1/2009

dkfz. GERMAN CANCER RESEARCH CENTER IN THE HELMHOLTZ ASSOCIATION

alumni

DEUTSCHES KREBSFORSCHUNGSZENTRUM

Congratulations! Professor Harald zur Hausen receives the Nobel Prize in Medicine 2008 from King Carl XVI Gustaf of Sweden.

Dear DKFZ Alumni and Friends,

The undisputed highlight of the DKFZ and its Alumni Association in 2008 was the donation of the Nobel Prize in Medicine to our distinguished founding member Professor Harald zur Hausen for his seminal findings on the role of human papilloma viruses (HPV) in the development of cervical cancer, paving the way for the devlopment of vaccines against this global viral burden. In this Newsletter, Professor Lutz Gissmann, scholar, co-worker and colleague of Harald zur Hausen, describes decisive steps in this success story which has been closely linked to the DKFZ for exactly 25 years. This is also evident from the presentation of honorary silver badges for 25 years of service at the DKFZ to three former co-workers of the Nobel laureate as well as a number of other employees by the DKFZ Management Board in a ceremony preceding the Annual Reception. The winning of the Nobel Prize also dominated the Reception, at the end of which Professors Harald zur Hausen and Otmar D. Wiestler discussed future aspects of cancer research.

Immediately before, several great sponsors of the DKFZ presented their personal views on the responsibility of successful companies to support society in general and the scientific community in particular. The scientific counterparts of these highly appreciated efforts are not only experienced researchers, but also a large number of young students and guest researchers from abroad who, in addition to the "old girls and boys", are in the focus of many activities of our Alumni Association, as outlined in this Newsletter. The guest research report by a "Großmeister" from Russia gives a very impressive example of a scientist from abroad with a steep career at the DKFZ and the University of Heidelberg.

The scientific success of the DKFZ is not only shown by the prestigious Nobel prize but also by additional outstanding awards to DKFZ scientists and Alumni. A promising future for the DKFZ and its regional and supra-regional partners is described in an article on the positive evaluation of the scientific program by an international review panel, and reports on the winning of the regional biotechnology cluster "Cell Based and Molecular Medicine" integrating the scientific efforts of the University of Heidelberg, the EMBL, and the DKFZ, particularly its new stem cell institute, and research and development of many regional biotechnology companies. This initiative is supported by highly devoted investors, and the communities of Heidelberg and Mannheim. In addition, a supra-regional alliance between Bayer-Schering and the DKFZ for the development of cancer drugs has been established recently.

International connections of the DKFZ are reflected in this Newsletter by a report on joint scientific efforts of Singapore and Baden-Württemberg, and the announcement of forthcoming DKFZ-related scientific events in Denver (USA), Tokyo (Japan) and Gliwice (Poland). The Board of the Alumni Association was strongly involved in the organisation of these events and sincerely hopes to meet many of you on these occasions.
With best wishes from all of us at the DKFZ

Peter Bannasch

highlight

An Overdue Recognition of Perseverance in Research

by Lutz Gissmann

Those who work at the DKFZ were able to directly witness and participate in the great joy and enthusiasm that spread on October 6, 2008 – the day when Harald zur Hausen, Emeritus Professor and former Scientific Director and Chairman of the DKFZ Management Board, was announced winner of the Nobel Prize in Medicine. One who received the good news while far away was Lutz Gissmann, a longstanding research companion of the highly decorated virologist. The former PhD student at zur Hausen's lab and now a successful scientist himself here reflects on the exciting development of the "HPV Story".

During the symposium that was held in mid January to honor Professor Harald zur Hausen, several speakers and other participants disclosed where they had been when the Nobel Price in Medicine 2008 was announced. I myself was in Buenos Aires and – being four hours behind – was probably not among the first to know: In fact I learned it when I was checking my emails over breakfast. Yes, many people including myself had expected this to happen for several years and believed that this highest scientific recognition of zur Hausen's important contributions to human medicine was overdue. Yet when it happened, it took me by surprise, also since I had not realized that this was the day when the Nobel Committee would be announcing the winners.

The Nobel Foundation chose ***Prof. Harald zur Hausen*** *winner of the Nobel Prize in Medicine 2008 as the virologist "...has made seminal observations that identify novel human papilloma viruses as key contributors to cervical cancer. These findings have led to an understanding of cervical carcinogenesis, a characterization of the natural history of the human papilloma virus infection, and paved the way for the development of preventive vaccines."*

From the distance I could only imagine the storm of exaltation running over the DKFZ on this day. It was impossible to reach the laureate by phone since he must have been busy receiving congratulations from so many felicitators and giving dozens of interviews. A few journalists standing in line were even rerouted to Argentina for me to answer questions about how I had experienced zur Hausen as a supervisor, teacher and fellow scientist.

Being secluded and sitting on a long flight back to Germany the same evening gave me the opportunity to think of old days when I was fortunate to be part of the development of the "HPV Story". Then, in the late seventies, at the University of Freiburg we were looking for the DNA of human papilloma viruses (HPV) in cervical cancer biopsies in order to verify zur Hausen's hypothesis stating that these viruses are causatively linked to the disease. At that time this was not a trivial exercise since we did not have the right DNA probes for our search and thus we depended on specific protocols that were limited in their detection accuracy and specificity. Anyway, I remember the first time we identified a clear signal in one of the samples, the X-ray film still dripping from developing fluids when we were running to the boss' office. Another highlight was when in 1982 Matthias Dürst succeeded in cloning the DNA and we were thus able to find the DNA of this virus (later called HPV 16) in additional samples. I also recall the skepticism of some colleagues when we first presented the data in a workshop in Sweden and later when some questioned the viral origin of the DNA or when epidemiologists in the late eighties, not being satisfied by the studies run so far, did not accept a causal role for HPV in cervical cancer. Even if all this is over, I still remember our big relief when a few months after our initial report of HPV 16 a note by Peter Howley was delivered who worked at the NIH at that time and who – like several others

– had received DNA samples from us. He informed us that he was able to confirm our finding of the presence of HPV 16 DNA in cancer biopsies.

Owing to zur Hausen's generosity and scientific attitude, all materials generated in our laboratory were made freely available and thus helped to speed up the accumulation of knowledge. Indeed, the whole field of papilloma virus research would be different today without his impact. The consequences of his discoveries are obvious when one considers the exponential increase of participants at the annual workshops starting from about a dozen in the seventies and reaching 500 to 700 attendants during the last years.

Even with the advent of prophylactic vaccines the "HPV Story" is not over. There are still many open questions in areas that have already been investigated (e. g. the role of HPV in non-genital cancer). We also know of certain aspects of these viruses that have barely been approached (e. g. the role of host factors in HPV infection). It remains to be hoped that also future generations of researchers within the papilloma virus field will benefit from zur Hausen's knowledge. I am sure they will – since, among many other things in his daily life as a scientist, he greatly enjoys to support young colleagues.

Building on Reliable Partnerships

The DKFZ Management Board's New Year's Reception on February 5, 2009, was devoted to the overall headline: "DKFZ needs strong partners". As a result it became quite clear that mutual partnership is a vital factor for the Center and its sponsors as well.

In a discussion moderated by Dr Stefanie Seltmann (3rd from left), Head of the Press and Public Relations' Office, outstanding DKFZ sponsors presented personal views on the responsibility of the society to promote science. Not only was the generous financial support of Dr h. c. Manfred Lautenschläger (far left), Lautenschläger Foundation, welcomed with great applause, but also the commitments of Albrecht Hornbach (2nd from left), Hornbach Holding AG, Dr Tilman Todenhöfer (3rd right), Robert Bosch Industrietreuhand AG, and Prof. Christof Hettich (2nd right), dievini Hopp Biotech Holding GmbH, were highly appreciated, as Dr Josef Puchta (far right), Administrative-commercial Director of the DKFZ, strongly emphasized.

Research partners throughout the world commit themselves to continued networking with the DKFZ and participate in many activities of the Alumni Association.

