

alumni magazine

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The "guides" on a marvellous journey through India

Travelling Foreign Countries

The Alumni New Year's Reception is on the best way to become a very successful tradition. This year's event took us on a colorful journey through India. And what a journey it was! The varied program introduced to different regions of the country by pictures and words presented by the moderators, by Indian dances and songs and by an entertaining as well as educational presentation by Alumna Dr. Dharanija Madhavan. By the way, this Alumni event is open to all colleagues, scientific and non-scientific, so don't hesitate to sign on next time.

2+3

Unravelling Causes of Liver Cancer

Liver cancer is the second most common cause for cancer related mortality. The recently established Division Chronic Inflammation and Cancer aims to better understand the pathological processes of virus infection and high calorie diet-driven liver cancer in more detail. Mathias Heikenwälder and his research team want to elucidate why in some instances inflammation might be a "good thing" while in other situations it drives the development of liver tumors. Take a chance and make familiar with the new experts at the DKFZ.

Entering New Career Paths

The initiative "Interface LifeScience" wants to give talented PhD students and postdocs the chance to look into the "black box" of careers in industry. As a pilot project a visit to Merck in Darmstadt was arranged by Alicia Torkov and Felix Geist in cooperation with DKFZ Alumni and the Career Service. Experts of Merck gave an insight on their career paths and the challenges of a position in industry. In return, three members of the DKFZ group got the chance to highlight their own research with a poster presentation. Find out how to join one of the follow-up events.

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editorial

Dear Alumni, Colleagues, and Friends,

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Front cover , p. 2-3, p. 8: DKFZ/Yan de Andres; p. 1, p4, bottom: Susanne Schunk; p. 4, top: wikipedia commons; p. 5: private; p. 6: Axel Kull; p. 7: private; p. 10, left: Bettina Denner, middle: Andreas von Deimling, right: DKFZ; p. 11, left: DKFZ/Tobias Schwerdt, middle: private, right: DKFZ/Yan de Andres; p. 12: DKFZ; p. 13: Claus Völker, Merck; p. 14: DKFZ/Uwe Anspach.

Tempus fugit! The DKFZ Alumni Association was founded in 2004 by Peter Bannasch upon suggestion by the then Chairman of the Board and Scientific Director of the DKFZ Harald zur Hausen. Since then, the strategic value of the Association for the mother institution has become increasingly evident. This has been particularly recognized over many years by the long-term DKFZ management, Scientific Director Otmar D. Wiestler and Administrative Director Josef Puchta, avid supporters of the Association. The basis for this recognition lays in the central mission of the Alumni Association, which is “to advance and promote the interests of the DKFZ by connecting alumni with each other, with current members of the DKFZ as well with the DKFZ institution, with the members of the Alumni Association acting as ambassadors and advocates on behalf of the DKFZ.”

As a broad long term vision, the Association “aims to be an organization responsible for building and engaging a globally connected network of alumni communities that support the DKFZ”. In pursuit of this vision, the Board of the Alumni Association has developed a strategic framework of activities that is constantly being adjusted to emerging new challenges in order to strengthen the ties between alumni, current members of the DKFZ, and the DKFZ institution. As an important element appears to the Board to offer membership to both former DKFZ members (Alumni in the classical sense) as well as to active DKFZ members (“prospective Alumni”) while including in this approach both academic and non-academic individuals. This approach has resulted in a strong attendance and lively atmosphere during highlight events organized by the Association, such as the 2016 New Year Reception “A journey through India” presented in a strategic alliance with the DKFZ PhD Student Council (p. 2; and receptions in previous years as well), or the Reception during the meeting of the American Association for Cancer Research (AACR) in New Orleans (p. 4) as well in a constant

strong increase of membership (p. 6). Significant activities for networking are also regional get-togethers, initiated by Lindsay Murrells (p. 4) as well as the establishment of Association chapters in Berlin by Wolfhard Semmler) and in Hangzhou/China by Tianhui Thomas Chen.

Central activities of this strategic framework intend to recognize academic, professional and other achievements of the alumni and the members of the DKFZ, and to institute suitable awards for them; to collect, publish and distribute information that may be useful to members of the Association; and to follow up on career developments of alumni. To learn more about the broad range of exciting activities of the Association, please join us for the upcoming General Alumni Meeting on June 9 to 11 (p. 9). There, you will receive information from established scientists about career development, hear the latest news about hot-topic cancer research regarding “Clinical Epigenetics” – and also meet the winners of the Alumni Association/Cancer Letters Award, the LifeScience Lab and DKFZ Alumni Associations Award and of Merck Poster Awards. Please remember: Even if you are not a member of the Association – you are very welcome (p. 3).

Finally, I wish to thank my fellow Board members for their continued input towards making a good Alumni Association even better, interacting with the Board members has been a constant source of learning and inspiration. The design of this impressive first issue of the “Alumni Magazine” (changed from “Alumni Newsletter”) has been fully in the talented hands of Dagmar Anders, great thanks also to her. Looking forward to meeting you at the Alumni Association Meeting in early June – members and non-members alike.

Hansjörg Neuhaus

israel cooperation

A Collaboration that “Comes From the Heart”

by Sibylle Kohlstädt

At a festive symposium in Tel Aviv on April 5, scientists and politicians came together to celebrate the 40th anniversary of the science cooperation agreement between the German Cancer Research Center (DKFZ) and the Israeli Research Ministry (MOST).

“I was only four years old when the DKFZ-MOST cooperation agreement was signed,” said Israel’s Research Minister Ofir Akunis, impressed by the 40 years of history of the DKFZ-MOST cancer research program. He concluded his welcome address with the words: “I am happy to see the ties between our two countries growing stronger and we are proud to have Germany as our partner.” The anniversary symposium was held immediately after the 18th DKFZ-MOST workshop where all scientists involved in the ongoing tandem projects had met at the Weizmann Institute. All workshop participants, the members of the program committee, representatives of the Israeli and the German embassy as well as the directors of several Helmholtz Centers had been invited to the festive event.

The President of the Helmholtz Association, Otmar Wiestler, commended the high scientific quality of the collaboration program: “What makes the program so unique are the rigid quality proved peer-reviewed projects and the dedicated board of advisors.” He continued: “The idea that suggested itself was



to copy this successful model and apply it to other Helmholtz research areas.”

