

alumni

2011



The reconstructed main building presents itself with a friendly glass facade

Reconstruction finished

After a renovation period of 4 years, the modernized DKFZ building now presents itself with light-flooded rooms which both accommodate increased technical requirements and inspire scientific exchange and personal interaction. The new room qualities have substantially improved working conditions at DKFZ, and now there is much more communication going on among employees than before.

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Interview with John Mendelsohn

The President of the MD Anderson Cancer Center in Houston, Texas, reveals his point of view on the prerequisites for an oncological research institution to become the leading cancer center in the world. He also talks about new approaches in cancer therapy where treatment protocols are adapted to the individual characteristics of a patient's tumor.

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National Cohort

A large prospective cohort for epidemiologic research on the causes of chronic diseases in Germany is currently set up. In a nation-wide network the partners which are organized in clusters will investigate risk factors with the overarching goal to provide a sound knowledge base for improved and more targeted measures for the prevention and early detection of major diseases.

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editorial

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Dear Alumni, Colleagues, and Friends,

This Newsletter reports on major developments and events at the DKFZ since the end of 2010. Moreover, this Newsletter appears in a new layout designed by Dagmar Anders.

Stefanie Seltmann, head of the Press and Public Relations office of the DKFZ, provides an overview on the newly formed network for translational cancer research, which is coordinated in a major effort by the DKFZ and comprises a total of 8 Cancer Centers in Germany. The renovation of the DKFZ main building resulted in new laboratories and in a new building, which was opened in October 2010 by high-level politicians, scientists, and administrators. A highlight of architecture serving cancer care and cancer research was opened on the Neuenheimer Feld Campus in November 2010: The National Center for Tumor Diseases (NCT) Heidelberg is described in a brief article on page 9 of this Newsletter. Construction continues with a new facility for preclinical research and by modernization of the original Central Animal Laboratory (see page 8).

The Annual Meeting of the American Association for Cancer Research was held in April of this year in Orlando, Florida, and included the traditional reception for DKFZ Alumni, colleagues, and friends of the DKFZ. On this occasion, Otmar D. Wiestler gave an impressive overview on recent developments at the DKFZ. This included the new and expanding research fields supported at our center and the establishment of new divisions. To name a few: the cancer stem cell program headed by Andreas Trumpp and supported by the Dietmar-Hopp-Foundation, new developments in the alliance between DKFZ and the Center for Molecular Biology of Heidelberg University, changes in the Tumor Immunology program with Hans-Reimer Rodewald as the new head of the Division of Cellular Immunology, the foundation of the German-Israeli Helmholtz Research School in Cancer Biology, and several other new programs and initiatives some of which are mentioned later in this Newsletter.

As chairman of the Board of the Alumni Association, I gave a brief overview on the aims of the DKFZ Alumni Association and on recent initiatives, which are now close to being realized. This includes the support of short visits of qualified young scientists, exclusively nominated by members of the Alumni Association, to discuss a future research stay at a division of the DKFZ; a web link on the homepages of DKFZ and Alumni to short curricula of former DKFZ division heads and distinguished scientists; and the long-awaited membership directory with password-protected internet access for our members.

During the AACR meeting, John Mendelsohn, president of the MD Anderson Cancer Center in Houston, Texas, and long-term advisor to the DKFZ, agreed to give an interview recorded by Stefanie Seltmann for this Newsletter. This remarkable interview, entitled "The Secrets of Making Cancer History", provides insights into strategies, developments, and success of this largest cancer center in the world.

The program of the Alumni Association includes many activities and excursions for guest scientists successfully coordinated by Gerhard van Kaick. Recent visits briefly described in this issue included a visit to Strasbourg and to the European Parliament, and to Boehringer-Ingelheim with its impressive headquarter and insights into drug development with an emphasis on oncology. This excursion was concluded by a visit to the nearby city of Mainz and the famous Gutenberg Museum where the first printing press is shown.

We hope that this selection of topics will keep you up-to-date with ongoing activities of the DKFZ and the Alumni Association.

With best wishes from Heidelberg

Dietrich Kepler

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The Alumni Association gratefully acknowledges financial support from MerckSerono.

collaboration

Network for Translational Cancer Research

by Stefanie Seltmann

In order to transfer new findings in cancer research more swiftly into clinical practice a network of partners, including seven university hospitals and the DKFZ, is currently formed. This German Consortium for Translational Cancer Research evolved from a joint initiative by the German Ministry of Education and Research (BMBF), the German Cancer Aid (Deutsche Krebshilfe) and the German Cancer Research Center. Recently, an internationally staffed expert committee has certified highest excellence to the general concept.

“In cancer research, we have achieved crucial advances in recent years,” says Prof. Otmar D. Wiestler, Scientific Director and Chairman of the DKFZ Management Board. “Now it is time to translate these findings from the laboratory into clinical practice. The German Consortium for Translational Cancer Research will offer ideal conditions for the eight partners to do so.”

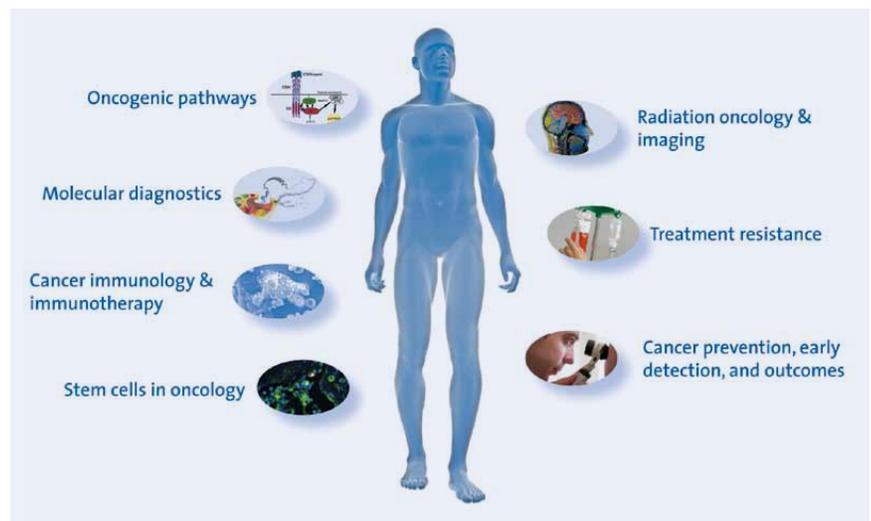
An internationally staffed expert committee already selected the partnering sites for the consortium. DKFZ will serve as core center for the consortium and contribute, jointly with Heidelberg University Hospitals, the National Center for Tumor Diseases (NCT) Heidelberg to the consortium. The selected partnering sites outside Heidelberg are:

- Charité Comprehensive Cancer Center, Universitätsmedizin Berlin
- University Cancer Center Dresden, University Hospital Carl Gustav Carus, Dresden Technical University
- West German Cancer Center, University Hospital Essen
- University Cancer Center, Johann Wolfgang Goethe University Hospital, Frankfurt, together with University Medical Center, Johannes Gutenberg University Mainz
- Ludwig Heilmeyer Tumor Center – Comprehensive Cancer Center Freiburg (CCCF), University Medical Center Freiburg
- Munich University Hospital, Munich, University Hospital of Technische Universität München
- Southwest German Tumor Center – Comprehensive Cancer Center Tübingen (CCC), University Hospital Tübingen

At each of the sites the partners and the DKFZ will establish a translation center. The research concept of the partners in the Consortium for Translational Cancer Research provides for seven translational research programs in the areas of Signaling Pathways, Molecular Diagnosis of Cancer, Tumor Immunology, Stem Cells and Cancer, Imaging and Radiation Therapy, Therapy Resistance, and Cancer Prevention and Early Detection.

