Thirty-seven of the 38 chairs of cardiology in Germany describe their most significant achievements and research in 80 to 100 words to Lindy van den Berghe, BMedSci, BM, BS.

**Johann Bauersachs, MD, chair, Department of Cardiology and Angiology, Hannover Medical School, Hannover**
Professor Bauersachs was appointed chair of the Department of Cardiology and Angiology in 2010. He is an interventional cardiologist with special interests in acute coronary syndromes, left ventricular healing and remodelling, acute and chronic heart failure, and intensive care. He is particularly interested in aldosterone and mineralocorticoid receptor-mediated mechanisms and the role of microRNAs. He is the incoming chair of the European Society of Cardiology Working Group on Myocardial Function.

**Gert Baumann, MD, PhD, chair, Charité Centre for Cardiovascular Medicine, Charité University Hospital, Berlin**
Professor Baumann’s research is dedicated to basic and clinical research in heart failure. He began his career with the description of β-receptor downregulation in acute heart failure after myocardial infarction. He then investigated new positive inotropic drugs for heart failure in vitro and in clinical settings. Recently, his research has focussed on the role of circulating autoantibodies in cardiovascular diseases. He is a recognised expert on heart failure and innovative treatment options, especially involving immunoabsorption in dilated cardiomyopathy and in inflammatory vascular diseases.

**Stefan Blankenberg, MD, chair, Department of Cardiology, University Heart Centre, University Medical Centre Hamburg-Eppendorf, Hamburg**
Professor Blankenberg set up the Gutenberg Health Study, one of the largest population-based cardiovascular studies, which includes a sophisticated biobank. He coordinates Cardomics of the Genomics and Physiopathology of Cardiovascular and Metabolic Diseases call between Agence Nationale de la Recherche, France, and the German Federal Ministry of Education and Research and the European Union-funded European Integrated Project BiomarCaRE. Further research activities are within the German Heart Research Centre, which includes the University Heart Centre Hamburg-Eppendorf. His clinical focus is interventional cardiology, structural heart disease, and cardiovascular prevention.

**Christoph Bode, MD, chair, Internal Medicine, Department of Cardiology and Angiology I, Heart Centre Freiburg University, and Department of Internal Medicine III (Intensive Care Medicine), University Hospital Freiburg, University of Freiburg, Freiburg**
Professor Bode was appointed chair in 1999. His research interests include interventional cardiology and molecular cardiology, with a focus on antithrombotic treatment and arteriosclerosis. He is chair of the Scientific Programme Committee of the German Society of Cardiology, president of the Society for Thrombosis and Hemostasis, incoming chair of the Assembly of Governors of the American College of Cardiology, and European editor of Circulation.

**Michael Böhm, MD, chair, Internal Medicine (Cardiology, Angiology, and Intensive Care Medicine), University of the Saarland, Homburg, Saarland**
“My specialities are heart failure and interventional cardiology. I developed renal denervation for resistant hypertension and heart failure, and under my guidance our clinic has been recognised as a European Excellence Centre for hypertension. I am past president of the German Cardiac Society, and I chair the Scientific Programme Committee of the European Society of Cardiology (for the congress in Paris, France, in 2011, and for the congress in Munich, Germany, in 2012). I have served on many editorial boards, and I am the chief officer of Clinical Research in Cardiology. I was recently appointed an honorary member of the Hungarian Society of Cardiology.”
Martin Borggrefe, MD, PhD, chair, Department of Medicine 1 (Cardiology, Angiology, Pneumology, Hemostasiology, and Medical Intensive Care), University Medical Centre Mannheim, Mannheim

“My areas of research are interventional electrophysiology, primary electric diseases, molecular genetic aspects of arrhythmogenesis and cardiomyopathies, and electrical therapy of heart failure. In 1986, we induced radiofrequency ablation in humans. We have described various novel channelopathies: SCN5A mutation associated with ventricular fibrillation, in collaboration with Professor Gaita from Turin, Italy; family history of short QT syndrome, overlap syndromes (ie, Brugada syndrome/short QT); and Ca2+ mutation in Brugada syndrome, in collaboration with Professor Charles Antzelevitch from Utica, NY.