“I myself applied several times for DKFZ-MOST funding,” said Michael Boutros, acting Scientific Director of the DKFZ, and – paying tribute to the program’s strict selection criteria – added with a twinkle in his eye: “...not always with success.” He continued that the collaboration with the MOST ranged among the most important international activities of the DKFZ.

For the lectures that followed, the two program coordinators, Hagit Schwimmer from MOST and Peter Angel from the DKFZ, had invited senior scientists who had led multiple projects funded by the collaboration program. Their presentations provided a good panoramic view of some of the major research areas funded by the program. The invited speakers were Adelheid Cerwenka, Bat Sheva Kerem, Sara Lavi, Moshe Oren and Yosef Yarden. One of the “chief players” in the German-Israeli cancer research collaboration has been Peter Krammer, who was involved in nine DKFZ-MOST projects from 1979 to 2008. In his talk, he described how, over the years, CD95 has evolved from a main driver of apoptosis into a promising target for the treatment of malignant brain cancer. Concluding the symposium, Hellmut Augustin expressed his thought shared by many of his colleagues on participating in the DKFZ-MOST program: “Nobody does it for the money. It comes from the heart.”

On the occasion of the Anniversary a brochure was edited highlighting the history and major achievements of the cooperation program. It is available on www.dkfz.de/en/israel.



DKFZ scientists visiting the old city of Jaffa

new year's reception

Yatra – a Journey through India by Juliane Hafermann

For a few years now, the Alumni Association has held an Alumni New Year's Reception, and although it is not quite a tradition yet, it is on the best way to become a very successful one. The previous two receptions were dedicated to China and Latin America, respectively, giving the international scientists and the DKFZ a chance to inform their colleagues about their home countries and culture. This year's reception took us on a journey through India.



Devina Mitra

With members from various nationalities, a wide network and good connection to the PhD students and postdocs at the DKFZ, the Student Council helped the Alumni Association to quickly identify and recruit two capable and competent organizers for the Indian-themed event: Devina Mitra, a PhD student and former member of the Student Council hailing from Kolkata in West India, and Dr. Sreejith Rajasekharan from Kerala in Southern India, deputy speaker of the



Sreejith Rajasekharan

DKFZ PostDoc Network (PDN). With the help from the DKFZ Indian community, the Alumni Association, the Student Council and the Heidelberg Indian Students Association (HISA), they put together an interesting and varied program.

The first highlight of the evening could already be admired even before entering the lecture hall: A rangoli, an Indian work

of art which arranges colourful petals of different flowers into intricate patterns on the floor, was prepared in the foyer with the help from the DKFZ Art Club. The program started with a welcome by Alumni Chairman Manfred Schwab and an introduction to the Alumni Association and its importance, followed by Prof. Josef Puchta's greeting address for the DKFZ Management Board.



The inaugural lamp lighting ceremony, an Indian ritual performed at the start of any celebration, was accompanied by a solemn song performed by Raga Deepi Ediga. As co-organizer of the reception, Sara Ciprut introduced the PhD Student Council in a short presentation, and Prof. Manfred Schwab gave an overview of the Association's activities.



Sara Ciprut

Finally, the journey through India began with the elucidation of the meaning behind the expression "Yatra": The DKFZ Art Club had designed the picture of an Indian bride in a palanquin, depicting the journey to her husband's place after marriage. This yatra is the most important travel in a woman's life; she leaves her home to see a part of the world that is completely new to her. Similar to this new bride's Yatra, the moderators Devina and Sreejith invited the audience to join the journey through India.



Dharanija Madhavan

And what a journey through India it was! We were taught about the different regions of the country by pictures and words presented by the moderators, by Indian dances and songs and by an entertaining as well as educational presentation by Dr. Dharanija Madhavan. The alumna who is meanwhile doing research at the EMBL, presented an Indian's view on the German way of life and the unforeseen challenges of integrating the chaos typi-



Sursamgam Music Club



Indian folk dance



Anisha Subramanian



by PhD students

cal for her home country into German Ordnung. To get an idea of the various different nuances of Indian culture, the audience was invited to enjoy several different dance performances: There was a Kathak dance by Anisha Subramaniam, hilarious Bollywood-style performances by the Bombay Dance Club, a Bharathnatiyam presentation by Sneha Bharandwaj, and a Punjabi folk dance rehearsed by some of DKFZ's Indian PhD students. Further, the Sursamgam



Sneha Bharandwaj

Music Club presented some traditional Indian music, and Himamshu Soni, another DKFZ PhD student, concluded the programme by singing the Indian National Anthem, which prompted the whole audience to raise from their seats.

After the performances, the guests of the reception came together in the foyer to enjoy the delicious India buffet prepared by the DKFZ canteen. All in all, the evening was a great success,



Bombay Dance Club



with more than 250 visitors, many of whom expressed their desire to visit India by themselves. After this colourful evening, we are definitely looking forward to travelling to other countries in future receptions. So, don't miss to be part of it!



National Anthem



Joining in Alumni DKFZ

A personal invitation by Susanne Schunk prompted me to join the Alumni New Year's Reception 'A journey through India'. I was under the impression that the invitation was only for current international and former DKFZ colleagues and would have never thought of joining. Therefore I was very pleased to learn that this event is open to all colleagues, scientific and non-scientific, and happily signed on. I experienced a pleasant and informative journey through the different states of India. The presenters wore traditional clothes and did an excellent job. The dancing performances were breathtaking and concluded in frenetic applause from more than 250 DKFZ colleagues and friends.

I was pleasantly surprised about the many young scientists participating in the Reception and felt that there was a good balance between all age groups and stages of scientific level. Also the warm welcome from Prof. Puchta and Prof. Schwab highlighted how international and outstanding the DKFZ is. I will definitely become a member of the Alumni Association and participate again next year.

*Sibylle Szabowski,
Member of the Works Council*

get-together

Upcoming Get-Togethers

June 21 in London, UK
June 24 in Zürich/Basel, Switzerland

Existing groups

USA

- Boston (*LinkedIn Group: DKFZ Alumni in Boston*)
- San Francisco

UK

- London
- Oxford
- Cambridge

Switzerland

- Zürich
- Basel

Germany

- Berlin

If you're interested in joining or hosting a DKFZ Alumni get-together in your city, please send an e-mail to meet-alumni@dkfz.de.