The consortium will be generously funded; its annual budget will be gradually increased from 5 million Euros to approximately 30 million Euros by 2014.

Otmar D. Wiestler is looking forward to the collaboration within this network. He is convinced that the consortium will be successful: “Together with these top-class partners we will be able to achieve substantial improvements for tumor patients in numerous areas of cancer research and medicine.”



The Consortium supports seven translational research programs

In addition, five research platforms open for all partnering sites, will be established. A Clinical Communication platform will ensure uniform diagnostic standards for all patients in order to facilitate their participation in large clinical trials. Various core facilities will be available to outsource routine laboratory work according to uniform standards. Preclinical models will facilitate common access to genetically modified animals that develop specific cancers. Substance development will focus on selected areas and on collaboration with the pharmaceutical industry. Finally, the School of Oncology will provide education and training for physician scientists and medical researchers in the area of translational cancer research.

modernization

Expansion and Exchange – the New DKFZ Building

by Kerstin Hoff

What is growing needs space. If it is not possible to get more space, existing facilities should at least be optimized. This is what has been planned and implemented over the past years for the main building of DKFZ. After a renovation period of 4 years, the modernized research institute now presents itself with light-flooded rooms which both accommodate increased technical requirements and inspire scientific exchange and personal interaction.

At first, renovation plans for DKFZ's main building comprised only its technology, which, after over thirty years, urgently needed overhauling. Even though well maintained and kept in good shape, it just couldn't fulfill the growing requirements of modern laboratory work anymore. After detailed stocktaking and planning studies it became clear that the whole building and its technology needed to be renovated. The good news was that the structure

Nevertheless, it was decided to renovate the existing building in several stages – not only for cost reasons, but also for lack of an alternative building site on the Neuenheim Campus. To the total costs, the Federal government contributed 70 million Euros and the State of Baden-Württemberg provided another 7 million Euros.

First, employees working in the east part of the building moved into temporarily rented laboratory buildings in Technology Park. Meanwhile, their colleagues in the laboratories of the building's west part had to cope with all the noise and



Foyer



Main Entrance

of the weight-bearing parts and the concept of the building, which is well over 30 years old, turned out to be foresighted and flexible enough to allow a step-wise core renovation while work in the laboratories was to go on. Thus, two building stages were finally planned and carried out.

The decision to renovate while continuing work in the laboratories was surely a risky one compared to erecting a new building at a new site. After all, it was necessary to ensure safe and uninterrupted supply of highly complex technology for one half of the laboratory building, while the other half was being completely renovated. This task comprised, in particular, the critical technology supply units located in the basement. It was an enormous challenge for expert planners and DKFZ's Technical Infrastructure Division.



Laboratory

vibration of the demolition and building work that started in spring 2006 in the other half of the building. This was certainly not always easy and required a great deal of understanding, flexibility and patience of affected employees. Was it simply the busy scientists' stoic attitude or rather the miserable situation of staff in the old, small and partly dark rooms as well as the prospect of individually planned, spacious new laboratories and workplaces that kept complaints about the aggravating building work within limits? Be that as it may, in July 2008, the first building stage was completed and German Research Minister Annette Schavan came for the opening celebration.

The staff of the building's west part was the first to come to enjoy the new, state-of-the-art laboratory rooms after completion. Feedback has been very positive ever since. The bright, light-flooded laboratories have a consistent room concept with high flexibility, which supports a wide variety of working pro-

cesses and needs. The new system with only one corridor has made additional laboratory space available compared to the old two-corridor system.

A study by the Fraunhofer Institute for Work Organization (Fraunhofer IAO) in Stuttgart has shown that the new room qualities have substantially improved working conditions at DKFZ compared to the situation before renovation. There is much more communication going on among employees than before. Moreover, the east wing of the main building now fulfills all current requirements and regulations relating to laboratory safety, workplaces, fire safety, and building technology.

The subsequent renovation of building stage “West” was completed by May 2010 and the divisions and working groups which had been relocated during the four years of renovation were finally able to return to the newly organized main building. The complex moving of all scientific departments and teams first to the temporary premises and later back to the main building as well as from the building’s west wing to its east wing was a logistical challenge for everybody involved. Even though all moving processes were planned in detail and managed by experienced movers, the complete spatial reorganization required a great deal of commitment



Modernized staircase viewed from the communication center

and self-discipline of all employees. It is thanks to their excellent cooperation that moving processes were completed successfully and speedily.

DKFZ’s Management Board acted with foresight by taking the opportunity to buy the laboratory buildings in Technology Park that were used as temporary premises. Thus, space for DKFZ, whose workforce has been continuously growing over the past few years, was considerably expanded.

In October 2010, the big day had finally come: The Federal Minister of Education and Research, Prof. Annette Schavan, and Baden-Wuerttemberg’s Minister-President Stefan Mappus, were honorary guests at the opening ceremony of the renovated main building which took place with all employees. Research Minister Schavan pointed out in her speech that those who demand cancer research

and cancer medicine at the highest level have to create excellent conditions for this. The Federal government and the State of Baden-Wuerttemberg therefore jointly intended to create attractive working conditions in Heidelberg for cancer researchers from across the globe in order to “succeed in the international competition for the best brains”. Minister-President Mappus added: “The German Cancer Research Center is a beacon in Baden-Wuerttemberg’s outstanding research landscape. Every Euro is well invested here.”

What a pity, though, that the Stuttgart Fraunhofer Institute for Work Organization was not able to continue its study after completion of the second building stage when the newly introduced, spacious communication zones were established. The new central communication zones are located on each floor and comprise a meeting room, recreation area, reading corner, tea kitchen, and science lounge. These are much frequented places where people meet and communicate and have substantially improved the quality of communication possibilities across the Center.