A decisive asset on the part of DKFZ lies in its outstanding research personalities. The Nobel Prize in Medicine recently gained by Harald zur Hausen, stimulated the whole Center and at the same time further strengthened its attraction to top level researchers from abroad. This was emphasized clearly by the Center's Chairman and Scientific Director Professor Otmar D. Wiestler.

With this promising perspective the Center´s Alumni Association sees its "raison d´ être" in fostering ongoing communication with researchers even after they have left the center. This holds true not only for retired employees, but especially for scientists who took up a position in Germany or abroad. Membership is steadily growing since the Alumni Association came to life in 2004. At present, there are considerably more than 300 members and there is strong evidence that further growth is to be expected.

At any rate, it is especially important that young researchers should be addressed by DKFZ Alumni and Clubs already established or still to be set up locally in different foreign countries. Thereby, potential new research students may receive individual information about the Center. This alleviates the decisions regarding research visits to Heidelberg. Moreover, it is a vital element in promoting the Center´s research potential and strength. Maintaining and further developing scientific excellence also proves the Center's role as a reliable partner for sponsors who trust in the effectiveness of their financial support.

Members and friends of the Center´s Alumni Association help to follow-up this lead target by their voluntary contributions and further support through donations by generous sponsors. To strengthen our fundraising activities with non-members, strong support and back-up by the members of the Alumni association is highly appreciated. Their commitment can be regarded as the most convincing argument. At the beginning of this year the Board of the Association wishes to express sincere thanks to all of you. Special thanks go again to Merck Pharma Darmstadt for sustained support over a number of years.

Contributions and donations to the Alumni Association (see last page for account details) are predominantly dedicated to young researchers from Germany and other parts of the world who commit themselves to continued networking. This will be of mutual benefit: The DKFZ needs reliable partners.

Konrad Buschbeck

The Board of the Alumni Association welcomes the colleagues cooperating in its newly established Advisory Council:

Heike Allgayer
Bettina Crispin
Harald zur Hausen
Kari Hemminki
Gerhard van Kaick
Peter Lichter
Stefan Meuer
Günther Schütz
Wolfhard Semmler

Teaming up to Combat Cancer *by Manfred Koegl*

To make the transition from a basic research finding to early drug development more efficient, a new partnership has been established between DKFZ and Bayer-Schering Pharma (BSP). The idea is to pick up novel ideas early, and develop them together towards novel therapeutic applications.

With the signing of the contract the new alliance to accelerate the translation from basic research at DKFZ to drug development at Bayer Schering was sealed. From left: Professor Otmar D. Wiestler, Chairman of the Management Board of the DKFZ, Dr Wolfgang Plischke, Chairman of Research at Bayer AG, Dr Dominik Mumberg, Tumor Biology & Translational Oncology Research at Bayer Schering Pharma AG.

The German Cancer Research Center has been practising excellent basic research for many decades. However, translation of scientific insights into the development of novel therapeutics has never been straightforward. Finding a partner company for the development of an idea into drug can be a slow process, involving lengthy discussions and negotiations. Information flow is often hampered by extreme caution on both sides, and sometimes a lack of understanding of the interests and possibilities of the two partners involved. In many cases, it appears as if it is hard to match the goals and interests of pharmaceutical companies with those of an academic research institute.

To ameliorate these problems, DKFZ has now entered into a new partnership with Bayer-Schering. The cooperation is initially limited up to two years and includes shared financing of projects: each partner will contribute 1.75 million Euros. Accordingly, the intellectual property generated will also be owned jointly between the partner institutions. The cooperation is open to proposals from all fields, with special attention from BSP to angiogenesis, chromatin modulation and cell cycle regulation. The National Center for Tumor Diseases Heidelberg (NCT) is also included in this new alliance.

The partnership was kicked off on January 8, 2008, and started officially on January 1, 2009. Financing terms, confidentiality issues, the treatment of intellectual property and the commercial exploitation of joint findings are covered by the umbrella agreement. As a consequence, scientists on both sides do not have to worry about these issues, which leaves them free to concentrate on the facts and facets of their project of interest. This setting has already led to a fast and efficient exchange of ideas. A first call for projects at the kick-off meeting has received tremendous resonance from DKFZ researchers: altogether, 28 proposals have been submitted so far, covering a wide range of fields and directions. Several of them have been selected for more detailed discussion.

In all discussions, those involved agree that the flow of information in these discussions is not one-way from academia to industry, but that DKFZ scientists get the chance to learn a great deal about the relevant considerations in drug development and about the steps and processes required to go from a scientific insight to a new medicine.

The measures to support the exchange of ideas and promote personal contacts between DKFZ and BSP scientists include mutual site visits of delegations. For the first such event in early February, DKFZ researchers visited the Berlin site of BSP. The guests got the opportunity to learn about the different phases of drug development in a series of seminars. They also visited the facilities and exchanged ideas with various experts from BSP. For many of the visitors this was the first deeper look into the challenges of drug discovery. The knowledge they took back to Heidelberg will certainly affect discussions at the DKFZ, and will also add a necessary grain of salt to academic ideas on translational projects. The counter visit of BSP researchers at the DKFZ is scheduled for spring this year.

It is actually trivial to say that academic research organisations and commercial companies do not have the same objectives. Nevertheless, it has been amazingly easy to find common goals for selected projects. According to the enthusiasm with which it has started one may expect successful projects in this cooperation, with benefits for both partners involved, and hopefully for the ultimate beneficiary, the patient.

peer review

Weighed and Found to Be Excellent

by Otmar D. Wiestler and Susanne Weg-Remers

In April 2008, DKFZ successfully passed a seminal evaluation of its program in cancer research by an international review panel. Based on the very positive results of this evaluation, DKFZ has been able to earn increased institutional funding for the years 2009 to 2013.

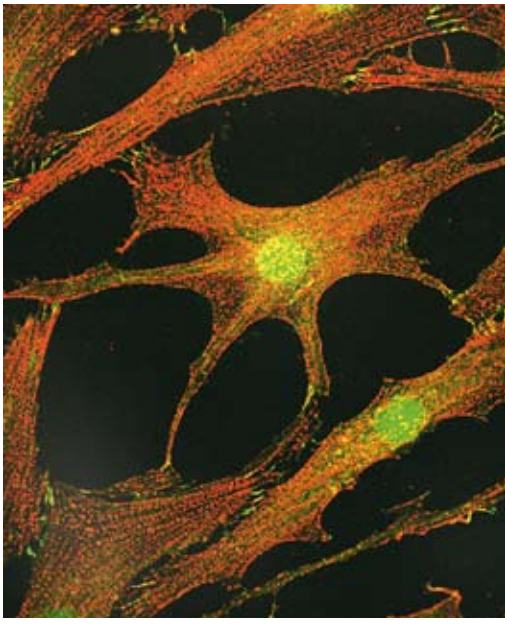
The Helmholtz Association of 15 national research centers is the largest publicly founded research organization in Germany with a budget of 2.4 billion Euros per year. In addition to "Health", there are five main research fields: "Energy", „Earth and Environment", "Structure of Matter", "Key Technologies", and "Aeronautics, Space and Transport". All research programs within are subject to a large-scale strategic international evaluation every five years. Scientific projects with exceptional quality and high strategic significance can compete for additional funds from the premium budget of the research field. Funding on the basis of the recommendations of the Helmholtz senate is provided by the Federal Government (90 percent) of Germany and the State Government of the respective center (10 percent).

The research field "Health" is subdivided into six research programs focusing on major socioeconomically relevant human diseases. DKFZ, the leading research center within this research field, is in charge of the program "Cancer Research". Five of the seven topics within the program "Cancer Research" are complemented by scientific projects from the Max-Delbrück-Center Berlin-Buch or the Gesellschaft für Schwerionenforschung, Darmstadt.