Alumni Reception at the AACR Meeting

Already for the 11th time, the DKFZ Alumni Association hosted a reception at the annual AACR conference, one of the largest meetings of cancer scientists worldwide. This year, it took place in the famous city of New Orleans.

Chairman Manfred Schwab welcomed a group of around 70 guests and reported that after an initial moment of hesitation, he now really enjoyed his duties as executive of the Alumni Association, as it is an opportunity to plan and initiate various exciting events: From the alumni "round table" meetings in European and American science capitals to the DKFZ Alumni New Year's reception, representing a different country every year. An important and particularly nice responsibility of the Alumni Association according to Schwab is to honor young scientists for outstanding achievements with the Alumni Award. He also announced the electronic alumni newsletter, which will in future report monthly on current developments.

In his following address, DKFZ Scientific Director Michael Boutros looked back on the past year, during which DKFZ scientists have again published many exciting research results. As an example he mentioned Hai-Kun Liu's findings in the field of stem cells in the brain and

NEW ORLEANS



their role in the development of cerebral tumors. Boutros also highlighted the work of Aurelio Teleman, who discovered an entirely novel metabolic pathway. He also introduced the "Children's NCT" as an outstanding future project, which will begin soon under the direction of Stefan Pfister, Olaf Witt and Andreas Kulozik. "This will mean that our big goal of individualized medicine will also be able to greatly benefit all our smaller patients", Boutros said. A very important part of the reception started right after the talks: An informal exchange and conversations between the scientists over some tasty food. Schwab was very pleased with the event and is already looking forward to next year's AACR meeting in Washington D.C.

Stefanie Seltmann

On the Trail of Dinosaurs in Berlin

This year's first "Stammtisch" of DKFZ Alumni took place in Berlin on April 13th in Germany's biggest Natural History Museum. The event was organized by Wolfhard Semmler, Chairman of the Berlin chapter of the Alumni Association. During his introduction, Dr. Patrick Ansbach from the University Hospital Charité proved how fascinating interdisciplinary crosslinks between medical and paleontological research can be. By performing CT Scans on dinosaur bones, the medical researcher and his colleagues have provided astonishing insights into the pathological structure of material several million years of age. The talk was followed by a tour through the dinosaur exhibit, the highlight of which was the skeleton of "Tristan

Otto", one of the few very well reconstructed samples of a *Tyrannosaurus Rex*. The skeleton of "Tristan" in combination with detailed explanations by the guides gave the participants a deeper understanding of how dinosaurs lived and which pathological processes may have occurred in their bodies especially in their bones.

After a short evening walk through the city center, lively conversations over dinner in the restaurant "12 Apostel" centered on newly-gained knowledge and fostered the exchange of news about the DKFZ. Participants deemed the evening a great success, and Wolfhard Semmler has already plans for next Alumni event in Berlin...

Carsten Köhler



new division

The Good and Bad Sides of Inflammation in Cancerogenesis

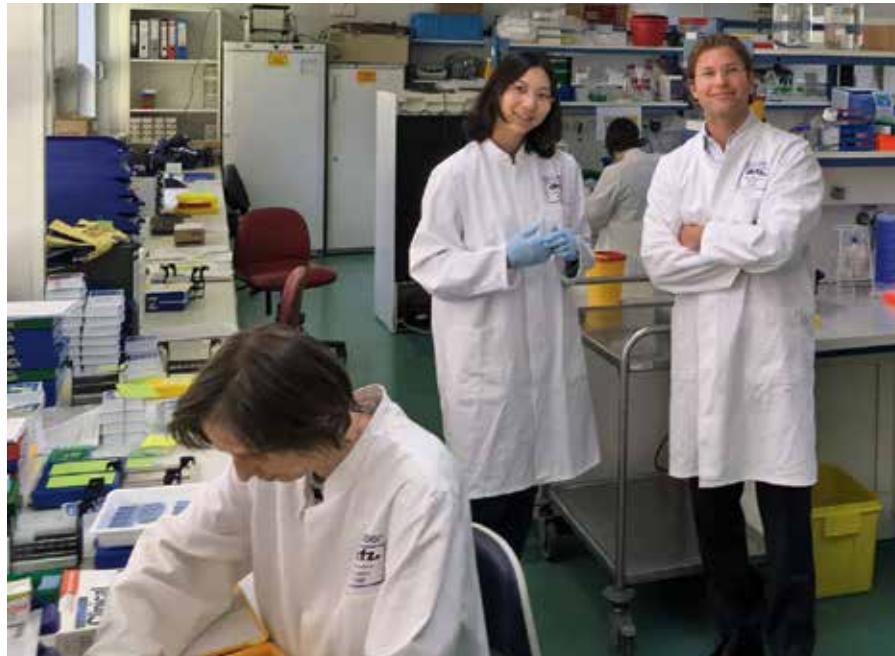
by Mathias Heikenwälder

The DKFZ has expanded its scientific expertise with the establishment of the Division Chronic Inflammation and Cancer headed by Mathias Heikenwälder. A primary focus of the new research unit is put on liver cancer, the second most common cause for cancer related mortality in humans. There are two main primary liver cancers, hepatocellular carcinoma (HCC) and cholangiocellular carcinoma (CCC), that account for more than 800.000 deaths per year world-wide.

Inflammation exists in several different flavors. Already, the time span of inflammation is a first parameter. Whereas short-lived inflammatory reactions are rather indicative of an acute, regenerative process, chronic inflammatory reactions can be deleterious causing subsequent diseases such as autoimmunity driven tissue damage or even cancer development. In the case of liver cancer development several different chronic etiologies have been identified: chronic viral infections with Hepatitis B and C virus (HBV or HCV), chronic alcohol consumption or a high calorie diet combined with insufficient movement. Yet, no effective therapy is available that could cure liver cancer patients.