Translation by Stefanie von Kalkkreuth



from left: Prof. Dr. J. Rüdiger Siewert, Medical Director of the Heidelberg University Hospitals, Werner Pfisterer and Stefan Mappus, Members of the Baden-Wuerttemberg Parliament, and Dr. Karl Lamers, Member of the Federal Parliament, Federal Research Minister Prof. Dr. Annette Schavan, Prof. Dr. Otmar D. Wiestler and Prof. Dr. Josef Puchta at the inauguration ceremony for the reconstructed main building.

interview

The Secrets of Making Cancer History

Prof. John Mendelsohn, President of the MD Anderson Cancer Center (MDACC) in Houston, Texas, and a long-term advisor to the DKFZ, was among the highly renowned attendants of the Annual Meeting of the American Association for Cancer Research (AACR) in Orlando, Florida, in April 2011. A couple of days after this occasion, Dr. Stefanie Seltmann, Head of Press and Public Relations of the DKFZ, had the chance to ask him about the prerequisites to become the leading cancer center in the world.

Seltmann: Dr. Mendelsohn, after 15 years being President of the prestigious MD Anderson Cancer Center: Time to take a stock: Do you remember the most impressive moment during this time?

Mendelsohn: Oh, there was not just one impressive moment, there was an impressive series of moments when everyone at MD Anderson realized that we had the capability to become the leading cancer center in the world based on the excellence of our translational and clinical research – strongly supported by basic research.

The MDACC is the largest cancer center in the world, but that is not the only remarkable issue of this institution. What makes the difference to other cancer centers? Why can you make cancer history? What is your secret?

Well, first of all, all the cancer centers are making history. Our secrets are: We're very large, we are near 1400 faculty – it's a big university. Everyone at the center is there because he or she is interested in cancer, one way or another, and we emphasize the broad spectrum. We have recruited, promoted and given tenure to people who are strong basic scientists, and to people who are strong clinicians and never go to the laboratory. That is something the DKFZ has to spend more resources on, the groups that are doing clinical science, where the experiment is being done on the patient rather than on an animal or in a test tube. The majority of the faculty at most universities that are tenured, are studying test tubes and animals rather than people. And MD Anderson believes that all of those are important.



We have organized our care around the type of cancer rather than around specialty. So there is a clinic for breast cancer where the medical, the surgical and the radiation therapy as well as the imaging and the pathology faculty meet together around the patient. And this approach, I think, produces better care, but also produces opportunities for research. And we're very active at caring for research so it's a matter of how we've organized ourselves. And fortunately, we've been able to attract bright people that are highly motivated to do research on patients with patients as participants.

Which were the most impressive research achievements at MDACC during the last 15 years?

Oh, I don't think that I can pick out the most impressive one. Every year we put 9,000 patients on therapeutic clinical trials and each year there are publica-

tions showing new approaches to the therapy of cancer. The most recent trial is the Battle-trial. In this randomized clinical study tailor-made drugs are designed to attack tumors with particular abnormalities. With the Battle-trial we were able for the first time to demonstrate that if you select such new phase I therapies for cancer patients who have specific genetic alterations, they will do better. And I think this is something that is going to change our approach towards cancer therapy in the future, namely, trying to design a therapy around what's wrong with the patient's tumor. Until recently, we couldn't do that in real-time, it took too long, but now we have demonstrated that firstly, patients would submit biopsies of tumors that have metastasized, and secondly, that within a few weeks we can



get the information from a laboratory which will allow us to select a therapy.

Harold Varmus, Director of the NCI, stated at the opening ceremony of the AACR meeting that the situation for clinical trials is critical. What did he mean by that?

Well, I was chair of a committee that published a report on that topic of clinical trials, especially the coopera-

tive group of clinical trials that involve multiple collaborating centers. The evidence we got was that many of the trials haven't been completed, and the average time to create a new trial was two years – this is very inefficient. It's unfair to the investigators running the trials, it's unfair to the patients and it's a waste of money. So we made some suggestions about how to streamline this process and how to make it more efficient. And we proposed to put in place committees that would prioritize trials. I think Dr. Varmus concurs and has made this one of his major priorities. I really hope this will happen because with present funding and with the opportunities that are so exciting we just have to do our clinical trials more efficiently.

There are these new targeted drugs where only very few patients can profit from and can be recruited for the trial. Will this change the situation for clinical trials?

Yes, it will. Drugs that target cancer genes and their products seem to be pretty effective in many cases. However, cancers can choose among probably 300 different genes. The problem is to see which genes are involved, that means which genetic alterations in particular will eventually trigger tumorigenesis. So what we need to do is to screen a lot of patients in

order to find out whether a patient's tumor shows the genetic abnormality that a new drug is targeted against. Let me give you an example: In the case of the alk-oncogene an abnormal rearrangement was detectable in about 2 or 3 percent of lung cancers. So we had to screen between 1500 and 2000 lung cancer patients to find 40 who can be part of the trial. But then the response rate was 50 percent! So what that says is that we will have to spend a lot more money upfront screening the tumors.

But that's getting better because the patients who receive this kind of medication are more likely to respond. The drug companies will have quicker answers, they will apply for FDA approval earlier, it will be less expensive to develop the new drug and finally the patients will be getting drugs that are more likely to work. So all in all, that'll be a win-win-situation for everybody.

MDACC has 22 sister institutions distributed throughout the world. In 2010 you launched the Sister Institution Network Fund (SINF) Program, and the first 3 projects to be funded are in collaboration with the DKFZ: So, does the German Cancer Research Center have a special role among the sister institutions?

Well, Otmar Wiestler and I have been very excited about this collaboration and the secret of collaboration is not to get the directors of the institutes together, but rather the scientists that do the research. So we have brought our scientists to Heidelberg and the DKFZ has sent its scientists to Houston and we've developed collaborative projects. Both sides committed to raise funds so that we could support projects which have been selected most promising in a peer review process. This is a model which we hope to do with our other sister institutions, too, and I'm pleased to say the DKFZ is one of the very first institutions that we were able to do this with.

Who will follow you as president?

We're developing a shortlist of candidates now, and I'm sure they'll find somebody excellent. I've never had a happier 15 years in my life than during the time I've been president of MDACC, but I think that's enough. And I think diversity and variety is important. I will go back and work with my colleague Gordon Mills and with my colleagues at MD Anderson on targeted therapy addressing genome abnormalities. And someone else will take the responsibilities at MDACC.

Thanks a lot Dr. Mendelsohn.

epidemiology

The National Cohort: A Major Step in Disease Prevention

by Rudolf Kaaks

A large prospective cohort for epidemiologic research on the causes of chronic diseases in Germany is currently set up. In a nation-wide network the partners will investigate risk factors with special focus on cardiovascular diseases, cancer, diabetes mellitus, and neurologic and psychiatric diseases. The overarching goal of this "National Cohort" will be to provide a sound knowledge base for improved and more targeted measures for the prevention and early detection of major diseases.

