Life Science Nord

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www.life-science-nord.net

MAGAZINE FOR THE MEDTECH, BIOTECH AND PHARMA SECTOR

Surgeon online

A new online platform for exchanging views

Heading – scaling new heights

Austria is a magnet for many international companies

At the right place at the right time

MedDrop is specialized in direct drug delivery

CONTENTS

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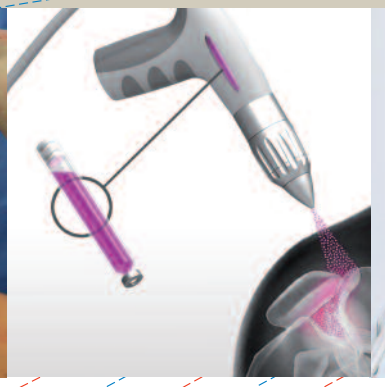

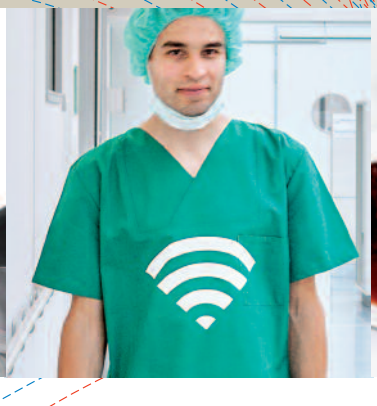

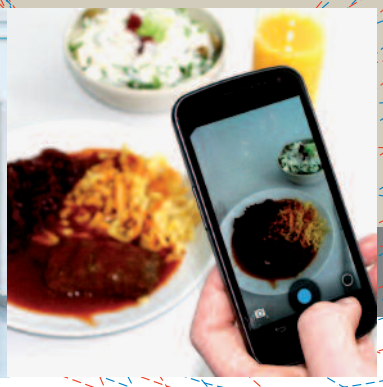

KNOW-HOW

NEWS FROM BUSINESS AND SCIENCE

SPECIAL

ONLINE COMMUNICATIONS PLATFORM

NORTH-EAST

NEWS FROM MECKLENBURG-VORPOMMERN

photo and cover photo: Stefanie Herrmann, location: University Medical Center Schleswig-Holstein

ACHIEVING MORE TOGETHER
KNOW-HOW AND CONTACTS FOR BUSINESS AND SCIENCE

Life Science Nord

BUSINESS NORTH

NEWS AND FACTS OF NORTH GERMAN COMPANIES

TALENTS

TIPS, DATES AND INFORMATION

Dear Readers, the Internet and mobile terminal devices are increasingly becoming part of everyday life for medical professionals. In our top story, we present the online communications platform SurgeryNet. Its aim is to promote the regular exchange of views among surgeons, industry and medical institutions and to combine research activities. Three players from the Life Science Nord Cluster who have been heavily involved in setting up the project explain the opportunities offered by SurgeryNet. But online exchanges are also becoming increasingly important in everyday work, and not just for research purposes. In our North-East section, you can find out how Mecklenburg-Vorpommern is successfully using telemedicine to tackle the growing shortage of specialist doctors. We also demonstrate the modern opportunities of smartphones, smartwatches or tablet PCs when it comes to treating disorders such as diabetes or obesity. But online contacts alone are not always enough. This is why the University Medical Center Hamburg-Eppendorf (UKE) and the Hamburg University of Technology (TUHH) have set up the Hamburg Medical Technology Research Center to promote collaboration in joint projects. This year, BIO-Europe, Europe's largest partnering conference, will also show in Vienna that one-to-one exchanges are virtually irreplaceable. This is reason enough to devote a country special to our neighbors, and sound out the opportunities for German life science firms in Austria. As always, you can also read our roundup of news and services from Hamburg and Schleswig-Holstein.

The team at Life Science Nord hopes that you enjoy reading this issue and find it informative.

NEW MARKETPLACE

The North German Nanomaterials Initiative Network (NINa) has been converted into a non-profit association

NINa has been networking and fostering nanotechnology in North Germany for more than eight years. To continue and extend the successful work after the dissolution of the Innovation Foundation of Schleswig-Holstein, which had supported the project, the network created a non-profit association in August at a meeting in the Faculty of Engineering of the Christian-Albrechts-Universität zu Kiel. Since 2005, North German scientific working groups and companies have regularly exchanged their latest findings and experiences on the NINa platform.

Further information: www.uni-kiel.de

INFLAMMATION IN THE BRAIN

The European Union is providing funding of 3.4 million euros to a project coordinated by the University of Lübeck to examine inflammation processes in the brain

Together with 12 research and industry partners in nine European states, Lübeck scientists will examine inflammation processes in the brain, taking strokes and multiple sclerosis as examples. The researchers are especially interested in how the inflammation reaction is regulated and what significance certain types of cells such as monocytes and microglia have for the severity of the diseases. It is intended that the insights they obtain will help bring about lasting improvements in the treatment of multiple sclerosis and strokes.

Further information: www.neuroinflammation.eu

HOPE FOR HIV/AIDS PATIENTS

Virologists at the Heinrich Pette Institute in Hamburg have for the first time managed to demonstrate the effect of Tre-recombinase, which selectively removes HIV genes from the genetic material of infected host cells, in humanized mouse models

Earlier experiments had already shown that Tre-recombinase produced genetically in the laboratory is so far the only therapy strategy that can remove HIV genetic material from infected host cells and thus reverse the infection. The current study now demonstrates that this is also possible in an infected living organism. The finding is an important prerequisite for future clinical trials aimed at curing HIV-infected persons.

Further information: www.hpi-hamburg.de

NEW COOPERATION

Best connections to Switzerland

Soventec, the software development company based in Schleswig-Holstein, will support the Swiss Center for Regenerative Medicine (SCRM) at the University of Zurich with its laboratory software Lab OS

With its Lab OS product, Soventec will install and be responsible for the GLP- and GMP-compliant documentation of biobank processes, automated integration of laboratory equipment into such processes and data management of the SCRM's sample database. The biobank (CTBB – cell and tissue biobank) contains not only pure research samples, but also those that are used in medical therapy and transplanted into the human body. The respective samples are either delivered to the institute in a frozen state or are frozen on-site. Various processes are available and have to be documented. For example, samples may be frozen in a controlled manner with a cryogenic workbench. Parameters are set by the soventec software LAB OS. The predefined standard freezing curves are also documented, as is the actual freezing curve and any incidents. All sample information is managed in Lab OS Sample DB, a storage-location-based sample database. In cooperation with soventec, the standardized processes of the SCRM's biobank, which can run automatically and must be documented electronically, were developed, defined and implemented in electronic workflows. **sm**

Further information: www.soventec.de

MARINE BIOTECHNOLOGY MASTERPLAN

More blue growth

With a final conference in Danzig, Poland, the SUBMARINER Baltic Sea Program was successfully concluded in September. In that context, the federal state of Schleswig-Holstein also presented the Marine Biotechnology Masterplan internationally

The "SUBMARINER" (Sustainable Uses of Baltic Marine Resources) network project funded by the Baltic Sea Region Program has laid the foundation for the viable development of the Baltic Sea region and identified ways in which the marine ecosystem and economic use can be harmonized. The objective of the final conference was to bring together the main players from the fields of politics, industry and research in the Baltic Sea region to discuss innovative opportunities for the sustainable use of marine resources. The SUBMARINER Compendium, a summary of innovative and sustainable ideas on how the Baltic Sea can be used, was presented along with action recommendations in the form of the SUBMARINER Roadmap. Norgenta North German Life Science Agency and the Kiel Center for Marine Substances at GEOMAR contributed significantly to both publications. In addition, the SUBMARINER Network was launched. The Ministry of Economic Affairs, Employment, Transport and Technology of Schleswig-Holstein is responsible for coordinating the two areas, "technology development and transfer" and "BSR-wide systematic approach to blue biotechnology research," to continue providing optimum support to the players in the North with regard to the sustained and innovative use of marine resources. Against this background, Schleswig-Holstein is currently discussing specific measures that are derived from the Marine Biotechnology Masterplan. In this way, regional and supraregional activities will be interlocked and should give a huge boost to marine biotechnology and its players. **sm**

Further information: www.life-science-nord.net, www.submariner-project.eu

photo: Lesprenger

HELP FOR LIVER SURGEONS

The tablet PC as assistant

A team of surgeons at the Hamburg Asklepios Clinic Barmbek has successfully used a newly developed tablet PC app in a liver operation. The application was developed by scientists from the Fraunhofer Institute for Medical Image Computing MEVIS in Bremen

Prior to an operation, surgeons currently have to memorize the precise location of important blood vessels in the organ and where exactly a tumor is located. The new app for tablet PCs could give them immediate support during operations in the future and help to lower complication rates. The app is based on an established MEVIS software program that is used worldwide to plan liver surgery. Starting with 3D X-ray images, this software reconstructs the precise location of the vessels in the liver for every patient. This enables surgeons to plan precisely how and where they should apply their scalpel to remove a tumor effectively. However, during the operation doctors have little opportunity to view the software images and compare the surgical situation with the planning data. Some surgeons print out images to take into the operating room. Using the new app, they can now have all planning data shown directly at the operating table. **sm**

Further information: www.mevis.fraunhofer.de, www.asklepios.com/barmbek

Prof. Dr. Karl Oldhafer adjusts a tablet PC to access and visualize planning data during liver surgery

photo: Fraunhofer MEVIS /Fabian Bimmer (GERMANY)

RETINITIS PIGMENTOSA

A second chance at vision

For the first time in North Germany, ophthalmologists at the University Medical Center Hamburg-Eppendorf (UKE) have implanted a new-style retina prosthesis that can restore vision to patients with a severe congenital retinal disease