The best treatment available today is a pan-tyrosine kinase inhibitor (Sorafenib) that prolongs the lifespan of late stage patients by approximately three months. At the same time we are facing a strong rise in HCC incidence we are missing appropriate therapies. Great advance has been made to eradicate some of the etiologies of liver cancer formation (e. g. efficient treatment of HCV infections), whereas other etiologies of liver cancer – such as non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) are strongly increasing in industrializing but also developing countries and will further rise in the next years. Thus, more appropriate preclinical models as well as a better immunological, genetic and molecular understanding is needed to generate new and effective therapies.

In collaboration with several research divisions at the DKFZ we aim to better



Mathias Heikenwälder believes that basic research in his lab might have the chance to be translated successfully into valuable clinical applications.

understand the pathological processes of virus infection and high calorie diet-driven liver cancer in more detail. To elucidate why in some instances inflammation might be a “good thing” and protective whereas in other situations it drives tumor development in the liver will remain a major goal of our division.

Our research team uses mouse models, human tissue specimen from patient cohorts and several different *in vitro* assays to understand molecular and cellular mechanisms driving tissue damage and cancer. It aims at deciphering the role of chronic inflammation – induced by chronic virus infections, chronic toxin consumption or high calorie diet combined with a low sedentary life style – in tissue damage, cancer development and dissemination of tumor cells.

We feel very privileged to profit from and to work in such a great, inspiring atmosphere that is vibrant, competitive and supportive. I have never experienced such a dynamic drive on one campus that engulfs basic research and clinical expertise – for the first time in my life I really believe that it is possible and not unrealistic to translate findings from basic research into clinical applications.

Mathias Heikenwälder studied Genetics and Microbiology at the University of Vienna (Max-Perutz laboratories) and performed his Diploma thesis at the Max-Delbrück Center for Molecular Medicine (MDC) Berlin-Buch. In 2001, he started his PhD thesis in the laboratory of Prof. Adriano Aguzzi at the University Hospital in Zurich USZ/ETH, graduating in 2004 with distinction. After two years as a postdoc at the Department of Clinical Pathology Heikenwälder received a Prof. Max-Cloetta award enabling him to become an independent investigator in 2007 focusing on “Chronic Inflammation and Tissue damage”. In 2009, he habilitated at the Medical Faculty of the University of Zurich on “Experimental Pathology” and one year later continued his research in a Helmholtz-Young Investigator Group at the Helmholtz-Zentrum München. At the same time Heikenwälder started as a W2 Professor at the Technische Universität München (TUM), Institute for Virology, supported by a Peter Hofsneider Professorship. In 2010, an ERC Starting Grant on “Liver Cancer Mechanisms” and in 2015 an ERC Consolidator Grant enabled him to pursue his research. Since October 2015, he heads the Division Chronic Inflammation and Cancer at the DKFZ.

Special honor

Congratulations to an Exceptional Scientist

by Friedrich Rippmann



Prof. Dr. Erich Hecker, former Head of the Institute for Biochemistry at the DKFZ, is going to celebrate his 90th birthday in July. On this occasion, the Alumni Association gratefully commemorates his achievements as a researcher and an advocate of scientific networking.

Erich Hecker studied and worked with later Nobel Prize winner Adolf Butenandt in Tübingen, and this certainly sparked his interest in highly active natural compounds, and sophisticated separation techniques – key interests which he then pursued throughout his entire career.

After stays in the US and Munich, Hecker became founding director of the Institute of Biochemistry at the DKFZ, which he ran for three decades. There he identified and studied the effect of many highly active plant ingredients, particularly tumor-promoting phorbol esters. The biochemist concisely established the world-wide acknowledged concept of initiation/promotion to

study the effect of these compounds in carcinogenesis, and established the basis for their quantitative risk assessment.

Erich Hecker was also a strong believer in world-wide collaboration, and, even well beyond his official retirement age, dedicated much effort to fostering DKFZ's collaboration with Israel.

Professor Hecker was an experimental scientist, in the best sense of the word, and when he now celebrates his 90th birthday in good health, than this may be due to the pinch of ascorbic acid (vitamine C) which he never failed to take with his afternoon cup of tea. Hope there will be many more healthy cups to come...

New Alumni Members

Lorenz Adlung, DKFZ, Heidelberg // **Dr. Marie-Astrid Albert**, DKFZ, Heidelberg // **Dr. Niko Bretz**, Boston // **Manuela Brom**, DKFZ, Heidelberg // **Jörg Bujorat**, DKFZ, Heidelberg // **Sara Ciprut**, DKFZ, Heidelberg // **Dr. Heike Dally**, Berlin // **Elena De Vita**, DKFZ, Heidelberg // **Srinidhi Desikan**, DKFZ, Heidelberg // **Anna Katharina Dieckmann**, DKFZ, Heidelberg // **Aset Duman**, DKFZ, Heidelberg // **Nese Erdem**, DKFZ, Heidelberg // **Christian Faltus**, DKFZ, Heidelberg // **Julia Fröse**, Cambridge, MA // **Minakshi Gandhi**, DKFZ, Heidelberg // **Dr. Magalie Géraldy**, DKFZ, Heidelberg // **Dr. Klara Gießler**, DKFZ, Heidelberg // **Florian Grünschläger**, DKFZ, Heidelberg // **Lei Gu**, Boston // **Eva Gundel**, DKFZ, Heidelberg // **Dr. Eva Gutierrez**, Cambridge, MA // **Dr. Tim Heinemann**, Cambridge, MA // **Dr. Stephanie Hoppe**, DKFZ, Heidelberg // **Dr. Volker Hovestadt**, Boston // **Zhivika Hristova**, DKFZ, Heidelberg // **Laura Hüser**, DKFZ, Heidelberg // **Dr. Nao Iwamoto**, Heidelberg // **Dr. Daniel Klimmeck**, Heidelberg // **Dr. Lutz Langbein**, Frankenthal // **Jin-Ho Lee**, DKFZ, Heidelberg // **Dr. Frauke Leitner**, Heidelberg // **Stefano Malvestiti**, DKFZ, Heidelberg // **Anja Marscher**, DKFZ, Heidelberg // **Jessica Matthias**, DKFZ, Heidelberg // **Dr. Aliyu Muhammad**, Zaria, Nigeria // **Dr. Katharina Müller-Ott**, Little Chesterford, UK // **Dr. Felix Oppel**, Boston // **Antonino Pane**, DKFZ, Heidelberg // **Dr. Boryan Petrova**, Cambridge, MA // **Georgios Pougialis**, DKFZ, Heidelberg // **Dr. Ria Pradhan**, Zaltbommel, NL // **Dr. Stefan Pusch**, DKFZ, Heidelberg // **Venkatesh Rao**, Freiburg // **Anke Retzmann**, DKFZ, Heidelberg // **Dr. Michael Rogers**, DKFZ, Heidelberg // **Ahmed Sadik**, DKFZ, Heidelberg // **Dr. Larissa Savelyeva**, DKFZ, Heidelberg // **Lisa Schardt**, DKFZ, Heidelberg // **Dr. Esther Schmidt**, DKFZ, Heidelberg // **Dr. Franziska Schmidt**, DKFZ, Heidelberg // **Dr. Joao Seco**, Boston // **Himanshu Soni**, DKFZ, Heidelberg // **Jorge Soza Ried**, London // **Sofia Stahl**, DKFZ, Heidelberg // **Dr. Yuliya Sytnikova**, Boston // **Aysenur Torun Yazici**, Newark // **Dr. Katalin Tóth**, DKFZ, Heidelberg // **Gianna Triller**, DKFZ, Heidelberg // **Dr. Foivos Tsokanos**, DKFZ, Heidelberg // **Dr. Zhe Zhu**, Cleveland // **Dr. Frederick Ziebel**, DKFZ, Heidelberg //