After months of intensive preparation, the scientific proposal for "Cancer Research" was submitted to the Helmholtz office in November 2007. During a visit from April 21 to 24, 2008, an international review panel chaired by Professor Paul E. Neiman from the Fred Hutchinson Cancer Center had the opportunity to discuss the proposal with DKFZ scientists and to visit the research facilities. On April 22, 2008, colleagues from Heidelberg, Berlin and Darmstadt provided summaries of the different program topics. On the same day, the reviewers had the chance to participate in several discussion rounds focused either on the different program topics, strategically highly relevant projects, career development, or on center management. At the end of the visit, the reviewers were deeply impressed with the scientific excellence, the enthusiasm of the participating scientists, and the future potential of the program.

During the evaluation, a number of additional proposals were presented with the aim to raise further funds through the premium budget. The DKFZ-ZMBH alliance and an early clinical trials initiative in translational oncology received a strongly positive vote by the review board. Another premium-budget project of particular strategic significance was the Helmholtz cohort, a large-scale, long-term prospective epidemiological study. As a joint venture of the main centers in the research field "Health" its ambitious goal is to recruit and follow up a population of 200.000 participants for 20 years. On April 24, 2008, it was evaluated separately by a panel of epidemiology experts. This project, too, received strong support from the reviewers.

Funding recommendations for the topics of the program "Cancer Research", its premium budget projects, and the other programs from the research field "Health" finally passed the Helmholtz Senate by the end of October 2008. With the funds provided we can now approach our challenging goals for the upcoming five year period. To be in such an excellent position is largely accomplished by the most efficient work of the many scientists and the writing committee compiling the final proposal.



Immunofluorescence micrograph showing human mesenchymal stem cells, originally taken from bone marrow and propagated in cell culture. These cells are connected to each other by cell-cell junctions (green, β-catenin) and are rich in contractile filament bundles (red, α-actinin). Nuclei are coloured blue-green.

DKFZ Reception at the AACR Meeting 2009 in Denver, Colorado

During the forthcoming 100th Annual Meeting of the American Association for Cancer Research (AACR) in Denver, Colorado, on April 18-22, 2009, attending Alumni and current Scientists of the DKFZ are cordially invited to a reception, taking place in the Hyatt Regency at Colorado Convention Center on Monday, April 20, between 6:30 p.m and 8:30 p.m.

The Chairman and Scientific Director of the DKFZ Management Board, Prof. Otmar D. Wiestler, will give an overview on the present research programs of the DKFZ on this occasion. The Chairman of the Board of Alumni DKFZ, Prof. Peter Bannasch, will review the present state of the Association. The establishment of a DKFZ Alumni Club in the USA is envisaged.

Ilia Toshkov

Boost for Regional Biotechnology

In September 2008, the Biotechnology Cluster Rhein-Neckar (BioRN) was awarded 40 Million Euros by the Federal Research Ministry for its program "Cell Based and Molecular Medicine". It was the only cluster that had been selected in the area of life sciences to take part in this highly competitive program. The amount of federal support will be met by an additional 40 Million Euros coming from participating industry. In total, 35 research and development projects will be supported during the next five years.

The Rhein-Neckar region contains internationally renowned research institutions, such as the University of Heidelberg, the German Cancer Research Center and the European Molecular Biology Laboratory. Here, the highest density of pharmaceutical companies in Germany exists (e. g. Roche, Merck/Serono, Abbott). In addition, approximately 60 small and mid-size biotech companies were founded within the last ten years. The communities of Heidelberg and Mannheim, regional organizations, highly devoted investors such as Dietmar Hopp, one of the founders of the SAP AG, modern infrastructures and services complete this unique regional setup, which already represents one of the top bioregions of Europe.

Science and business experts guided through the competition (from left to right): Dr Jürgen Schwiezer (Roche), Dr Wolfgang Niopek (IHK Rhein-Neckar), Dr Christian Tidona (CEO of BioRN Cluster Management GmbH), Prof. Stefan Meuer (University of Heidelberg), Prof. Otmar D. Wiestler (DKFZ), Dr Ernst-Dieter Jarasch (BioRegion Rhein-Neckar-Dreieck) and Dr Bernhard Kirschbaum (Merck Serono).

A crucial element for a successful development of this biotechnology cluster in the future is a strategically oriented cluster management, which has hitherto not existed before. Now, four partners, namely the Metropolregion Rhein-Neckar, the Chamber of Commerce and Industry (IHK) Rhein-Neckar, the City of Heidelberg/Technology Park, and the Bio-Region Rhein-Neckar-Dreieck Association have joined forces and formed the new BioRN Cluster Management GmbH, with Dr Christian Tidona as its Chief Executive Officer.

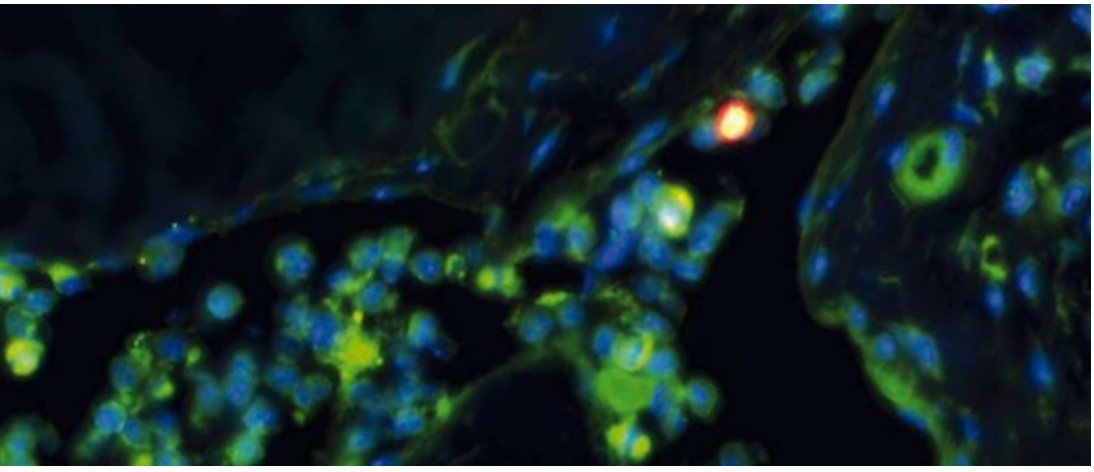
Central goals exist in the implementation of 35 research and development projects, the strategic positioning of the BioRN Cluster at an international level, the attraction of additional companies and investors as well as continuous monitoring of economic success, based on standardized indices. The 35 projects of the BioRN Cluster are combined in five strategic "Subclusters". Besides the "Cluster Management", the "Incubator" serves as a tool to develop potential candidate drugs from pre-clinical or early clinical phases into industrial maturity. The "Stem Cell Network" conducts research in the areas of tumor stem cells and adult stem cells. A centerpiece of this project is constituted by the newly founded "Heidelberg Institute for Stem Cell Technology and Experimental Medicine" (HI-STEM; also see next page), run by Andreas Trumpp, an internationally renowned scientist in the area of tumor stem cells. The "Biomarker Center" develops novel diagnostic procedures for individualized medicine. And the "BioRN Academy" aims at training talented young investigators in the field of life science to become highly qualified leaders.

Within the coming five years this program should be instrumental for the development of the BioRN Cluster into one of the economically most successful places in Europe's biotechnology scenery.

Stefan Meuer
Chairman of the Supervisory Board of the BioRN Cluster Management GmbH

Heidelberg Stem Cell Research Institute *by Andreas Trumpp*

Within the BioRN cluster "Cell-Based and Molecular Medicine" the new "Heidelberg Institute for Stem Cell Technologies and Experimental Medicine gGmbH" (HI-STEM) was at the core of the recently awarded Excellence-Cluster prize by the German Ministry of Education and Science. Last fall, HI-STEM was jointly established by the German Cancer Research Center and the Dietmar Hopp Foundation with its main focus on enhancing the most recent advances in stem cell research and applying them to the treatment of primary cancer and metastases as well as some degenerative diseases.



A dormant hematopoietic stem cell (yellow) in its niche inside the bone marrow.

