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Prof. Dr. med. Stefan Schönberg

## Scientific board:

Prof. Dr. med. Norbert Gretz  
Prof. Dr. rer. nat. Mathias Hafner  
Prof. Dr. rer. nat. Lothar Schad  
Prof. Dr. med. Frederik Wenz

## Organizing committee:

PD Dr. med. Christian Fink  
Dr. med. Maliha Sadick

## List of Chairs and Speakers:

Prof. Dr. Dr. h.c. Klaus van Ackern, Dekan der Medizinischen Fakultät Mannheim der Universität Heidelberg  
Priv.-Doz. Dipl. Phys. Thomas Beyer, Geschäftsführer crni-experts GmbH Zürich  
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Prof. Dr. rer. nat. Gunnar Brix, Abteilung für medizinische Strahlenshygiene, Bundesamt für Strahlenschutz Neuherberg  
Dr. med. Dietmar Dinter, Oberarzt Institut für Klinische Radiologie und Nuklearmedizin, Universitätsmedizin Mannheim  
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Prof. Dr. rer. nat. Jürgen Hesser, Klinik für Strahlentherapie und Radioonkologie, Universitätsmedizin Mannheim  
Dr. med. Hany Kayed, Institut für Klinische Radiologie und Nuklearmedizin, Universitätsmedizin Mannheim  
Prof. Dr. med. Fabian Kiessling, Lehrstuhl für Experimentelle Molekulare Bildgebung, Universitätsklinikum Aachen

Dr. rer. nat. Stefan Kirsch, Computerunterstützte Klinische Medizin, Universitätsmedizin Mannheim  
Priv.-Doz. Dr. med. Henrik Michaely, Oberarzt Institut für Klinische Radiologie und Nuklearmedizin, Universitätsmedizin Mannheim  
Priv.-Doz. Dr. rer. nat. Bernd Neumaier, Leiter der Radiochemie Max-Planck-Institut für Neurologische Forschung, Medizinische Fakultät der Universität Köln  
Prof. Dr. rer. nat. Bernd Pichler, Leiter des Labors für Präklinische Bildgebung und Bildgebungstechnologie der Werner Siemens-Stiftung, Universitätsklinikum Tübingen  
Priv.-Doz. Dr. rer. nat. Gerald Reischl, PET-Zentrum, Sektion Radiopharmazie, Universitätsklinikum Tübingen  
Dr. med. Maliha Sadick, Oberärztin Institut für Klinische Radiologie und Nuklearmedizin, Universitätsmedizin Mannheim  
Prof. Dr. med. Samuel Samnick, Experimentelle Nuklearmedizin u. Interdisziplinäres PET-Zentrum, Klinik und Poliklinik für Nuklearmedizin Universität Würzburg  
Prof. Dr. rer. nat. Lothar Schad, Direktor des Lehrstuhls für Computerunterstützte Klinische Medizin, Universitätsmedizin Mannheim  
Prof. Dr. med. Dipl.-Phys. Heinz-Peter Schlemmer, Leitender Oberarzt Diagnostische und Interventionelle Radiologie, Universitätsklinikum Tübingen  
Prof. Dr. med. Mathias Schreckenberger, Leiter der Klinik und Poliklinik für Nuklearmedizin, Johannes Gutenberg-Universität Mainz  
Prof. Dr. med. Matthias Taupitz, Oberarzt Institut für Radiologie, Klinik für Strahlenheilkunde, Campus Charité Berlin  
Prof. Dr. med. Rolf-Detlef Treede, Direktor des Lehrstuhls für Neurophysiologie, Zentrum für Biomedizin und Medizintechnik, Medizinische Fakultät Mannheim der Universität Heidelberg  
Prof. Dr. med. Frederik Wenz, Prodekan für Forschung der Medizinischen Fakultät Mannheim der Universität Heidelberg

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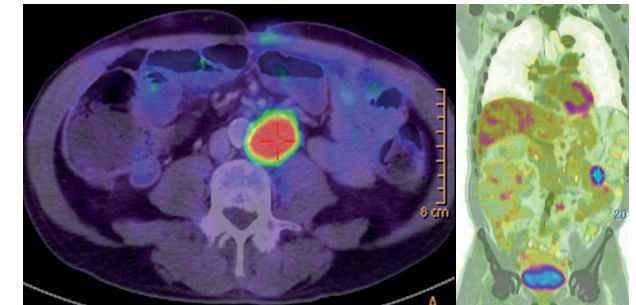
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special focus



# Molecular Imaging: Technical Advances and Translation to Clinical Practice



Saturday, 28. March 2009

University Medical Center, Mannheim  
Lecture hall H07 (ZMF Haus 42, Ebene 1)



In Cooperation with:

Akademie  
für Fort- und Weiterbildung in der  
Radiologie

IKRN Institut für Klinische Radiologie und Nuklearmedizin

## ■ Invitation:

Over the past decades, advancements in imaging technology have substantially broadened the range of imaging procedures. Current techniques provide improved resolution and more detailed images of organs and tissues than previously. With CT, ultrasound and MRI it has become possible to provide important structural and anatomic information. These techniques enable the radiologist to differentiate malignant from benign lesions, rule out the possibility of metastatic spread and assist in accurately staging the patient and performing biopsies. During the past 20 years there has been a rapid development of basic molecular techniques. These advancements have allowed scientists to explore and sequence human genes, elucidate molecular pathways, automate DNA sequencing, determine protein specific causes of disease, develop transgenic animal models, and use cell lines to test drugs and therapies.