In 2007 the German Cancer Research Center and Helmholtz Research Center München (HMGU) started an initiative on chronic disease epidemiology within the Helmholtz Association. A first outline of their plans was presented in April 2008, and following a favourable review of this outline by an international expert panel, the initiative was broadened to a nation-wide network including not only Helmholtz institutes, but also a large number of universities and other non-Helmholtz public research institutions. As from 2009 onwards, these institutions jointly developed a detailed protocol for the study which in April this year was positively evaluated by an international expert panel. In parallel with the scientific protocol, the Federal Ministry of Education and Research, the German regional states and the Helmholtz Association have been developing plans for funding the study, and for its basic governance structures.

The National Cohort will include a total of 100,000 women and 100,000 men aged 20 to 69 years, to be recruited through a network of 18 study centers throughout Germany. In each research center, study participants will be invited to respond to computer-assisted personal interviews, to provide biological samples (blood, urine, saliva, nasal swabs and stool samples), and to undergo physical and medical examinations. The examinations will include anthropometric indices, a dual-energy x-ray assessment of body composition and bone density, detailed assessments of cardiovascular, cognitive and respiratory functions, measurements of physical activity



Recruitment clusters (oval areas) and study centers of the National Cohort

by accelerometry (7 days), and basic tests of physical fitness. In a subgroup of 40,000 participants a comprehensive program of whole-body magnetic resonance imaging (MRI) is also foreseen. Data and biomaterials will be stored centrally for future analyses.

The further time plan for the study includes an extension of the preparation phase till spring 2012, during which a series of feasibility studies will be conducted. As from April 2012, piloting studies will be conducted to test the final study protocol (2012), and from 2013 onwards full-scale recruitment of the cohort will start. Five years after their first recruitment, all study participants will be re-invited for a new round of examinations, so as to assess intra-individual, medium-term changes in risk factors and prospective changes in quantifiable preclinical morbidity characteristics. In addition, all study participants will be followed up for a time period of least 25 years to ascertain the future occurrence of chronic diseases, with special emphasis on cardiovascular diseases, cancer, diabetes mellitus, and neurologic and psychiatric diseases.

Over time, as numbers of cases with newly diagnosed disease will increase, it will be possible to compare risk factor data (questionnaire data, biomarker measurements, clinical measurements, genetics) between study participants who develop diseases and others, who do not. Through such comparisons, the National Cohort will allow a multitude of studies to identify basic determinants of disease risk, and pathways of disease development. This will cover areas as diverse as nutrition and metabolism, chronic psychological stress and its physiologic correlates, viral and bacterial infections, immune status, genetics and epigenetics.

Modern chronic disease epidemiology increasingly integrates information directly obtained from participants through questionnaires and interviews with the knowledge and measurement tools from clinical and biological sciences. By fostering such integration of clinical and biological sciences into public-health oriented research the establishment of the National Cohort and the corresponding network of research institutions will be a major step for prevention research in Germany, and worldwide.

project

Fighting Childhood Brain Tumors by Understanding Their Genetic Heterogeneity *by Stefan Pfister*

Brain tumors are the leading cause of cancer-related mortality and morbidity in children and have therefore become a primary research focus in recent years. Based on this fact, it was self-evident that the first pediatric project within the International Cancer Genome Consortium (ICGC), a global consortium that aims at obtaining a comprehensive understanding of genomic, transcriptomic and epigenomic changes in the 50 most clinically and socio-economically relevant tumor types worldwide, would investigate childhood brain tumors.

The PedBrain Tumor project (www.ped-braintumor.org) within the ICGC is the first German contribution to this worldwide effort to comprehensively understand the cancer genome and, based on their frequency, focuses on the two most common pediatric brain tumors, medulloblastoma and pilocytic astrocytoma. Together, the Federal Research Ministry (BMBF) and the German Cancer Aid



**International
Cancer Genome
Consortium**

(Deutsche Krebshilfe) are providing 15 million Euros of funding for this project over a five-year period. In a second call,

the same funding agencies enabled two additional German contributions to the ICGC, namely early onset prostate cancer and malignant lymphoma, which just started their work.



Initiated in 2009 by Prof. Peter Lichter from the German Cancer Research Center, who is now the coordinator of the first German ICGC project, the PedBrain Tumor Consortium involves groups from Heidelberg (DKFZ, University Hospital, and European Molecular Biology Laboratory (EMBL)), Berlin (Max-Planck Institute for Molecular Genetics), and Düsseldorf (University Hospital) covering a wide range of complementary expertise including the biology of these tumors, clinical care of children with brain tumors, neuropathology, next-generation sequencing, bioinformatics, statistics, and data storage. This diverse team of experts from different fields forms a very strong consortium and makes the involved researchers confident to not only catalogue the true genetic and bio-

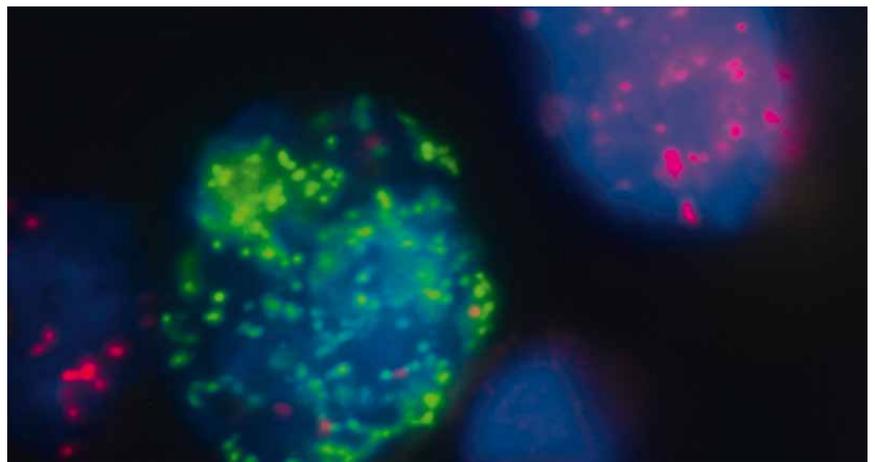
logical heterogeneity of these tumors, but also exploit this knowledge for our patients by enabling a rapid translation into clinical applications.

Based on our results, we expect to develop new targeted therapies directly attacking the signaling pathways involved in tumor initiation and progression (including metastatic spread), and to be able to stratify patients for risk adapted treatments as well as to provide markers that will predict a patient's response to a specific therapy regimen.

Overall, this extensive effort should allow us to improve cure rates for high-risk patients and to reduce toxic side-effects for standard risk patients, which are the two major factors for our patients to benefit from our research.