The major reason for high cancer mortality is commonly not the primary tumor itself, as it can mostly be treated by resection of the neoplastic tissue combined with adjuvant chemo- and/or radiotherapy, but rather the formation of distant metastases. Circulating metastatic cells which are supposed to be derived from so called "cancer stem cells" within the primary tumor, can spread via the blood stream to distant organs and initiate lethal metastases.

HI-STEM has been set up in order to coordinate, streamline and significantly enhance basic and clinical research on stem cells. The goal of this non-profit organization is to accelerate the generation of patents which in cooperation with the biotech and pharmaceutical industry should rapidly lead to new drugs and therapies to treat patients suffering from metastatic cancers. HI-STEM is mainly located within the DKFZ. It is expected that the University of Heidelberg together with its clinical institutes will shortly join the new center.

A central focus of the research performed at HI-STEM is to study cancer stem cells which are characterized not only by their malignancy, but also by their extensive chemo- and radioresistance, thus escaping elimination by current therapies targeted to fast dividing cells. One of the reasons why these cells manage to escape chemotherapy is their surprisingly long period of dormancy. Thus, although most of the tumor mass is eliminated by chemotherapy drugs, some malignant stem cells may remain unnoticed within the body. After a shorter or longer dormant period, these cells can restart the tumor growth, finally leading to the frequently observed cancer relapse, which often acquires a highly aggressive phenotype.

One major approach at HI-STEM is to establish methods for the identification and ultimate extinction of metastatic stem cells from the blood and bone marrow of cancer patients. In my research team we have not only identified such deeply dormant stem cells, but have also uncovered that interferon-alpha efficiently "awakes" haematopoietic stem cells from their dormant state making them susceptible to killing by chemotherapeutics. Clinical trials are currently being initiated to test whether short term priming of chronic myelogenous leukemia patients with interferon-alpha followed by treatment with the BCR-ABL kinase inhibitor imatinib (developed by Novartis) will lead to the elimination of leukemia stem cells and thus to a durable cure.

Additionally, in cooperation with partners of the pharmaceutical industry such as Merck-Serono HI-STEM will accelerate the identification and development of further substances which eliminate disseminated cancer stem cells and thus will hopefully be able to offer novel therapies to patients suffering from metastatic tumor disease, patients for which currently no efficient treatment options exist.

*HI-STEM is headed by **Prof. Andreas Trumpp**, an internationally renowned expert on stem cells, who has just been recruited to Heidelberg from the ETH in Lausanne.*

Joint Scientific Efforts of Singapore and Baden-Württemberg

by Hans-Georg Rammensee

In 2007, the National University of Singapore (NUS) and the Ministry of Science, Research and the Arts in Baden-Württemberg initiated a program to support scientific exchange between the two regions. As Minister Professor Peter Frankenberg pointed out in the First Joint Scientific Conference in Singapore in October 2007, the two regions share characteristics of excellence – Baden-Württemberg being the "... most innovative region within the European Union, and Singapore being one of the most prolific global locations in the life sciences". Both, the Minister and the President of NUS, Professor Shih Choon Fong, emphasized that NUS and Baden-Württemberg are "natural partners" for cooperation focused on innovations in the life sciences.

The Baden-Württemberg scientific delegation was led by Professor Otmar D. Wiestler, Chairman and Scientific Director of the DKFZ Management Board. Several of the delegates were active DKFZ members and two delegates were DKFZ Alumni, i. e. Professor Klaus Michael Debatin and myself. The programme focused on cancer immunology, stem cells, tissue engineering, and translational research. As a practical consequence, the Minister and the President of the NUS agreed on a scientific research program, whereby approximately 0.9 million Euros from each partner are to be spent on selected and peer-reviewed joint grants, and also agreed to continue the cooperation by annual bilateral meetings.

From left: Prof. Simone Fulda, University of Ulm, Prof. Frank Lyko and Prof. Andreas Trumpp, both DKFZ Heidelberg.

Prof. Peter Frankenberg, Minister of Science, Research and the Arts of Baden-Württemberg

from left: Prof. Allen Eng-Juh Yeoh, NUS, Prof. Hans-Georg Rammensee and Dr Peter Lang, both University of Tübingen, Prof. Choon Nam Ong, NUS

The Second Joint Scientific Conference was held in Baden-Württemberg at the DKFZ from September 21 to 23, 2008, hosted by Professor Otmar D. Wiestler and Minister Professor Peter Frankenberg. The Singapore delegation was led by Professor Barry Halliwell, Deputy President of NUS, and Professor Choon Nam Ong, Director of the Life Sciences Institute of NUS. This time, neurobiology was added to the scientific subjects covered previously. In addition, Albrecht Jahn from the European Union informed the participants about the possibilities for EU funding.

In the cancer session Professor Yoichi Taya (NUS) provided evidence that cytosolic p53 may participate in the regulation of cathrin-mediated endocytosis to control the correct signalling from EGFA. Professor Simone Fulda (University of Ulm, DKFZ Alumna) reported on the targeting of inhibitors of apoptosis proteins (iAPs), for example by antisense methods or small molecule inhibitors. These measures present a promising novel approach for drug development and may prove to be a successful strategy for overcoming apoptosis resistance of human cancers. Professor Motomi Osato (NUS) described novel findings on the Runx1 transcription factor. This gene is frequently mutated in sporadic myeloid and lymphoid leukaemia with translocations or other changes and it is master regulator in the development of the haematopoietic system. Now it was found that an intronic Runx1 enhancer marks haematopoietic stem cells. Professor Frank Lyko (DKFZ) reported on epigenetic modification as a biomarker and tool for cellular differentiation and tissue engineering.

In the neurobiology session, Professor Barry Halliwell gave an overview of the neuroscience activities at the NUS, indicating that Singapore has a strong focus on this topic. Professor Hannah Monyer (University Hospital Heidelberg) described molecular determinants required for synchronous network activity and cognition. Professor Tuck Wah Soong (NUS) reported that altered combinatorial splicing profiles of heart-specific, voltage-gated calcium

channels provide a new perspective in understanding the possible role of molecular modelling of channels in cardiac hypertrophy as a consequence of hypertension. Professor Tobias Böckers (University of Ulm) shared new insights into the molecular composition of synaptic contacts, in particular on the protein SHANK, which is a master scaffolding protein of the neural postsynaptic density. In the session on immunology, Professor Michael Kemeny (NUS) reported on dendritic cells and the integration of immune and microbial signals for IL-12 and Th1 responses. Professor Frank Kirchhoff (University of Ulm) discussed the pathogenesis of AIDS and reported in particular on the role of NEF in down-modulation of TCR-CD3 expression and

Prof. Choon Nam Ong, NUS, Prof. Otmar D. Wiestler, DKFZ, Prof. Christoph Peters, University of Freiburg, Minister Prof. Peter Frankenberg, Ministry of Science, Research and the Arts in Baden-Württemberg, Prof. Barry Halliwell, NUS

the prevention of activation-induced cell death. Professor Herbert Schwarz (NUS) provided evidence that reverse CD137-ligand signalling takes place in haematopoietic progenitor cells, in which it induces proliferation and differentiation towards monocytes and macrophages. Dr Adelheid Cerwenka (DKFZ) gave an overview of the activation of NK cells for the treatment of cancer and concentrated on strategies to amplify NKG2D mediated anti-tumor responses which thereby counteract tumor or immune escape mechanisms.

In the session on stem cells and tissue engineering, Professor James Hui (NUS) gave an impressive lecture on knee repair, in particular, on new measures for cartilage regeneration. Professor Andreas Trumpp (DKFZ) addressed the role of dormant and activated stem cells during normal homeostasis and injury and in particular discussed the identification of stem cells in cancer. Professor Michael Raghunath (NUS) described the surprisingly positive influences of in vitro bioassembled human extracellular matrix allowing for the growth of cells, in particular stem cells, in tissue culture. Dr Peter Lang (University of Tübingen) reported on the growing impact of transferring antigen-specific T cells into stem cell transplantation recipients for the treatment of virus infections which otherwise might be lethal. He reported in particular on the transfer of adenovirus-specific T cells, which can restore T cell

Albrecht Jahn, representative of the European Union, informed about possibilities of EU Funding.

immunity after stem cell transplantation and in several cases have already saved the lives of the virus-infected patients.

