MEDTECH, BIOTECH & PHARMA | 3/2018

LSN MAGAZINE

THE BUSINESS JOURNAL OF HAMBURG & SCHLESWIG-HOLSTEIN

LIFE SCIENCE NORD

THE NORTHERN WAY OF INNOVATION

The ecosystem of life science companies and start-ups, clinics and research institutes in the North offers a fertile playground for new business ideas and unusual alliances

AUGMENTED REALITY

Clinicians from Lübeck develop new 3D imaging technologies to improve endovascular treatments

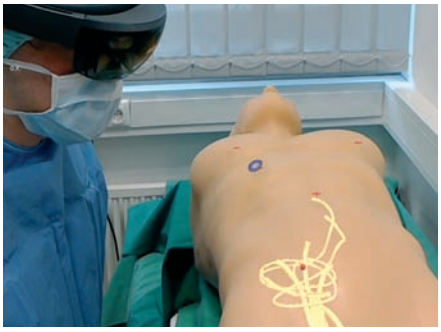
FROM DIAGNOSTICS TO POLITICS

Before starting his political career, the First Mayor of Hamburg Peter Tschentscher was physician

50TH EDITION

WWW.LIFESCIENCENORD.DE

KNOW-HOW
3D NAVIGATION FOR AORTIC REPAIR
PAGE 06



SPECIAL: THE 50th EDITION
THE NORTHERN WAY OF INNOVATION
PAGE 08

PORTRAIT
FROM DIAGNOSTICS TO POLITICS
PAGE 16

NEWS

NEWS FROM
BUSINESS AND SCIENCE

KNOW-HOW

THE TECHNOLOGY STORY

SPECIAL

NORTHERN LIFE SCIENCE ECOSYSTEM –
BEACON OF INNOVATION

BUSINESS NORD

NEWS FROM THE COMPANIES

PORTRAIT

LEADING LIGHTS IN THE NORTH

TALENTS

EXCELLENCE IN THE NORTH

50TH EDITION OF LIFE SCIENCE NORD MAGAZINE

HOW THE NORTHERN LIFE SCIENCE ECOSYSTEM BOOSTS INNOVATION

Visit us at Facebook:
www.facebook.com/LifeScienceNord

Dr Hinrich Habeck,
Managing Director
Life Science Nord Management GmbH

Dear Readers, with this 50th edition of the Life Science Nord Magazine we are pleased to provide an overview that looks back on our achievements in technology transfer, start-up support and innovation policy. At the same time, we take the opportunity to present brand new initiatives that want to advance the next generation of start-ups. One of these new ideas has been closely developed with the help of the Life Science Nord Management: the new "Anti-infective BRIDGE" which is currently being set up by Hamburg-based Evotec AG together with the city of Hamburg and local infectious diseases research institutes is a direct result of fruitful cooperation under the umbrella of the HIHEAL project. We very much look forward to boosting and supporting infectious biology approaches that find their way from the lab to the clinic and help address the need for new antimicrobials to tackle the fight against antibiotic resistant pathogens. Another important initiative takes place at the Lübeck Technology Center (TZL) which has been on hand for a good 30 years to provide northern Germany with a lively start-up scene and active entrepreneurship. Now, a new accelerator program is being established together with local partners from science and business – and the life sciences will be among the priority topics. It is scheduled for launch in 2019 and will support up to 12 start-ups with specific mentoring services and an initial capital infusion.

Furthermore, this edition highlights the achievements of the universities of Lübeck and Kiel in winning Federal funding as an Excellence Cluster for the third time in a row. They won over the jury with a new concept on precision medicine. In the Know-How section, we take a look into the potential of augmented reality for endovascular treatments. Another article presents an overview of the growing life science market in China. In addition, the editorial team met Peter Tschentscher, First Mayor of Hamburg. Before climbing to top jobs in politics, he worked as a physician in laboratory medicine.

Enjoy reading this 50th edition packed with further exciting news from companies and researchers from the Life Science Nord Cluster.

Hinrich Habeck

CHRONIC INFLAMMATION CLUSTER

HUGE SUCCESS FOR THE NORTH

Millions of Euro of Federal Government funding will be put into biomedical research in Schleswig-Holstein: For the third time in a row, the universities of Kiel and Lübeck have been selected as an Excellence Cluster with their new concept on precision medicine.

With a focus on personalized medicine and tailor-made treatments for chronic inflammation diseases the cluster concept of the Universities of Kiel and Lübeck convinced the Excellence cluster jury.

The Kiel and Lübeck university cluster "Inflammation at Interfaces", together with partner institutions in Plön and Borstel, has built up unique structures in research and healthcare, and has put Schleswig-Holstein on the map as an important biomedical region. Since 2007, it has received substantial financing from the Excellence Initiative of the German government and the federal states, totaling 68 million Euros.

Now, for the third time, the cluster has impressed the Excellence Initiative jury, with a new concept and name. "Precision Medicine in Chronic Inflammation" (PMI) will be one of 57 Clusters of Excellence that have been selected within the first funding program under the new Excellence Strategy. The cluster will be supported for seven years from January 2019. A second funding period may be granted upon successful proposal submission and review. Together with another successful cluster proposal – "ROOTS - connectivity of society, environment and culture in past worlds" – the University of Kiel (CAU) will receive total funding of 100 million Euros until 2026. But there is more: since Kiel has been successful in receiving two clusters, it may now apply as one of 19 top German universities to become a University of Excellence in the second funding program led by the Excellence Strategy. "This is a huge success which no one outside of our state had expected," said CAU President, Lutz Kipp. "With this success achieved against extremely fierce competition, tens of millions of Euros will flow to Schleswig-Holstein. The continuation of the successful research of clinical diseases will now be transferred to specific treatments," said Cluster Spokesperson Stefan Schreiber, Director of the Department of Internal Medicine I at USKH Kiel, and Director of the Institute of Clinical Molecular Biology at Kiel University.

Focus on the individual patient

Content wise, the new PMI cluster aims at ameliorating the translation of findings from bench to bedside to enable it to make progress in terms of early diagnosis, preventive intervention and treatment for chronic inflammatory diseases. As part of its strategy, the PMI research will target in particular the early detection of chronic inflammatory diseases, the prediction of disease progression and complications, as well as the prediction of the individual response to treatment. This is based on a modern understanding of medicine: holistic and interdisciplinary, preventive rather than reactive, personalized and tailored to the individual patient.

Furthermore, the new PMI Cluster will support the careers of researching clinicians. This will be carried out by a nationally groundbreaking structured clinician scientist program which is being launched to train young clinical researchers from 2019 onwards, together with the medical faculties, the University Medical Center Schleswig-Holstein and the Medical Association Schleswig-Holstein medical association.

pg

More Information:
www.inflammation-at-interfaces.de
www.uni-kiel.de

FIRST XFEL EXPERIMENT RESULTS

ANTIBIOTICS KILLER REVEALED

In October, a large international collaboration has announced the results of the first scientific experiment performed at European XFEL a year ago. The group of over 120 researchers from over 30 institutions was led by Hamburg-based DESY scientist Anton Barty from the Center for Free-Electron Laser Science (CFEL). They revealed the formerly unknown structure of a potential antibiotics killer.