PD Dr. Stefan Pfister is associated with the Division of Molecular Genetics at the DKFZ and the Department of Pediatric Hematology and Oncology at the Heidelberg University Hospital. He heads the commonly run Research Group Molecular Genetics of Pediatric Brain Tumors.

Childhood brain tumors are often characterized by their genetic heterogeneity. From this fluorescence in situ hybridization (FISH) of a medulloblastoma it becomes evident that cells within the same tumor may exhibit the amplification of different genes (dyed green and pink respectively).



future plans

New Facilities for Preclinical Research

by Norma Howells and Michaela Socher

Biomedical research using animal models continues to have a significant impact on disease research, and in particular cancer research. Hence the use of these animal models in research investigations is an essential pre-requisite for obtaining meaningful results; which can be further transferred into clinical applications. The DKFZ in Heidelberg is meeting this responsibility by building the Center for Preclinical Research, and by modernization of its original Central Animal Laboratory.



The wellbeing of the animal in the planned facilities is one of the major considerations.

The planning of building the Center for Preclinical Research started 4 years ago, and in February of this year preparation of the site started. The space available for use will be 2800 m², which will be distributed over 5 floors: It will consist of animal rooms, technical laboratories, offices, service areas and a cellar, which will be refurbished and brought into use at a later date for further species. Moreover, operating theaters and Safety Level 2 procedures will be provided.

The estimated date of completion is January 2013. This will be followed by a 6 months period of technical installations. A further 3 to 6 months will be required for testing the air supply systems and introduction of the animals. This new building will be able to maintain an additional 20,000 cages; with the net cost being in the range of 14.7 million Euros. All in all, this will double the capacity for holding small laboratory animals. The requirement for additional space is reflected in the number of new scientific groups that have joined the DKFZ in the last 4 years; principally working in the field of disease and animal models.



*The new building will double the capacity for holding small laboratory animals like the african clawed frog *Xenopus laevis*.*

Throughout the planning the interest and wellbeing of the animal has been the main consideration; hence the animals will be held in a "state of the art" cage system, namely "Individual Ventilated Cage" (IVC). In addition, con-

forming to the German and European Legislation, this system is internationally recognised as being of the highest standard for holding animals. Through the individual ventilation of each cage it is possible to maintain different categories of health status within the same room. This is extremely important since various scientific groups will share the rooms. Nevertheless, areas will be specifically designated for breeding colonies, immune-compromised animals and experimental animals. Since the facility is spread over several floors a concept for work flow and hygiene is being established.



With the "Individual Ventilated Cages" (IVC) a "state of the art" cage system will be provided.

With the new Center for Preclinical Research, the DKFZ as a leading International Institution is well equipped to support scientific groups working in the field of Biomedical Research.

inauguration

A Modern Home for Comprehensive Cancer Care by Alenka Tschischka

Being actually operational since August 30th, 2010, the new building of the National Center for Tumor Diseases Heidelberg was officially inaugurated on November 2nd, 2010. After five years of intensive development, the Center now offers such a patient-friendly, communicative and appealing environment," said Prof. Christof von Kalle, Chair of the NCT Board of Directors. The new building designed by Stefan Behnisch has 5,565 m² of floor space and costs 29 millions Euros. "Both patients and staff of NCT are deeply grateful to the Deutsche Krebshilfe and the architects for this new home of the Comprehensive Cancer Center."



In fact, the new environment located on the Neuenheim Biomedical Campus is very conducive to close personal interaction between physicians, patients and scientists. Data obtained in clinical medicine is analyzed in the laboratory, permitting the near real-time monitoring of the response to therapy and its correction where necessary. Three possible laboratory floors give home to research groups in the following program areas: Clinical Research, Molecular Diagnostics, Immunotherapy, Novel Therapeutics, Integrative Radiation Oncology and Cancer Prevention, Control and Outcomes.

"The NCT's new building offers ideal conditions for translating current research results into clinical practice," said Prof. Otmar Wiestler, Chairman and Scientific Director of the DKFZ Management Board. "Its two strong partners, the German Cancer Research Center and Heidelberg University Medical School, provide the best basis for this." And Prof. J. Ruediger Siewert, Chief Medical Director of Heidelberg University Hospitals, explains: "NCT has become the entrance portal for all tumor patients in Heidelberg. In its outpatient units, chemotherapy is centralized in one place."



On NCT's clinical side, 28 outpatient clinic rooms and 60 treatment chairs are used to diagnose and treat about 7,000 new patients each year. The outpatient unit offers interdisciplinary consultation services where patients are examined by different specialty doctors. Subsequently, an interdisciplinary expert board produces a quality-assured treatment plan following highest medical and scientific standards and guided by NCT clinical pathways. "The National Center for Tumor Diseases is exemplary of the care for cancer sufferers at the highest level," acknowledges Federal Minister of Health, Dr. Philipp Roesler, during the opening ceremony. And the federal Minister of Education and Research, Prof. Annette Schavan who visited NCT two weeks earlier remarked: "As scientists discover more and more, their responsibility to translate the findings into effective new therapies grows. The NCT is a wonderful example of how translational research does best when researchers and clinicians work together under one roof."

The NCT is a joint project of the DKFZ, the Heidelberg University Medical School, the Thoraxklinik Heidelberg, and, last, but not least, the German Cancer Aid (Deutsche Krebshilfe) which has covered NCT's new building for the next ten years. "Our aim is to provide cancer patients with interdisciplinary treatment according to the latest medical and scientific findings," said Hans-Peter Kraemer, Chairman of the Board of Directors of the Deutsche Krebshilfe. To this end, the organization launched a program for the development of Oncology Centers of Excellence in 2007, whose network currently has 11 centers.

Also impressed by NCT's new building, its laboratories and the outpatient units was Baden-Wuerttemberg's Minister-President Stefan Mappus: "The NCT Heidelberg is a leading competence center accessible for everyone in Germany. Thanks to close cooperation between all fields of specialization involved in cancer care and between inpatient and outpatient care, the NCT can provide cancer sufferers with tailor-made treatment plans," Mappus summarized the Center's national and the regional impact.



Hand-over of the keys to the NCT-Board of Directors (from left): Prof. Dr. Peter Kramer, Prof. Dr. Dirk Jäger, Prof. Dr. Wolfgang Wick, Hans-Peter Krämer (Chairman of the Board of the German Cancer Aid), Gottfried Schaaf (construction supervision); Prof. Dr. Dr. Jürgen Debus, Prof. Dr. Cornelia Ulrich, Prof. Dr. Christof von Kalle, Stefan Behnisch (architect); Federal Minister of Health Dr. Philipp Rösler.

people

Awards & Special Honors

Prof. Stefan Delorme, Deputy Head of the Division of Radiology, has been elected new President of the German Society for Ultrasound in Medicine (DEGUM).