lifetime achievement

From Minor Histocompatibility Antigens to Immunotherapy

by Hans-Georg Rammensee

At the age of 20, I was called up for civil service at the University Hospital in Tübingen, in the Department of Radiooncology. I worked at the ward with cancer patients as a helping hand for the nurses, first during day time and later on night shift. What I saw and experienced at the ward had a strong effect on me. Indeed, several of the patients died in my presence, which was especially hard when I was alone on night shift. These experiences motivated me to consider my future as a scientist in cancer research, but not as a physician, since the hospital doctors obviously were unable at that time to treat the patients successfully.

During my studies of biology, I learned about immunology, and was very impressed by the brand new Nature paper published by Zinkernagel and Doherty on MHC restriction of T cells. I had the gut feeling that such T cells that are capable of recognizing and killing virus infected cells might also somehow be able to recog-

nize cancer cells, and thus decided to specialize in immunology. The Director of the Department of Immunogenetics at the Max-Planck-Institute for Biology, Prof. Jan Klein, accepted me for a diploma and later doctoral thesis, and I was very grateful when he set me to work on minor H antigens because I suspected that these strange, ill-characterised T cell antigens that gave only weak responses might actually have common

presented peptides from all sources of antigens, including viral and tumor antigens. Indeed, at approximately the same time, Thierry Boon (1991) discovered that human tumor antigens are HLA presented peptides. Since then, our algorithms to predict and identify HLA ligands are commonly used also for tumor antigens, including the now very fashionable mutated ones. The recent revolution in

cancer immunotherapy by checkpoint inhibition is based on the unleashing of T cell responses against such HLA presented tumor antigen

ARTICLES

Allele-specific motifs revealed by sequencing of self-peptides eluted from MHC molecules

Kirsten Falk, Olaf Rötzschke, Stefan Stevanović*, Günther Jung* & Hans-Georg Rammensee†

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Nature, 1991 May 23;351(6324):290-6.

features with tumor antigens. This, surprisingly in hindsight, turned out to be true, and many years later we were able to show that minor H antigens are peptides presented by MHC molecules.

In an extension of this work we discovered the rules on selection of MHC

peptides. Thus, together with my team (see picture), I am pleased to have been able over the years to contribute a bit to this field, and looking back I am still surprised at the foresight of the young student at that time. And the motivation to fight cancer by science is still going on.

The team responsible for the discovery paper on MHC motifs, published 1991 in "Nature", at a meeting 20 years later in Tübingen. (from left):
Kirsten Falk, Olaf Rötzschke, Stefan Stevanović, Günther Jung, Hans-Georg Rammensee



alumni affairs

Membership in a Nutshell

by Dagmar Anders



Dr. Dharanija Madhavan belongs to the international scientists that have joined the DKFZ family for their graduate studies. She successfully completed her thesis in 2013 and came back to Heidelberg in January 2015 to pursue her career at the European Molecular Laboratory (EMBL) in the group of Christopher Merten. It's not long since the ambitious researcher from India has become a member of the Alumni Association to keep up with the latest news from the center and to maintain close contacts with her former colleagues. The Alumni Board invited her to state her point of view on the Association's development and to suggest further ideas for its promotion.

Dr Madhavan, how did you first become involved with the DKFZ?

My journey to the DKFZ began when I applied – fortunately with success – for the Helmholtz International Graduate School stipend for my PhD in 2010. I joined the lab of Prof. Barbara Burwinkel in the Division of Molecular Epidemiology.

What have you been doing over the years since you first came into contact with the DKFZ?

During my time at the DKFZ I was also involved in many student activities and various bodies, such as the PhD Student Council, Welcome Team, and Retreat Team. I successfully defended my thesis in July 2013. After graduating I took a break, and used this opportunity to travel for six months. Since January 2015, I have been working as a post-doctoral fellow at the EMBL, Heidelberg, on an EIPOD fellowship.

What made you become a member of the Alumni Association?

My main motivation to join the Alumni Association was that I assumed it would serve as a platform to maintain contact with my alma mater, and stay in touch with my ex-colleagues.

What do you like about the Alumni Association already and what are you looking forward to in the future?

The Alumni Association has been active in conducting varied events like publishing a newsletter that keeps us abreast of current events, conferences etc., and is also involved in the organization of get-togethers for alumni during meetings in different cities. These actions provide a chance to meet old friends and make new contacts, and overall serve as an excellent platform for forging close ties between the alumni and also with current members of the DKFZ. I believe that I can immensely benefit from these events and the alumni association because as a scientist in an early phase of the career these networking opportunities will surely be very useful.

What additional benefits should the Alumni Association provide to its members?