The 3.4 kilometres long European XFEL is designed to deliver X-ray flashes every 220 nanoseconds. To unravel the three-dimensional structure of a biomolecule, such as an enzyme, the pulses are used to obtain flash X-ray exposures of tiny crystals grown from that biomolecule. Each exposure gives rise to a characteristic diffraction pattern on the detector. If enough such patterns are recorded from all sides of a crystal, the spatial structure of the biomolecule can be calculated. "Being at a totally new class of facility we had to master many challenges that nobody had tackled before," said Barty. The results of these experiments have just been published in the journal Nature Communications. They include details of the structure of the enzyme CTX-M-14 beta-lactamase, which is responsible for antibiotic resistance in the bacterium Klebsiella pneumoniae. The enzyme works like a molecular pair of scissors cutting open penicillin derived antibiotics, thereby rendering them useless. To avoid this, antibiotics are often administered together with a compound called avibactam that blocks the molecular scissors of the enzyme. In their experiment the scientists used the X-ray laser to study the atomic structure of the enzyme bound together with the avibactam compound. Next, the team plans to collect more data to create molecular movies of this binding process.

The publication of research results obtained at the European XFEL is also relevant for future research projects. "The first team's groundbreaking work has paved the way for all users of the facility who greatly benefit from these pioneering experiments," emphasizes European XFEL Managing Director Robert Feidenhans'l. sw

Further information: www.xfel.eu

SÖRING

NEUROSURGERY TO TREAT CANCER

More precise and low-risk resection of neurosurgical lesions is at the center of the new research project "UltraLas", headed by the surgical device company Söring GmbH headquartered in Quickborn. Funded by the German Ministry of Education and Research over the next three years, an interdisciplinary team comprising of scientists from Söring as well as partners from two research institutes, a laser company and the Department of Neurosurgery at the University Hospital Schleswig-Holstein (UKSH), will work on developing and evaluating various measurement methods for the intraoperative in vivo recognition of tumor extent, vascular architecture and tumor elasticity for neurosurgery.

"The main objective of the project is to be able to reliably detect tumor tissue. This is still difficult and will only improve with great technological effort," Söring stated. The company assumes that with its neurosurgical microinstruments lesions could more accurately be resected which could actually lead to the more reliable determination of the edges of brain tumors.

According to Söring, "for the patients' health, it is extremely important to remove as much of the cancerous tissue as possible, while also preserving adjacent healthy brain tissue and larger blood vessels." The interdisciplinary team hopes that the new methods of identifying tumor boundaries will, in the long term, lay the groundwork for prolonging the lives of cancer patients. sw

Further information:
www.soering.de

BONEBANK PROJECT GROWS

The goal of the BONEBANK consortium, currently financed by the European INTERREG program, is to collect stem cells during routine operations and harvest them in a joint cross-country biobank system. Now, the project will be extended. With an additional budget of 1.5 million Euros, further stakeholders such as harvesting and implementing hospitals, biobanks and companies will be involved and a BONEBANK organisation established. The Department of Clinical Immunology of the Næstved Hospital and the University of Lübeck are joining as new partners. The Chamber of Commerce in Lübeck will support the network partners in maintaining contacts with the regional economy.

Further information:
www.bonebank.eu

#START-UPS

100

start-ups have been funded by the Hamburg Investment Bank IFB. The number 100 is CellmatiQ, developing new diagnostics based on artificial intelligence.

NEW CLUSTER STRATEGY

In 2019, Life Science Nord Management aims at presenting the new "Cluster Strategy 2024". During a first kick-off meeting in September seven main topics have been presented: digital transformation, entrepreneurship, innovative product technologies, internationalization, working force of the future, sustainable cluster management and fostering of the innovation pipeline. In the upcoming months these topics will be discussed in detail with working groups, representing business, science and politics. The results will lay the ground for the strategy.

Further information:
www.lifesciencenord.de

VASCULAR DISEASES

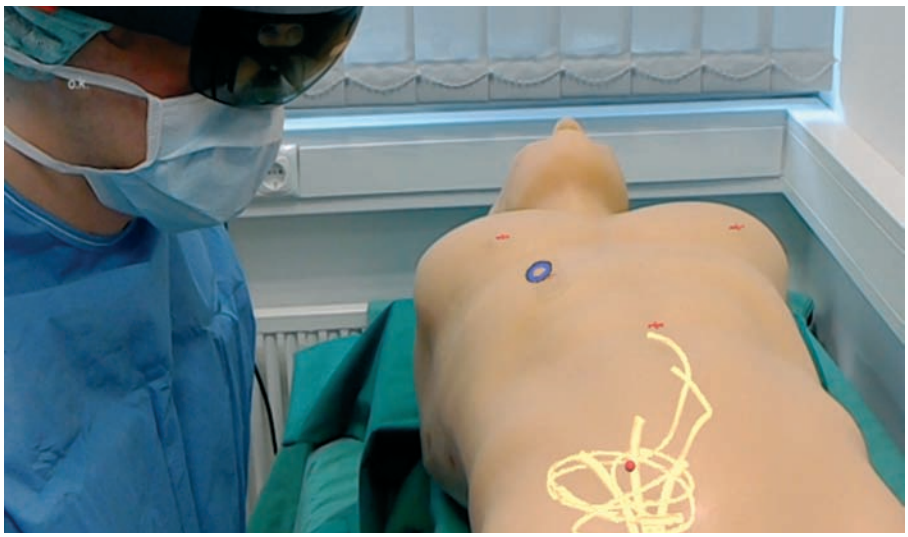
AUGMENTED REALITY FACILITATES AORTIC REPAIR

One of the major challenges associated with endovascular treatment of aortic aneurysms is the extraordinarily high exposure to radiation caused by continuous X-ray imaging during the operation. New 3D imaging technologies developed by scientists from the University of Lübeck aim to solve this problem.

To treat aneurysms physicians usually use endovascular therapy: They put a stent graft via a delivery catheter inside the vessel which brings it back to its normal size and seals the aneurysm. "Endovascular therapy has resulted in huge improvements for patients, but there are two issues that create serious health hazards for patients and the surgical team," states Markus Kleemann, Head of Vascular and Endovascular Surgery at University Hospital Schleswig-Holstein in Lübeck. To make patients' blood vessels visible, X-ray imaging is used. However, this leads to an extraordinarily high exposure to radiation and the administration of high doses of nephrotoxic contrast-agents. "Carcinogenic radiation in particular is a big problem for patients and the surgeons that carry out countless operations during their career," states Kleemann, "But with modern visualization technologies, contrast-agents and radiation are no longer needed for the intervention." Together with four different medical and technical partners in Lübeck, Kleemann established the Nav EVAR project (Navigated Contrast-Agent and Radiation Sparing Endovascular Aortic Repair) in 2017. The team aims at developing novel navigation systems for endovascular therapy to significantly reduce the X-ray burden.

Unique infrastructure in Lübeck

The project will receive funding of 4.2 million Euro by the German Federal Research Ministry until 2020. "The unique features of this project not only include disruptive research, but also excellent infrastructure here in Lübeck," says Floris Ernst from the Institute for Robotics and Cognitive Systems at the University of Lübeck (ROB). Clinicians and radiologists are only 200 meters away from their technical partners, including the ROB, Fraunhofer MEVIS and the Medical Laser Center Lübeck. "This environment creates synergistic effects and facilitates progress within the Nav EVAR project," Ernst points out. Thus far, the team has developed a patient specific vascular phantom model on the basis of CT angiography data from anonymous patients with real pathology by 3D rapid prototyping. "With this model we test and simulate our new tracking methods in a realistic environment and we avoid animal testing", states Ernst. To prevent exposure to radiation, the team wants to integrate a glass fiber with bragg grating for optical coherence tomography (OCT) into the stent placement system. The imaging technology can be used to verify the position of the catheter in the vessel and to later check whether the catheter is correctly placed. "OCT will improve accuracy and safety by continuously providing local feedback on the tip of the catheter with real-time visualization of the vessel. In combination with virtual angioscopy and other real-time visualizations, the OCT image can be displayed as a 3D projection through augmented reality," explains Ernst.