In the final session on translational medicine, Professor Allen Yeoh (NUS) described new approaches for personalizing therapy for childhood acute lymphoblastic leukaemia, a project in cooperation with the University of Tübingen which is actually supported within the research program of Baden-Württemberg and Singapore. Professor Marco Prinz (University of Freiburg) discussed novel aspects of translational medicine in neuroimmunology, in particular with regard to the use of type I interferons for therapy of CNS-associated diseases.

Professor Patrick Tan (NUS) showed how integrative genomics may help to understand cancer progression. Thus, he provided evidence that diffused type gastric cancer and intestinal type gastric cancer represent two molecular distinct tumor types. Professor Rupert Handgretinger (University of Tübingen) discussed new strategies to enhance the graft-versus-leukaemia effect after haplo-identical haematoopoietic stem cell transplantation.

Social activities during this very impressive and rewarding meeting were the opening reception at the Castle of Heidelberg, a reception hosted by Minister Frankenberg at the Conference Centre of the DKFZ in the middle of the meeting,

Prof. Choon Nam Ong, NUS, Prof. Klaus-Michael Debatin, University of Ulm

and a dinner in the Restaurant "Weißer Bock" in the Old Town of Heidelberg, hosted by the Deputy President of the National University of Singapore on the last evening.

The Third Joint Scientific Conference in Life Sciences will be held in Singapore, and it is planned to take place in January 2010. We are looking forward to another exciting and highly rewarding meeting.

Appointments

Dr Sven Diederichs who worked on miRNA at the Harvard Medical School in Boston, is in charge of the Helmholtz University Young Investigator's Group Molecular RNA Biology and Cancer.

Dr Markus Feuerer, a former PhD Student in the Division of Cellular Immunology, came back from Harvard Medical School and took the position as Head of a Helmholtz University Young Investigator's Group working on peripheral T-cell tolerance.

Dr Jan Wilkens, Division of Medical Physics in Radiation Oncology, has been appointed W2-Professor for "Advanced Technologies in Radiation Therapy" within the excellence cluster „Munich Center for Advanced Photonics" at the TU München. He already took up the new position last year.

As of Oktober 1, 2008, **Dr Rolf Zettl,** formerly Assistant of the Scientific Management Board and until recently Head of the Division Strategic Business Advancement at the Charité-Universitätsmedizin Berlin, took the position of the Managing Director of the Helmholtz Association for a period of five years.

Retirement

Prof. Walter Pyerin, Head of the Research Group Biochemical Cell Physiology, retired on July 1, 2008.

Awards to DKFZ Scientists

Prof. Heike Allgayer, Clinical Cooperation Unit Molecular Oncology of Solid Tumors, received the Research Award 2008 of the Walter Schulz Foundation in Munich. The prize endowed with 25,000 Euros acknowledges her work on essential molecular mechanisms of tumor progression, invasion and dissemination which also focused on minimal residual tumor disease.

The Chica and Heinz Schaller Promotion Prize 2008 was awarded to **Dr Tobias Dick**, Head of the Boveri Junior Research Group Redox Regulation. He was decorated for his ground-breaking innovative research on the impact of redox reactions in cellular signalling. The prize is endowed with 100,000 Euros.

Prof. Peter Angel, Head of the Division of Signal Transduction and Growth Control, and **Prof. Peter Lichter**, Head of the Division of Molecular Genetics, have been appointed members of the European Molecular Biology Organization (EMBO), which hosts a panel of reviewers and consultants and at the same time supports young investigators and fosters international exchange programs between research institutions. Peter Angel's research of the last two decades elucidated how cells react on external signals and why certain genes are activated or shut down. Peter Lichter focused on the impact of genome alterations on the development of tumors.

Prof. Lutz Gissmann, Head of the Division of Genome Modifications and Carcinogenesis, and **Prof. Harald zur Hausen**, Emeritus Professor and former Scientific Director and Chairman of the DKFZ Management Board and Nobel laureate 2008 (see also pages 2 and 3), received the Warren Alpert Foundation Prize 2007 endowed with 150,000 Dollar. The committee of the Harvard Medical School in Boston acknowledges the fundamental investigations on Human Papilloma Viruses (HPV) which allowed for the characterization of several types of viruses and which proved for the first time the association of some of these viral infections with cancer.

Awards to DKFZ Scientists

Prof. Barbara Burwinkel, Head of the Junior Research Group Molecular Epidemiology, is winner of the Claudia von Schilling Prize 2008. She was decorated for her findings on so called ultra-conserved gene elements. One of six identified versions is supposedly associated with an elevated risk of breast cancer. Burwinkel shares the award of 20,000 Euros with Prof. Ulrich Lehmann, Hannover Medical School.

Dr Stefan Pfister, Division of Molecular Genetics of the DKFZ and Pediatric Oncologist at the Center for Childhood and Juvenile Medicine of the University Hospital Heidelberg, and his PhD student **Marc Remke** share the Doktor-Maresch-Klingelhöffer-Research Award of 5,000 Euros with Dr Wibke Janzarik, University Hospital Freiburg. The Foundation for Childhood Cancer in Frankfurt awarded the three scientists in recognition of a joint publication on genetic causes of astrocytoma in children.

Klaus Schläfer, Research Group Environmental Epidemiology, became honorary member of the European Association for Cancer Research (EACR) in recognition of his longstanding activities as Treasurer of this society.

The outstanding efforts of **Prof. Otmar D. Wiestler**, Scientific Director and Chairman of the DKFZ Management Board, on the implementation of „Comprehensive Cancer Centers“ (CCC) like the National Center for Tumor Diseases Heidelberg (NCT) has been acknowledged by the German Society of Gynecology and Obstetrics. The association awarded him the Gunther-Bastert-Prize for Innovation endowed with 10,000 Euros.

Dr Bhupesh Prusty, Division of Tumor Virus Characterization, received the EMBO/EMBL Science Writing Prize 2008. The award of 1,000 Euros is dedicated every year to a researcher whose presentation of a scientific topic is easily understandable for the broad public.

A **team of 16 students** under supervision of Prof. Roland Eils, Head of the Division of Theoretical Bioinformatics, and Dr Victor Sourjik, Head of the Research Group of Quantitative Analyses of Microbial Networks at the ZMBH (i. e. the Center of Molecular Biology Heidelberg), won three special prizes as well as a Gold Medal for their scientific achievements at the international iGEM Competition held at the Massachusetts Institute of Technology (MIT) in Boston. The team has elaborated on the “Ecolicence to Kill” project. Their aim was to construct bacteria able to seek and destroy other germ, possibly even tumor cells.

Awards to DKFZ Members

Dr Armin Pscherer, Division of Molecular Genetics, received one of the poster prizes for young investigators of 1,000 Euro each. The German Cancer Aid honoured him during the 3rd Mildred Scheel Cancer Conference for his research on candidate genes associated with leukaemia and lymphoma.

Dr Carlos Salazar, Research Group Modelling of Biological Systems, was honoured with the MTZ-Bioquant-Award for Systems Biology 2008. The prize of the Monika und Thomas Zimmermann Foundation endowed with 2,500 Euros supports the young investigator in his work on "phosphorylation cycles and the regulation of cellular processes".

Dr Angelika Zabel-du Bois, Clinical Cooperation Unit Radiotherapy of the DKFZ and Senior Physician at the Radiological University Hospital Heidelberg, was awarded the Günther von Pannewitz-Prize endowed with 1,000 Euros. The German Association of Radiooncology (DEGRO) honoured her investigations on patterns of gene expression displayed in arteriovenous malformations which resulted in potential biological markers for successful obliteration.