In recognition of his pioneering work in human papilloma virus research, the Mexican Colposcopy Society named their bi-annual international conference after **Prof. Lutz Gissmann**.

Dr. Sven Diederichs, Head of Helmholtz-University group Molecular RNA Biology and Cancer, is one of the 10 junior researchers who were welcomed as new members of the Young Academy at the Berlin Brandenburg Academy of Sciences and the German Academy of Natural Scientists Leopoldina.

Dr. Andreas Fischer, member of the joint Division Vascular Biology of the German Cancer Research Center and the Medical Faculty Mannheim at Heidelberg University, has been awarded the Chica and Heinz Schaller Prize. With the distinction of 100,000 Euros the correspondent foundation acknowledges the scientist's pioneering work on the significance of cellular signaling in the development of blood vessels and the origins of cardio-vascular disease.

Prof. Stefan Hell, Head of the Division Optical Nanoscopy at DKFZ and Director of the Department of NanoBiophotonics at the MPI for Biophysical Chemistry, Göttingen, was honored with the Hansen Family Prize 2011 for his pioneering work in fluorescence microscopy, which plays a key role in biology and fundamental medical research today. The 75,000 Euros award of the Bayer Foundation for Science and Education is one of the most renowned science prizes in Germany.

Dr. Stephan Herzig, Head of the Division of Molecular Metabolic Control, has been awarded the 10,000 Euro Richtzenhain Prize for his research on markers of metabolic disturbances leading to either obesity or cachexia. The two metabolic states have been proven to be closely linked with tumor diseases (also see p. 12).

Allan Jones, graduate student of the Division of Molecular Metabolic Control, received the Novartis Prize "Young Endocrinologist" from the German Society for Endocrinology (DGE) 2011. The award of 10,000 Euros acknowledges investigations on a protein important in the fat metabolism of the liver. The findings allow for a better understanding of the origins of cardio-vascular disease and diabetes.

Prof. Alwin Krämer, Head of the Clinical Co-operation Unit Molecular Haematology/Oncology, is one of two winners of the translational part of AIO Scientific Prize 2010 endowed with 15,000 Euros. Krämer's team discovered a mechanism in cancer cell division that renders the tumor cells vulnerable. This finding might be a promising approach for targeted cancer medications.

Prof. Michael Platten, Head of the Helmholtz Group Experimental Neuroimmunology at DKFZ and Deputy Head of Department of Neurooncology at the Heidelberg University Hospital, has been awarded the Heinrich Pette Prize of 10,000 Euro. He shares the award with Prof. Thomas Korn in Munich. The German Society for Neurology honors the work of Platten's group on a new therapeutic approach in multiple sclerosis.



The German Society for Medical Physics (DGMP) has awarded **Prof. Wolfgang Schlegel**, Head of the Division of Imaging and Radiology, the Glocker Medal for his lifetime merits to the research field.

The European Molecular Biology Organisation (EMBO) pronounced **Dr. Aurelio Teleman** one of 21 most talented junior researchers in Europe. Teleman, Head of the Helmholtz Junior Research Group Signal Transduction in Cancer and Metabolism, was selected for the three years EMBO Young Investigator Program and will receive 15,000 Euros in grants and numerous further education possibilities.

The Eva Luise and Horst Köhler Foundation for people with rare diseases honored a team of investigators with the Research Prize 2011. Among the awardees is **Prof. Christof von Kalle**, Head of the Division Translational Oncology at DKFZ and Director of the National Center for Tumor Diseases Heidelberg (NCT). The prize of 50,000 Euros recognizes the development of a therapy based on the gene transfer to blood stem cells. Children suffering from Wiskott-Aldrich syndrome who otherwise would have died will benefit from this treatment.

Prof. Harald zur Hausen, former Scientific Director and Chairman of the DKFZ Management Board and Nobel Laureate, was introduced into the Hall of Fame of German Research for his life's work. The virologist also accepted the Grand Papanicolaou Award of the Hellenic Medical Society of New York for his outstanding work on human papilloma viruses as the cause of cervical cancer. The magazine "The Economist" honored zur Hausen with the Bioscience Innovation Award 2010 for his contributions to biotechnology and pharmaceuticals.

Awards to Alumni

Prof. Thomas F. Baumert, Head of the Inserm Virology Unit U748 at Strasbourg University, France, has been awarded the "Laboratoire d'excellence" label for research on virus-host interactions and liver diseases. This award funded by the French research ministry includes a grant of 5.2 million Euros for ten years and 2 faculty positions. Baumert, formerly a M.D. student in the Division of Tumor Biochemistry at DKFZ, and his group discovered key host factors required for HCV infection.

people

Appointments



A new Junior Research Group titled “Immunotherapy and -prevention” headed by PD Dr. Dr. **Angelika Riemer** has been set up. She plans to develop a vaccine for already existing infections with human papilloma viruses type 16. Dr. Manfred Lautenschläger, founder of the company MLP and longtime supporter of the DKFZ, is providing one million Euros over four years for the establishment of the research group.

The research program Cell Biology and Tumor Biology has been complemented by the Division of Chaperones and Proteases under Prof. **Bernd Bukau**.

With two new groups DKFZ strengthens its research: One is the term-limited bridging group Cell Morphogenesis and Signal Transduction under Prof. **Michael Knop**. Secondly, the Junior Research Group Normal and Neoplastic CNS Stem Cells is headed by Dr. **Haikun Liu**.

Dr. **Josef Puchta**, Administrative-Commercial Director of the Management Board, has been appointed Honorary Professor of the Hochschule Mannheim – University of Applied Sciences. The appointment recognizes Puchta’s long-time commitment to studies and teaching as a lecturer and, in addition, of his support for the University in matters of science and science policy.

Dr. **Marc-Steffen Raab** is head of a newly established Max-Eder Junior Research Group titled “Experimental Therapies for Haematologic Malignancies”.

The Junior Research Group under Dr. **Wilfried Roth**, has been promoted to the Clinical Co-operation Unit Molecular Tumor Pathology.



Prof. **Hans-Reimer Rodewald** took over the position as Head of the Division of Cellular Immunology. Rodewald’s research concentrates on three different cell types: Firstly, thymus T-cells and their role in the development of leukaemia. Furthermore, Rodewald is interested in “positive” effects of mast cells on the immune system which have not been revealed yet. His third interest is in blood stem cells and allogeneic transplantation. His team has developed a new murine model in which donor blood stem cells can embed in the bone marrow without prior radiation thereby avoiding severe side effects.

The Junior Research Groups “Redox Regulation” and “Molecular Metabolic Control” headed by Dr. **Tobias Dick** and Dr. **Stephan Herzig**, respectively, have been promoted to divisions.