By wearing a Microsoft HoloLens, doctors will be able to follow the catheter position at any time in a real-time navigation framework. "The HoloLens still has a very narrow viewing area. Also weight, accuracy and battery need to be improved. However, it is foreseeable that with our project the augmented technology will be mature enough to make it into the OR in the near future". Nav EVAR scientists currently use electromagnetic tracking systems to test the 3D printed phantom model for their navigation systems. "The latest challenge is to improve the accuracy of the fiber bragg navigation and to develop a stable catheter that incorporates a fiber for both navigation and OCT."

hm

More information:
www.navevar.uni-luebeck.de

STRYKER

NEXT GENERATION FIXATION OF BROKEN ARM BONES

Stryker is the market leader in intramedullary devices for the fixation of fractures and most of its innovation in this field stems from the company's R&D site near Kiel. In November, a new generation of titanium nails will be introduced. The humeral nail of the T2 Alpha system is being developed to address complex fractures of the upper arm.

It has been a constant source of innovation for the surgeons' toolbox: At the site in Schönkirchen near Kiel, the medical engineers from Stryker are proud of their history of developing pioneering medical technology. In 1904, Ernst Pohl founded his company of the same name that later developed the first intramedullary nails. Today, such devices are standard in surgical practice and Stryker, with the German site near Kiel, supplies clinical centers all over the world with orthopedic traumatology devices. A nail from here is implanted every 76 seconds worldwide. "Intramedullary nails are less invasive than plates or other devices in the fixation of fractures for all extremities – that is why they have been extremely successful," says Bernd Robioneck, Vice President R&D Trauma & Extremities at Stryker. The medical technology group headquartered in the US hopes to add another chapter to this success story: this November, a new generation of titanium nailing systems known as T2 Alpha will be implanted in patients for the first time to treat femoral and tibia shaft fractures.

Improvements in design and handling

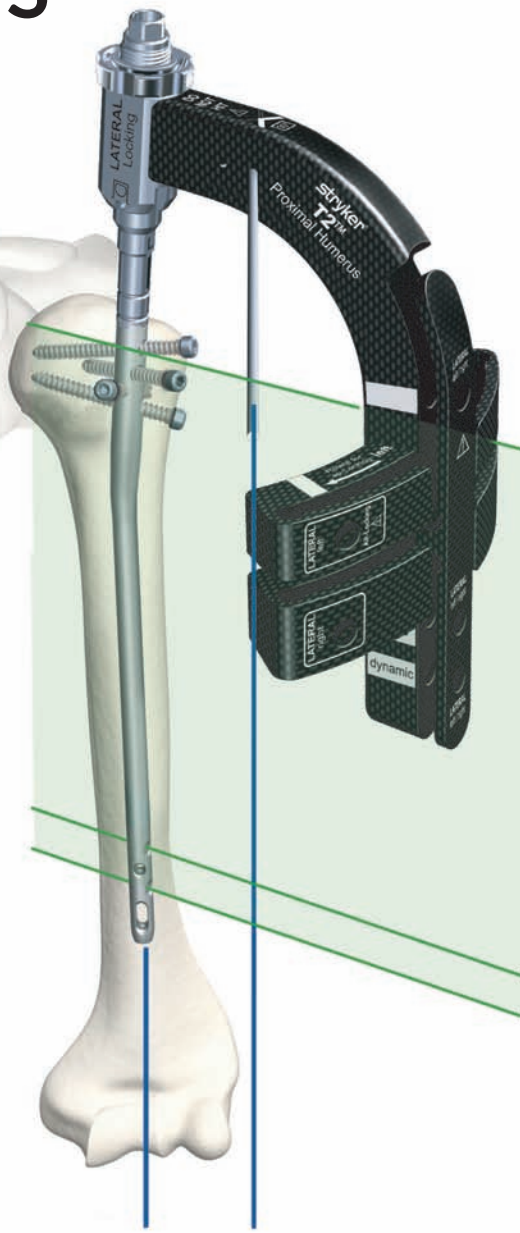
"The new platform comes with major improvements for surgeons and patients," says Robioneck. The system's innovative design helps to dramatically reduce X-ray exposure during the imaging procedure. According to Stryker, the nails require less inventory and storage space in the operating room. Furthermore, color-coded packaging makes identification of the products easier for surgeons and their assistants. During the development process of the nails, the latest big data resources have been used. "We optimized the curvature and the shape of the nails with the help of our internal bone database known as SOMA. 3D information from 20,000 bones is stored here, allowing for a population-based design," says Robioneck. As the market launch of the T2 Alpha platform refers to leg fractures, the R&D team in Schönkirchen has now targeted the upper arm bone, the humerus, to adapt it for the new generation of titanium nails. "The humerus is much smaller in diameter, which requires smaller nails. Tricky procedures such as the distal targeting of nails can be very challenging for surgeons," Robioneck points out.

EU co-funded project

The "T2 Alpha Humerus" project is co-funded until 2020 by WT.SH, the Business Development and Technology Transfer Corporation of Schleswig-Holstein based on funding from the European Regional Development Fund. "The project mainly involves developing a new targeting device that guides the surgeons while inserting the nail in a minimally invasive and precise manner," Robioneck says. The R&D process also benefits from a novel imaging method, the computer-assisted surgery platform ADAPT. Here, smart algorithms generate stacks of the X-ray pictures taken in the operating theater. This provides much needed 3D information for the surgeons. "It also helps with the increased paperwork required as part of the new Medical Device Regulation in Europe," Robioneck explains.

Innovative environment

More than 800 employees work at the Stryker Schönkirchen site, most of them involved in manufacturing. Among them 130 people are based in the R&D unit. "It's very important that we are able to do top-notch R&D in Kiel," Robioneck stresses. Close contacts to university hospitals such as the UKSH and a fruitful cluster networking are an additional asset for the company. "And, as you can see in the case of T2 Alpha Humerus, we have been successful in obtaining funding for our innovative projects." pg



This is Stryker's existing humerus fixation system that is now being further developed.

More Information: www.stryker.com

LIFE SCIENCE ECOSYSTEM

THE NORTHERN WAY OF INNOVATION

Over the past years, life science companies, clinics and research institutes in the North offered a fruitful ecosystem for founders and innovative business ideas. Now, new initiatives want to bring forward the next generation of start-ups.

"We have to promote Hamburg's start-up culture," says Thomas Hanke. The Head of Academic Partnerships at Hamburg-based biotech company Evotec AG has focused in one field in particular: infectious diseases. In this respect Hamburg stands tall on the world stage, boasting several top research institutes: whether it's the Heinrich-Pette Institute (HPI), Bernhardt-Nocht Institute, University of Hamburg, Eppendorf University Hospital (UKE), the European Molecular Biology Laboratory (EMBL), the Centre for Structural Systems Biology (CSSB) and the DESY on the Bahrenfeld Campus – a wealth of promising research groups publishing at the highest level in the field of infection biology can be found throughout the city. Evotec has just set itself the task of transferring as many of the research results as possible from the aforementioned institutes into "industry-ready drug candidates", stresses Hanke.