The retinal prosthesis is used for patients that suffer from a hereditary eye disease in which the photoreceptors of the retina die, while the optic nerve remains intact. The vision of patients with retinitis pigmentosa deteriorates steadily and leads to complete blindness. In the operation performed at the UKE, the so-called bionic eye developed by the company Second Sight was used. This involves placing a retinal prosthesis in the eye. The implant stimulates the nerve cells in the retina to produce visual impressions in blind people again. The system transmits video images that a miniature camera captures in the patient's spectacles to electrodes that are implanted on the surface of the retina. The patients learn to interpret the visual patterns that arise and can then find their bearings again. The UKE is the first clinic in North Germany to use the Argus II implant. A further implant, the Intelligent Retinal Implant System (IRIS), is being clinically tested in the Department of Ophthalmology. This was developed mainly by Prof. Gisbert Richard and his team at the Department of Ophthalmology at the UKE. It is designed to help blind people regain some of their vision and thus significantly improve their quality of life. This implant is also used for retinal degenerative diseases for which there are currently no adequate therapies. Ten patients have so far received retinal implants in the Department of Ophthalmology at the UKE. **sm**

Further information: www.uke.de

NEW INDUSTRY GUIDE

A revised edition of LSN Yellow Pages, North Germany's who's who for the life science industry, will be available from mid-november

The industry guide will no longer be available as a print edition, but only as an online database and can be found under "Service" on the Life Science Nord website. Since it first appeared in 2009, the LSN Yellow Pages has become an indispensable guide and overview for the life science sector in North Germany. Thanks go to all cluster players that provided entries for the new edition of the database. New entries and changes to existing entries can be made at any time free of charge, simply by sending an e-mail to info@norgenta.de.

Further information: www.life-sience-nord.net

ORIGIN OF CANCER DISEASES

An international team, in which scientists from the Christian-Albrechts-Universität zu Kiel and the University Medical Center Schleswig-Holstein (UKSH) were also involved, has revealed the mechanism that brings about carcinogenic changes to the genome

The researchers have presented the first comprehensive compendium of mutation processes that lead to tumor developments. Overall, they uncovered more than 20 signatures of processes that cause changes to DNA. The underlying biological processes responsible for many of these signatures were also identified. The scientists hope to develop new approaches for a specific therapy or prevention.

Further information: www.uni-kiel.de

TRACKING DOWN PATHOGENS

The foundation stone for the new Centre for Structural Systems Biology (CSSB) has been laid at the DESY campus in Hamburg

From 2016, scientists are to focus in particular on viruses, bacteria and parasites at the molecular level in order to decipher their attack mechanisms and create customized medicines. The CSSB bridges the gap between structural biology and system biology. Biologists, chemists, medical professionals, physicists and engineers will team up to examine the interplay between pathogens and their hosts. They will be able to use the DESY light sources, which are unique in Germany and which offer ideal conditions for structural biology.

Further information: www.desy.de

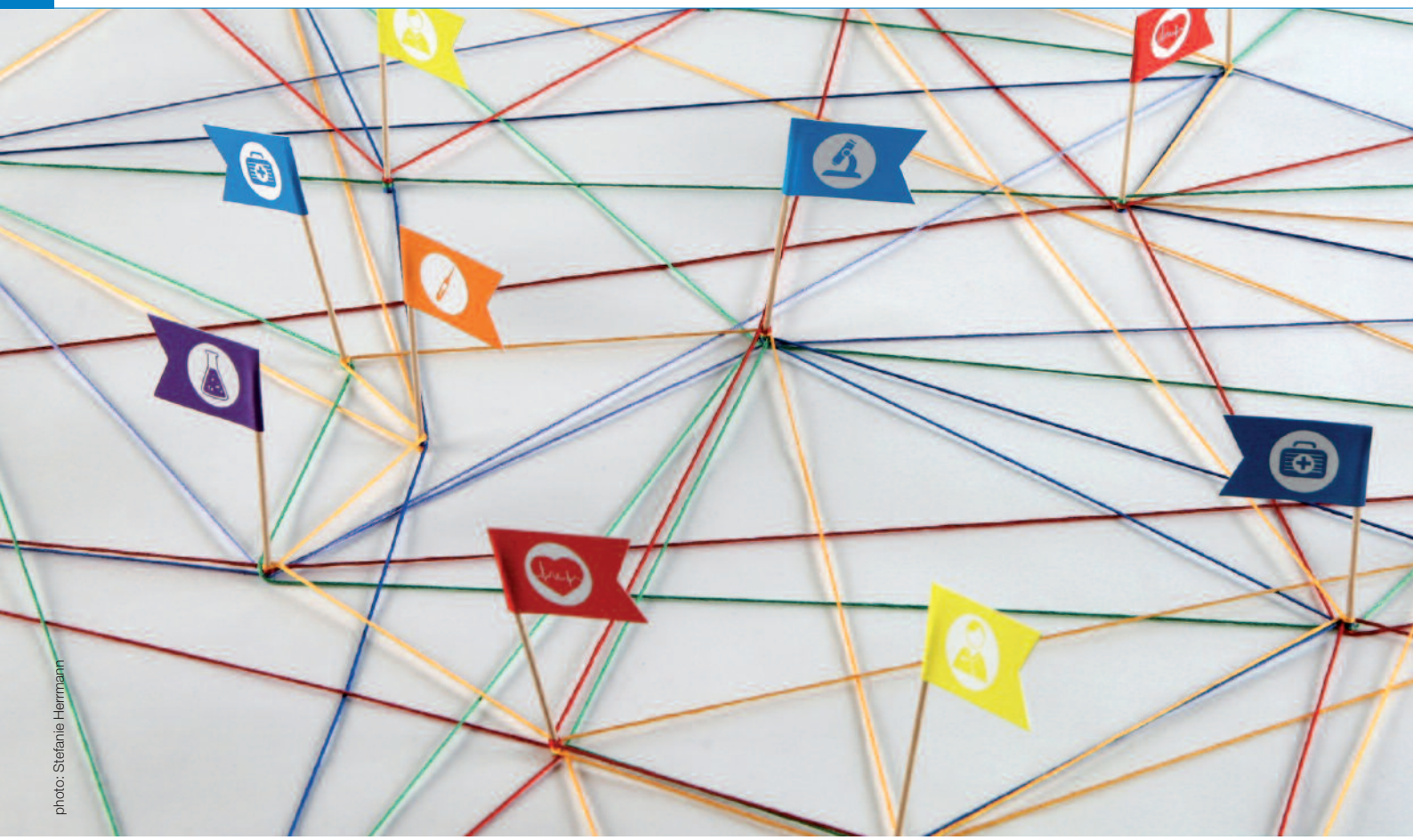

photo: Stefanie Herrmann

INTERDISCIPLINARY COLLABORATION

Working together from idea to innovation

The Hamburg Medical Technology Research Center combines the medical and engineering expertise of the University Medical Center Hamburg-Eppendorf and the Hamburg University of Technology. A strategic partnership for research, teaching and the development of young scientists

Although they are separated by several kilometers and the river Elbe, the Hamburg University of Technology (TUHH) and the University Medical Center Hamburg-Eppendorf (UKE) have long been linked by successful collaboration based on mutual trust. In May, the two institutions formed a joint virtual center of excellence and with its support have placed their scientific capacity in medical technology on a new footing. The partners are seeking even closer cooperation between research and teaching, including the creation of new interdisciplinary areas of research. There is a particular emphasis on imaging, joints, prosthetics and nanosensors – in application and basic research. Further goals include offering simplified support to young scientists, strategic partnerships with industry, a greater exchange of ideas between existing courses – and in the long term the establishment of a joint part-time course for medical technology.

"Interdisciplinary collaboration between medical professionals and engineers requires a

First round of funding completed

After the establishment of the Hamburg Medical Technology Research Center (fmthh) in May, the Board of Directors has now provided initial funding for the first two interdisciplinary projects

The ALSTER (Aneurysm Like Synthetic bodies for Testing Endovascular devices in Reality) project is concerned with the production of accurate, high-precision three-dimensional models of intracranial aneurysms. Medical care for complex cerebral aneurysm requires an extremely high degree of planning certainty. Case-specific cerebral vessel models provide an opportunity to meet this need by ex vivo testing. A problem that has been insufficiently solved in the past is the reliable replication of highly complex structures in the submillimeter range. The project's objective is to test production and materials, and prepare and optimize the production of accurate patient-specific haptic 3D models of intracranial cerebral arteries and aneurysms for further use. The head of the project at the University Medical Center Hamburg-Eppendorf is Prof. Jens Fiehler from the Department of Diagnostic and Interventional Neuroradiology. The head of the project at the Hamburg University of Technology is Prof. Dieter Krause from the Institute for Product Development and Mechanical Engineering Design.

The BioMicroSens project involves the characterization of biological cells with microwave near-field sensors. Cell characterization plays an important role in medicine, for example in the examination of tumors. In the BioMicroSens project scientists will now research a new technological approach, as the usual standard procedures such as staining techniques or impedance spectroscopy using low-frequency alternating current have some disadvantages. The aim is to clarify how impedance spectroscopy affects the cells at high frequencies in the microwave range. The head of the project at the Hamburg University of Technology is Prof. Arne Jacob from the Institute for High Frequency Technology (IHF). The project manager from the University Medical Center Hamburg-Eppendorf is Prof. Ralf Smeets from the Department of Oral and Maxillofacial Surgery.

willingness to learn a joint language. Whenever this succeeds, something new is created, which in our field improves the medical care of patients with bone and joint diseases," says Prof. Michael Amling, Director of the Department of Osteology and Biomechanics at the UKE. Together with Prof. Michael Morlock, Director of the Institute of Biomechanics at the TUHH, he is one of the founding members. In the Medical Technology Research Center, they are examining the surface replacement of the hip joint in a collaborative project. Prof. Wolfgang Krautschneider, Director of the Institute of Nanoelectronics at the TUHH and his UKE colleague Prof. Gerhard Adam, Director of the Clinic and Polyclinic for Diagnostic and Interventional Radiology, have also been represented with an interdisciplinary project from the start. The nanoelectronic treatment of aortic aneurysms lies at the heart of their research project.

