor in order to optimize treatment planning and to document individual treatment progress. In addition, radiology imaging helps to detect recurrent tumors as early as possible in the follow-up care of cancer patients.

Professor Dr. Heinz-Peter Schlemmer, a physician and physicist, has been head of the Radiology Division of the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) since the beginning of this year. Before joining DKFZ, Schlemmer last worked as a senior consultant in the Department of Diagnostic Radiology of Tübingen University Hospitals, where he was responsible for magnetic resonance imaging. "DKFZ is Germany's leading cancer research institute. Therefore, it is our task to offer patients continuously improved radiological methods and to evaluate new technologies as swiftly as possible in preclinical and clinical studies. DKFZ offers an ideal setting for further developing complex imaging technology," said Schlemmer explaining the goals of his department.

Heinz-Peter Schlemmer has two major focuses in his work at DKFZ: As a recognized specialist in magnetic resonance imaging (MRI), Schlemmer sees a big challenge in the diagnosis of prostate cancer using this radiation-free technology. Prostate cancer is among the most variable types of tumor, and the radiologist aims to use MRI to detect clues for the aggressiveness of an individual tumor. If doctors decide that treatment is not immediately required, they may suggest "active surveillance" of the tumor to the patient. Observing disease progression by MRI might deliver crucial information about the development of malignancy and help to take specific tissue samples from suspicious areas of the prostate. "In the long term, we aim to achieve that patients receive the right treatment at the right time," said Schlemmer describing one of the goals of his work at DKFZ.

Computed tomography (CT) is an indispensable tool in cancer diagnostics. DKFZ has recently installed a state-of-the-art computer tomograph, of which there are only a few available in Germany so far. The system enables imaging at such high speed that even structures in motion such as the lung or a beating heart can be captured in sharp images in fractions of a second. In addition, the CT needs only a fraction of the commonly used radiation dose for each examination. "This particularly benefits those patients who we need to examine several times, such as to monitor treatment results of chemotherapy," Schlemmer explains. Such indications include, for example, changes of blood flow within a tumor in the course of therapy; these can now be visualized in 3-dimensional images using the new apparatus.

Heinz-Peter Schlemmer was born in 1961 in Linz, Austria. He studied physics and medicine at the University of Heidelberg, where he also received his doctoral degree in medicine. He was trained as a specialist in diagnostic radiology at the German Cancer Research Center, Heidelberg University Hospitals and Mannheim City Hospitals. Schlemmer pursued research as a visiting professor at Yale University, USA, the Prince of Wales Hospital of the Chinese University of Hong Kong, the Hamad Medical Center in Doha, Katar, and at a molecular imaging development laboratory of Siemens in Knoxville, USA. He is a member of several national and international science associations. Heinz-Peter Schlemmer is a father of four.

A picture of Heinz-Peter Schlemmer is available on the Internet at:

<http://www.dkfz.de/de/presse/pressemitteilungen/2010/images/schlemmer.jpg>

(Photography: Jutta Jung)

The German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) is the largest biomedical research institute in Germany and is a member of the Helmholtz Association of National Research Centers. More than 2,000 staff members, including 850 scientists, are investigating the mechanisms of cancer and are working to identify cancer risk factors. They provide the foundations for developing novel approaches in the prevention, diagnosis, and treatment of cancer. In addition, the staff of the Cancer Information Service (KID) offers information about the widespread disease of cancer for patients, their families, and the general public. The Center is funded by the German Federal Ministry of Education and Research (90%) and the State of Baden-Württemberg (10%).

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