Bridging the gap between initial research and start-up

Currently, Evotec is establishing, together with the above mentioned institutes, an 'Anti-infectives BRIDGE' – a consortium which is coordinated by Life Science Nord Management within the HIHEAL project. The so-called 'Academic BRIDGE' represents a framework for a partnership of equals between business and science. "These academic BRIDGES have already been introduced in other European locations such as Oxford (LAB282), in Toulouse (LAB031) and the US (LAB150, LAB591). They have proven to be excellent tools for the preclinical validation of promising projects emerging from academic medical research going through our industry experience and drug discovery platforms. That means as a result of these BRIDGES we can really start to consider spin-offs and getting investors on board," explains Hanke. And that is the ultimate goal of Evotec's translation strategy: researchers at participating research institutes can apply for funding under the 'Anti-infectives BRIDGE' program. Successful applicants will be guaranteed project funding – ideally until the end of the preclinical validation process. "The role of the Life Science Nord Cluster Management was to establish an appropriate governance structure", says Friederike Saathoff from Life Science Nord. "Thus we built up a good framework under which all participating institutions, funding authorities and the political support of Hamburg could be bundled."

New support which requires academics to rethink

For Evotec, the industry approach is crucial here. "Unlike other funding initiatives, there are no fixed funding periods with a given budget. That requires academics to rethink, too. We will establish milestones for each project and decide how to proceed further based on whether those are achieved or not," states Hanke. Once selected for support, the projects will be advanced as far as possible: "At this stage, we will be competing on an international level and need to act as fast as possible to determine whether the technical aspects of the project are feasible from an industrial perspective and if it can be developed clinically." This includes a preclinical proof of concept in an animal model, or a validated lead structure that is robust enough for patenting. Based on this step, a spin-off could be developed. "Together with our international network, we will then watch out for seed capital or invest in the company ourselves," says Hanke. In 2017, Evotec has already granted more than 20 million Euros in funding for spin-offs and other investments. The 'Academic BRIDGE' is planned to be jointly financed with the city of Hamburg. For the present pilot phase, in which two infectious biology projects have already been selected, currently available funding instruments will be employed. For the official launch of the BRIDGE in 2019, new instruments needs to be evaluated. Hanke: "We're still discussing the specifics."

50 EDITIONS OF LIFE SCIENCE NORD MAGAZINE

Three times a year, the Life Science Nord Magazine looks into the newest developments of the northern Life Science ecosystem – every Autumn with an English edition. The first magazine was published in January 2005. 13 years later, the 50th edition is in place – a good occasion to take a look at the current innovation status of the North.

All editions are available at: www.lifesciencenord.de

Advancing Hamburg's start-up culture

Frank Schnieders, managing director of Provecs Medical GmbH, is also convinced that Hamburg has some way to go in its start-up culture. Twenty years ago, when the gene therapy expert, together with his research group, made the move from the Max-Delbrück Center for Molecular Medicine in Berlin to Hamburg, initially to HPI, and subsequently UKE, such approaches didn't yet exist. One of the rare few who wanted to make the switch from research to business, Berlin had already whetted his appetite for entrepreneurship, and once there he participated in a spin-off established by research colleagues. In Hamburg, Schnieders wanted to become a businessman himself, based on a research approach of his own, combining immuno- and gene therapy. Yet his initial priority was to lay the foundations for this kind of business – and the UKE offered the ideal environment in which to do just that. "Thanks to funding from the Federal Ministry of Education and Research, together with the UKE colleages, we were able to process fundamental animal data and had the chance to register patents. That was very straightforward here in Hamburg," recalls Schnieders. Even after the spin-off got off the ground, the young biotech company was able to use the clinic's infrastructure for a number of years, keeping costs low. "That allowed us to push forward, even with relatively little start capital."

The idea of promoting gene therapy and immunoncology was pretty risky back then. These days, however, Hamburg-based Provecs has struck the right note by entering into discussions with big pharma. "Our expertise – to activate an oncological setting that targets immunology via certain signaling proteins and through highly localized genetic therapies – makes us interesting when it comes to combination therapies in immuno-oncology such as those for solid tumors," explains Schnieders, who is delighted to have attracted interest from international pharmaceutical companies. But the managing director has also forged close ties at a local level. He has gotten together with clinic operator Asklepios, for example, to run analyses on tissue samples that test the effectiveness of immune biomarkers. "One of the deciding factors for Hamburg is that partnerships are so straightforward." And thanks to the local networks Schnieders also succeeded in starting a collaboration with pharmaceutical company medac. Since 2016, both firms have a joint research venture to promote the development of completely new immuno-oncology drugs. "We're delighted that medac wishes to implement this visionary project with us – for a business of this size the willingness to take

Frank Schröder-Oyenhausen, Head of the Technology Center Lübeck, currently works on a new accelerator program for start-ups.

Frank Schnieders, CEO of immunotherapy-specialist Provecs Medical GmbH, thinks that Hamburg needs to focus on its strengths and know-how to boost new foundations.

such risks is not a given." The move to Hamburg has certainly paid off for Provecs, since a one-time start-up has been transformed into a key local player financed by private capital from local sources. "The commercial perspective, existing in many places across the region, has been a real boon. But a business also needs a certain level of visibility to rely on," says the managing director. He hopes that today's start-ups don't need to spend quite so much time in this phase. He welcomes initiatives such as that organized by Evotec and hopes that they will develop into something much bigger. "Hamburg might not be Boston at the moment, but our town has a huge potential! We can achieve so much here."

New accelerator program for start-ups in Lübeck

Outside Hamburg, the Lübeck Technology Center (TZL) has been on hand for a good 30 years to provide northern Germany with a lively start-up scene and active entrepreneurship. Since its foundation in 1986, TZL has been offering flexible, scalable offices, lab and production spaces and a host of additional services for innovative companies. Today, it has 20 buildings totaling approximately 50,000 square meters across three sites in Lübeck. About 300 companies and more than 4,000 jobs have been created in Lübeck because of and through the TZL – and according to Frank Schröder-Oeynhausen there's still a long way to go. It has been an year now since Raimund Mildner, longstanding Manager of TZL, passed the torch to him, and he now finds himself at the center of preparations for a new accelerator program for start-ups. "Not only do we want to provide development space, we also wish to connect companies and investors, to tap into and link their expertise," he says. The first step in that direction was for TZL to establish the plattform "Gruenderviertel.de" as a website operated in conjunction with other partners. It acts as the first port of call for entrepreneurs in Lübeck and Kiel to gain information on establishing their own companies. The accelerator program will allow the city to progress even further. The plan is to grant spaces to up to 12 start-ups in a new co-working space on the TZL campus in Lübeck, where they will be provided with 30,000 Euros start capital as well as support from mentors and coaches. "We aim to focus on regional strengths such as life sciences, food, logistics and digitization," explains Schröder-Oeynhausen. The production laboratory (FabLab) that TZL has been managing since 2014 will be closely attached. Students there have the opportunity to work in an open, high-tech workshop with access to a 3D printer, laser cutter, CNC milling machine and CNC lathe. "That's how ambitious, technically minded inventors, entrepreneurs or interested start-ups can access the latest production technologies quickly and easily," states Schröder-Oeynhausen. And it works. Take the example of Bjarne Andersen, who is studying for a master's degree in medical engineering and is currently developing an orthotic for stroke patients. This medical aid is fitted with tiny sensors that measure how far an arm can be extended following a stroke. It's even possible to integrate small motors into it.

