Interview with Otmar D Wiestler, Chairman of DKFZ and Vice President of Healmholtz Association, DKFZ – German Cancer Research Center

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The DKFZ – German Cancer Research Center – is Germany’s largest cancer research institute with an international recognition recently coroneted with the Nobel Prize to Mr Harald zur Hausen for the HPV vaccine. What were the set of values and visions that allowed the DKEZ to have such a prominent position worldwide?

The DKFZ is an institution with a great history and critical mass. The center was first established in 1964 as a national research center. Its main mission has been to advance the basic research on cancer and on translational research on the area. As a member of the Helmholtz Association the center is publicly funded; it receives 90 percent of its funding from the federal government and 10 percent from the local state of Baden-Württemberg. Further financial sources are external funding, license revenues, and donations.The center has grown considerably over the past years. Nowadays it has a staff of more then 2500 people, allowing us to support major activities in cancer research. The DKFZ currently has seven research programs involving cell and tumor biology; a major program in genome research; cancer risk factors with preventive oncology, a crucial field for the future; tumor immunology where the institute has a long tradition in – apoptosis was discovered at the DKFZ 30 years ago by Peter Kromer; a strong program in imaging and radiooncology with oriented medical physics and a strong alliance with Siemens; a program on infection and cancer

established by my predecessor Harald Hausen that received the Nobel Price last year; last but not least, the DKFZ has a program on translational cancer research which has been integrated to a number of divisions headed by physicians that builds on a bridge between the cancer center and medical centers on campus.The center is basically active in three major areas. For a long time we have invested most of our resources into basic research, understanding basic mechanisms of cancer development since this is the driving force for all other fields of research. Secondly, with all the information that has been generated by modern technologies understanding the complex system in cells' tissues is an increasing challenge and opportunity for modeling and system biology. Therefore those are areas in which the DKFZ has invested considerably. Naturally, the final goal of every research is enhance translational research and improve people's life. The DKFZ is exploiting its research findings from to contribute for the development of new tools from diagnosis to treatment, early detection and prevention of cancer. The more we learn about the disease the more attractive and promising are the perspectives for translational research.

How efficient the DKFZ has been in promoting translational research?

The center has shown its excellence in transforming its basic research programs in breakthroughs in the cancer field as evidenced by the awarded HPV vaccine case. This is due to the institute's excellent infrastructure; its reasonable funding; and its outstanding human resources.For translational research it is crucial to develop the expertise in-house in order to identify new targets such as new reagents, antibodies and small molecules; to develop new instruments in the field of medical physics; and to exploit genome research for diagnostic purposes. However, what is particularly critical for the long term success in translational research are possible alliances with strong partners. Although the DKFZ has a reasonable size – the biggest cancer research institute in Germany – it is certainly not big enough to achieve all of its goals alone. The DKFZ needs alliances with two major kinds of partners. First it needs to partner with Cancer medical centers. This is why the institute decided five years ago to set up the first comprehensive cancer center in Germany, the National Center for Tumor Diseases in an ambitious project with our colleagues from the medical school in Heidelberg and the charity organization the German Cancer XXXXX. This center serves as an entry portal for all eight thousand cancer patients that enter the Heidelberg University Medical Center and it has two major tasks. The first one is to establish a novel quality of cancer care – a key priority for our colleagues from the Medical School. They offer medical oncology as a key discipline, which doesn't exist in other German universities; tumor boards; standard operating procedures; and better environment for clinical trials. For the DKFZ the comprehensive cancer center is an ideal platform for translating some of our research findings into the clinic arena.Secondly, it needs strong partnerships with the pharmaceutical industry. In this area the

DKFZ gave a number of important steps. First of all, it has entered in a major alliance with Siemens Healthcare in a €50 million project that started 3 years ago involving cutting-edge medical devices. Now there is a need to further move into the pharmaceutical market and have a closer relationship with the pharmaceutical industry and biotech companies.In this regards, the DKFZ started negotiations with important pharmaceutical players such as Roche and Bayer-Schering. We proposed to start a pilot project establishing a join unit where both sides contribute in order to have a continuous portfolio screening. The DKFZ has a considerable patent portfolio with interesting new findings that may provide hints for the development of new diagnostic and therapeutic tools continuously. The idea is to establish a join R&D unit, open the entire portfolio, and then jointly decide how to exploit the new discoveries and applications. There are interesting negotiations on the way. However, this kind of collaboration is not simple. The DKFZ started negotiations with Roche but they failed soon after they started. Fortunately, the DKFZ has been more successful in its negotiations with Bayer and we recently started a pilot program exploiting the idea of a joint R&D unit, scanning the whole portfolio of our cancer research center and then picking up individual projects for further development. There is great enthusiasm in both sides.

How do you portrait yourself as the partner of choice for those companies compared to other internationally known cancer research institutes?

