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National Center for Radiation Research in Oncology Dresden/Heidelberg

Federal Research Minister Annette Schavan and Research Minister of Saxony, Sabine von Schorlemer, have given the starting signal for an auspicious new research center / OncoRay Dresden teams up with HIRO in Heidelberg

The unveiling of a stele on Tuesday afternoon (September 21) marked the starting signal for the National Center for Radiation Research in Oncology Dresden/Heidelberg. Two research clusters, OncoRay in Dresden and HIRO in Heidelberg, are forming a joint research center whose infrastructure and competence are leading-edge at international level. The founding event on the campus of Dresden University Medicine was attended not only by representatives of the partner institutes but also by Germany's Minister of Education and Research, Professor Annette Schavan, the Saxon State Minister of Science and the Fine Arts, Professor Sabine von Schorlemer, as well as representatives from science and politics.

“The National Center can make an important contribution to a better cure for cancer, not least thanks to a model collaboration of excellent scientists from university and non-university research institutes,” said Research Minister Annette Schavan. “The foundation of this center is a successful example of German Unity,” Schavan continued to emphasize the relevance of this cooperation between Dresden and Heidelberg in the light of the 20th anniversary of Germany's reunification. The Saxon State Minister for Science and the Fine Arts, Professor Sabine von Schorlemer, recognized the foundation of the National Center for Radiation Research in Oncology Dresden/Heidelberg as evidence of the extraordinary performance of Dresden's research institutes and university medicine. “OncoRay

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uses its competence in radiation research for developing advanced therapy methods for cancer and thus increases the chances of cure for affected patients. It is a strong partner in Dresden's Life Sciences and among the innovation drivers in top-level research. The collaboration with colleagues in Heidelberg will make sure that this infrastructure and bundled competence in radiation research will continue to range among the world's leading group in the future," said the State Research Minister and thanked the Federal government and the institutes participating in this center for their good cooperation. Schorlemer added that the State Excellence Initiative in Saxony also contributed to paving the way for the National Center. Moreover, Professor Sabine von Schorlemer emphasized that, due to progress in medicine and demographical change, health economy has evolved into an important pillar of value creation.

"We are pleased to be awarded, jointly with our colleagues in Heidelberg, the title 'National Center for Radiation Research in Oncology'. This honors the research work that we have been pushing forward for over a decade now," said the two coordinators of the new OncoRay Center, Professor Michael Baumann and Professor Roland Sauerbrey (FZD). OncoRay is a joint project of TU Dresden, Gustav Carus Dresden University Hospitals and the Research Center FZD Dresden-Rossendorf. The main focus of the new research institute in Dresden is proton therapy.

"On the campus of Dresden University Medicine, scientists and doctors will advance the use of protons in cancer treatment close to the patient and without commercial constraints," said Professor Michael Albrecht, Medical Director of Dresden University Hospitals. The advantage of this first proton therapy facility in East Germany is that patients will soon benefit from further innovations in this young and developing therapy method. This is a major reason for the university hospitals to contribute to the several-million investment. "In order to obtain innovative results in oncology radiation research, a high level of interdisciplinary collaboration between doctors, physicists and biologists is needed. This is what we have here in Dresden," says Professor Roland Sauerbrey, Scientific Director of FZD. "A very recent proof of this has been the first successful irradiation of cells with laser-accelerated protons at our high-performance laser 'Draco' at FZD." Besides research into new types of radiation beams, researchers at OncoRay are developing, among other things,



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molecular drugs which make tumor cells more sensitive to radiotherapy. In addition, the scientists are working to develop biological imaging technologies which make treatment of tumor patients more precise and, at the same time, more individual.

Heidelberg, too, is a pioneer in radiotherapy research. “Our Heidelberg Institute for Radiation Oncology (HIRO) is an internationally outstanding research cluster in the field of radiation research in oncology,” said Professor Otmar Wiestler, Scientific Director of the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ). HIRO unites radiotherapy research at DKFZ, Heidelberg University Hospitals, the Heidelberg Ion-Beam Therapy Center (HIT) at Heidelberg University Hospitals, and the National Center for Tumor Diseases (NCT). HIT went into operation in late 2009 and is the only ion beam therapy facility in Europe which uses not only protons but also heavy ions for radiation treatment of cancer patients. The Research Center FZD was also involved in the development of this heavy ion therapy. The rotating gantry, which directs the therapy beam around the patient so that the tumor can be irradiated from all directions, is the only one of its kind in the world. Equally famous are several methods developed at DKFZ for precision radiotherapy using intensity-modulated radiation fields and molecular-biologically optimized therapy, which aims, for example, to predict treatment response of tumors by detecting molecular markers.

Parallel to the foundation of the National Center for Radiation Research in Oncology, a building project for a patient-oriented research and development platform for innovative diagnostic and radiotherapy technologies is started in Dresden. As a worldwide unique feature of this research project, the new building, which will be completed in 2013, will house not only a conventional proton accelerator but also a second device that will use lasers to accelerate the protons. Even though the new laser technology for particle acceleration involves considerably less technical effort and financial effort, researchers expect advantages from the mode of action and intensity of this method compared to current devices. In order to verify this scientifically, the new facility will make it possible to direct both conventionally and laser-accelerated particles into the same research laboratory. The new laser proton accelerator, which will be developed and set up in the medium term, will then also be used for treating patients. “This will create a high-technology platform for patient-oriented research, which is the only



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one of its kind in the world,” as Baumann and Sauerbrey are convinced. “Our two locations supplement each other in an excellent way; together we represent the whole spectrum of radiation therapy research,” said Michael Baumann and Otmar Wiestler, the initiators of the National Center for Radiation Research in Oncology Dresden/Heidelberg. “Strategic partnerships, which must also involve industry, are the only way for us to compete internationally.”

A picture for this press release is available on the Internet at:

www.dkfz.de/de/presse/pressemitteilungen/2010/images/Kollimator.jpg

Picture source: Marco Müller, DKFZ

Caption: Computer-controlled collimator (multileaf collimator)

Contacts

Heidelberg Institute for Radiation Oncology (HIRO) OncoRay – Center for Medical

c/o Deutsches Krebsforschungszentrum

Press and Public Relations

Dr. Stefanie Seltmann

Phone: +49 6221 42 2854

Fax: +49 6221 42 2968

E-mail: S.Seltmann@dkfz.de

www.dkfz.de

Radiation Research in Oncology

c/o Universitätsklinikum Carl Gustav Carus

Press Office

Holger Ostermeyer

Phone +49 351 458 41 62

Mobile: +49 162 255 08 99

Fax: +49 351 449 210 505

E-mail: pressestelle@uniklinikum-dresden.de

www.oncoray.de



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Forschungszentrum Dresden-Rossendorf e. V.

Press and Public Relations

Dr. Christine Bohnet

Phone: +49 351 260 24 50

Mobile: +49 160 96 92 88 56

Fax: +49 351 260 27 00

E-mail: c.bohnet@fzd.de

www.fzd.de

Universitätsklinikum Heidelberg

Press Office

Dr. Annette Tuffs

Phone: +49 6221 56 45 36

Fax: +49 6221 / 56 45 44

E-mail: annette.tuffs@med.uni-heidelberg.de

www.klinikum.uni-heidelberg.de