Laying a permanent foundation for start-up ideas

Natascha Koch, on the other hand, has built a prosthetic hand for her bachelor's degree project at the Institute of Signal Processing, University of Lübeck. The device, which was manufactured by a 3D-printer, could enable her to help children in the Third World who have been maimed by mines. "We must set ourselves the task of ensuring that such ideas don't remain stuck in the early stages but rather are built on properly from day one," says Schröder-Oynhausen. With that in mind, in the long run FabLab plans on breaking out of the basement and moving into a new central building on campus. It is envisioned that a new building next to GründerCube could bundle all technology transfer activities. "We want to make more visible our cooperation between the academic institutes and the TZL," says Schröder-Oeynhausen. "However, this project is still at an early stage." He's convinced that Lübeck is the ideal location for such plans. It's not only strong local partners such as the University Hospital, the academic institutes, the Chamber of Industry and Commerce, the banks and local companies that are involved: the TZL manager also views the

proximity to the partners in Schleswig-Holstein as a major advantage. “We're a small Gallic village that wants to find smart solutions quickly.” Currently, extensive efforts are being made to gather LOIs for the new accelerator program. Not only public bodies, but also private companies will be on board. The first call for Germany-wide tenders is expected in spring 2019.

Call for new translation solutions

Christian Stein could spend hours discussing how new technologies make their way from academic research to business start-ups. He believes there is no one-size-fits-all solution. As a managing director at Ascenion GmbH, he spends his days dealing with translation. As a partner to a wealth of research institutes from the Helmholtz and Leibniz Association, the Charité university clinic in Berlin, the Medical Technical University Hanover and associated organizations involved in translation research, the Ascenion staff travel the length and breadth of Germany to select the perfect research results for commercial applications and to supervise the process. “However, in the case of radically new therapeutic approaches, a direct jump from research to business can be tricky, as such breakthrough innovations are often too risky for the pharmaceutical industry, even if they have originated in first-class scientific research," says Stein. An excellent example of such a challenge is the Provirex GmbH start-up, which emerged from the Heinrich Pette Institute with the help of Ascenion. Already since 2005, the team led by Joachim Hauber has been working with research colleagues from the Technical University of Dresden on a revolutionary method to "cut" the HIV virus from the body using genetic scissors – if this genome-editing approach were also to function in humans, it would pave the way to a cure for HIV. “The necessary early clinical studies alone cost over 11 million Euros, however, and private investors shy at investing such amounts for good reasons,” says Stein.

Thomas Hanke from Evotec AG aims at builing a new "Academic BRIDGE" with Hamburg-based research institutes to translate infection disease projects into the clinic.

Unconventional funding for HPI spin-off Provirex

Dynamic Hamburg connections are to thank for the solution that now presents itself. In June, the local red-green coalition plugged the funding gap by making three million Euros available to the start-up, with the Federal Ministry for Research and Education contributing a further 5.9 million Euros. That government money now allows the Provirex to raise private funds. The capital is sufficient for a feasibility study to be performed on eight patients at UKE in Hamburg and to ascertain whether the methods work not only for mice but also in humans. “Hamburg has been given a great opportunity to promote a unique research project that is important to society, and in this way, it can become a leader in the field of infection research,” said Science Senator Katharina Fegebank (Green Party) to the Hamburger Abendblatt, while Sven Tode, Science Spokesperson for the Social Democrats, stressed that: “Our Hanseatic city has the opportunity to become a leading global location for future gene therapy technologies.”

Christian Stein, who has worked as a molecular biologist and also founded several companies himself, is pleased that Provirex has been able to finance further developments because of that flexible partnership between regional and national authorities. He hopes that such novel and groundbreaking approaches will garner long-term support through the new agency for breakthrough innovations currently being set up by the Federal Ministry for Education and Research. “We need tools that take in huge quantities of funds for individual projects – especially in areas that are relevant to society, where the market alone can’t raise the necessary capital." At the same time, he sees a risk at present that the interests of technology-transfer organizations may be focused too narrowly on the generation of start-ups – even if the technological foundations have not been sufficiently validated. For this reason, he would prefer to establish new forms of valorization budgets. “Not all projects are suitable for a spin-off, but for licensing. For this reason, we should be considering flexible instruments that allow technology bodies themselves to undertake validation measures with a small dedicated budget and prepare to set up businesses only after their completion,” says the Ascenion CEO. Through that process, the start-ups would have a realistic chance of financing further growth through private investors – whether on the national or international level.

Frank Schnieders also notes how the start-up scene in the North is becoming more attractive to industry leaders abroad. “We shine as a location and are now on the radar of many investors.” Schnieders believes that northern Germany needs to take greater advantage of such potential: “Many other cities have made mistakes when it comes to promoting start-ups. We can learn from that and bring together our expertise to do it properly.” SW

BIOANALYTICS

BRUKER EXPANDS DRUG DETECTION PORTFOLIO

As of last summer, Hamburg-based Sierra Sensors GmbH belongs to US biotech giant Bruker. As part of an international group, Sierra's products are now able to reach global markets more quickly.

Drug development is laborious and expensive. Analytical methods and techniques that test and determine the binding capacities and thus efficiency of the active ingredients of potential new medications are therefore in high demand. One particularly promising high-throughput analysis technology was developed by Hamburg-based Sierra Sensors GmbH. The company was founded 2006 by Klaus Wiehler and Chris Whalen with support from the High-Tech-Gründerfonds and soon grew to a resepctable company, employing 20 biotech experts. They made their staple in innovative analytical biosensors based on Surface Plasmon Resonance (SPR) detection, one of which stands out especially: the SPR+ detection technology. „Powering an array of 32 sensors across eight channels, it is able to screen thousands of samples per day with outstanding sensitivity ", explains Klaus Wiehler. Over the past years, Sierra Sensors constantly grew its costumer base in Europe and the US. But due to the size of the company, global expansion was limited in the long-term. Therefore, the interest of biotech giant Bruker regarding the SPR+ technology was more than welcome. In June of 2018, Bruker announced the takeover of Sierra Sensors, financial details were not disclosed. "Bruker was looking to fill their gap for label free analysis, and we were looking to expand and address a bigger more global market – it was a win-win situation," summarizes Wiehler.

Seamless transition

In order to complement their mass spectrometry portfolio, Bruker incorporated Sierra into their Daltonics branch in Bremen, changing the name of the former Sierra Sensors laboratory in Hamburg to "Bruker Daltonics SPR". "The same 20 biotech experts that helped us establish Sierra and our technologies are still working in our Hamburg Bruker office today," says Wiehler. "However," he is quick to point out, "utilizing the ecosystem of a large coroporation with a very similar business model will make long-term planning much more feasible "

And with the support of Bruker behind them, Wiehler sets ambitious goals for the future of their technology: "In five years, we aim to be market leaders with our SPR technology. We have the know-how, and now we have the necessary infrastructure."

jmr

More information: www.bruker.com/de

HAMBURG INNOVATION AWARD

HIGH-QUALITY FOOD TESTING

Hamburg-based GALAB laboratories analyze food content and quality, thereby ensuring high quality standards with their latest food metabolomics technology. They have just received the Hamburg Innovation Award for their growth.

What is in the food we eat? GALAB Laboratories tests just that for their customers and analyzes food products – among other things – for unwanted residues. Founded in 1992, the independent contract laboratory operating in the field of external quality control has been growing and expanding ever since. Currently, they employ roughly 170 highly trained food- and biochemists at their campus in Hamburg. That growth is also what garnered them the coveted "Hamburg Innovation Award" as part of the annual Hamburg Innovation Summit (HHIS) in May 2018. The HHIS honors entrepreneurship, new business ideas and innovative companies in the Hamburg metropolitan region. Jürgen Kuballa, Managing Director at GALAB, points out: "Our location in Hamburg provides us with the best technology, infrastructure and people. For that reason and because of the demand for more stringent testing, we're constantly growing and expanding."