At the same time, these four top scientists sit on the center's Board of Directors along with Prof. Ralf Pörtner and Prof. Gerold Schneider from the TUHH and Prof. Klaus Püschel and Prof. Udo Schumacher from the UKE. They decide jointly on the main areas of collaboration. Members of the fmthh's executive board are TUHH President Prof. Garabed Antranikian and Prof. Uwe Koch-Gromus, member of the UKE Board of Directors and Dean of the Medical Faculty. One of the main concerns of the ten-man board is to support young scientists in their research work. The TUHH and UKE will each provide 125,000 euros a year for this purpose. The initial financing by fmthh will support new collaborative projects between scientists of both institutions. Each research project must therefore be able to present at least one applicant from the UKE and TUHH.

"We want to give others the opportunity to build something. This is why we will promote interesting and promising projects and ideas in an uncomplicated manner and above all without delay," explains Michael Morlock. Indeed, the first funding was awarded only a few months after the research center was established. From a total of 12 applications that were submitted, two projects can look forward to receiving funds of about 189,000 euros in total for the next two years (see box). The deadline for applications was the end of July and the decision on which applications should be supported was already taken in September. Ideally, the funding provided by the Medical Technology Research Center will result in follow-up financing by third parties, for example the German Research Foundation (DFG). "If every third project that we assist turned into an application, this would be wonderful," says Morlock. "There is a tradition of sponsorship in Hamburg," adds Wolfgang Krautschneider. "We also aim to win sponsors and boost our modest budget with their support. What makes us attractive as an institute and sets us apart from other research centers in Germany is that we restrict our projects from the scientific idea to implementation to Hamburg and provide funding solely in Hamburg. This strengthens the city as a location for business and science." **sm**

Further information: www.fmthh.de

Defined droplets of special drug preparations, together with oxygen, are applied through the skin (transcutaneously) to the joint or other area needing treatment

photo: MedDrop GmbH

At the right place at the right time

SUCCESSFUL TRANSCUTANEOUS DRUG DELIVERY

Research, development and production at one site, combined with successful networking: this is one way of summing up MedDrop's formula for success. The Hamburg company, which specializes in direct drug delivery, is now expanding in the Gulf region

Lots of racehorses, camels and a large number of diabetic patients create ideal conditions for MedDrop GmbH to raise its presence in the Arab market with its products. Founded in 2009, the company has developed a system that enables oxygen to be administered to humans and animals locally and non-invasively. "We optimize the drugs in the laboratory so that they find their way into the very layers of tissue where they are needed. Using a special applicator, we then apply them, highly enriched with oxygen, at precisely the right spot to the skin in oscillating frequency," explains CEO Friedrich von Hahn. Using the transcutaneous method, optimum drug concentration can therefore be achieved and the body is not subjected to systemic exposure. The clinically pure oxygen is transported into the deep tissue and activates the cells to absorb the drug.

Indications for this treatment can be degenerative and inflammatory processes in the musco-skeletal system – for example as part of pain therapy for arthrosis. However, the procedure developed by MedDrop can also be applied in dermatology – for example for psoriasis and neurodermatitis – in pre- and postoperative treatments and in professional cosmetics. In human medicine, it is still in the clinical approval stage, although it has been successfully used in veterinary medicine and cosmetology in Germany and elsewhere for several years.

Von Hahn reports that the company therefore also turned its attention to the Arab market. "Through delegations with Life Science Nord to the Gulf region, we were able to establish useful and important business contacts. The trips to sound out the markets in Saudi Arabia and Oman in April this year were huge steps forward. It turned out that the potential in veterinary medicine and beauty applications is actually even greater than we had expected," says Friedrich von Hahn. In addition, in view of the large number of diabetic patients in the Arab region, MedDrop could profit enormously from its expertise in wound healing. "We are therefore currently working very closely with the Healthcare Industry Service Centre Hamburg in Dubai to set up a local branch at the start of the coming year."

This is a huge step for the comparatively young company, especially as MedDrop relocated to larger facilities in the north of Hamburg just a few weeks ago due to its success. Research, development and production now take place at the new site, covering more than 1,200 m². The company places great emphasis on in-house production in particular. According to von Hahn, it long considered whether cooperation agreements, for example with large pharmaceutical groups, make sense for MedDrop, but deliberately decided against that option. "In the end, we concluded that no third-party process, no bought-in production technology and no outsourced product development can meet our requirements in terms of quality and knowledge management. This is why we are making everything ourselves – from the design of the device to the carrier substance." However, even the greatest level of expertise has its limits – for example when it comes to certifications. In connection with the relocation, the company therefore took advice from the Hamburg company Prosystem AG and had itself certified under ISO 13485. And in entering the Arab market, MedDrop prefers to draw on the high level of competence of its network partners from the Life Science Nord region. The firm's success confirms this strategy. **sm**

information: www.meddrop-technology.com

ONLINE COMMUNICATIONS PLATFORM

Surgeon online

The idea behind SurgeryNet is to promote the regular exchange of ideas between surgeons, industry and medical institutions and to bundle current research activities. In the long term, the online communications platform could even establish itself as a network for innovation and cooperation for all medical disciplines – that is the view of three players that were involved in its development and implementation

SurgeryNet
The new Internet platform was developed specifically for surgeons and enables them to communicate with each other in a protected area. At the same time, SurgeryNet is designed to strengthen communications between companies and surgeons. The initiators of the nationwide project are also open to international influences. The target group consists of surgeons in education and training, the entire community of surgeons wishing to exchange know-how and developers of new devices, procedures and processes. SurgeryNet offers extensive specific functions and can be used as a working platform, in the cloud or for exchanges in a closed group. The online communications platform is a joint initiative of medical professionals and technicians, teaching institutions and companies from North Germany and is a pilot project in this field.
http://projekt.surgerynet.de

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photos: Stefanie Herrmann, location: University Medical Center Schleswig-Holstein

Surgeon online

"5,000 users in three years"

Dr. Raimund Mildner
Technical Project Coordinator, SurgeryNet UniTransferKlinik Lübeck

"In the field of dynamic, current and interactive knowledge transfer, SurgeryNet is a pioneer," says Dr. Raimund Mildner. As one of the initiators, the Managing Director of the Technikzentrum Lübeck has been instrumental in getting the project off the ground. "While e-learning offerings are nothing new, our approach goes a great deal further," explains Mildner, a graduate with a PhD in economics. "SurgeryNet is an image-supported and project-oriented communications platform for surgeons to exchange views on the latest developments." For example, they can discuss new techniques, instruments or navigation procedures. And not weeks or months after these have been developed and tested by doctors at other locations, who report about them at the next congress sometime in the future – but at once, online and therefore largely independent of place and time.

Platform users have numerous functions to enable them to do so easily. For example, they can contact colleagues online, set up groups and use a chat function. One particular feature is that SurgeryNet also offers opportunities for computer-supported cooperative work (CSCW). Numerous tools are available – for example to cut and annotate videos online or anonymize, jointly watch and comment on digital images from MRT and CT. Other possibilities offered by the platform include live transmissions of operating or medical demonstrations.

To ensure that the range of services also reflects users' expectations, a survey was carried out to find out the needs of young medical professionals at the start of the project and these were brought into line with what is feasible technically and in terms of content. SurgeryNet has gained a number of partners, including the European Surgical Institute (ESI) in Norderstedt and the medical device manufacturer Karl Storz GmbH & Co. KG, both of which provide technical content for the platform.

The project funding provided by the Federal Ministry of Education and Research will end soon. "However, the platform has been activated, the pilot application is up and running and already has some 350 users," says Raimund Mildner. We now have to raise the profile of SurgeryNet, convince the medical professionals of the benefits and attract more users. "If we had 5,000 users in three years, I would be satisfied," says the project manager looking ahead. That would be more than one-quarter of all surgeons in Germany.

photos: Stefanie Hermann

Prof. Dr. Hans-Peter Bruch
Former Director of the Clinic for General Surgery at the UKSH, Campus Lübeck, President of the BDC

"The long-term goal is MedNet"

Lifetime learning is especially close to the heart of Prof. Hans-Peter Bruch. The former clinic director at the UKSH in Lübeck had already put further education on the agenda over a longer period at the Professional Association of German Surgeons (BDC) when the Federal Ministry of Education and Research called for tenders on "Web 2.0 further education". "Dr. Mildner from the UniTransferKlinik in Lübeck saw this as an opportunity to create a point of coordination to link science and practice in surgery and brought up the subject with me," recalls the current president of the BDC. "I was immediately sold on the idea."

As the project was managed by the Department of Surgery at the UKSH Campus Lübeck, Prof. Bruch played a significant part in the development of the content. He now uses his contacts to convince colleagues of the benefits of SurgeryNet and its potential. "Today, SurgeryNet is still a complementary offering, but we want to create a totally new product," says Prof. Bruch. If the network, which is currently still thematically focused on surgery, were to grow steadily, it could develop into a network for all medical disciplines in the long term: "Instead of SurgeryNet, we would then have arrived at MedNet."