I am aware that a new platform, DKFZ connect, will be launched soon, and I hope that this can be used as a tool for a strong mentorship program, wherein alumni with experience can guide and advise young students at the DKFZ or other alumni with scientific or career related questions.

What can Alumni members do who want to get more involved into the Association's activities?

I would highly encourage Alumni members to actively participate in the events organized by the Association if time permits, and definitely become more involved at the DKFZ connect platform.

How do you rate the achievements of the Alumni Association in the past and what do you suggest for the future?

The Association has carried out an excellent job so far, and I trust they will keep up their enthusiasm and spirit in the future. In this online world I think we should try and get as many members enrolled in the online Alumni network to strengthen our connections and relations.

Dr Madhavan, thank you very much!

alumni pin board

SAVE
THE DATE:
June 9 - 11,
2016

7th General Alumni Meeting

The Alumni Meeting from June 9 to 11, 2016, provides an excellent opportunity for cancer researchers and clinicians to share experiences of the past and to discuss visions for the future.

In the session Mentoring on Thursday, Adelheid Cerwenka, Susanne Weg-Remers and Hai-Kun Liu will focus on different kinds of career opportunities in the cancer field. Additionally, Christian Tidona will introduce BioMed X.

The topic of the Scientific Symposium on Friday is "Clinical Epigenetics", an area that is attracting increasing attention and importance.

Attending the meeting is free of charge. Registration is still open until [May 30, 2016](#). Please, confirm your participation on

<http://alumni2016.dkfz.de/registration.aspx>

AWARD +++ POSTER PRIZE +++ AWARD +++ POSTER PRIZE +++

DKFZ Alumni/Cancer Letters Award for International Scientists

Don't miss the Award Ceremony during the Reception on Friday, June 10, starting at 16.30 h. The DKFZ Alumni/Cancer Letters Award for International Scientists endowed with 5,000 Euro will be granted for outstanding achievements in cancer research. Further, six young scientists who give an excellent presentation of their recent research findings during the poster session will be honored with poster prizes of 500 Euro each.

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Coming Soon: Alumni Monthly – the Exclusive E-mail Newsletter



Alumni Monthly brings you closer to what is currently happening at the DKFZ. It includes information on DKFZ press releases, job offers and new publications as well as news on new divisions and junior groups, deadlines for applications (PhD program, postdoc program, junior group leaders, W2/W3 professorships) and DKFZ presence at conferences (AACR, Naturejobs etc.).

Alumni Monthly will only be available via e-mail and is exclusively for Alumni members.

people

Awards



The Roland Ernst Foundation of Medical Research honored **Dr. Sebastian Bickelhaupt** (second right) and **Dr. Frederik Laun** (second left) with an Award of 5,000 Euro for their studies on the application of a special MR imaging method in diagnosing breast cancer. The two radiologists showed that advanced diffusion-weighted MR imaging can prevent women with a suspicious finding after mammography from an unnecessary invasive biopsy. The optimized MRI technique helped to classify over 90 percent of the suspicious cases correctly. The method is based on the movement of water molecules in tissues. As tumors strongly reduce the movement of these molecules, they can be distinguished from normal tissue. Of course, the results have to be confirmed over the further course of the study, and substantially larger studies are necessary before physicians can refrain from performing biopsies on the basis of MRI scans alone.

For his epidemiological studies on the efficiency of colonoscopy in early detection of bowel cancer, **Prof. Hermann Brenner**, head of the Division Clinical Epidemiology and Aging Research, was honored with the Darmkrebs-Präventionspreis 2015. The Award that comes with a prize money of 5,000 Euro is commonly launched by the German Cancer Association (Deutsche Krebsgesellschaft), the Stiftung LebensBlicke and the German Cancer Foundation (Deutsche Krebsstiftung). It is delivered in acknowledgement of research projects committed to the prevention of colon cancer.

The German Cancer Award ("Deutscher Krebspreis") in the category "Translational Research" is dedicated to **Prof. Andreas von Deimling**, head of the Clinical Cooperation Unit Neuropathology

of the DKFZ and the Heidelberg University Hospital (see picture above, middle). The distinction acknowledges his merits in continued development and integration of molecular analyses in tumor neuropathology. With the help of molecular diagnostics treatment planning for gliomas can be adjusted more precisely to the individual patient situation. The prize of 7,500 Euro is funded by the Deutsche Krebsgesellschaft and the Deutsche Krebsstiftung.

Prof. Dr. Mathias Heikenwälder (see also page 5), head of the Division Chronic Inflammation and Cancer has received an ERC Consolidator Grant of approx. two million Euro for his research into the cellular and metabolic activation of the immune response in the development of non-alcoholic fatty liver and liver tumors in humans. The young investigator is tracking down an interaction between cytotoxic T-cells and liver cells that lead to disorders of the organ. With this grant the European Research Council (ERC) wants to support young scientists on their way to consolidate their independent research and also to counteract the "brain drain". Additionally, a prestigious ERC Starting Grant comprising 1.5 million Euro for a period of five years was awarded to **Stefan Gröschel**, a medical researcher of the Division of Translational Oncology. The focus of his work is abnormally high activity of an important cancer-promoting gene. The oncogene EVI1 is a driver in a number of cancers including, in particular, acute myeloid leukemia (AML) and ovarian cancer as well as many cases of cancer of the breast, gut and lungs. The ultimate goal of Gröschel's research is to use new epigenetically active drugs to reduce EVI1's activity to a level that no longer promotes cancer.

Dr. Volker Hovestadt (picture above, right) was honored with the Helmholtz Doctoral Prize for Health Research endowed with 5,000 Euro. In addition, the award winner was granted an allowance of up to 12,000 Euro for a six-month stay at a research institute abroad. Hovestadt received the award for his PhD thesis, which he completed last year "with highest distinction" in the DKFZ Division Molecular Genetics. The bioinformatics researcher analyzed the genome of pediatric brain cancer in order to find out which alterations drive cancer growth. In medulloblastoma, the most common type of childhood brain cancer, he discovered a new epigenetic regulatory mechanism that can lead to abnormally high transcription levels of cancer-promoting genes. In February 2016, Hovestadt continued his research as a postdoc at the Broad Institute of MIT and Harvard University and Massachusetts General Hospital in the USA.