New global subsidaries

Moreover, GALAB has recently founded a subsidiary in China to oversee and manage product control locally. And they are about to break ground on another subsidiary in South America. The reason: the flow of goods is becoming more and more complex and globally intertwined – apples from New Zealand, meat from Argentina, and granola mixes from China. GALAB's main focus right now is on the organic and infant food market. "Customers demand particularly high-quality standards from these products. We have tested most of the organic food products in any given supermarket," Kuballa states proudly. Part of GALAB's success and growth is rooted in their in-house development of new analytic technologies. "Twenty years ago, customers as well as technologies were far less sensitive regarding food additives or chemical residues. Now, we can detect miniscule traces of pesticides or whether products have been mixed with cheap additives," explains Kuballa.

To that end, GALAB is currently researching what are known as food metabolomics (FOODOMICS). A concept based in pharmacology where new medication, or in GALAB's case, food, and its effects on the physiology and metabolism of patients or customers are assessed. By using these kinds of analyses, the laboratory can even detect the different metabolic effects of apples versus pears or whether a product was contaminated. jmr

More information: www.galab.de

OSTEOLABS

BONE HEALTH BIOMARKER SPIN-OFF

Osteolabs GmbH has just spun off from the GEOMAR Helmholtz Centre for Ocean Research. The start-up aims at offering its test as a medical device and osteoporosis screening service.

Osteoporosis or bone loss is a widespread disease from which many older women suffer. The consequences of this illness range from broken bones to complete loss of mobility. Under the Osteolabs project, a research team from the GEOMAR Helmholtz Centre for Ocean Research Kiel and physicians from University Hospital Schleswig-Holstein are developing a non-invasive biomarker based on a marine chemistry analysis method for calcium isotopes that only requires urine or blood for examination. The composition of different calcium isotopes is detected by sophisticated mass spectrometry methods. Osteolabs GmbH spun off from GEOMAR on 30th August. Geochemist and Coral Reef Researcher Anton Eisenhauer (portrayed in LSN Magazine 1/2017) acts as Chief Scientific Officer with serial entrepreneur Stefan Kloth as CEO.

"Our biomarker is able to detect bone loss much earlier than traditional methods and, in the case of an illness, to measure therapeutic success, thus ensuring a personalized treatment strategy and optimized medication," says Eisenhauer. The goal of the spin-off is to offer the test as a medical device and osteoporosis screening service. Osteolabs has already received funding of 1.8 million Euro from a validation project by the Helmholtz Association. In June this year, Osteolabs' business idea was selected for the Helmholtz Enterprise funding program that provides spin-off projects with up to 260,000 Euro. "Without this funding, we couldn't have developed the method to be close to marketable," says Kloth, but he stresses there is still some way to go to make the test faster and more cost-effective. Karin Prien, the Minister of Education, Science and Cultural Affairs of Schleswig-Holstein, said on the occasion of the founding that the Osteolabs spin-off is an excellent example of successful technology transfer. Osteolabs is also a player of NORTHOPEDICS, the innovation network for bone healing in the Life Science Nord region. pg

More information: www.osteolabs.de

LIFE SCIENCES IN CHINA

FUELED BY INNOVATION

Data & Facts

Pharma market revenues (2017):
US$ 126.6 bn (Source: IQVIA)

Medical devices market revenues (Estimates for 2018):
US$ 42bn (Source: China Med Device)

Regulatory body:
China Food and Drug Administration (CFDA), to be renamed China Drug Administration (CDA)

High market demands in:
Biopharmaceuticals, high-end medical devices

Further information:
www.chinabio.com

China's life science industry is booming. Facing unmet medical needs and an aging population, the government has put much effort into reforming the healthcare system and in fostering research and translation. Novel regulatory frameworks are regarded as game changers for the domestic life sciences industry, but also for foreign companies.

China's life science industry is at a turning point. The country, with a population of 1.4 billion, has stepped up investment in drug innovation in recent years, both in basic academic research and in industry-driven R&D. Reforming the healthcare system has become a national priority for the central government and recent changes in the regulatory landscape have been very effective in catalyzing the development of a drug and medtech innovation ecosystem. China is the world's second largest pharmaceutical market after the United States and is on track to be number one in 2020. The unmet medical needs of a rapidly aging population are fueling the potential market. One in four people will be over the age of 65 by 2036. As the middle class grows, those costly drugs for chronic diseases and cancer are likely to find payers.

The biopharmaceutical industry has received special attention and support from the Chinese government in its last three five-year plans, the strategic blueprints that determine the country's economic goals. The latest plan, China's thirteenth, stipulates that by 2020 the biotechnology sector should exceed 4% of the gross domestic product and there should be 10 to 20 life science parks for biomedicine with an output surpassing 10 billion yuan (1.5 billion US$).

Significant regulatory changes

In a report, consulting firm McKinsey calls last years' regulatory changes by the drug administration agency, the CFDA, the "Big Bang" for the drug innovation ecosystem in China. They align China with the leading

drug markets in the US, Europe and Japan, making it easier for foreign companies to enter China and import their drugs. This has resulted in a wave of 35 new drugs reaching the market in China in 2017 in comparison to five in the preceding year. As part of Beijing's "Made in China 2025" industry plan, President Xi Jinping identified the pharmaceutical sector as one to push, with the focus on innovation and homegrown research and development. There has been an uptick in deals with Western companies investing in Chinese drug candidates. This momentum has piqued investor's interest: Chinese venture capital and private equity funds raised 45 billion US$ for investment in the life sciences in the two and half years prior to June 2017, according to ChinaBio.

China's medtech market offers similar potential for growth. It is the third largest in the world and forecast to be the second largest worldwide by 2020. According to Statista, in 2016, the size of the Chinese medtech market was 41.1 billion US$. Traditionally, Chinese companies have dominated the low end of the market, but a few years ago, the government started to launch a number of initiatives to promote innovation in the local medtech industry. Strict regulations require clinical trials for innovative products and have increased the registration timeline, a major hurdle for players hoping to enter the medtech market. "China is one of the most preferred markets for our cluster-network companies," says Alberto Baldi, Coordinator of the European Medtech Alliance MAGIA.Funded by a European Commission project, this alliance brings together four European health clusters – BioPmed, BioWin, Life Science Nord and Lyonbiopole – and aims at supporting its small and medium-sized companies (SMEs) in going international on two global target markets. In a recent survey among the companies, China emerged as one of the most interesting. "China is so big that it offers opportunities for growth in all medtech segments," Baldi points out. Furthermore, he says that the European companies would be better off addressing the high-end medical devices segment, rather than the low-to-medium tech sector which is dominated by local manufacturers. The MAGIA staff is now assessing China's medtech landscape to identify the best landing areas for SMEs. Baldi: "One innovation hub to go for is definitely Shanghai with its numerous high-tech parks." pg

For more information about the MAGIA project, please contact:
Sarah Niemann
niemann@lifesciencenord.de

LIFE SCIENCE MARKET IN CHINA

"A MORE CHALLENGING MARKET"

Dennis Wilkens is Managing Director of Jadevita International Inc., an international commercial agency for medical technology and biotech companies with activities in Beijing, Hamburg and Toronto. He has worked in China as a specialist in healthcare and medtech for more than twelve years in various leading positions and speaks Mandarin Chinese fluently.

How would you characterize the life sciences market in China?
Wilkens: It is a dynamically growing market across all fields of life sciences which provides interesting opportunities, but also has its challenges. The government promotes innovation and has ambitious plans for further reform and investment in the healthcare system. China's biotech industry, for example, has become a vibrant industry with innovative drug developments in the pipeline. Regarding the medtech market, there is demand for high-end, innovative, imported medtech as well as for locally manufactured medtech that is more price sensitive and comes with higher volumes.