The experienced surgeon has no doubts about the need: "Nowadays, my young colleagues are supposed to keep up with the rapid technological, methodological and medical developments within ever shorter periods," he says. "SurgeryNet is an ideal source for rapid exchanges and up-to-date information." The benefits for the private sector are also obvious: "In SurgeryNet, companies can, for example, show where they see their need for developments and find partners that occupy themselves with the corresponding specific questions," says Prof. Bruch. "To further strengthen this aspect, we are, of course, always open to interested partners from industry." In addition, work still needs to be done to win people over: "If you do something totally new, the first reaction is always one of skepticism," says the man who has worked in science since he was 22. "But I am accustomed to it and have plenty of stamina. If you are really convinced by something, you have to fight for it."

"Sensible complement to proven systems"

Dr. George Alevizopoulos
Head of the European Surgical Institute (ESI) in Norderstedt

The European Surgical Institute (ESI) is an internationally renowned center for medical education and training and a partner of SurgeryNet. It provides technical content and recommends the platform as an addition to the training of young surgeons. However, the integration of SurgeryNet into the curriculum of the ESI is just the beginning. "In terms of content, it is just starting to be established," says Dr. George Alevizopoulos. "But there is undoubtedly huge potential and there will soon be more and more material." And the greater the amount of information is quickly available in the network, the more attractive the new network will become for surgeons.

The initiators expressly welcome the involvement of industry. However, the ESI, as part of the medical division of Johnson & Johnson, proceeds with particular sensitivity: "By making our know-how available to SurgeryNet, we want to help medical professionals, developers and researchers become acquainted with product developments and new technologies," explains the head of the ESI. "But naturally we do not want to abuse the platform and use it to advertise for certain products. That would impair our credibility in the long term."

He says that modern information and cooperation platforms such as SurgeryNet are a sensible addition to medical training in Germany: "However, the proven systems and teaching methods will certainly not be ousted by digital networks." Dr. Alevizopoulos has no doubts about that. "After all, in medical education and training, practice and work on the patient still count." Developing a feeling for a certain method or instrument is also part of practical experience and the learning process. And this is not possible on the screen, but must be learnt with a lot of patience and with one's own hands. **hk**

EUROREGION POMERANIA

A Center for Medical Care 2.0

A population density of about 70 inhabitants per square kilometer in Mecklenburg-Vorpommern requires creative solutions to provide specialist medical care even in rural areas. The Pomerania Network shows how this can succeed

While basic medical care still exists especially in cities and to some extent in rural areas, patients from the extreme northeastern part of Germany have to travel long distances to visit a specialist doctor. This applies in particular to highly specialized disciplines such as radiology. Moreover, specialist physicians in private practice and smaller clinics are only able to offer their services during core working times. For examinations at the weekend or during the night, there are often insufficient patient numbers to fund such services. In some cases, therefore, there may be expensive medical devices and specialist personnel that can operate the equipment, but no doctor to produce a report on the findings in non-core times.

Since 2001, the European Union has therefore funded the establishment of a telemedical network in the Euroregion Pomerania under the Interreg program. The regions Eastern Mecklenburg-Vorpommern and North Brandenburg from Germany and their neighboring regions of Poland participate in the network. One of the goals is to network small hospitals in rural areas with larger hospitals in towns such as Greifswald, Neubrandenburg and Eberswalde. In addition, the network helps to make better use of physicians and equipment by means of cross-border cooperation with Poland. In a total of eight medical fields, including stroke care, interdisciplinary treatment of cancer patients and radiology, 35 medical institutions in the Euroregion Pomerania have formed a network. Videoconferences are also part of the concept of telemedical collaboration. They are used whenever the informed opinion of an expert is required at very short notice – for example in stroke diagnosis. This enables the participating clinics and physicians to cope with the deficits in medical care across the entire region and at the same time raise the peripheral medical care of their patients to a supraregional or university level.

This is why Prof. Norbert Hosten and his radiology colleagues no longer have any X-ray envelopes. All the data of his Radiological Institute at the University Hospital of Greifswald is stored on a central server. Data protection and security have the highest priority. “Consistent digitalization is the first step towards teleradiology,” says Hosten, who is not only the head of the institute, but also chairman of the “Telemedicine Euroregion Pomerania” association. If CT scans have to be performed in a smaller clinic during the night or at the weekend within this network, medical teamwork even works across distances of more than 100 kilometers thanks to modern technical facilities.

Prof. Hosten explains the principle as follows: “After a teleconference with the referring doctor, normally the surgeon, the medical radiology assistants at the local hospital then receive instructions from the University Hospital of Greifswald on the type of scan they should perform. We receive the data in encrypted form through a secure network; the doctor providing local treatment then receives our findings and can start the therapy.” This works not only in comparatively harmless cases. It can also be successfully applied in the case of patients with craniocerebral trauma. In this way, neurosurgeons and radiologists can jointly consult with each other about acute medical care at very short notice and arrange to have patients transferred to the University Hospital of Greifswald if necessary. The X-rays and examination results are available to all physicians providing treatment, duplicate examinations are avoided, and diagnosis and treatment can take place everywhere at the very highest level. This represents an advance in medical technology that greatly improves the safety and quality of life of the aging populations in rural areas. **sm**

Further information: www.telepom.eu

photo: Telemedizin Euroregion Pomerania e.V.

photo: Yuri Arcurs

Key data always at hand

PROFESSIONAL DIABETES CONTROL

Diabetics are confronted with the daily challenge of adjusting their lifestyle to the disease and integrating it into their everyday life. Today, modern technologies can help them cope with the disease

Until a few years ago, we mostly had a cell phone for making calls. Today's smartphones can do more: thanks to intelligent apps, they are becoming more and more an electronic everyday assistant for people. In the healthcare sector, smartphones are also increasingly assisting their owners. The Neubrandenburg-based company Infokom GmbH has been conducting research and development in the field of telemedicine for years. This resulted in the launch of the Mobil Diab System onto the market.

In addition to the telematics platform as the core technology, the system consists of the smartphone app and various Web portals. According to CEO Rolf-Dietrich Berndt, the handling of sensitive data was an especially important issue in the development. "Health data must be given special protection and a high degree of security is needed in connection with their handling. To ensure the necessary confidentiality in electronic data transfer prescribed by the legislator, we use highly secure encryption technologies." Infokom GmbH's telematics platform guarantees this secure data communication and storage. It also supports standardized protocols and can be integrated flexibly into existing practice management systems.

The Mobil Diab System is also easy to use for patients. The latter always have their "electronic diabetes logbook" with them. Besides a host of useful functions, the Mobil Diab smartphone app also offers a graphic evaluation, enabling patients to keep tabs on their medical condition at all times. They enter the data such as blood sugar levels, medication, bread units and body movement in the app or patient portal. The data is then transmitted to the telematics platform and the doctor providing treatment can view it via the doctors' portal or directly in his practice management system. This enables him to treat his patients independently of time and place and adjust the treatment rapidly and optimally. Besides the technical expertise, Infokom is relying above all on intensive networking and national and international cooperation agreements to keep on adapting Mobil Diab to medical advances and the needs of users – and turn smartphones into the perfect personal diabetes assistant. **sm**

Further information: www.infokom.de, www.mdiab-health.de

INNOVATIVE AND APPLIED RESEARCH

Success with implants and infection research

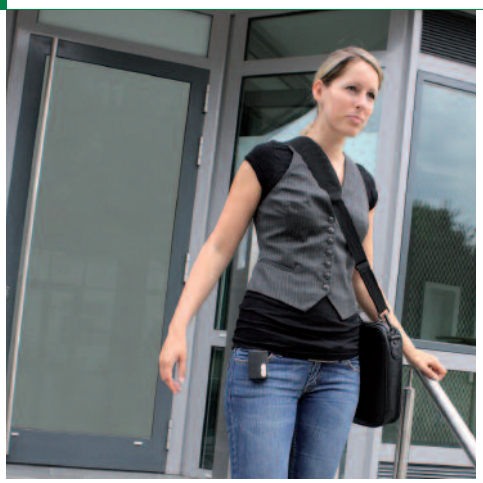
Over the coming five years, two major collaborative projects from Mecklenburg-Vorpommern will be funded by the German government under the "Twenty20 – Partnership for Innovation" program

A jury of experts chaired by Matthias Kleiner, the former President of the German Research Foundation (DFG), has decided that the consortiums "Response – partnership for innovation in implant technology" led by the University of Rostock and "InfectControl 2020 – new anti-infection strategies – science, society, business" – in which researchers from Greifswald will play a significant role – should receive funding. The two projects will now receive a total of 90 million euros. According to the Federal Ministry of Education and Research (BMBF), the aim is to systematically extend the outstanding economic and scientific skills built up in the Eastern German federal states by means of cross-regional and interdisciplinary cooperation in the future.

Improving care of multimorbid patients and raising the quality of life well into old age are at the heart of the research that is being conducted by the Response consortium, in which the University of Rostock plays the lead role. The aim is to develop clinically relevant therapies with innovative implants that ease the burden on the healthcare system in the treatment of common diseases such as cardiovascular ailments, cataracts and glaucoma as well as deafness and numbness. To this end, Response is developing implants that take account of their target tissue in a particular way and provide a tissue- and implant-specific reply to cellular processes in the implant region. At the same time, Response aims at considerably increasing the lifetimes of the implants by using improved materials and designs to facilitate renewed operations and reduce the need for implant renewals.