Rüdiger Braun-Dullaeus, MD, chair, Internal Medicine/Cardiology, Angiology and Pneumology, Magdeburg University, School of Medicine, Magdeburg

Professor Braun-Dullaeus’s scientific work centres on the mechanisms of atherosclerotic plaque development and restenosis after percutaneous coronary intervention and, particularly, the signalling within the local proproliferative and proinflammatory milieu and the interaction of macrophages with smooth muscle cells. He deciphered the mechanism by which rapamycin influences cell cycle progression and thereby inhibits vascular smooth muscle cell proliferation. A recent new research area is genotoxic stress and its effect on proliferative and inflammatory signalling cascades.

Werner G. Daniel, MD, chair, Department of Cardiology and Angiology, University Hospital, Friedrich-Alexander University, Erlangen

“My main research interest is cardiac imaging. It started with echocardiography at Hannover Medical School with the development of transoesophageal echocardiography, where we were among the pioneers of this technology worldwide. At Erlangen University, my research has concentrated on cardiac computed tomography and we have made a significant contribution to the development of noninvasive coronary angiography by computed tomography. My department also covers the complete spectrum of invasive and noninvasive cardiology, and we have research groups in all the different areas.”

Raimund Erbel, MD, chair, Department of Cardiology, West-German Heart Centre Essen, University Duisburg-Essen, Essen

Professor Erbel was appointed chair in 1993 and his main interest became interventional cardiology. One landmark was the implantation of the first bioabsorbable metal stent worldwide in 2004. He has researched spontaneous and iatrogen-induced microembolisation with the Institute of Pathophysiology (chair, Gerd Heusch, MD, PhD) and intravascular ultrasound for visualising subclinical atherosclerosis, which resulted in a landmark validation article published in 2010 with Karl-Heinz Jöckel, PhD (chair of the Institute of Medical Informatics, Biometrics and Epidemiology) and the Heinz Nixdorf Recall Study Investigative Group.

Erland Erdmann, MD, chair, Department of Internal Medicine III (Cardiology, Pulmonary Diseases, Angiology, and Intensive Care Medicine), University of Cologne Heart Centre, Cologne

“I was appointed chair in 1993, and the clinical staff of the Department of Cardiology—7 consultants and 30 fellows—carry out 5300 interventions each year. Our large outpatient clinics specialise in hypertension, pulmonary arterial hypertension, arrhythmias, and severe heart failure (including heart transplantation). Our research focuses on experimental and clinical heart failure, and our most significant articles are on β-receptors, calcium metabolism, regulation of contraction, and, more recently, diabetes mellitus and renal sympathetic denervation.”

Georg Ertl, MD, chair, Department of Internal Medicine I (Cardiology, Endocrinology, Intensive Care and Emergency Medicine, Nephrology, and Pneumology), University of Würzburg, Würzburg, Bavaria

Professor Ertl’s basic and clinical research has included the neurohumoral regulation of coronary blood flow, mechanisms of ischaemia and cardiac remodelling, nuclear magnetic resonance phosphorous spectroscopy, and reduced energy reserve of the heart. Key areas now are the prevention of heart failure, with a focus on cardiac wound healing and repair using cardiac imaging, including magnetic resonance imaging and echo techniques. Future interests include the molecular and genetic basis of multimorbidity and heart and brain interactions.

Stephan B. Felix, MD, chair, Department of Internal Medicine B (Cardiology, Angiology, and Pneumology), University Medicine Greifswald, Greifswald

Professor Felix’s interests include disturbances of the immune system in heart failure, myocarditis, and dilated cardiomyopathy; immune system interventions for dilated or inflammatory cardiomyopathy; myocardial metabolism during myocardial ischaemia and reperfusion; omics technologies for analysing the pathophysiology of cardiovascular diseases; and epidemiology and molecular genetics of cardiovascular diseases and cardiac risk factors. The Department of Internal Medicine B of the University Medicine Greifswald is a member of the German Centre for Cardiovascular Research initiated by the German Ministry of Education and Research.
Hans-Reiner Figulla, MD, chair, Division of Cardiology, Angiology, Internal Intensive Care Medicine, and Pneumology, University Heart Centre, Jena

Professor Figulla has published important articles in Circulation on dilated cardiomyopathy, coronary circulation, and percutaneous cardiac assist devices, and he has 379 citations in PubMed. He also has ≈75 patents for inventions and refinements of interventional devices and procedures, most prominent from 1995 onwards for transcatheter aortic valve replacement. His recent and current research includes the development and first human use of a heterotopic tricuspid valve, development of a percutaneous mitral valve, technical refinements of renal artery sympathetic ablation systems, and endothelial progenitor cell and stem cell studies. He founded the companies JenaValve and Occlutech.