What future developments and opportunities do you foresee for the future?
Wilkens: Going forward, we see more growth for the healthcare market due to long-term trends. Registration with the CFDA, China's drug and medtech administration body, has become more challenging, but the registration process is more transparent and process-oriented than before. In order to be successful with medtech in China, a company has to provide an innovative product or device with outstanding features that the market demands. "Me too" solutions are hard to promote. An interesting area for growth in general is the dental technology market. Furthermore, a new regulatory framework was recently released for food for special medical purposes, and this area, as well as the sports nutrition market, sees vibrant growth. The biotech market is interesting in terms of overall market demand and it offers exciting possibilities for partnership with competent local partners.

What advice do you have for companies interested in entering the Chinese life sciences market?
Wilkens: Entering the Chinese market has become more challenging and more capital intensive compared to a few years ago. An overall growing healthcare market does not necessarily mean it is a growing market for your solution also. On the other hand, in the right niche with the right strategy attractive growth can be achieved in one of the largest healthcare markets worldwide. Thus, a proper market landscape analysis and thorough planning is most important initially, as well as the right partners locally for continuous, process-driven business development. That is where our expertise and experience come in. As a commercial agency, we provide strategic and operational support in business development, and we can open doors to professional local distributors.

More information: www.jadevita.com

PETER TSCHENTSCHER

FROM DIAGNOSTICS TO POLITICS

Peter Tschentscher has been First Mayor of Hamburg since March 2018. As a financial expert, he is passionate about dealing with complex data. Before climbing to top jobs in politics, he worked as a physician in laboratory medicine.

One of Peter Tschentscher's personal role models is Rudolf Virchow. The famous pathologist was not only an influential physician and scientist but also a passionate politician and parliamentarian in 19th century Berlin. Virchow coined the saying that "politics is nothing else but medicine on a large scale". Tschentscher reckons there are indeed interesting parallels between both worlds: "In medicine, you diagnose and treat individuals, politics is about knowing the challenges and finding the best solutions for society". Like Virchow, today Tschentscher's heart beats for both medicine and politics.

Politics has become his full-time job for good reason: this March, the 52-year-old Social Democrat became First Mayor of Hamburg, making him head of government of the Free and Hanseatic City. By 2011, he had climbed to the top of the political career ladder by becoming head of the Ministry of Finance in the Senate of Hamburg. This step marked the end of his medical career as a practicing senior physician at the Diagnostics Center of the University Medical Center Hamburg-Eppendorf (UKE).

Fascinating power of diagnostics

Early on during his medical studies in Hamburg in the late 1980s, he became fascinated with the potential of laboratory medicine and the power of emerging molecular diagnostics. "Laboratory medicine is like a gripping crime story, there are symptoms and there is an offender and you have to narrow it down with a precise diagnosis," says Tschentscher. What comes in addition to this detective's instinct is his passion for facts and figures. "I like dealing with and interpreting complex

FACTS & FIGURES

Place of work: City Hall of Hamburg
Position: First mayor of the Free and Hanseatic City of Hamburg, President of Senate
Career path: born in 1966 in Bremen, studied Medicine and Molecular Biology in Hamburg, specialist in Laboratory Medicine. 2008 habilitation at the Medical Faculty, from 2011 Senator and Head of the Ministry of Finance

Further information:
www.hamburg.de

data," he says. That skill has served him well to date in his daily life as a political leader. After completing his Doctor of Medicine degree, he specialized in molecular biology and clinical chemistry.

Tschentscher is convinced that laboratory medicine is the backbone of evidence-based healthcare. "Without a top-notch lab, a hospital can never be good," he says. Together with his team at the UKE Diagnostics Center, he once developed molecular testing procedures to detect cancer mutations. It's about the utmost care – and it's about not producing false-positive results without overlooking things.

Teaching cannot be digitalized

Tschentscher also stresses that laboratory medicine is much more communicative than people might think. "You are in constant dialogue with colleagues from other disciplines and you deal with patients a lot – for example in transfusion medicine," Tschentscher says. Another thing he enjoys is teaching. In 2008, he finished his habilitation. Until recently, he gave lectures at the UKE and still tries to keep up with the latest developments. Teaching is often something very personal where you can pass on knowledge, Tschentscher


Hamburg's City Hall

explains. "That's something you cannot digitalize." That he could progress in his political career despite his challenging job as diagnostician is a local peculiarity. "Hamburg is a good place for part-time politicians", explains the father of an adult son. As a long-standing member of the District Assembly Hamburg North, he soon earned the reputation of a financial expert.

What is his view as first mayor on the status of the life sciences sector in Hamburg? Tschentscher comes up with some figures: The complete healthcare sector has a gross value added of 10 billion Euro and 180,000 employees – numbers that demonstrate that healthcare is a significant economic factor. "Biotechnology is clearly the main driver of innovation in the fields of diagnostics and novel therapies," Tschentscher says. He is convinced that biotechnology can also provide new solutions for bioinspired technologies and for more sustainable use of natural resources. He considers the wide spectrum of excellent research institutions in the life sciences in Hamburg as a huge plus for the innovation ecosystem. "We provide continued support for networking between academic and economic players and the startup scene," he says. Faster and more efficient translation of relevant results from lab to bedside is another important aim of his government. "That's why we put an emphasis on the concept of innovation parks as hubs for cooperation – with Altona and Harburg focusing on life science." He appreciates private initiatives such as the Health Innovation Port, a co-working space format at Philips or the Hamburg Innovation Port that is currently under construction in Harburg.

One thing is certain: being both physician and mayor, he will always have a special insight into what's going on in the life sciences sector in Hamburg. pg

BORSTEL

NEW LAB BUILDING FOR LUNG DISEASE RESEARCH

It's another breath of fresh air for the expansion of the campus at the Research Center Borstel: the Federal Government and the state of Schleswig-Holstein both invest 40 million Euro for the construction of a new lab building called the "Leibniz Respiratorium".


The "Leibniz Respiratorium" will serve as the central lab building.

The new building is part of an investment offensive into the future of the Research Center Borstel. Within the next four years, the campus of the Leibniz Lung Center will be expanded thanks to an investment totaling 50 million Euro. The "Leibniz Respiratorium" will replace the current central laboratory building, which turned out to be impossible to renovate. Across three floors, the new lab building will provide space for 150 employees from 14 research teams. The new building is to open its doors in 2022. The construction costs will be divided equally between the state of Schleswig-Holstein and the Federal Government. The Research Center Borstel has been a member of the Leibniz Association since 2003. The center's mission is to perform comprehensive health and biomedical research in pneumology. On a national level, it's regarded as a leading institute in tuberculosis and asthma research. The Research Center Borstel will also partner with the newly-approved Cluster of Excellence "Precision Medicine in Chronic Inflammation" network coordinated by the University of Kiel and Lübeck commencing in January 2019 (*see also p.4*). In 2017, the center had a total annual budget of 21.7 million Euro and raised 7.6 million Euro in external funding. pg

Further information:
www.fz-borstel.de

SURGERY

AN ADHESIVE TO REMOVE KIDNEY STONES

It could be a breakthrough in kidney stone surgery: the start-up Purenum GmbH has developed a biocompatible medical adhesive that sticks tiny kidney stone residues together, but does not adhere to tissue or medical devices. It has just secured further financing.

Kidney stones are smashed by laser and endoscopically removed bit by bit. But fragments smaller than one millimeter can remain as nuclei for new and severe kidney stones. Urologists have observed, that more than 50% of the patients actually develop new and painful kidney stones after surgery. "The use of our adhesive called mediNiK enables physicians to remove even the smallest residues endoscopically," states Ingo Grunwald, one of the two founders of the startup Purenum GmbH.