Scientists from the Ernst-Moritz-Arndt University of Greifswald and the Friedrich-Loeffler Institute, Riems, are heavily involved in InfectControl 2020. The project brings together top research institutes, companies and stakeholders to devise new anti-infection strategies and contain the development and dissemination of new and multi-resistant germs in the long term. The goal is to raise the industry's interest in the development of new antibiotics by establishing a strong scientific collaborative group. The new processes, methods, services and products are designed to affect areas such as agriculture, veterinary medicine and research as well as patient care and education. **sm**

Further information: www.infectcontrol.de, www.uni-rostock.de



With the aid of special algorithms, the DiaTrace system developed by Gerald Bieber and his colleagues detects motion in the smartphone without disturbing the user. Photos of the consumed food are taken with the smartphone's camera and sent by DiaTrace to a case manager, who systematically evaluates the course of the therapy

Smart medical assistants

photo: Fraunhofer Institute for Computer Graphics Research IGD

At the Rostock facility of the Fraunhofer Institute for Graphic Data Processing IGD, solutions are being created to support people in a variety of work, life and learning processes – for example as apps for smartphones and smartwatches

INTERACTIVE DOCUMENT ENGINEERING

Headed by Prof. Bodo Urban, scientists in the Interactive Document Engineering department of the Fraunhofer IGD are developing processes that make important data from the engineering, plant construction and healthcare sectors visible and therefore usable. In caring for the sick and elderly, this involves, for example, information that doctors on an emergency call need to provide tailored treatment. In production, the scientists are often interested in data that prevent downtimes or speed up maintenance work on a system. "Our task is to gather information, assess it properly and finally to edit it so that it can be retrieved at any time, at the right place and by the right addressees, enabling them to make informed decisions on the basis of the information," says graduate engineer Gerald Bieber, whose research work at the Fraunhofer IGD in Rostock focuses on activity recognition.

For example, in 2003 researchers there developed a motion sensor board that evaluates the user's pattern of movement and physical activity. In the meantime, such an acceleration sensor is fitted into nearly all smartphones and serves primarily to detect whether a photo is to be taken in portrait or landscape format with the mobile handset. The scientists exploit this fact. With the aid of special algorithms, the DiaTrace system developed by Gerald Bieber and his colleagues detects motion in the cell phone without disturbing the user. DiaTrace then evaluates the measured activities to calculate the energy consumption, taking into account the metabolism and form of movement. The DiaTrace system is also used in the Inter-Learn study. Together with doctors from the Medigreif Inselklinik Heringsdorf and major industrial partners, researchers at the Fraunhofer IGD in Rostock concentrate above all on overweight children and young persons. DiaTrace is used as an app in the smartphones of the young test persons; newly developed algorithms are also used on smartwatches. The idea is to make it easier for very overweight children to check their new and healthy lifestyle and maintain it in everyday life after a clinic stay and not to fall back into old patterns of behavior and eating habits. "The number of overweight children and young people is alarmingly high and the main reasons are that they eat the wrong type of food and do not exercise enough," says Gerald Bieber. The result is that already children are suffering from lifestyle diseases such as overweight, obesity, hypertension and diabetes.

"The success of long-term medical therapies depends crucially on being able to continuously monitor and analyze the activity and nutritional status of patients with such indications by smartphone. On this basis, it would also be possible to help patients determine how much insulin they need on a daily basis, as it also depends crucially on the personal physical activity of the persons in question," explains Bieber. However, the telemedical assistance given to children and young people in the Inter-Learn study goes even further. Photos of the consumed food are taken with the smartphone's camera and sent by DiaTrace to a case manager, who systematically evaluates the course of the therapy and regularly meets the young test persons to provide aftercare together with the doctors and psychologists involved in the original inpatient care as well as nutrition and sport therapists. If they succeed in helping the young patients improve their state of health in the long term, the scientists will have moved much closer to achieving one goal, namely developing daily medical support for users of smartphones and smartwatches that is tailored exactly to their indication. **sm**

Further information: www.igd.fraunhofer.de

photo: Danny Gohlke

This year's BSHR meeting in Rostock focused on "Building International Bridges in Health and Life Sciences beyond the Baltic Sea Region" with case studies from Stockholm, Krakow, Rostock, Dubai, Moscow, Karlsburg, Smolensk, Bahrain and Fujairah

INTERNATIONAL BRIDGES

Success for a recognized **platform**

The Baltic Sea Health Region Meeting (BSHR) has established itself as a prominent platform for experts in science and business in the Baltic Sea Region. The third meeting since 2011 was held in July as the international session of the National Sector Conference on Health Economy in Rostock

More than 600 experts from medicine and health, authorities and science attended this important national and international convention, which was opened by the German Federal Minister for Health, Daniel Bahr, who outlined German health policy in his keynote speech. This year's BSHR meeting focused on building international bridges in health and life sciences beyond the Baltic Sea region, with case studies from Bahrain, Dubai, Fujairah, Karlsburg, Krakow, Moscow, Rostock, Smolensk and Stockholm. The participants discussed the developments in innovative medicine in the Baltic Sea Region as well as the challenges in cooperating with partners in the Emirates and Russia for the benefit of the patients, especially those suffering from lifestyle diseases such as diabetes, cancer, and cardiovascular diseases.

A study tour was organized to selected "hot spots" for innovative medicine in Mecklenburg-Vorpommern, for example the Campus Diabetes Karlsburg, one of the oldest diabetes hospitals in Germany, established in 1930, and the universities in Greifswald and in Rostock with their competences in molecular and regenerative medicine, epidemiology and demography ("Study of Health in Pomerania – SHiP"). A visit to a typical German rehabilitation hospital in Bad Doberan, which focuses on therapy for patients after orthopedic surgery, complemented the program for the international guests. "The BSHR Meeting was very successful this year thanks to the excellent presentations of our guests. It is a well-accepted platform at the National Sector Conference on the Health Economy and we see an increasing demand for international cooperation," stated Wolfgang Blank, Chairman of ScanBalt and managing director of BioCon Valley Mecklenburg-Vorpommern.

The meeting was organized within the framework of the ScanBalt Health Region Flagship, led by BioCon Valley and the Lithuanian Biotechnology Association in cooperation with ScanBalt BioRegion. ScanBalt Health Region Flagship was approved by the EU Commission under its Strategy for the Baltic Sea Region. The flagship serves as an umbrella for a multitude of coordinated activities, with shared visions and values for the development of the region and a common communication and coordination structure. Its mission is to set up cross-sectoral and transnational reference projects for collaboration and innovation in health industry and in life sciences in order to promote public health on a high and sustainable level and to make the region a globally leading and prosperous health region. The next National Sector Conference on Health Economy will take place in Rostock on May 21 and 22, 2014. **sm**

Further information: www.scanbalt.org; www.konferenz-gesundheitswirtschaft.de

CLOSE TIES WITH JOURNALISTS

The international press study tour to Denmark brought journalists, companies, universities, science parks and networks from Northern Europe together for three days of lively discussions

The press study tour was the fourth of its kind in the ScanBalt BioRegion in collaboration with the European Union Science Journalist Association. For ScanBalt, it is crucially important to encourage and promote the dialogue between society, science and innovation. Furthermore, a press tour is a reality check of the relevance of ScanBalt BioRegion activities. During the tour a summary of a HealthPort Innovation Agenda was launched with initial recommendations to the European Union on how to create a competitive health economy in the Baltic Sea Region. **sm**

Further information: www.scanbalt.org

CDIFF IS UP AND RUNNING

On August 1, 2013, the North German Center for Microbial Genome Research started its first major research project: CDiff – epidemiology and systems biology of the pathogenic bacterium Clostridium difficile

The project, which is coordinated by the TU Braunschweig and in which the Ernst-Moritz-Arndt University of Greifswald will play a leading role, has been approved for three years with total funding of some four million euros. The research will focus on a comprehensive characterization of the bacterium Clostridium difficile, which causes life-threatening bowel diseases. CDiff is the first major project of the North German Center for Microbial Genome Research, which was established in January 2013. The Greifswald microbiologist Prof. Michael Hecker is the co-initiator and deputy spokesman. **sm**

Further information: www.nzmg.de

LIFE SCIENCES IN THE SOUTHERN BALTIC SEA REGION

The "Eco4Life-South Baltic Network for Environmental and Life Sciences to Boost Cross Border Cooperation" project was successfully completed in October with a conference in Szczecin, Poland

The goal of the conference on oncology, diabetes and cardiometabolic risk is to mobilize international contacts between businesses and research institutes and to promote the economic and scientific potential in the southern Baltic Sea region. In addition, the satellite conference workshops enabled participants from the various countries to exchange experiences. With Eco4Life, the project partners networked regional skills across countries and supported business start-ups in order to jointly develop internationally competitive and innovative products. **sm**

Further information: www.eco4life.info

Heading – scaling new heights

photo: Vaclav Volrab

LIFE SCIENCES IN AUSTRIA

With its attractive tax regime and a highly innovative business environment, Austria is a magnet for many international companies. German life science firms represent the strongest group of investors. To succeed, they have to take account of regional and cultural differences

From November 4 to 6, 2013, the biotechnology industry will turn its attention to Vienna when the city plays host to BIO-Europe. Decision makers from the biotechnology, pharma and finance sectors from all over the world will be able to identify new business opportunities there and establish strategic relationships. Aided by its location at the heart of Europe, Austria has long been an established hub for the growth markets in Central and Eastern Europe. The gateway to the Balkans at the junction of the transport routes between the major European economic and cultural regions has seen its life science sector growing rapidly over many years. The Austrian healthcare system is considered to be one of the best in the world and expenditure amounted to some 32 billion euros in 2011. As a result of progress in medical technology, demographic trends and rising awareness about health issues, insiders expect expenditure to rise considerably in the long term.