Molecular imaging allows visualization of physiology, cellular and molecular processes in living tissue. These newly developed techniques allow visualization and quantification of clinically relevant physiologic variables such as blood flow, oxygen consumption, glucose metabolism, proliferative activity, and tissue hypoxia in living cells. Molecular imaging can identify important and key molecular structures and receptors that cover the surface of tumors. To facilitate the development of molecular imaging technologies there have been developments in image enhancement agents, imaging probes, and imaging ligands. In imaging, animal models of cancer are making it possible to perform certain kinds of studies that are difficult to perform in humans. Animal models will enable imaging technology improvements that then can eventually be applied for cancer patient care.

PET-CT is already a new clinical standard and has undergone remarkable improvements in terms of speed, spatial resolution and anatomic coverage. Additionally, first results are available for new hybrid systems uniting PET with unique advantages of magnetic resonance imaging. With this technology, it is possible to directly translate this molecular information into better clinical management of the patient.

Molecular imaging is a multidisciplinary enterprise and needs a multidisciplinary approach. The Institute of Clinical Radiology and Nuclear Medicine at the University Hospital Mannheim is pleased to invite you to the first meeting in "Molecular Imaging: Technical Advances and Translation to Clinical Practice" in March 2009. This symposium aims at addressing these important tasks and would like to welcome all who share our interest in the discovery and translation of new diagnostic and therapeutic approaches. We are pleased to offer you a very attractive and innovative program.

Prof. Dr. Stefan Schönberg

PD Dr. Christian Fink

Dr. Maliha Sadick

9.00 – 9.05 Introduction

Welcome of the vice dean of research,  
*Prof. Dr. med. Frederik Wenz, UMM*

### 9.05 – 9.30 State-of-the-art lecture

Chairmen: *Prof. Dr. med. Stefan Schönberg, UMM*  
*Prof. Dr. Dr. h.c. Klaus van Ackern, UMM*

9.05 – 9.25 Molecular Imaging in Oncology,

*Prof. Dr. med. Fabian Kiessling, Aachen*

9.25 – 9.30 DISCUSSION

### 9.30 – 10.30 Advances in molecular magnetic resonance imaging

Chairmen: *PD Dr. med. Henrik Michaely, UMM*  
*PD Dr. med. Bernd Taupitz, Berlin*

9.30 – 9.45 Advances in ultra high-field spectroscopy,

*Dr. med. Stefan Kirsch, UMM*

9.45 – 10.05 Ultra high-field MRI. from morphology to

metabolism, *Dr. med. Michael Bock, DKFZ*

10.05 – 10.20 Assessment of functional renal disorders with

dynamic MRI and optical imaging,

*Dr. med. Maliha Sadick, UMM*

10.20 – 10.30 DISCUSSION

10.30 – 11.00 **Coffe break**

### 11.00 – 12.30 Advances in PET and PET-CT – Clinical innovation

Chairmen: *PD Dr. med. Christian Fink, UMM*  
*Prof. Dr. med. Rolf-Detlef Treede, UMM*

11.00 – 11.20 Current clinical tracers for PET in oncology,

*Dr. med. Dietmar Dinter, UMM*

11.20 – 11.40 Design of new tracers for oncologic PET,

*PD Dr. rer. nat. Bernd Neumaier, Köln*

11.40 – 12.00 PET imaging of neurological disorders,

*Prof. Dr. med. Mathias Schreckenberger, Mainz*

12.00 – 12.20 Design of new tracers for neurodegenerative

diseases, *Prof. Dr. med. Samuel Samnick, Würzburg*

12.20 – 12.30 DISCUSSION

12.30 – 13.30 **lunch – Visit of the center for medical research**

### 13.30– 14.30 Advances in PET and PET-CT – Technical innovation

Chairmen: *Prof. Dr. rer. nat. Gunnar Brix, Neuherberg*  
*Prof. Dr. rer. nat. Jürgen Hesser, UMM*

13.30 – 13.50 PET-CT. from unclear to nuclear medicine,  
*PD. Dipl. Phys. Thomas Beyer, Zürich*

13.50 – 14.05 MR-PET. a clinical perspective,  
*Prof. Dr. med. Heinz-Peter Schlemmer, Tübingen*

14.05 – 14.20 New technical developments,  
*Prof. Dr. med. Bernd Pichler, Tübingen*

14.20 – 14.30 DISCUSSION

### 14.30 – 15.10 Advances in probe design

Chairmen: *Prof. Dr. med. Norbert Gretz, UMM*  
*Dr. med. Maliha Sadick, UMM*

14.30 – 14.45 Live cell tracking with new probes, *Prof. Dr. rer. nat. Mathias Hafner, Hochschule Mannheim*

14.45 – 15.05 Development of new targeted tracers for PET,  
*PD Dr. rer. nat. Gerald Reischl, Tübingen*

15.05 – 15.15 Measurement of transcription factor activity in pancreatic carcinoma – potential targets for molecular imaging? *Dr. med. Hany Kayed, UMM*

15.15 – 15.25 DISCUSSION

15.25 – 15.30 SUMMARY

*Prof. Dr. med. Stefan Schönberg, UMM*

## ■ Registration and Information:

### ■ Scientific secretariat:

*Renate Hubert*

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### ■ Registration fee: none

### ■ CME-Accreditation:

The symposium is CME accredited in cooperation with the board of German Board Radiologists and the Roentgen Ray Society for continuous medical education.