In September 2008, **Dr Richard Taubert**, Division of Developmental Immunology, was awarded the Hans-Hench-Prize for Clinical Immunology 2008 for his PhD thesis on the implications of promiscuous gene expression for tolerance and autoimmunity. The prize is endowed with 2,000 Euros. Only a few weeks later, he also received the Ludolf-Krehl-Prize of 2,500 Euros for his doctoral thesis.

*25th anniversary of employment at the DKFZ: Three former scholars working with Prof. Harald zur Hausen, namely **Prof. Elisabeth Schwarz**, Division of Tumor Virus Immunology (Immunology (front row, 4th left), **Prof. Lutz Gissmann**, Head of the Division of Genome Modifications and Carcingenesis (4th from right), and one of his group leadesr, **Dr Michael Pawlita** (2nd right,) as well as **Elfriede Mang**, Secretary of the Alumni Association (front row, 2nd left), received the Badge of Honour in silver. The Management Board (Dr Josef Puchta, Prof. Otmar D. Wiestler,in the back, left) also awarded seven additional DKFZ members for 25 years of service for the DKFZ: (from left) **Monika Cerff-Oetzel**, **Claudia Rensch**, **Dr. Peter Schmezer**, **Prof. Bruno Kyewski**, **Matthias Ehrbar**, **Michaela Hergt** and **Angelika Wörner**.*

Awards to Alumni

Dr Holger Bastians, formerly PhD student at the Division of Molecular Biology of Mitosis and now Head of the Research Group Cell Cycle and Associated Checkpoints at Marburg University, received a Heisenberg-Fellowship from the German Research Foundation (Deutsche Forschungsgemeinschaft). The grant is dedicated to a research project on cell cycle regulation with special regard to the relevance of mitotic pathways in cancer treatment.

Dr Leif Schröder, formerly PhD Student at the Division of Medical Physics in Radiology and now Postdoctoral Research Fellow of the Department of Chemistry at the University of California in Berkely, was awarded the Dr Emil-Salzer Prize 2008 endowed with 5,000 Euros. The physicist was honoured for improvement of magnetic resonance imaging by implementing a combination of hyperpolarized Xenon gas and a Xenon biosensor attached to an antibody against a tumor-specific molecule. Thereby, MRI signals are amplified ten thousand-fold (see also page 15).

Prof. Harald zur Hausen, Emeritus Professor and former Scientific Director and Chairman of the DKFZ Management Board, is laureate of the Nobel Prize in Medicine 2008 as detailed on pages 2 and 3.

events

Reception of Guest Scientists and Award Ceremony

For the first time the dedication of the Dr Emil-Salzer Prize was combined with a traditional reception for guest scientists and foreign co-workers. This proved to be a good idea. Many interested scientists were impressed by the presentation of price-winner Dr Leif Schröder on the nearly incredible progress of optimizing the sensitivity of magnetic resonance up to a factor of ten thousand (Science 314, 2006).

Professors Otmar D. Wiestler and Gerhard van Kaick described the history of the Salzer Prize and the scientific career of Leif Schröder who performed research for his diploma and his PhD thesis at the DKFZ under the guidance of Professor Peter Bachert. He now holds a position at the University of California in Berkeley in the Department of Chemistry. There is some hope that he will return to the DKFZ.

Directly after the award ceremony, the chairman´s reception started and the guests found a well prepared entrance hall of the communication center. Professor Peter Bannasch welcomed the participants and introduced the program of the Christmas concert presented by the highly versed and well known Wilhelmsfelder Singkreis, conducted by Ria Günther. The choir enchanted the participants with a motet by Johann Ludwig Bach and international Christmas carols. Another highlight of this reception was the fascinating retrospection of two outstanding Alumni, Drs Ada and Donald Olins who frequently returned as highly esteemed guest scientists in several divisions of the DKFZ since the seventies. Finally, Professor Otmar D. Wiestler outlined the stunning developments at the DKFZ during the last year. A wonderful experience, after the buffet was opened, were the conversations with many young scientists coming from all over the world, giving each participant the feeling of being a member of a large international family.

Gerhard van Kaick

The sensitivity of magnetic resonance has been dramatically increased, as Dr Leif Schröder, winner of the Dr Emil-Salzer Prize 2008 reported during the award ceremony. Among the congratulators was Prof. Gerhard van Kaick, Chairman of the jury.

2nd NCC/DKFZ Cancer Workshop in Tokyo

The 1st joint Workshop of the Japanese National Cancer Center (NCC) and the DKFZ on Basic and Clinical Cancer Research was held in Heidelberg in July 2008 as favourably highlighted in our last Newsletter (2/2008) by Dr Hitoshi Nakagama from the NCC. On this occasion the Japanese and the German delegation agreed to continue and further develop scientific exchange and cooperation between these two outstanding national institutions, including the Medical Faculty of the University of Heidelberg. In the frame of this agreement, a **2nd NCC/DKFZ Workshop on Basic and Clinical Cancer Research** has been scheduled for **July 7 and 8, 2009, at the NCC in Tokyo.**

The tentative program of this meeting includes genomics, epigenomics, and proteomics of cancer development and growth, innovative approaches to cancer therapy, and, as a particular focus, basic and clinical aspects of pancreatic cancer. The German delegation will be composed of Drs Peter Bannasch, Jörg Hoheisel, Christoph Plass, Otmar D. Wiestler and other DKFZ scientists.

In addition to the reactivation of close links between the NCC and the DKFZ, Drs Toshi Ishikawa from the Tokyo Institute of Biotechnology and Manfred Schwab from the DKFZ have recently made arrangements for a better exploitation of exchange programs for students supported by the JSPS and the DAAD. To this end, there will also be a **Poster Session for young Japanese scientists** who are interested in spending some time at the DKFZ or the Medical Faculty of the University of Heidelberg, in combination with the 2nd NCC/DKFZ workshop on **July 8, from 2.00 to 4.00 p.m.**

A **Reception by the Management Board and the Board of the Alumni Association of the DKFZ** for participants of the workshop and for Japanese DKFZ Alumni will take place on **July 8, from 4.00 to 6.00 p.m.**

Peter Bannasch

meeting

2nd Polish-German Cancer Workshop in Gliwice

As reported in our last Newsletter (2/2008) by Dr Katarzyna Lisowska, the 1st Polish-German Cancer Workshop took place at the DKFZ in June 2008, right before the 3rd General Alumni Meeting. At the end of this stimulating event all participants expressed their great interest in continuing this fruitful exchange of scientific ideas and in strengthening the personal contacts between scientists from both countries which have also been politically closely related in the EU since 2004. In the meantime, the President of the Maria Sklodowska-Curie Memorial Cancer Center and Institute of Oncology in Warsaw and Gliwice, Professor Marek P. Nowacki, and the Scientific Director of the DKFZ, Professor Otmar D. Wiestler, have agreed to hold the

2nd Polish-German Cancer Workshop in Gliwice on November 20, 2009.

The scientific program of this meeting has been coordinated by Professors Piotr Widlak from Gliwice, and Jörg Hoheisel and Kari Hemminki from the DKFZ and will include 10 Polish and 9 German speakers as listed in alphabetical order below.