In the medical technology segment, imports worth 1.3 billion euros were reported in 2012, nearly 12 percent more than in 2011. Germany accounts for about half of the imports. Experts expect strong growth in the long term here as well. There are good opportunities in electromedicine and clinic equipment for outpatient treatment. Industry observers also see growing demand for medical aids, for example for rehabilitation, orthopedic and home care purposes, in part because the aim is to reduce the length of time patients stay in hospitals. In this field, Austria is a stepping stone for countries in Eastern and Southern Europe. Many of the imported devices are re-exported to those countries. The wellness and fitness market segment – in other words overall private expenditure on prevention – is booming.

The country's largest medical technology producer is Fresenius Kabi, which has more than 700 employees. Further significant manufacturers include MED-EL Elektromedizinische Geräte GmbH with over 600, and the German-Austrian company Lohmann & Rauscher, with 3,000 employees worldwide.

Like the entire life sciences sector, biotechnology in Austria is still quite young – a company in this industry is just eight years old on average. Nevertheless, the sector has grown into a significant economic factor within a short time. In recent years, this boom has also been reflected in the growing interest of international firms in doing business with Austrian companies. According to the Austrian Business Agency (ABA), German companies set up 63 business operations in Austria, making them the largest group of investors in 2011. Germany was followed by Italy and Russia. Apart from international players, a host of small and medium-sized firms are engaged in the sector. In all, 288 companies operate in the biotechnology and pharma industries.

The government has recognized the significance of the life sciences and taken strategic action to support the industry. For example, the Alpine republic attracts foreign investors with an appealing tax regime and an innovative climate based on the close links between scientists and industry. Companies carrying on research profit from tailored assistance. In addition, a premium of 10 percent on the research expenditure is paid.

Five life science specific sector clusters offer companies that conduct research excellent conditions. In total, 723 life science firms with more than 50,000 employees strengthen Austria's innovativeness. Besides SMEs and spin-offs, these include international R&D headquarters. They cooperate closely with each other and with research institutes and scientists. The top life science regions are Vienna, Tyrol, Upper Austria, Lower Austria and Styria. Further advantages are the similarities in mentality with its Eastern neighbors and the experience of doing business with them. This is why numerous international companies tap into Austria's expertise on Eastern and Southeastern Europe. **bp**

Further information: www.lifescienceaustria.at
Source: Germany Trade and Invest

Attractive development programs

Sonja Polan, International Marketing Manager at Austria Wirtschaftsservice, explains the funding that is available in the growing Austrian market

photo: Austria Wirtschaftsservice

RELIABLE RELATIONSHIPS

What forms of funding can German companies claim?

Sonja Polan: Austria Wirtschaftsservice GmbH, the state-owned Austrian development bank, focuses on start-up ideas in biotechnology and medical products and offers financial assistance through two tailored development programs: LISA PreSeed and LISA Seedfinancing. LISA PreSeed offers funding in the critical stage before a life science company is actually formed. The LISA Seedfinancing program offers up to one million euros in funding for the start-up stage. Start-up entrepreneurs benefit additionally from customized advice. No normal bank collateral is needed. However, to apply for funding, the company must show that a reasonable portion of its financing comes from private capital. Further initiatives of Austria Wirtschaftsservice GmbH to promote the life sciences include guarantees and loans. These two strong sources of funding are supplemented by financing tools of other Austrian authorities, including the Austrian Science Fund (FWF), which funds basic research, and the Austrian Research Promotion Agency (FFG), which has an annual budget of 430 million euros to fund applied research. About 70 million euros were used for life science projects.

What products from Germany have particularly good chances of succeeding in Austria?

Austria offers German life science businesses a host of opportunities in research and industrial cooperation. The Austrian life science industry focuses mainly on therapeutics – above all innovative vaccines and anti-infectants, cancer, medical technology, production and platform technologies as well as advanced diagnostics and analytics. The life science sector in Austria is very broadly based and includes small and large companies as well as a number of multinational groups that have their head office or production sites in the country. However, small and mid-sized firms dominate in a very wide range of segments.

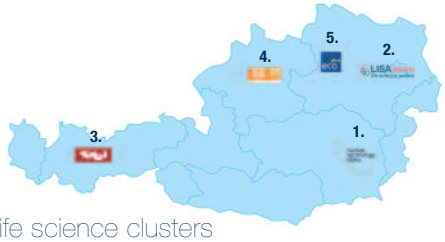
The high level of cooperation among manufacturers, suppliers and service providers, all of which come together in a relatively small area, is one of the astounding factors in the field of life sciences and biotechnology in Austria. Networks and cooperations are among the strong points of the Austrian life science industry. In Austria, there are also five life science clusters that promote cooperation. It is therefore easy to establish contacts and opportunities for collaboration.

What advice would you give German businesses wanting to succeed in the market?

It is very important that businesses entering the Austrian market should familiarize themselves with Austrian culture and business practices. An exact analysis of the market is a further requirement. Despite the geographical proximity and similarities between Austrian and German culture, there are differences in service and products. The size of the country also plays a role. In Austria, the level of service is much more personalized. Customers usually always deal with the same service technician with whom they have built up a relationship over many years.

Can you give examples of successful cooperation with Germany?

Thanks to the attractive assistance we offer, we have successful entrepreneurs from Germany that set up businesses in Austria. One example is Affiris, which now has nearly 90 employees. A further example of successful collaboration is the research alliance between the Hamburg cluster Biokatalyse2021 and ACIB GmbH (Austrian Centre of Industrial Biotechnology) in industrial biotechnology.



Life science clusters
in Austria

1. Human.technology Styria GmbH
Pharmaceutical process and production engineering. Biomedical sensor technology and biomechanics, as well as biobank and biomarker technology. (www.humantechnology.at)

2. Life Science Austria Vienna
Point of contact for biotechnology/pharmaceuticals and medical technology in Vienna. Main areas: advising and assisting innovative firms. (www.lisavr.at)

3. Cluster Life Sciences Tyrol
Technology fields: biotechnology, pharmaceuticals, medical technology, services, and research and education. (www.standort-tirol.at)

4. The Health Technology Cluster
The main areas are ultrasound technology, analytics and diagnostics, electronics, medical mechatronics, installations and housings. (www.gesundheits-cluster.at)

5. ecoplus Cluster
Support in connection with the implementation of innovations based on cross-company collaboration and the involvement of R&D and qualification facilities. (www.ecoplus.at)

photo: EndoChoice

Headquarters **by the Elbe**

The US firm EndoChoice is opening its first European and international branch in Hamburg

GASTROINTESTINAL PLATFORM SYSTEMS

The American company EndoChoice is opening its first EMEA branch in Hamburg. After acquiring RMS Endoskopie-Technik in Elmshorn, a manufacturer of gastrointestinal platform systems, it is now set to expand its presence in Europe.

The new branch in the Elbe metropolis will act as the European and international head office. In the future, it will be responsible for the worldwide production of video endoscopes as well as repairs of flexible endoscopes. "In acquiring RMS, we have taken the first step towards establishing ourselves in Europe. After the integration process has been completed, we will move into new, larger facilities with a total of 4,000 square meters of space in autumn. This will take account of our increased staffing requirement," explains Matthias Stief, managing director of EndoChoice EMEA. The combined know-how of EndoChoice and RMS Endoskopie-Technik means that sales, marketing, customer support and production will all be concentrated on one site. For the upcoming market launch of a new colonoscope with innovative camera technology, Hamburg offers an ideal infrastructure for sales and an attractive environment for staff and potential new employees. "Our new video colonoscope will at long last provide experts with a diagnostic tool that has significantly improved the detection of changes in the colon compared to conventional devices. Our first EMEA location in Germany brings us even closer to our customers and ensures that we can provide a comprehensive and efficient service," says Matthias Stief. EndoChoice offers medical and diagnostic devices, infection control and imaging devices for specialist physicians in the treatment of a large number of gastrointestinal disorders.

With more than 2,000 customers, the medical device manufacturer is one of the fastest-growing companies in the US and distributes its products in 34 countries worldwide. **bp**

Further information: www.endochoice.com

ESTABLISHMENT

Healthy splitting

Weinmann has created two independent companies out of the Homecare and Emergency units

To sharpen its focus on the various markets and their needs, Weinmann has created two independent companies out of the Homecare and Emergency units. The new company Weinmann Emergency Medical Technology GmbH & Co. KG is to operate from a new address in Hamburg, but with the same team, same brand and same products. It will concentrate even more on the emergency, transport and disaster medicine segments in the German and international markets. The Weinmann Medical Technology brand, together with the logo and products, will remain. "We will ensure as much continuity as possible in the transitional phase for our customers and business partners," explains André Schulte, managing director of Weinmann Emergency. "For them, nothing really changes apart from the address and phone numbers of their contacts."