Norbert Frey, MD, chair, Cardiology and Angiology, University of Kiel, Kiel

Professor Frey was appointed to the chair of cardiology and angiology at the University of Kiel in 2008. His main clinical interests include interventional cardiology, acute coronary syndromes, and cardiomyopathy/heart failure. His scientific work focuses on molecular cardiology to identify new molecular mechanisms in cardiomyopathy and heart failure with the ultimate goal of defining innovative treatment strategies. He has received several scientific awards from the German Cardiac Society, including the Oskar-Lapp Prize in 1999, the Franz-Maximilian Grödel Prize in 2005, and the Arthur-Weber Prize in 2008.

Meinrad Gawaz, MD, chair, Cardiology Department, University Hospital of Tübingen, Eberhard-Karls University of Tübingen, Tübingen

“Our clinical research interests include interventional cardiology, especially transcatheter aortic valve implantation and mitral valve repair, antithrombotic management of cardiovascular risk, robotor-assisted ablation of complex rhythm disturbances, clinical and biomarker risk assessment of heart failure due to myocarditis/inflammatory cardiomyopathy, and a cardiogenic shock programme. Our basic research group focuses on platelets and inflammation and combines basic science with drug development. We have elaborated basic molecular and cellular mechanisms, and we have developed the concept of lesion-directed antplatelet therapy. We are also developing bifunctional molecules to augment vascular and myocardial repair.

Christian W. Hamm, MD, chair, Medical Clinic I, University of Giessen, Giessen, and medical director, Kerckhoff Heart and Thoraxcenter, Bad Nauheim

Professor Hamm was appointed chair in 2011. His research focuses on acute coronary syndromes, cardiac biomarkers, cardiac magnetic resonance imaging and computed tomography, and interventional cardiology. He has been principal investigator for many clinical studies and serves on steering committees in multicentre trials. He has been a member of European Society of Cardiology guideline committees, and he chaired the recent guideline on non-ST elevation acute coronary syndrome. He has also served on the board of the European Society of Cardiology, and he is incoming president of the German Cardiac Society.

Gerd Hasenfuss, MD, chair, Department of Cardiology and Pneumology, the Heart Research Centre, University of Göttingen, Göttingen

Professor Hasenfuss coordinates cardiovascular research at the University of Göttingen. The Heart Research Centre is part of the German Centre for Cardiovascular Research, of which Professor Hasenfuss is a member of the board of directors. Professor Hasenfuss’s main research area is alterations of excitation-contraction coupling in heart failure. He and his group found that frequency potentiation of contractile force is blunted or inverted in heart failure. They identified the molecular defects and described the spermatogonial stem cell as a pluripotent cell of the adult organism that is able to differentiate into all kind of organ cells, including cardiomyocytes.

Dieter Horstkotte, MD, chair, Department of Cardiology, Ruhr University, Bochum

Professor Horstkotte’s interests are optimal timing of intervention in valvular heart disease, inflammatory heart disease, cryoablation and magnetically guided radiofrequency ablation for arrhythmias, and limb salvage in peripheral artery disease. His research has included first-in-man studies of oral anticoagulation and point-of-care self-management, as well as the first German polysomnography lab in cardiology. He runs an extensive heart failure programme, including mechanical circulatory support and heart transplantation with the Department of Cardiovascular Surgery. His department is a European Centre of Excellence for hypertension and is 1 of 3 accredited grownup congenital heart disease centres in Germany.