The Chica and Heinz Schaller Foundation honored **Dr. Hai-Kun Liu** for his excellent work in the field of biomedicine with a prize money of 100,000 Euro. The head of the Division Molecular Neurogenetics is investigating how stem cells develop in the adult brain, with the goal of understanding how tumors develop. His work resulted in the identification of the Tlx protein as the key molecule in brain tumor stem cells. Without Tlx tumor stem cells were unable to regenerate. The protein holds much promise for new treatment strategies for glioblastoma, the most aggressive type of brain tumor. Liu and his team also succeeded in tracking the genetic lineage of brain tumor stem cells in the living organism.

people



A great success for a young DKFZ staff member: 22-year old **Franziska Pilz** (see picture above, left) came second in the Helmholtz Apprentice Award. The jury commended her for the “significant contribution to the further development of stem cell research and for her independent, proactive and responsible work”. Pilz who is training to be a biology laboratory assistant, worked on the interaction between hematopoietic stem cells and niche cells. Together with her supervisor of a HI-STEM Junior Research Group, she managed to establish a novel cell culture system in which hematopoietic stem cells could be maintained for up to two weeks. Using the so-called “co-culture”, conditions of a living organism can be re-created – a crucial step in the study of hematopoietic stem cells.

In recognition of his excellent achievements in the field of cancer epigenomics, the Ministry of Science and Technology of Taiwan donated the 2015 Tsungming Tu Award (TTA) to **Prof. Christoph Plass**, head of the Division Epigenomics and Cancer Risk Factors. The award comes with prize money of 75,000 US dollars and is regarded as one of the most prestigious academic honors conferred to foreign scholars. The researcher's work focuses on the analysis of abnormal DNA methylation profiles in leukaemia, especially acute myeloid leukaemia and chronic lymphatic leukaemia, and in solid tumors.

For her research on the prevention of breast cancer, **Prof. Karen Steindorf** received the 2015 Claudia von Schilling Award of 20,000 Euro which she shares with Sibylle Loibl from the German Breast Group. The head of the newly established Division of Exercise, Prevention Research and Cancer is studying which type of exercise improves



cancer patients' quality of life most significantly and might possibly even increase their chances of being cured. In addition, Steindorf (see picture above, middle) is pursuing the question of how a person's individual cancer risk can be reduced most effectively by physical activity. For her preventive approaches, she collaborates closely with experts from various disciplines at the NCT. Last November, the DKFZ researcher was also honored for her work with the 2015 Quality of Life Award by the Lilly Foundation.

The Deutsche Hypothekenbank AG has awarded the Johann Georg Zimermann Prize to **Dr. Aurelio Teleman**, head of the Division Signal Transduction in Cancer and Metabolism, for his outstanding scientific achievements in cancer research. The biochemist is studying molecular signaling pathways that regulate metabolism in cells and may trigger tumor development. Teleman's goal is to find targets that may be used for treating metabolic disorders as well as cancer. As published in the journal “Nature”, he discovered that stearic acid also has signaling functions and regulates the performance of mitochondria. Teleman is now exploring the question of whether the fatty acid might also improve mitochondrial functioning in humans.



The scientific work of six young DKFZ investigators was rewarded: The 2015 Waltraud Lewenz-Preis of 7,500 Euro was conferred to **Dr. Amelie Lier** (far left) and her colleague **Dr. Dagmar Waller** (third left), both members of the Junior Research Group Experimental Hematology (DKFZ and HI-STEM). The prize acknowledges outstanding investigations in the field of either „Cancer Risk Factors and Prevention“ or “Diagnostics and Experimental Therapy“. The Walter and Christine Richtzenhain-Prize 2015 endowed with 10,000 Euro is shared by **Dr. Theresa Bunse** (second right.), Clinical Cooperation Unit Neuroimmunology and Brain Tumor Immunology at the DKFZ and the Heidelberg University Hospital, **Dr. Kshitij Srivastava** (second left), Division Vascular Oncology and Metastases, and **Dr. Volker Hovestadt** (fourth left), Division Molecular Genetics. The distinction honors the investigations of graduate students into translational cancer research. **Lukas Bunse** (far right), also member of the Clinical Cooperation Unit Neuroimmunology and Brain Tumor Immunology, received the Andreas Zimprich Award 2015 endowed with 2,500 Euro. The young investigator was honored for his excellent medical thesis on neurooncological issues. All six of them succeeded to publish their research results in remarkably high ranked journals.

Obituary

Prof. Neidhard Paweletz passed away on February 13, 2016 at the age of 80 years. In 1964, he belonged to the staff members of “the first hour” at the newly established German Cancer Center. Until his retirement in the end of 1998, Neidhard Paweletz headed the Research Group Growth and Division of the Cell at the former DKFZ Institute for Cell and Tumor Biology which was later turned into a division. For his structural investigations into cell division he gained an outstanding scientific reputation. Neidhard Paweletz is known as a pioneer in the visualization of cell structures by electron microscopy. Gratefully acknowledging his personal commitment to DKFZ issues, the Alumni Association will keep his memory in great honor.



Delighted by the generous donation: Christian Heinze (second from left) and Karolin Handschuh (left) receive the bags from members of DKFZ Asylkreis who had encouraged DKFZ staff to support refugees at Patrick Henry Village. The initiative was raised as a clear statement against xenophobia.

Last autumn, the staff of the German Cancer Research Center (DKFZ) very generously supported a donation initiative for refugees: More than 950 bags were collected filled with urgently needed in-kind gifts for children and adults, along with five moving boxes filled with sneakers: The donations were handed over to the charity "Diakonisches Werk" at its counseling center in Heidelberg's Patrick-Henry Village refugee shelter.

People donated drawing pads and colored pencils, coloring books and crayons, tea, coffee and candy, dictionaries and illustrated books, and many more. This donation initiative had been launched by a spontaneously founded group called "DKFZ Asylkreis" whose members wanted to make a clear statement against xenophobia. "We are an international research center with people from more than 50 countries. Therefore, we wanted to explicitly say 'welcome' to the people in the refugee accommodations," said Josephine Bageritz of DKFZ Asylkreis.