Functional Genomics in Cancer Research

Michael Boutros **(Heidelberg):**	Genome-wide functional screens to identify novel factors in cancer pathways
Jörg Hoheisel **(Heidelberg):**	Looking at microRNA and mRNA profiles as well as related epigenetic variations in promoter regions of pancreatic cancer samples
Barbara Jarzab **(Gliwice):**	Thyroid carcinoma as a model for gene expression profiling of cancer
Jolanta Kupryjanczyk **(Warszawa):**	Prognostic and predictive factors in ovarian cancer – results of verification of DNA microarray data
Jerzy Ostrowski **(Warszawa):**	Functional analyses of microarray-based data in the studies on colon adenoma-carcinoma sequence
Joanna Polanska **(Gliwice):**	New mathematical approaches in analyses of genomic and proteomic data
Aurelio Telemann **(Heidelberg):**	Regulation of TOR by amino acids
Stefan Wiemann **(Heidelberg):**	Tumor function versus normal tissue behavior
Piotr Widlak **(Gliwice):**	MALDI-ToF MS analyses of serum proteomes in cancer diagnostics

Molecular Epidemiology of Cancer

Dorota Butkiewicz **(Gliwice):**	Association between DNA repair gene polymorphisms and survival in lung cancer patients
Federico Canzian **(Heidelberg):**	Genome wide studies in cancer
Asta Försti **(Heidelberg):**	Evidence for a genetic basis of cancer survival
Ewa Grzybowska **(Gliwice):**	Molecular epidemiology of hereditary breast and ovary cancer in Silesia
Ute Hamann **(Heidelberg):**	Breast cancer genetics
Kari Hemminki **(Heidelberg)**:	Genetic basis of familial aggregation of cancer
Rudolf Kaaks **(Heidelberg):**	European Prospective Investigation into Cancer and Nutrition (EPIC)
Jolanta Lissowska **(Warszawa):**	Current trends in ovarian and endometrial cancer research from international consortia perspectives
Jan Lubinski **(Szczecin):**	The latest advances in clinical genetics of cancers
Krzysztof Szyfter **(Poznan):**	Identification of laryngeal cancer-related genes using high resolution array-CGH techniques

On behalf of Professor Piotr Widlak we cordially invite all interested colleagues to take advantage of this attractive program and attend the meeting in Gliwice. We are particularly pleased and grateful to the **DAAD** for providing funds (**program Alumni-Plus**) covering **travel expenses and accommodation for up to 14 Polish Alumni from the DKFZ and the University of Heidelberg who are now back in Poland**. Applications for this generous support should be addressed to the Secretary of the Alumni Association of the DKFZ, Elfriede Mang, DKFZ, im Neuenheimer Feld 280, 69120 Heidelberg, Germany, before **September 30, 2009**. The applications should include the curriculum vitae and a list of publications. The Board of the Alumni Association will be responsible for possible selections and the final approval of the applications.

Peter Bannasch

guest report

A "DKFZ-Großmeister" from Russia

by Alexander Nesterov-Müller

The Russian physicist Dr Alexander Nesterov-Müller represents an example of a remarkable career of a guest scientist: His time at the German Cancer Research Center (DKFZ) is not only characterized by the physicist's dedication to the synthesis of peptide libraries and his fruitful collaboration with experts from other fields, but shows an ambitious investigator with a good sense of humor.

***Alexander Nesterov-Müller** received his M. S. in Physics from Lomonosov Moscow State University in 1998. In 2003, he joined the research group "chip-based peptide libraries" at the German Cancer Research Center as a PhD-student. Three years later, he earned a doctor's degree from the University of Heidelberg, where he became a "Privatdozent" in 2008. His research interests include physical aspects of fabrication and processing of chip-based molecular libraries.*

The suggestion by Professor Peter Bannasch to write an article on work and life at the DKFZ for the Alumni Newsletter was a bit unexpected for me. I am a physicist by education. My experience and impressions would be rather untypical for a large scientific center with the focus on medical and biological sciences. On the other hand, there were good reasons to accept it, above all the possibility to express my honest gratitude for this very fruitful time at the DKFZ. Thus, I would like to thank all my colleagues who supported me during the past five years.

I finished my studies in Physics at the oldest Russian university – Lomonosov Moscow State University, which is known among physicists for its fundamental educational system. Searching for a PhD position my attention was primarily attracted by the original research conducted in the group "chip-based peptide libraries" at the DKFZ. Finally, the decision to graduate in Heidelberg turned out to be a good choice.

The starting point for my PhD work was the invention of amino acid particles for the combinatorial synthesis of peptide libraries made by Dr Frank Breitling, Dr Ralf Bischoff and Dr Volker Stadler together with group members and colleagues at the DKFZ. The particles incorporate amino acids for peptide synthesis. If an amino acid particle is deposited and melted, the amino acids diffuse and couple to a functionalized substrate. In contrast to other methods, this particle-based approach for peptide synthesis has several important advantages. First of all, it renders the delivery of monomers to individual pixels completely independent of the coupling reaction; that means the number of coupling cycles can be reduced to one per layer. The second point is that particles can be selectively addressed with a higher resolution than the droplets. During research for my PhD thesis, I dealt with selective amino acid particle deposition on the computer chip, and finally earned my degree from the University of Heidelberg in 2006.

After receiving the "Venia Legendi" two years later, I joked: "Venia Legendi" should be translated as "I'm legend". As a matter of fact, there is a rather simple explanation for this unusually short period of my "Habilitation". I was very lucky to work with very interesting people, who were not only experts in their own special fields, but who were also not scared to solve interdisciplinary problems. I worked at the DKFZ in a very close cooperation with Heidelberg University (Chair of Computer Sciences/ Computer Engineering at the Kirchhoff-Institute for Physics). Such a scientific atmosphere facilitates efficient research. Proof-of-principle experiments on particle based peptide synthesis on a chip were successfully conducted (results published in "Science", 2007). This work triggered an avalanche of resonance in the scientific literature due to its possible applications. This method allows for the translation of whole proteomes into arrays of overlapping peptides. Such high complexity peptide arrays could be used for the development of diagnostic methods and in biomedical research, for example, to scan the humoral immune response toward a pathogen's proteome. The high complexity peptide arrays might possibly be an efficient instrument to study principles of non-covalent interactions at the nano level.

My "Habilitation" also included teaching at the Faculty of Physics and Astronomy at Heidelberg University. With regard to the preparation of lectures it turned out to be very helpful that I formerly spent two years as a school teacher.

Finally, you will easily understand why I do not want to draw a balance: In 2005, I received a certificate as a "DKFZ-Großmeister" signed by Prof. Otmar D. Wiestler, Chairman of the DKFZ Management Board, for a successful match in the center's first chess tournament. Yet, I hope that my best games are still ahead.

excursion

From Modern Medicine to a Medieval Masterpiece *by Rauf Bhat*

Bayer is a global enterprise with core competences in the fields of health care, nutrition and high-tech materials. As a part of the DKFZ Alumni program, foreign co-workers and guest scientists were offered a tour to this well-known company often recognized for its famous drug Aspirin.

We chose a chilly autumn day to visit Bayer. Though we left Heidelberg a little late, we fortunately reached the headquarters after a 3.5 hours bus ride perfectly on time. The main establishment is situated in Leverkusen, North Rhine-Westphalia, Germany. Here, at the Bayer communication center, we started into a fairly impressive day with a lot of things to learn.

The Bayer AG Holding once started as "The general partnership 'Friedr. Bayer et comp.'" on August 1, 1863, in Barmen, Wuppertal, by dye salesman Friedrich Bayer (1825-1880) and master dyer Johann Friedrich Weskott (1821-1876) to manufacture and sell synthetic dyestuffs. Now, the Bayer group consists of three major subgroups: HealthCare, Material Science and Crop Science. The present slogan "Bayer: Science For A Better Life" summarizes the group's goals, strategies and values to benefit people and to improve the quality of their lives. In 2007, Bayer employed 106,200 people and had sales of 32.4 billion Euros worldwide. To us, the Bayer HealthCare organisation was of particular interest. This group is structured in different divisions including Bayer Schering Pharma, Consumer Care, Diabetes Care and Animal Health. The Pharma division has developed many successful medicinal products in its history including Aspirin, Prontosil (the first sulfonamide), Resorchin (malaria antiinfective), Adalat (antihypertensive), CiproBay (fluorchinolone antibiotic), Levitra (for the treatment of erectile dysfunction) and finally Nexavar (multikinase inhibitor in oncology). In 2006, Bayer supplemented its pharmaceutical products by the acquisition of Schering and its legacy especially in women´s healthcare (contraceptives), specialty medicine (betaferon for the treatment of multiple sclerosis), diagnostic imaging and oncology.