As part of the separation of the Weinmann businesses, Weinmann Emergency has also taken over the manufacturing center located in Henstedt-Ulzburg, which is close to Hamburg. "This will enable us to guarantee the highest product quality and best possible service in the future, too – as always 'made in Germany'," adds Philipp Schroeder, the co-managing director of Weinmann Emergency. In the past, the former Weinmann divisions Homecare and Emergency had increasingly drifted apart, resulting in ever diminishing synergies. "By splitting up the company, we are creating two independent and powerful units," says partner Marc Griefahn. A global team of about 220 members is transferring to Weinmann Emergency. The international network of branches and representatives will be reorganized and will also be available worldwide in the future. The target groups remain emergency medical services, ambulance services in armies, public authorities and hospitals. **bp**

information: www.weinmann-emergency.de

MICROBIAL PRODUCTION

Production facilities: **FDA approved**

The facilities of Richter-Helm have been approved by the FDA for the production of recombinant proteins

photo: Richter-Helm

The successful review of the production facilities in Hamburg and Bovenau by the U.S. Food and Drug Administration (FDA) has paved the way for Richter-Helm to enter the attractive US market. This means that recombinant proteins may be manufactured in the facilities and sold later to the US. The services offered by Richter-Helm range from the development of production strains to GMP-compliant manufacturing of biopharmaceutical drugs for use in clinical trials (phase I to III) and production on a commercial scale, including all necessary process validations. For Richter-Helm, the FDA approval is an important milestone and demonstrates the trust and closeness to customers, which is the result of many years of collaboration in this ambitious development project. The multidisciplinary team was fully committed to the project from the start of development to the successful completion.

The multipurpose manufacturing facilities are among the most modern centers for microbial production in Europe. They were designed in strict compliance with the requirements of the FDA and the European Medicines Agency (EMA). In recent years, Richter-Helm has increasingly invested in new production technologies to optimize the yields, while at the same time raising the quality and stability of the process steps. With new expression systems using optimized fermentation processes, the company has managed to increase the yield of Escherichia coli fermentations up to double-digit gram levels. For the production of more complex proteins, yeast-based systems may now also be used for customers.

Richter-Helm is a joint venture between Gedeon Richter and Helm AG for the global joint development and marketing of biopharmaceutical products. The company has more than 25 years of experience in the development and GMP-compliant production of recombinant proteins, plasmid DNA and microbial vaccines. **bp**

Further information: www.richter-helm-biotec.eu

POINT-OF-CARE DIAGNOSTICS

Deeper collaboration

The Fraunhofer ISIT and the diagnostics company Pocdia are intensifying their collaboration to detect antibodies against hepatitis C

The Fraunhofer Institute for Silicon Technology ISIT and Pocdia GmbH are deepening their collaboration by entering into a new R&D contract. The objective of the project is to develop analysis systems designed to detect antibodies against hepatitis C on the basis of ISIT's electrical biochip technology.

The systems consist of one analysis device with all the reagents needed for the examination and a special disposable cartridge with an integrated biosensor chip. For analysis purposes, a small quantity of test fluid is placed in the cartridge, which is then inserted into the device. A special mechanism automatically creates the electrical and fluid contact between device and sensor chip. ISIT plans to be able to deliver a prototype of the analysis system together with cartridges and biochips to Pocdia by 2015.

Pocdia GmbH was founded in 2011 as a spin-off from the Fraunhofer ISIT in Itzehoe. The company combines the expertise in molecular biology of the Fraunhofer Institute for Molecular Biology and Applied Ecology IME with the biotechnology know-how of the Fraunhofer ISIT and develops analysis systems for on-site examinations of patients.

In the collaborative project, ISIT is contributing significantly to the development of all key system components. Among these are the sensor chips, including the special biocoating and the cartridges, as well as the design of the device as a whole. Examinations of the durability of the biochips and reagents are included.

In the last two years, the Fraunhofer ISIT and Pocdia have already presented the first test devices for the planned analysis systems at various congresses and trade shows – most recently at BIO-Europe 2012 in Hamburg. **bp**

Further information: www.isit.fraunhofer.de, www.pocdia.de

MEDICA 2013

A leader in ultrasound technology

As a pioneer in ultrasound technology, the medical engineering company Söring will be present at Medica 2013

From November 20 to 23, 2013, the eyes of the international medical and healthcare industry will again be on Düsseldorf. At the world's largest medical trade fair, some 4,500 exhibitors from over 60 nations will show the entire range of products for outpatient and inpatient care. Söring, a medical technology company from Quickborn, will once again showcase its innovations in ultrasound surgery (hall 10, stand F29). As a pioneer in ultrasound technology, Söring is a leader in the development and marketing of innovative energy-based surgery solutions. Besides ultrasound technology, this includes devices for high-frequency surgery and plasma coagulation.

On the basis of more than 25 years of experience in ultrasound technology, Söring GmbH has a broad product portfolio. In neurosurgery and liver surgery, Söring's ultrasound dissectors for selective tumor aspiration and precise transection of the parenchyma with less hemorrhaging in liver resection procedures have established themselves as the benchmark. This technological know-how is increasingly being transferred to other fields such as spinal column surgery to develop instruments for bone dissection. The company is also heavily involved in supporting and developing endoscopic procedures in cranial and spinal neurosurgery. The tissue selectivity of low-frequency ultrasound is also used by Söring in the debridement of acute and chronic wounds. With a specially developed compact generator, healthy tissue is retained, the wound is effectively cleaned and biofilms are removed. This assists wound healing and also makes the innovative method very interesting for plastic and septic surgery.

In view of the wide range of its technological expertise and close collaboration with clinical users worldwide, Söring is considered a pioneer in application-oriented energy-based surgery. Thanks to the close links to scientific institutions and active participation in innovative research projects, Söring's groundbreaking ideas put it at the forefront of technological progress. **bp**

Further information: www.soering.com

INNOVATIVE IMMUNOTHERAPIES

Experts team up to tackle cancer

medac and Provecs Medical embark on a joint oncology development program

photo: Provecs GmbH

Specialists at work: the delivery of multiple biological signals designed to stimulate the body's most powerful defense force, the immune system

Expertise and innovation are key to successful pharmaceutical product development. Driven by this premise, medac GmbH as an experienced oncology expert and Provecs Medical GmbH with its innovative immunotherapy platform are teaming up to establish novel cancer treatments.

With the aim of providing new options for diagnosis and treatment of cancer, medac's passionate founders started off in Hamburg, Germany, more than 40 years ago. Today, medac is a rapidly growing leading niche pharmaceutical company with a focus on oncology, urology and autoimmune diseases complemented by a diagnostic division. With annual revenues of more than 300 million euros and about 1,000 employees, medac is active in most European countries and is about to start operations in the US.

Similarly, Provecs Medical is driven by a passionate desire to provide new options for cancer patients. Provecs was founded in Hamburg in 2007 to develop novel cancer immunotherapeutics, supported by ten years of research experience in the delivery of multiple biological signals targeted to stimulate the body's most powerful defense force, the immune system. Today, it is understood that advanced tumors establish a molecular microenvironment of perfect immune cell inactivation and that therapeutic reactivation requires multiple signals and a variety of immune cells – so far too much of a task for a single drug. Provecs technology has been developed to target all signals required for immune reactivation to enable therapies across a variety of cancer indications.

medac and Provecs have now embarked on a joint development program to identify product candidates from Provecs Enviro platform technology, as well as the most promising product and target disease profiles. Both partners are convinced that innovative immunotherapies offer the biggest potential as new future treatment options for cancer patients. **bp**

Further information: www.provecs.com, www.medac.de

photo: Anika Radder

The first place winners: Sven Hecht and Andreas Duttes (left to right)

HEALTHCARE INNOVATION WEEKEND 2013

From idea **to start-up**

At the first Healthcare Innovation Weekend, experts, visionaries and students presented innovative start-up ideas for the digital future in healthcare

The first Healthcare Innovation Weekend took place in Hamburg from September 13 to 15, 2013. To unleash the potential of new software technologies for the wealth of information in the healthcare market, viable ideas were tested and new services and business models developed from them. The guiding idea of the event was "from idea to start-up on just one weekend." Visionaries, students, IT talents, designers and healthcare experts teamed up with experienced coaches at the University Medical Center Hamburg-Eppendorf (UKE).

In all, 18 ideas were presented to about 80 attendees in 60-second pitches. "The digital transformation, which is already part of everyday communications for many, is still in the early stages in the healthcare market," explains Nils Seebach, initiator of the Healthcare Innovation Weekend. The seven strongest submissions were developed from business plan to prototype and the three winning teams were awarded prizes totaling 11,250 euros. 1st place: CallMyGrandma, a medication call reminder for elderly people and their families; 2nd place ("Impact prize"): Hidden Heroes, a first responder platform which notifies users in case of an emergency in their neighborhood; 3rd place ("Best pitch"): Quest4Health, a mobile fantasy role-playing game to help living healthier.

"There is huge potential in e-health to use algorithms to exploit body-related data, studies and past patterns and optimize therapies, services and research and tailor them to individual needs. This affects the work of physicians, pharmaceutical manufacturers and clinics as well as health insurance funds and medical technology firms. The Healthcare Innovation Weekend aims to use the proven start-up workshop methodology for this challenge," explains Seebach, the co-founder and CEO of eTribes Framework GmbH. A consulting firm and several start-ups, some in the digital field, are members of the network.

The 54-hour event was supported by Boehringer Ingelheim, the TRENZ law firm, and Life Science Nord. **bp**

Further information:
www.healthcareweekend.com

TECHNOLOGY TRANSFER

Innovative **bridge**

Together with Danish and Swedish partners, the Lübeck Chamber of Commerce and Industry has launched a new initiative to promote cross-border R&D projects

To promote projects between entrepreneurs and scientists from Lübeck to Copenhagen and Malmö, the "Transnational Technology Transfer for Industry and Science in the Fehmarnbelt-Öresund Region" (FBÖ TransTechTrans) initiative was launched at the end of June. The initiative supports research and development projects between companies and research institutes from the fields of biotechnology, medical technology and life sciences in Skåne (Sweden), Sjælland (Denmark) and the district of the Lübeck Chamber of Commerce and Industry. The objective is that the partners will generate joint ideas for new, transnational projects.