Boehringer-Ingelheim and the Printing Press

In the early morning on Friday April 1st, 2011, 53 participants – most of them PhD students and postdocs – joined the DKFZ Alumni Association on a full bus driving from the DKFZ in Heidelberg to Boehringer-Ingelheim (BI) near Mainz.

It was impressive to enter the factory grounds in Ingelheim covering three times the area of the Neuenheimer Feld. Here, the pharmaceutical company hosts 6,800 of its 42,200 employees, accommodated in tens of buildings for management, production, packaging and waste purification. The new anti-coagulation drug Pradaxa, expected to become a blockbuster, already had a building for itself!

Prof. Gerd Stehle gave us an overview on research and career perspectives at BI with its three major sites in Ingelheim, Biberach, and Vienna. After the delicious walking lunch, we had another exciting presentation by Dr. Manfred Kogel, now with BI in Vienna, who gave an overview on drug development in oncology. Both, Stehle and Kogel, were formerly scientists at the DKFZ.

Last, but not least we enjoyed a touristic visit of Mainz. At the Gutenberg Museum some of us got the opportunity to use the first printing press, invented around 1439 and we saw the

famous bible printed by Gutenberg . The city of Mainz, famous for its Roman history, its cathedral, and its carnival, is highly enjoyable for a walk.

Barbara Janssens

event

Awards, Reception, and Perspectives by Gerhard van Kaick

It turned out to be an attractive idea: the combination of an award ceremony with a reception for guest scientists linked with the invitation for Alumni of the DKFZ and senior scientists. In the beginning of December of last year, the communication center presented itself as a highly frequented venue for science at a high level, for reports and perspectives on the development of the DKFZ, and last, but not least, for the renewal of social contacts while enjoying snacks and drinks – and all of it surrounded by lively Klezmer music.



Congratulations on Florian Greten's work on the link between inflammation and tumorigenesis in gastrointestinal cancers (left: Otmar Wiestler, right: Hellmut Augustin).



Provided new insight into the development of the metabolic syndrome and cancer metabolism: Stefan Herzig (with Otmar Wiestler and Christof Niehrs).

The Emil-Salzer Prize 2010 was awarded to Prof. Florian Greten from Munich (Department of Gastroenterology of the Technical University). Returning to Munich after a 3-year research period with

Prof. Michael Karin (University of California, San Diego, USA), Greten investigated molecular and functional links between inflammation and tumorigenesis in gastrointestinal cancers. As pointed out in the laudation by Prof. Hellmut Augustin, Greten continued his highly successful research on this topic which was recently acknowledged by the publication of two important papers in *Cancer Cell* (2009 and 2010).

The winner of the Richtzenhain Prize 2010 was Dr. Stephan Herzig, Head of the Division of Molecular Metabolic Control of the DKFZ. After his PhD in Göttingen he studied the transcriptional control of glucagon and insulin gene expression. Herzig continued his scientific work on metabolism in Prof. Marc Montminy's lab at the Salk Institute San Diego, CA/USA. About 8 years ago he joined the lab of Prof. Günter Schütz at the DKFZ and most recently became a division head himself.

In his laudation, Prof. Christof Niehrs pointed out that Herzig's studies have provided new insights into the development of the metabolic syndrome and cancer-related metabolism. Thus, both awardees have made essential contributions to translational cancer research.

The following reception for the guest scientists was opened by the chairman of the

DKFZ, Prof. Otmar Wiestler, who summarized DKFZ's most important highlights over the past year. These included

- the completion of 4 years of construction work at the DKFZ main building,

- the establishment of the German Consortium for Translational Cancer Research,
- the official opening of the new building of the National Center for Tumor Diseases Heidelberg (NCT),
- the inauguration of the National Center for Radiation Research in Oncology Dresden/Heidelberg,
- the extension of the Cancer Information Service (KID) to become the National Reference Center for cancer information.

Last, but not least, Wiestler mentioned the transition in the board of the Alumni Association: The founding chairman Prof. Peter Bannasch, after 8 years of successful work, was now followed by Prof. Dietrich Keppler. In his brief overview, Keppler outlined the aims, recent initiatives, and the future plans for the Alumni Association (see also the Editorial of this Newsletter).

A new development in the Alumni Association is the integration of the guest scientist program. No doubt, for our guest-scientists the most important aspect is, that they will find a friendly and competent scientific family within their department at the DKFZ. Additionally we try to support our young friends by regular welcome meetings giving the chance to interact with other newcomers and to exchange experiences. The offered excursions for guest scientists aim at opening the view on important historical and cultural sites as well as centers for industrial research. These goals were illustrated by pictures from former excursions.

Finally, it should be mentioned that the so called "Alumni Club Heidelberg" for co-workers of the DKFZ living in and around Heidelberg, invites, at least twice a year, to meetings and visits demonstrating recent developments in cancer research at the DKFZ under various aspects.

The icing on the cake on this evening was surely the excellent music: The Klezmer trio "Emmanuel" greatly contributed to the special flair of the award ceremony and the welcome reception.

excursion

The Magic of the European Parliament and Alsatian Architecture *by Laura Nelson*

Once again the Alumni Association initiated an excursion to places of interest for DKFZ guest scientists and Alumni members. This time a busload of international scientists hit the Autobahn bound for a French town close to the south-west border of Germany: Strasbourg. It is said to be "a city that symbolizes the reconciliation of Europe after the two world wars". Bearing witness of its medieval history and at the same time providing sophisticated architecture for the European Parliament it is truly worth a visit.

Most informative and personal was a session that followed in a separate room, where a former interpreter from Latvia gave us an overview, then one of the German members, Thomas Ulmer, an MD who trained in Heidelberg, answered our groups' specific questions. This included queries about stem cell research, genetically-modified crops, and reusing medical equipment for less fortunate countries. A lot of interest was generated by this session and prompted us to really think about what the Parliament does and how it works.

Afterwards, we had free time to wander around the old town for coffee and to explore the magnificent Cathedral de Nôtre Dame (Our Lady). When in Strasbourg, you mustn't miss this masterpiece of late romanesque and gothic architecture with its rosy-hued structure, rendered almost dainty by a complicated web of pinnacles and spires, dwarfs everything around it. At 142 meters it was the tallest building in the world between 1647 and 1874. Built over the foundations of previous churches with sandstone from the Vosges Moun-

The Louise Weiss building houses the EU parliament



Our first stop was the European Union Parliament, where we all stood in awe in the glass, steel and granite oval-shaped inner courtyard of the modern Louise Weiss building. The building, lined with 18 stories of windows and placards describing each of the 27 member countries, was designed by the Architecture Studio of Paris and inspired by Roman amphitheatres. After airport-level security checks we entered the Visitors' Gallery at the top level of the massive blue and white meeting chamber that looked like something out of Star Trek. Today, we got the opportunity to attend a plenary session on postal services. Strasbourg houses the only multinational parliamentary assembly in the world, with its 736 members sitting in a hemicycle according to their political groups. There are 7 political groups ranging from the Communist-leaning GUE/NGL (European United Left–Nordic Green Left) on the far left to the EFD (Europe of Freedom and Democracy) on the far right, and any member may speak in any of the 23 official languages.