There are a number of important aspects. Naturally, the first one is quality. The DKFZ has a long history of very positive international evaluations and we are among the top five percent cancer research centers worldwide. A center that won a Nobel Price must be at the very top.The second question regards the portfolio that certain companies have and their different interests and priorities. The DKFZ is strong on immunology but not every company has an interest to develop new products based on this field.The pharmaceutical industry is global and German companies unfortunately are not among the top players. Germany was known 40 years ago as the pharmacy of the world and now lags behind its competitors. However, this is one more good reason for us to join forces and regain the space once owned by the German pharmaceutical industry.

Why Germany has lost its position as the pharmacy of the world and it will be able to regain it?

Germany has taken a long time to develop a stable and strong relationship between its academic research institutions and pharmaceutical industry. The Americans and the Swiss have been much better in doing. In Germany, for a long time both sides hesitated to collaborate and for a long period it was unfashionable for first class researchers to cooperate with the industry. On the industry part, the Germans insisted for a long time on classical chemical drug screening when other international companies had already moved to molecular medicine and biotechnology.If you look at

the pipelines of most of innovative pharmaceutical companies worldwide they are empty. However, important research fields are still uncovered and there are huge opportunities for alliances between research oriented organizations and pharmaceutical companies. It took us too long to change the strategy of drug development and exploit better technologies. Fortunately this has changed and Germany is trying hard to catch up. The DKFZ is here to cooperate and offer innovative solutions on the field of cancer research.The DKFZ has also important international partnerships with other research institutes and development agencies.

What are the main guidelines for those partnerships and which of those would you highlight as the most important?

Cooperation with other research institutes only works when you have clear complementary interests. Naturally, close professional networks also helps to gather common interests and establish cooperation programs.As en example, DKFZ main partner in the USA is the MEN. The strength of this partnership relies on the complementary between MEN's expertise in clinical research and DKFZ's cutting-edge position on basic research.Besides, the DKFZ provides training opportunities for talents from all over the world, especially developing countries; for instance we have a big international PhD program. We have thirty years of intense partnership with Israel and an important funding program where we invest more then one million euros per year with ten to fifteen projects that link Israeli partners such as WEISSMAN institute the Hebrew University to DKFZ. We have also a French research unity the sponsored by the Institut National de la Santé et de la Recherche Médicale (INSERM) among many other cooperation programs that enhance our position worldwide and promote the international development on cancer research.Naturally, all this success wouldn't be possible if the DKFZ didn't count with the best human resources available not just in Germany but worldwide.

How do you manage to attract and retain the best talent inside the institute?

The secret is to make sure that people fell that they are part of a very strong team; that they are in a very stimulating environment; and that they fell supported in their needs. They need to believe that they are at least as good here as they would be are in some places.Our programs aim to attract the best brains at the all the levels – graduates, post-docs, senior post-docs, and senior scientists. The DKFZ does a lot to attract and support talents with sophisticated carrier development strategies. The institute has the biggest graduate school for cancer research internationally with 450 grad students. Invest in human resources is the most important reason why the DKFZ is so successful and internationally recognized as a center of excellence on cancer research.

In recent years the DKFZ has witnessed great transformations. If we look at the future, what are the main changes that you expect for the institute?

Transformation always has a number of different aspects. An important transformation that took place in the last three to four years and is bound to continue for some is the generation shift. The DKFZ recruited twenty new division heads in the last four years, fifteen junior research group leaders. Naturally, this is a golden opportunity not only to attract new talent and brains but also to establish new fields of research. The institute has invested heavily on the field of cancer stem cell research by recruiting the best brains at home and abroad. This is part of the high stem project – the German government started a national competition two years ago to establish clusters of excellence in R&D with reasonable amounts of money under Public Private Partnerships projects. Out of more then 50 applicants only five eventually made it and the DKEZ was among them. At the heart of this initiative there is a new institute that we established in the field of cancer stem cell research. There are a number of companies involved such as Merck Serono, Roche, Abbott and a many biotechs in the region.Another major project that the DKFZ has just entered is the International Cancer Genome Project. This project is an international consortium that will try to establish a complete cancer genome both in normal cells and cancer cells in patients for the 50 most prevalent cancer entities for 500 patients each, a great project similar to the human genome project and is based on some very exiting preliminary data. This will have major impacts on cancer treatment and the DKFZ is the German partner of this international consortium. The project will also involve the industry since companies will also provide diagnosis and analysis and my expectation is that by 2014 the DKFZ will offer a complete cancer genome analysis to every cancer patient entering this comprehensive cancer center.

As the head of DKFZ what is your final message to the readers of Pharmaceutical Executive worldwide?

First class academic research and first class pharmaceutical partners can do much better in terms of developing novel tools for individualized treatment and also early detection and prevention of diseases. When we did it in the past the results were rewarding. This is our way to the future and is what the world is expecting from us.

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