The initiative offers ideal initial conditions by providing funding of up to 5,000 euros for secondments of employees to a Danish or Swedish partner organization. Similarly, companies or research institutes in the district of the Lübeck Chamber of Commerce and Industry can accept guests from Skåne or Sjælland on short-term stays. TransTechTrans also helps partners identify ways of funding the implementation of their project ideas after the secondment.

Interested life science players are invited to seize the initiative themselves as members of the LinkedIn group "FBÖ TransTechTrans." The network provides information about current developments and offers an excellent contact forum especially for organizations that have not yet found a suitable partner in Sweden, Denmark or Germany. To participate in the secondment initiative they can publish their partner wishes together with a brief description or a homepage link.

This groundbreaking project is funded jointly by the Lübeck Chamber of Commerce and Industry, the Danish Ministry of Research, Innovation and Higher Education, the Council of the Swedish region of Skåne and the Ministry of Economic Affairs, Employment, Transport and Technology of Schleswig-Holstein.

Further information: **bp**
www.fbo-corridor.eu, www.linkedin.com

REFINED MODULES

Refined **modules**

The biorefinery model for the future has entered the second round

Under the BIOREFINERY2021 project, IBN industry and science partners have identified two significant modules to develop economically and ecologically beneficial biorefinery concepts: the provision of high-quality feedstock for the chemical industry and the efficient use of by-product streams. "The use of the material lignin from lignocellulose represents a good opportunity to reach these objectives," explains project manager Prof. Irina Smirnova, Hamburg University of Technology (TUHH). "In the follow-up project, we therefore intend to focus on the production and experimental examination of lignin for use in an everyday reference product."

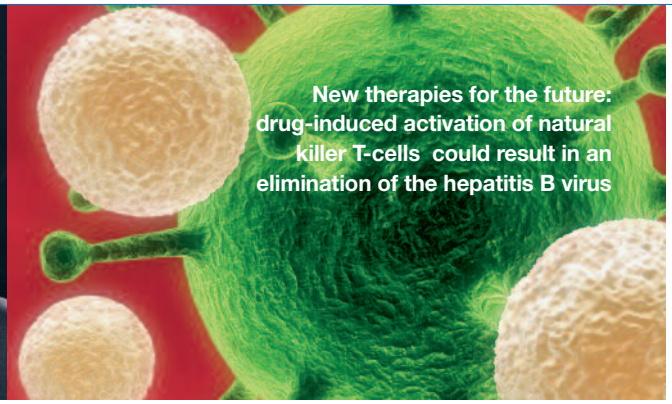
It is planned to examine and characterize the production of lignin as solid matter, as a dissolved substance and lignin pyrolysis in terms of the application characteristics. The analysis of these intermediate products of so-called integrated second-generation biorefinery as a possible additive for later use is planned in a three-stage procedure. The necessary technology is also to be developed over the project's lifetime of 2.5 years.

Researchers led by the TUHH have been working on a biorefinery model for the future since 2009. The project goals are to step up the development of innovative and realistic concepts for a biorefinery and its practical implementation on a trial and pilot scale.

Partners in the second round are the TUHH together with three of its institutes – namely the Institute of Thermal Processing Engineering, the Institute of Solid Process Engineering & Particle Technology, and the Institute of Environmental Technology and Energy Economics – the Thünen Institute for Wood Research in Hamburg, TuTech Innovation GmbH, Sigmar Mothes Hochdrucktechnik GmbH and a producer of consumer goods and durables. **bp**

Further information: www.ibnord.de
www.bioraffinerie2021.de

photo: private



New therapies for the future: drug-induced activation of natural killer T-cells could result in an elimination of the hepatitis B virus

illustration: Sebastian Kaulitzki

FRIEDMUND NEUMANN PRIZE 2013

Award-winning **insights**

Professor **Sebastian Zeissig**, Christian-Albrechts-Universität zu Kiel and University Medical Center Schleswig-Holstein (UKSH), was awarded the 2013 Friedmund Neumann Prize for his outstanding research in the field of inflammatory gastrointestinal diseases

How did you come to your specialty?
My interest was aroused at an early stage in my medical studies. As a result, in a doctoral thesis during my studies I began to examine the mechanisms of inflammatory bowel diseases – a group of disorders, the causes of which are not clear and which already begin in children and young people and are chronic.

What are the results of your research?
In my scientific work, I was able to demonstrate that in chronic inflammatory bowel diseases the barrier between the intestinal flora and the body's own tissue is impaired and contributes to the inflammation of the bowel. I was also able to prove that one single messenger of the immune system – TNF alpha – contributes significantly to this impairment and that blocking this messenger results in a restoration of the intestinal barrier along with a marked clinical improvement.

You have also examined immune defense mechanisms in hepatitis B infection. To what extent do your findings alter your understanding of these defense mechanisms?
In work on hepatitis B infection, one of the most prevalent infectious diseases worldwide, we were able to demonstrate that a rare group of immune cells plays a key role in the body's own defense against the virus. These natural killer T-cells are activated by a virus-induced change in the body's own lipids in connection with hepatitis B infection, and in this way help to eliminate the virus. Immune defense in mice lacking natural killer T-cells displayed pronounced deficiencies in dealing with the hepatitis B virus and the mice developed a chronic liver inflammation.

What new therapy approaches are possible?
It is conceivable that a drug-induced activation of natural killer T-cells in patients with chronic hepatitis B could result in an elimination of the virus. We are currently investigating this in further experiments.

What is your general assessment of the current state of research into gastrointestinal inflammatory diseases?
Gastrointestinal inflammatory diseases of both the bowel and liver are currently being researched more intensively than ever before and the findings of past research are now leading to pioneering clinical breakthroughs in conditions such as hepatitis C infection and inflammatory bowel diseases. These results are impressive testimony to the value of basic and applied research in life sciences.

What does the future hold in store for your research work?
With European funding to promote excellence – a starting grant of 1.5 million euros from the ERC – we are currently attempting to identify antigens that trigger the process of inflammatory bowel diseases. Our aim is to stop the inflammatory process in the bowel directly at its point of origin, and not, as in the past, to block it in an unspecific manner.

Further information:
www.inflammation-at-interfaces.de
www.uksh.de
www.uni-kiel.de

IMPORTANT EVENTS
UP TO APRIL 2014

NOVEMBER

November 4, from 1:00 p.m.
Congress for Telemedicine and Medical Technology in the Future
A series of joint events of the Hamburg Chamber of Commerce, the Lübeck Chamber of Industry and Commerce, Medcomm Regionalmanagement Gesundheit Südholstein and Life Science Nord. Further information: www.medcomm-sh.de
Venue: Olympus Surgical Technologies Europe, Hamburg

November 4–6, all day
BIO-Europe
The biotech industry's 19th partnering conference will take place in Vienna this year (Messe Wien Exhibition and Congress Center). Life Science Nord will again be represented at the conference with a large regional presentation. The trade show's stand-out feature is the partnering system, in which attendees get to know potential business partners in a series of scheduled one-to-one meetings. Further information: www.ebdgroup.com/bioeurope
Venue: Messe Wien Exhibition and Congress Center, Vienna

November 20–23, all day
MEDICA
At the world's largest medical marketplace, over 4,500 exhibitors from 60 countries will be represented on 120,000 square meters of exhibition space in 17 halls. Over four days, they will offer a comprehensive overview of current medical developments. The Business Development and Technology Transfer Corporation of Schleswig-Holstein (WTSH) organizes a joint stand with 13 exhibitors. Further information: www.medica.de
Venue: Messe Düsseldorf

November 28, 9:00 a.m.–5:30 p.m.
IDEE – Information and consulting day on start-ups and intellectual property rights
Further information: www.wtsh.de
Venue: WTSH GmbH, Kiel

DECEMBER

December 5, all day
Life sciences conference for students in Kiel
The conference is aimed at students, graduates and doctoral candidates in life sciences. Innovative projects and work will be presented in talks and poster sessions and awards will then be handed out by a jury. In addition, an industry exhibition will give students and employers from the region an opportunity to meet.
Further information: www.life-science-nord.net
Venue: Wissenschaftszentrum, Kiel

December 11
Consulting day on industrial property rights
Information on industrial property rights and advice from a patent lawyer. Further information: www.wtsh.de
Venue: Lübeck Chamber of Industry and Commerce

December 11
Life Science Nord Winter Lounge
Year-end meeting for all cluster players from Life Science Nord. Further information: www.life-science-nord.net
Venue: to be announced

JANUARY 2014

From January 15
Part-time online course leading to qualification as Manager Regulatory Affairs
Certificate course of the universities of the BioMedTec Science Campus in Lübeck, in cooperation with Forum für Medizintechnik e.V. Three 50-hour modules, approx. 150 hours for the full program. Rebate for members of LSN e.V., DGBMT, doctoral students and students of the universities of BioMedTec Science Campus upon request.
Registration and further information: Forum für Medizintechnik e.V., Lübeck; www.ffm-luebeck.com
Venue: online course

January 27–30
Arab Health
Arab Health is the world's longest-running healthcare exhibition and congress, taking place every January in Dubai. With the Middle East healthcare industry worth an estimated 80 billion US dollars per year, Arab Health is truly "at the heart of global healthcare."
Further information: www.arabhealthonline.com
Venue: Dubai

APRIL 2014

April 9–10
5. Deutsche Biotechnologietage
The Council of German Bioregions, BIO Deutschland and Life Science Nord are organizing the two-day German Biotechnology Days as a forum for players from the German biotechnology sector to exchange views. The program will include symposiums with cross-cutting and specialist topics as well as workshops and discussions on all biotechnology-related issues.
Further information: www.biotechnologietage.de
Venue: CCH, Hamburg

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Please send information and views to:
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