The adhesive technology was developed by Grunwald and his colleagues at the Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM. Together they generated the idea of creating a new biocompatible medical adhesive for endoscopy treatments. MediNiK is a two-component compound consisting of sugar or carbohydrate-containing materials. During surgery, physicians can guide the adhesive via endoscope from the urinary tract to the kidney. The first component surrounds the small stone residues, the second hardens it into a gel. "It just takes seconds until the mass is big and strong enough to be removed with conventional medicinal gripping tools," explains Grunwald. Another advantage of the technology: it can be integrated into existing endoscope procedures without new instruments or additional procedural steps. In preclinical tests mediNiK also proved to be selective because it neither stuck to devices nor to tissue. "Technically, the adhesive could already be used. Purenum GmbH was founded this year with the aim of developing the technical product into a medical product," adds Manfred Peschka, co-founder of Purenum. "Now, we have to arrange quality management according to ISO 13485, carry out extensive tests and subsequently certify the kidney stone adhesive with the help of a notified body."

In August, Purenum completed its first round of financing, with funding of Starthaus, an initiative of the the development bank for Bremen and Bremerhaven (BAB), the High-Tech Gründerfonds and other private investors. Furthermore, the team succeeded in raising GO-Bio II funds, which were also pledged in August. „Give it two more years, and we'll hope to have mediNiK on the market." hm

More information: www.medinik.de

MS UETRECHT, WHAT'S YOUR RESEARCH ALL ABOUT?

Charlotte Uetrecht is a biochemist and heads the junior research group "Dynamics of Viral Structures" at the Heinrich Pette Institute, Leibniz Institute for Experimental Virology (HPI) in Hamburg. She started working with mass spectrometry of viruses as a PhD student in Albert Heck's group at Utrecht University. Subsequently, she worked as a postdoctoral research fellow in Sweden and at the XFEL in Hamburg.

"I have always been fascinated by viruses and I have always wanted to understand how the structures of viruses change during the course of an infection cycle. To that end, we mainly use mass spectrometry (MS) to investigate the complex structure of viruses and their binding partners. The mass of a virus tells us which components are present in a complex at a certain point in time. And since MS is very sensitive, we only need small amounts of our virus samples to determine their specific weight and identify their binding partners. This is also the focus of my research group at the HPI: investigating the binding of viral shells to ligands of the host cell as well as the temporal changes in the replication complexes of viruses. The structural resolution of MS is limited, however. We therefore also work on methodological improvements by combining MS with X-ray lasers. This project is supported by a starting grant of roughly 2 million Euro which we received last year from the European Research Council. The knowledge we gain on viruses will be particularly important for the development of active substances and for nanotechnology."

EPPENDORF AG

SAMPLE HANDLING AREA WITH NEW HEAD

As of May 1, 2018, Peter Fruhstorfer took over the responsibility as Head of Business Area Sample Handling at Eppendorf, reporting to Thomas Bachmann, President and CEO at Eppendorf AG. Fruhstorfer has full commercial responsibility with the aim to further develop the offering and make the Business Area prosper with a long term perspective. The Business Area Sample Handling consists of three Business Units at the Eppendorf group: Centrifugation, Sample Management, and Instruments & Systems – as well as an Application team. They cover a broad product portfolio and diverse customers, representing approx. 230 million Euros of revenues. Peter Fruhstorfer holds a degree in Mineralogy, Crystallography, and Geochemistry and a doctoral degree in Hydrochemistry & Environmental Analysis from the Technical University Munich, Germany. He has extensive experience in the life science industry. Fruhstorfer has held position as Vice President Global Sales & Business Development and most recently as Managing Director of a Life Science Business Unit of a North American Life Science company. sw

Further information:
https://corporate.eppendorf.com/en/

UNIVERSITY OF LÜBECK

THYROID RESEARCH HONORED

Jens Mittag, Professor for Molecular Endocrinology at the University of Lübeck, has received the Harington-de Visscher Prize from the European Thyroid Association (ETA) at its annual meeting in mid-September in Newcastle, United Kingdom. He is the first German ever to be honoured by ETA for this prize which was established in 1974 for the first time by the generosity of Madame Jacqueline de Visscher.

The prize is awarded to a member of the association, who is younger than 42 years of age and has made a significant contribution to thyroid research. The ETA was founded in 1965 with the aim of promoting basic and clinical research of the thyroid. Currently, it has about 600 members. Jens Mittag has worked on the role of thyroid hormones in the cardiovascular and thermoregulatory systems and analyzed its relevance for the regulation of body temperature. In 2014, Mittag joined the University of Lübeck as professor and since 2015, he has held a Heisenberg professorship funded by the German research association DFG. Mittag began his career by studying biochemistry in Hannover. In 2006, he gained his doctoral degree at the Max-Planck-Institute for Experimental Endocrinology, Hanover. In 2011, Mittag habilitated at the Karolinska Institute in Stockholm, Sweden. sw

Further information:www.uni-luebeck.de

JOINING FORCES FOR SUCCESS: WE WANT YOUR INPUT!

Please send information and views to:
hauck@lifesciencenord.de

Would you like to receive the magazine regularly free of charge? For information on subscription, please contact:
info@lifesciencenord.de

IMPRINT

PUBLISHER

LIFE SCIENCE NORD

Life Science Nord Management GmbH
Managing Director: Dr. Hinrich Habeck
Falkenried 88, 20251 Hamburg

Phone: +49.40.471 96 400,
Fax: +49.40.471 96 444
info@lifesciencenord.de
www.lifesciencenord.de

SUPPORTED BY:

Hamburg

SH Schleswig-Holstein Der echte Norden

EDITORIAL BOARD

Simone Hauck (responsible under press law)
Life Science Nord Management GmbH

REALIZATION

BIOCOM AG, Berlin

PROJECT MANAGEMENT:
Sandra Wirsching

EDITORS OF THIS EDITION:
Dr. Philipp Graf, Dr. Judith Reichel,
Sandra Wirsching, Helene Märzhäuser

PROOFREADING: Andrea Murphy

ART DIRECTION: Michaela Reblin

PRODUCTION: Benjamin Röbig

PHOTOS: Jörg Müller (Cover, p.1,2,3,8); Sascha Klahn/Uni Kiel (p.4); UKSH/Ernst (p.6); Stryker (p.7); Bruker (p.12); Osteolabs (p.13); adobestock/Iakov Kalinin (p.14); Ronald Sawatzki/Senatskanzlei Hamburg (p.16); pixabay, RDS | IB (p. 17), Uetrecht (p.18), Mittag (p.19), Eppendorf (p.19)

FSC www.fsc.org RECYCLED Paper made from recycled material FSC® C005459

PRINT: Druckerei Siepmann GmbH, Hamburg. Printed on EU Ecolabel certified paper

Life Science Nord Magazine for Medtech, Biotech and Pharma is published three times a year.

BONE INNOVATION SUMMIT 2019

13-14 FEBRUARY 2019

Topics

Fractures | Stem Cells | Registries | Data | Infections | Materials | Diagnostics | Biobanking | Complications | Implants | Treatments | Osteoporosis | Regeneration

media docks Lübeck
Willy-Brandt-Allee 31 | 23554 Lübeck | Germany

www.bone-innovation-summit.com

REGISTER NOW!

Joint Conference of

BFCC Baltic Fracture Competence Centre

BONEBANK

We foster the economy EU.SH

Schleswig-Holstein Der echte Norden

NORTHOPEDICS Innovationsnetzwerk für Knochenheilung

Interreg Baltic Sea Region

EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

Interreg Deutschland - Danmark

EUROPEAN UNION