Even more information is provided on the Parliament's public website www.europarl.europa.eu which contains a world of news, activities, and details of the Members of the European Parliament (MEPs).

Less cerebral but none the less cultural was the boat tour after lunch which took us to the old town. The trip around L'Îll offered lovely views of the Museum of Modern Art, formerly a 14th century customs house, and the Museum of History. We passed the Pont de Corbeau, and had a look at the half-timbered houses of 'Le Petite France' where once people with syphilis were treated. Then, sections of the old city wall appeared, and we came across three medieval towers including Hangman's Tower. Further up we could see the University, the church of St. Paul, the EU building complex, the 18th century Château Rohan, and many other beautiful buildings.

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tains beginning in the late 12th century and continuing through the 15th century, it contains numerous stained glass windows closely tied with biblical stories and the buildings' long history. The west façade, approached from rue Mercière, contains thousands of figures including angels with bronze wings and swords, in and around the three portals and the rose window. Perhaps most famous is the 16th century astronomical clock, built by a team of mathematicians, watchmakers, architects, sculptors and painters. At the top of the hour a wooden figure of Christ comes out to chase Death, portrayed as a skeleton.

Later on, right before we made our way back home to Heidelberg, I dashed into a French bakery and bought a small bag with croissants and quiches. They were wrapped by a nice young man with beautiful amber eyes! After a day with so many lovely and exciting impressions I hope to return to Strasbourg again soon. Très jolie!

Imprint

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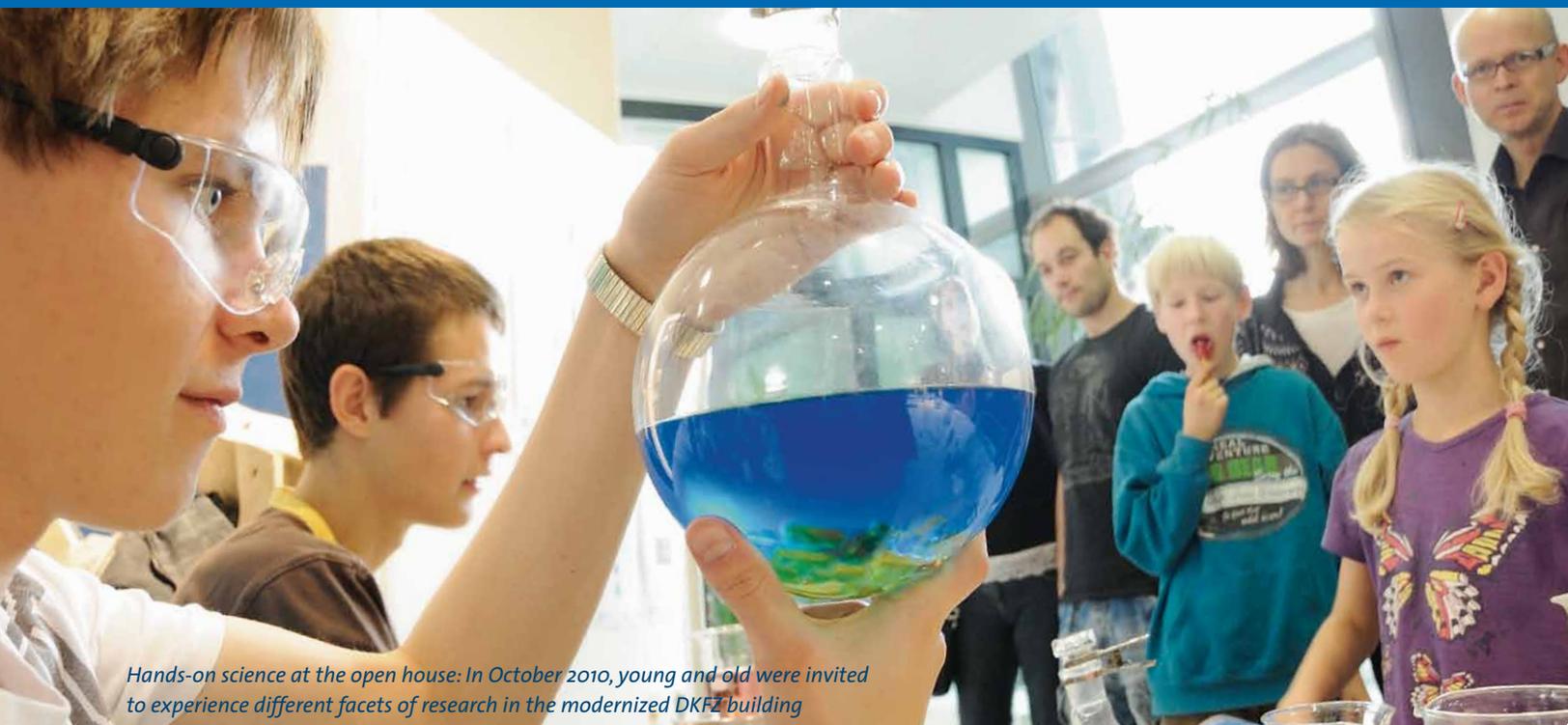
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Hands-on science at the open house: In October 2010, young and old were invited to experience different facets of research in the modernized DKFZ building

Obituaries

Dr. Dirk Bossemeyer, Head of the Division of Mechanisms of Biochemical Interactions passed away on January 20, 2011. In the early 1990s, this excellent scientist succeeded in growing protein kinase A crystals. Thereby, he was able to reveal the functional mechanism of this metabolic key enzyme at an atomic level.

In December 2010, **Prof. Wulf Dröge** who headed the Division of Immuno-Chemistry from 1978 until 2005 died at the age of 71. He was known for his innovative research with pioneering work on regulatory redox mechanisms of the immune system during aging and the development of tumor disease.

Prof. Nobuyuki Ito, former Chairman of the First Department of Pathology, Dean of the Medical School and later President of the Nagoya City University in Japan, passed away at the age of 81 in October 2010. The internationally renowned toxicologic pathologist had devoted his work to cancer prevention by identifying carcinogenic chemicals, particularly food additives. The "medium-term carcinogenesis bioassay" based on the detection of preneoplastic liver lesions, developed by Nobuyuki Ito and his co-workers, has been applied all over the world. From 1982 till 1983 Nobuyuki Ito was a guest scientist at the DKFZ, often returning as a visitor in later years.