Curriculum Vitae

Prof. Dr. Dr. Wolfgang Rudolf Bauer

Name:	Wolfgang Rudolf Bauer
Geboren:	30.01.1961, Frankfurt/Main
Familienstand:	verheiratet, zwei Kinder

Position

Executive senior physician of the Medical Dpt. 1 (UKW)
Leader of the research group "Cardiac MRI and Biophysics"

Academic Career

1980-1988	Westf. Wilhelms Univ. Münster, Technische Univ. München
1982	Vordiplom degree (B.Sc.) in physics
1987	Graduation in medicine (Approbation)
1988	MD thesis (Promotion)
1987-1988	Diploma thesis and graduation in physics
1989-1/1995	Intern at the Medizinischen Universitätsklinik Würzburg
1995/1997	Consultant degree for Internal Medicine/Cardiology
1995-1999	Head physician at the Universitätsklinikum Mannheim/Heidelberg
1998	Habilitation in Internal Medicine
1999	Head physician at the Medizinische Univ. Klinik Würzburg.
2003	PhD thesis in physics (Promotion)
2004	Professor

Fields of research

Cardio vascular imaging and (patho)physiology):

- ▶ Development of non contrast and contrast agent techniques to quantify myocardial microcirculation (blood oxygen level dependent (BOLD) imaging, spin labelling techniques, quantitative relaxation time mapping
- ▶ Role of myocardial microcirculation in the development of heart failure
- ▶ Cellular/molecular imaging of atherosclerosis and myocardial healing (imaging of macrophages and adhesion molecules).
  - ▷ with Fe nanoparticles
  - ▷ or 19F contrast agent
- ▶ functional vascular imaging (pulse wave velocity) to determine local pulse wave velocity as an early marker of atherosclerosis. Correlation with cellular and molecular imaging (see above)

Biophysics:

- ▶ modelling of nano devices/supra(bio)molecular assemblies (channeltransport, motors, enzymes),

- modelling of magnetic resonance imaging parameters (e.g. relaxation times) as a function of physiological/ micro-structural parameters (perfusion, capillary architecture/density, functionalized nanoparticles within biological tissues). The aim is to quantify the latter by MR-imaging.

Development of devices and techniques for electrotherapy in the MR scanner:
- MR-(conditional) safe electrodes and pacemaker/implantable cardioverter/ defibrillator)
- Electrophysiological interventions (diagnostics and ablation of cardiac rhythm disturbances) in the MR scanner

Special achievements/honors

1981	Admission into the "Bischöfliche Studienstiftung Cusanuswerk", and award of the scholarship
1995	Oskar Lapp Prize, German Cardiac Society
2003	Helmholtz Prize, „Helmholtz-Fonds" e.V. and „Stifterverband für die Deutsche Wissenschaft e.V."

Awards to the working group

1998	1st prize of European Society of Magnetic Resonance in Medicine and Biology (Christian Wacker)
1999	Werner-Forßmann-Prize of the „Deutsche Gesellschaft für klinische Mikrozirkulation und Hämorheologie" (Christiane Waller)
2000	MSD Prize of the „Deutschen Liga zur Bekämpfung des hohen Blutdruckes" (Christiane Waller)
2002	Young Investigators Award of the European Society of Magnetic Resonance in Medicine and Biology (Florian Fidler)
2003	Award of the Zonta Society (Christiane Waller)
2004	Poster Award of the Society of Cardiovascular Magnetic Resonance (SCMR) (Christian Wacker)
2004	Max Schaldach Prize of the German Cardiac Society (Oliver Ritter)
2005	Young Investigators Award of the European Society of Magnetic Resonance in Medicine and Biology (Christian Ziener)
2006	Wolfgang Trautwein Prize of the German Cardiac Society (Markus Koller)
2007	Scholarship of the „Berufsverbands Deutscher Internisten" (Christian Ziener)
2008	Posterprize (MR Safety) of the International Society of Magnetic Resonance in Medicine (ISMRM) (Florian Fidler et al.)
2008	Gorter Award of the German chapter of the International Society of Magnetic Resonance in Medicine (Christian Ziener)
2009	Wolfgang Trautwein Prize of the German Cardiac Society (Peter Nordbeck, Oliver Ritter)
2009	Max Schalldach scholarship (Peter Nordbeck)

2011	Melvin Judkins Award of the American Heart Association (Yuxiang Ye)
2012	Wollheim award for the best doctoral thesis of the University of Würzburg in the cardiovascular field (Christian Ziener)
2012	Gorter Award of the German chapter of the International Society of Magnetic Resonance in Medicine (Alexander Gotschy)
2012	Varian Award of the „Deutsche Gesellschaft für Medizinische Physik“ (Thomas Kampf)
2012	Lecture prize at the Annual Meeting of the German Chapter of the International Society of Magnetic Resonance in Medicine (Thomas Kampf)
2014	Wollheim award for the best doctoral thesis (PhD) in biomedicine of the University of Würzburg (Yuxiang Ye)

Selected publications

Bauer WR, Nadler W, Bock M, Schad LR, Wacker C, Hartlep A, Ertl G: Theory of coherent and incoherent nuclear spin dephasing in the heart. Phys Rev Letters, 83(20), 4215-4218 (1999)

Wacker CM, Hartlep AW, Pfleger S, Schad LR, Ertl G, Bauer WR: Susceptibility-sensitive magnetic resonance imaging detects human myocardium supplied by a stenotic coronary artery without a contrast agent. J Am Coll Cardiol. 41(5):834-40 (2003).

Bauer WR, Nadler W. Molecular transport through channels and pores. PNAS 103 (31): 11446-11451 (2006)

Bauer WR, Nadler W. Cooperative transport in nanochannels. Phys Rev E 88 (1) (rapid communiation): 010703 (2013)

Ye Y, Basse-Lüsebrink TC, Arias-Loza PA, Kocoski V, Kampf T, Gan Q, Bauer E, Sparka S, Helluy X, Hu K, Biovin V, Hiller KH, Jakob PM, Jahns R, Bauer WR. Monitoring of monocyte recruitment in reperfused myocardial infarction with intramyocardial hemorrhage and microvascular obstruction by combined fluorine-19 and proton cardiac MRI. Circulation128 (17): 1878-1888 (2013)

Li X, Bauer WR, Israel I, Kreissl MC, Weirather J, Richter D, Bauer E, Herold V, Jakob P, Buck A, Frantz S, Samnick S. Targeting P-selectin by Gallium-68 labeled Fucoidan PET for non-invasive characterization of vulnerable plaques: Correlation with in vivo 17.6T MRI. Atherosclerosis, Thrombosis and Vascular Biology 34(8): 1661-1667 (2014)

Lapa C, Reiter T, Li X, Werner RA, Samnick S, Jahns R, Buck AK, Ertl G, Bauer WR. Imaging of myocardial inflammation with somatostatin receptor based PET/CT - A comparison to cardiac MRI. Int J Cardiol 194: 44-49 (2015)