Two presentations gave us further insights into the world of Bayer Schering Pharma: Dr Franz-Josef Wingen introduced us to the field of drug discovery, whereas Dr Urban Scheuring provided us with a summary of the Nexavar development, particularly for the treatment of renal cell and hepatocellular cancer, as well as an overview of the oncology pipeline. After these informative

Alumni Club Heidelberg

On May 5, 2009, the Alumni Club will meet in the Communication Center (K1/K2) of the DKFZ at 19.00 h. After an introduction to recent developments at the Center by the Scientific Director of the DKFZ, Professor Otmar D. Wiestler, there will be a guided tour through new laboratories in the reconstructed main buiilding of the Center. Afterwards the participants are welcome to have a chat with food and drinks nearby. All Alumni are cordially invited to join this event. If you are interested in taking part in this get-together, please, inform the Alumni Secretariat by e-mail (e.mang@dkfz.de). Participation is free of any registration fee.

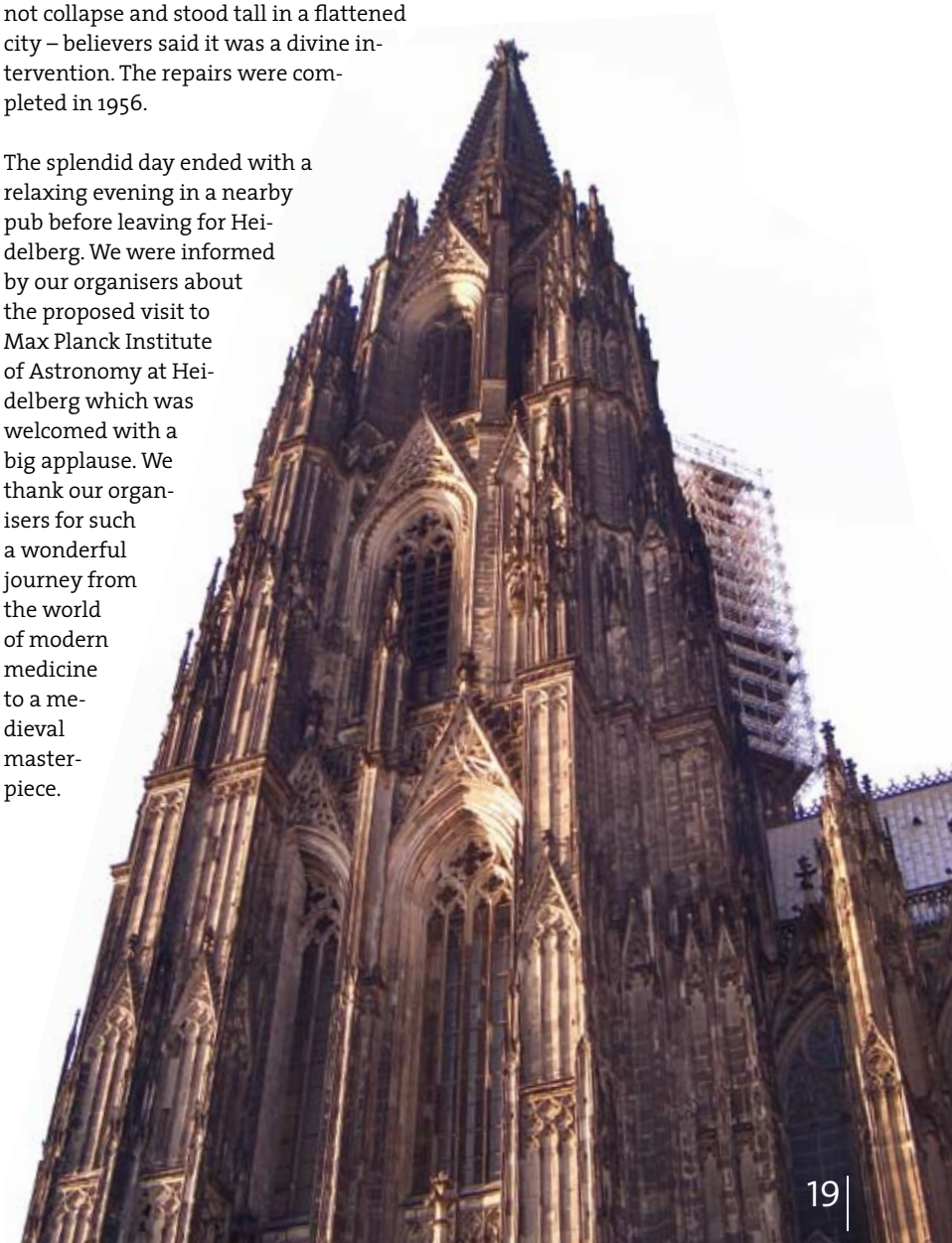
Gerhard van Kaick

talks, we enjoyed a fascinating guided multimedia tour of the Bayer museum highlighting the role of Bayer products in pharmaceuticals, crop science and material science. One of the amazing facts was that the annual production of the factor VIII substitution drug manufactured by the company (Kogenate) is a meagre 200 grams. Later in the afternoon, we left Bayer with some inspiring thoughts for the future.

The second part of our tour was the visit to the famous Cologne Cathedral ("Kölner Dom") – a renowned monument of gothic architecture. On reaching Cologne, we were delighted to see the hustle-bustle of foreign tourists, symbolising a truely multicultural metropolis of Germany. Our group lost no time in having a hasty photo session at the site. The organisers were succcesful in getting the services of two English speaking guides, well versed with the history and structure of the dome. Divided into groups, we were intricatingly led by our guides through this medieval masterpiece of faith and architecture.

There were many interesting facts to learn about the dome which is a UNESCO World Heritage site and is regarded an "exceptional work of human creative genius". Cologne Cathedral is one of the world's largest churches. During the early eighties of the 19th century it was the tallest structure in the world with the second-tallest church spires. The 24-ton Bell of St Peter ("St Petersglocke ",) is the largest free-swinging bell in the world. The construction of the gothic church began in 1248, and the building took over six centuries to be finished. The completion of Germany's largest cathedral was celebrated as a national event in 1880 attended by Emperor Wilhelm I of Germany. However, the cathedral suffered fourteen hits by aerial bombs during World War II. It did not collapse and stood tall in a flattened city – believers said it was a divine intervention. The repairs were completed in 1956.

The splendid day ended with a relaxing evening in a nearby pub before leaving for Heidelberg. We were informed by our organisers about the proposed visit to Max Planck Institute of Astronomy at Heidelberg which was welcomed with a big applause. We thank our organisers for such a wonderful journey from the world of modern medicine to a medieval masterpiece.



Dark Matter Matters

Why is the universe cold? Is it possible to catch the first light of it? And what does a "nursery for stars" look like? Organized by the Alumni Association, about 50 motivated DKFZ members set out for the Königstuhl on a misty November day to find some answers to such pivotal questions during a guided tour through the Max-Planck-Institute for Astronomy (MPIA).

Thanks to our competent guides Cassandra Fallsheer and Kelly Foyle as well as other PhD students from the MPIA, we were able to gain many insights into the origin of stellar systems, the characteristics of galaxies, and the instrumentation and techniques which are necessary for the observation of celestial bodies. The intriguing contributions compensated for the foggy weather which precluded us from any practical observation that day and from the scenic view from the top of the Königstuhl. But on our way down to Heidelberg by bus many lights from the city were glowing intensively like the stars on a clear winter day.

Only a few weeks after this visit, a new controversial theory about the formation of galaxies was published (A. Dekel et al., Nature 457, January 2009) by cosmologists from the Hebrew University of Jerusalem. Based on advanced astronomical observations and ultra-modern computer-simulations they concluded that galaxies were formed as a result of intensive cosmic flows of cold gas (among others hydrogen) and not, as assumed up to now, in the first line by galactic amalgamation.

Yet, a few questions such as "What is the reason for the cosmic dominance of dark matter?" still remained open. Who knows, maybe there will be an answer to this question next time!?

Felix Bestvater

*

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