Hugo A. Katus, MD, chair, Department of Internal Medicine III (Cardiology, Vascular, and Pulmonary Medicine), Heidelberg University Hospital, Heidelberg

Professor Katus invented the troponin T assay, which led to a paradigm shift in the diagnosis of myocardial injury and the clinical care of patients with acute coronary syndrome worldwide. Recently, he helped develop the high-sensitivity troponin T assay, which enhances diagnostic performance and identifies many more patients at risk, even in nonischaemic myocardial injury. In addition to the interests in biomarkers, he and his group have promoted molecular and translational research in the genetic causes of cardiomyopathies and novel treatment strategies of heart failure, including gene therapy.
Malte Kelm, MD, PhD, chair, Division of Cardiology, Pulmonary Diseases, and Vascular Medicine, University Hospital Düsseldorf, Düsseldorf
Professor Kelm’s key expertise is in the field of interventional cardiology, with a focus on coronary artery and structural heart disease. His main scientific achievements have been, and continue to be, in the field of vascular biology. In this context, he has published articles on endothelial function and the circulating nitric oxide pool. His group contributed to the body of evidence demonstrating that plasma and red blood cells store, transport, and produce nitric oxide metabolites and intermediates, thus contributing to the regulation of blood flow and vascular tone in physiology and pathophysiology.

Bernhard Maisch, MD, chair, Department of Internal Medicine and Cardiology, Faculty of Medicine of Philipps-University, Marburg
Professor Maisch’s research focuses on inflammatory cardiomyopathies, pericardial diseases, and atherosclerosis, and he has received several international prizes. He was the founding chair of the German Working Group on Myocarditis and the European Society of Cardiology’s Working Group on Myocardial and Pericardial Diseases, and he was chair of the Council of Cardiomyopathies of the World Heart Federation. He chaired the European Society of Cardiology’s Task Force on the Management of Pericardial Diseases, which published the first guidelines on pericardial disease worldwide. He has authored >510 original articles.

Nikolaus Marx, MD, chair, Department of Internal Medicine I, University Hospital Aachen, Aachen
“For the past 15 years, our group has mainly investigated diabetes mellitus and cardiovascular disease, combining basic research on the role of diabetes mellitus in the pathophysiology of atherosclerosis and translational, clinical research investigating the effects of various antidiabetic drugs on vascular disease in patients. Since 2009, as chair of the Cardiology Department at the University Hospital in Aachen, I am continuing my basic and clinical research in that field and coordinating the different teams within the department (interventional cardiology, molecular cardiology, electrophysiology, and cardiac imaging) to interact under the common topic ‘the vulnerable patient.’”

Andreas Mügge, MD, chair, Department of Medicine and Cardiology (University Hospitals St. Josef-Hospital and Bergmannsheil Bochum), Ruhr-University of Bochum, Bochum
“I moved from Hannover to Bochum as chair of cardiology at Ruhr-University in 1998. Together with my colleagues, I started clinical research programmes on antiplatelet therapy, prevention of coronary restenosis, and transcatheter aortic valve implantation. Together with Kornelia Jaquet, MD, PhD, an expert on protein biochemistry, I founded a lab for molecular cardiology to investigate the effects of mutations in the genes encoding troponin I, T, and C on force generation, calcium haemostasis, and β-adrenoceptor-associated signalling pathways. I am also deeply involved in teaching medical students, and we are reorganising the curriculum to start bedside teaching as early as possible. For several years, I have also taken part in an academic exchange programme with cardiologists from the Republic of China, taking care of ≈8 to 12 doctors each year.”

Thomas Münzel, MD, chair, Cardiology Department, University Medical Centre, Johannes Gutenberg University, Mainz
Professor Münzel’s main areas of research include preclinical and clinical studies addressing mechanisms underlying and the prognostic meaning of endothelial dysfunction, in particular its relationship to oxidative stress in the setting of hypercholesterolaemia, arterial hypertension, and chronic congestive heart failure as well as the mechanisms underlying nitrate tolerance. Recently, Professor Münzel initiated the Centre for Thrombosis and Haemostasis in Mainz, and his institution became part of the German Heart Centre for Cardiovascular Research, in addition to Frankfurt and Bad-Nauheim. Together with Professor Stefan Blankenberg, MD, chair of University Heart Centre, Hamburg, Professor Münzel initiated the Gutenberg Health Study, which now includes 15 000 people in a large, prospective cohort trial addressing the prognostic role of endothelial dysfunction. Professor Münzel is also responsible for the Chest Pain Unit Certification Programme in Germany.