Christian Breunig, who established the contact with Patrick Henry Village (PHV), said: "I wanted to get involved in refugee aid in Heidelberg and so I contacted Christian Heinze from Diakonisches Werk Heidelberg. He sent us a list of things that are needed." Breunig is a young scientist who – like most of the other Asylkreis members – currently works as a postdoc at the DKFZ. In the end of October 2015, the donations were handed over to the charity at Patrick Henry Village. The bags, packed in 150 moving boxes, were transported to PHV by truck and received by Chris-

tian Heinze and his colleagues. "When I first heard the number, 150 moving boxes, I was surprised and delighted but somewhat shocked at the same time, because we have very little space here," Heinze said. Helpers from DKFZ and Diakonie made a human chain to carry the boxes into the counseling rooms and piled them along the walls. One room has been completely filled up with boxes. Heinze is very pleased about this: "We have an enormous demand, with currently 4,000 people accommodated here and high fluctuation."

Diakonie staff will issue the contents from the bags to refugees at individual counseling sessions and at activities offered by volunteers such as sports and German language classes. Heinze was moved when he thanked all DKFZ employees on behalf of the two charity organizations Diakonisches Werk and Caritas Association, which are collaborating closely at PHV. "We experience a high readiness to donate in Heidelberg, not only from individuals but also from companies. But a donation of this dimension is unprecedented, this is really outstanding and new – and we are incredibly pleased about it!"

excursion

How to Enter New Career Paths

by Alica Torkov and Felix Geist

Many DKFZ Alumni have already taken the step from academic research to industry and now hold leading positions in several business fields. The aim of Interface LifeScience is to enable current PhD Students to draw from that experiences, get an inside view of the daily work in industry and discover new career path options. A recent kick-off event was hosted by Merck in Darmstadt.



Two DKFZ PhD students, Alica Torkov and Felix Geist, started the initiative “Interface LifeScience” in order to give talented PhD students and postdocs of the DKFZ the chance to look into the “black box” of careers in industry. As a pilot project a visit to Merck in Darmstadt was arranged in cooperation with DKFZ Alumni and the DKFZ career service. Merck selected 3 PhD students and 12 postdocs, who had applied with a CV and a short abstract of their research. Additionally, 15 students were invited from the Ingenium Network in Darmstadt.

On May 11, the group together with Susanne Schunk for the DKFZ Alumni Association left the DKFZ heading for Darmstadt. There, the visitors were greeted warmly and taken on a tour on the Merck premises. Afterwards top-level Merck professionals from Healthcare Oncology, Healthcare Med-chem, Life Science Applied Solutions and Human Resources gave an insight on their career paths experiences and field of work in Merck’s new innovation center. The speakers pointed out that industry research is strictly target and profit orientated in comparison to academic research. Three members of the DKFZ group got the chance to present their own research with a poster to the audience, which was joined by four recruiters. In the evening all participants of the excursion took the chance to continue and intensify their dialogues with the Merck professionals at a provided finger food buffet.

All of the PhD students and postdocs performed excellently, many new contacts were made and the event “Experience Merck” was completely successful. Follow-up events were suggested from participants and Merck professionals.

If you are a late-stage PhD student or postdoc and are interested in further events organized by Interface LifeScience, please write a short mail to info@interface-lifescience.de or join our group on LinkedIn.



Imprint

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With Perseverance to Medical History

On Friday, March 11, 2016, Nobel Prize Winner Harald zur Hausen was celebrating his 80th birthday. The former Chairman and Scientific Director of the DKFZ is world-renowned as “intellectual father” of the vaccination against cervical cancer.

“We are proud to have him in our midst as a person who has written a chapter of medical history and has gained overwhelming recognition around the world,” said DKFZ Directors Michael Boutros and Josef Puchta and extended their best wishes on behalf of all DKFZ employees.

Zur Hausen was Chairman and Scientific Director of the DKFZ from 1983 to 2003. During this time he profoundly restructured the institution and introduced modern methods of science management. Under his leadership, the Center emerged as one of the world’s leading cancer research institutes. Particularly his perseverance in establishing collaborations has borne fruit: The Heidelberg University Hospital and the DKFZ eventually teamed up to establish the National Center for Tumor Diseases (NCT) Hei-

delberg. Today, zur Hausen still heads a research division at the DKFZ. His co-workers are searching for new viruses that are linked, among other diseases, with colon cancer.

After completing his doctoral thesis in 1966, a fortuitous circumstance brought Harald zur Hausen to the lab of the tumor virologists Gertrude and Werner Henle at the Children’s Hospi-

and his team eventually succeeded in detecting DNA of the papillomavirus family in cancer tissue. Thus, they had found a strong indication that these viruses play a causal role in the development of cancer.

In 1977, as a Professor of Virology at the University of Freiburg, zur Hausen and his co-workers finally achieved the crucial breakthroughs. From tissue samples

taken from cervical tumors, they isolated the DNA of the two most important cancer-causing human papilloma virus types HPV-16 and HPV-18 and were able to elucidate how HPV-infected cells turn cancerous. From then on, even the many skeptics were convinced that infection with one of the high-risk HPV types is the cause of cervical cancer. Eventually, it became possible to develop a prevent-



In honor of Prof. Harald zur Hausen (middle), the DKFZ organized a Scientific Birthday Symposium with renowned speakers: Prof. Svante Pääbo (second left), Director of the Max-Planck-Institute for Evolutionary Anthropology, Prof. Volker Storch (second right), COS (Centre for Organismal Studies) Heidelberg, and Prof. Reinhard Genzel (far right), Director of the Max Planck Institute for Extraterrestrial Physics. In his speech, DKFZ Director Prof. Josef Puchta (far left) emphasized the perseverance that zur Hausen showed throughout his research career.

tal of Philadelphia in the USA. There, he first got involved in a topic that was to remain with him for the rest of his life as a research scientist: the link between viral infection and cancer.

Following years of successful research work at the Universities of Würzburg and Erlangen-Nuremberg, zur Hausen

developed a preventive vaccine against the cancer-causing viruses. In 2006, vaccines against the main high-risk HPV types became available. Scientists expect that HPV vaccination will protect thousands of women each year from cervical cancer, which often takes a deadly course in many parts of the world.