Georg Nickenig, MD, chair, Department of Internal Medicine (Cardiology, Pneumology, Vascular Medicine, and Intensive Care Medicine), University of Bonn, Bonn
Professor Nickenig’s research previously focussed on oxidative stress and the renin-angiotensin system in the pathogenesis of atherosclerosis and the role of endothelial progenitor cells during atherogenesis. He is now concentrating on the role of inflammatory pathways and innate immunity in the development of atherosclerosis, the role of endothelial cell degeneration and regeneration in the development of atherosclerosis, and developing novel specific atheroprotective therapies. Professor Nickenig’s clinical research interests are transcatheter aortic and mitral valve replacement and reconstruction procedures, interventional treatment of nonvalve structural heart disease, and interventional and medical treatment of coronary artery disease.
Christoph Nienaber, MD, PhD, chair, Medicine and Cardiology, University of Rostock, Rostock

Professor Nienaber is also a member of the Medical Faculty of the Université de Liège, Liège, Belgium. He has a background in interventional cardiology and cardiac imaging and is cofounder of the International Registry of Aortic Dissection (a worldwide operating network). In his current clinical position, he represents modern interventional cardiology with a research focus on aortic diseases and structural heart disease and integration of nonsurgical therapies for both pathologies. His research and clinical activities have emerged from a strong interest in noninvasive diagnostic imaging and metabolic characterisation of various cardiac conditions, including acute coronary syndromes. The Rostock group established the first Infarction Network in Germany with transfer logistics offering acute coronary syndrome patients in rural areas the same quality of care as in metropolitan areas. His mantra is excellence, comparison, and safe care for every patient every day.

Guenter A. J. Riegger, MD, chair, Internal Medicine II (Cardiology, Nephrology, and Pneumology), University of Regensburg, Regensburg

Professor Riegger is cofounder of the Working Group for Heart Failure of the European Society of Cardiology and has been medical director of the newly founded University of Regensburg Hospital since 1991. His research interests include the basic mechanisms of heart failure, neurohumoral activation (the renin-angiotensin-aldosterone system and neuropeptide S), cardiac imaging, genetic analyses of cardiovascular diseases, and induced pluripotent stem cells. He has authored and coauthored >300 PubMed-listed articles.

Wolfgang Rottbauer, MD, PhD, chair, Department of Internal Medicine II (Cardiology, Angiology, Pneumology, and Sports and Rehabilitation Medicine), University Hospital Ulm, Ulm

Professor Rottbauer’s basic research focuses on the elucidation of molecular pathways and druggable targets in cardiovascular development, disease, and repair using high-throughput forward and reverse genetic screens and small compound screens in zebrafish and mouse, as well as genome-wide association studies in patient cohorts and populations. Clinically, his research interests include evaluation of novel cardiovascular imaging modalities such as experimental diagnostic and interventional magnetic resonance imaging and interventional treatment strategies in the treatment of stable and unstable coronary heart disease and structural heart disease.

Albert Schömig, MD, chair, Department of Cardiovascular Diseases, German Heart Centre, Munich

Professor Schömig chose not to be included in this article.

Gerhard C. Schuler, MD, chair, Division of Cardiology, University Heart Centre, University of Leipzig, Leipzig

Professor Schuler’s research interests include the effects of regular physical exercise on risk factors, myocardial ischaemia, and progression of coronary artery disease; the effects of daily physical exercise on physical fitness and lifestyle in children; comparison of minimal invasive bypass surgery versus percutaneous coronary intervention for proximal left anterior descending coronary artery lesions; randomised comparison of complete arterial revascularisation versus percutaneous coronary intervention for left main stenosis; randomised comparison of intraaortic balloon pump versus conventional treatment in cardiogenic shock; and percutaneous valve replacement in aortic stenosis and for degenerated valve protheses.

Heinz-Peter Schultheiss, MD, chair, Department of Internal Medicine II (Cardiology and Pneumology), Charité Hospital, Berlin

For >30 years, Professor Schultheiss’s major research interest has been the role of pathogenic cardiotropic viruses and the cellular immune responses contributing to the pathogenesis of inflammatory cardiomyopathies, including the comprehensive characterisation of the long-term natural course of disease subtypes, the potential of antiviral and anti-inflammatory therapy options, targeted molecular approaches, and the contribution of immunogenetics to pathogenesis. He established the importance of cardiac biopsy-based information using a complete histological, histochemical, and molecular workup of tissue samples to allow subtype differentiation and causal treatment options. Several proof-of-concept trials, including the role of immunoabsorption, antiviral drugs, or recombinant proteins, have been conducted. A multicentre study investigating the effect of interferon-β in virus-positive inflammatory cardiomyopathy has recently been finalised.

Gerhard H. Schultheiss, MD, chair, Department of Internal Medicine II, Lübeck University Hospital, Lübeck

Professor Schunkert’s main interest is the genetics of atherosclerosis, specifically myocardial infarction. He coordinates the European Union-sponsored project Cardiogenics, the project Atherogenomics within the German National Genome Network, the transatlantic Leducq project CADgenomics, and the Lübeck partner site within the German Centre of Cardiovascular Research. He has received awards from the German Society of Cardiology, the German Society of Hypertension (elected to their board of directors), and the German Society of Preventive and Rehabilitative Medicine, as well as grants from the Deutsche Forschungsgemeinschaft and the Bundesministerium für Forschung und Technologie. Professor Schunkert serves on many editorial boards and the supervisory board of University Hospital of Regensburg. He has authored >300 articles in international journals.
Professor Steinbeck’s research focuses on physiological and catheter ablation of cardiac arrhythmias, implantable cardioverter defibrillators, and cardiac resynchronisation therapy. He is a board member of the German Competence Network on Atrial Fibrillation, and he participates in major clinical studies. Important recent articles have covered cardiovascular events during World Cup soccer, the genetics of atrial fibrillation, and the use of implantable cardioverter defibrillators for primary prevention of sudden cardiac death soon after myocardial infarction.

“Do ≈8000 coronary interventions and 2500 coronary artery bypass grafts a year. I am responsible for 20 people working on basic science, plus 80 doctors, 50 of whom work in the Internal Medicine and Cardiology Clinic. A major interest here is signal transduction in models of myocardial infarction, but we also have other groups studying heart failure and regenerative medicine. Major topics include neoangiogenesis, cardioprotection, cardiac hypertrophy and growth, and cardiac magnetic resonance. In the field of postconditioning, we are trialling drugs that may reduce the size of the infarct if administered before the vessel is opened. We have also developed a double-knockout mouse model for the proteins caveolin/endothelial nitric oxide synthase.

His special interests are automatic implantable cardioverter defibrillators, automated external defibrillators, clinical electrophysiology, sudden cardiac death, and intensive care medicine.

“In 1990, I started out as a basic scientist to identify novel targets for the stimulation of (cardio)vascular repair. This task was successful in identifying novel receptors for vascular endothelial growth factor, which was completely unknown to the cardiology community at that time. I have since devoted the past 20 years investigating all relevant aspects of vascular endothelial growth factor function in the context of metabolic and cardiovascular risk factors. These studies have led to novel mechanistic insight into endothelial, monocyte, and stem cell function; opened novel avenues for cellular diagnostic risk assessment; and unlocked novel strategies for the optimisation of (cardio)vascular repair. My clinical activities focus on interventional cardiology and innovating the treatment of acute and chronic myocardial ischaemia.”

Professor Strasser is the only woman to hold a chair of cardiology in Germany. She says, “We do ≈8000 coronary interventions and 2500 coronary artery bypass grafts a year. I am responsible for 20 people working on basic science, plus 80 doctors, 50 of whom work in the Internal Medicine and Cardiology Clinic. A major interest here is signal transduction in models of myocardial infarction, but we also have other groups studying heart failure and regenerative medicine. Major topics include neoangiogenesis, cardioprotection, cardiac hypertrophy and growth, and cardiac magnetic resonance. In the field of postconditioning, we are trialling drugs that may reduce the size of the infarct if administered before the vessel is opened. We have also developed a double-knockout mouse model for the proteins caveolin/endothelial nitric oxide synthase.

“For more information on many of these German chairs of cardiology, see: http://circ.ahajournals.org/site/misc/EuropeanPerspectivesIndex.xhtml
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