ENTREPRENEURIAL SPIRIT AND
RESEARCH EXCELLENCE IN SAXONY-ANHALT

HERE + NOW.

IMPULSE MAGAZINE

01 /// 2017

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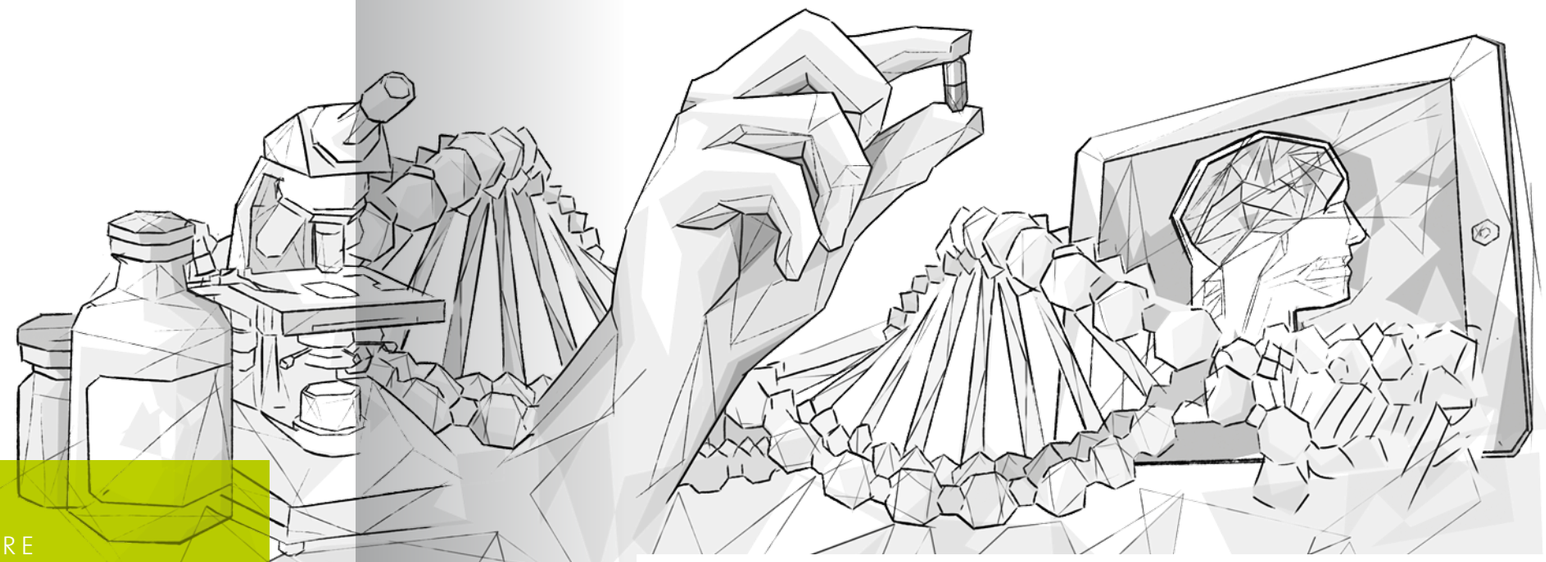
MOBILITY THROUGH PRECISION WORK
Günther Bionics returns freedoms once thought lost to patients – thanks to innovative prosthetics

A DOSE OF SUCCESS
IDT Biologika from Dessau-Roßlau supplies vaccines to the world

MARKET OF THE FUTURE
HEALTH AND MEDICINE

COVER: **In the service of people and animals: in Dessau-Roßlau, IDT Biologika develops and manufactures vaccines.**



HERE
IS WHERE THE HEART BEATS.

There is almost no other sector in which human advancement reaps as many benefits as it does in the healthcare sector. New medicines, equipment or methods can all noticeably improve patients’ quality of life.

In Saxony Anhalt, the area of life sciences beats with a strong heart. The pharmaceuticals industry, biotechnology and medical technology all set pulses racing. At the same time, producers and manufacturers are part of a strong network of academic and applied research. At the Weinberg Campus in Halle (Saale), a technology park, several biotechnology firms and institutes are focusing on the area of research into proteins and active agents. In and around the Otto von Guericke University Magdeburg, companies and the Leibniz Institute for Neurobiology are conducting research into the nervous system and exploring learning and memory mechanisms.

It isn't just Aspirin®, the best-known pain relief tablet in the world, that comes from Saxony-Anhalt. IDT Biologika of Dessau-Roßlau is a global player which has specialised in the manufacturing of vaccines and pharmaceutical products. Researchers in the city of Halle are committed to finding a cure for Alzheimer's Disease – with their work, the company Probiodrug AG and the Halle-based Department of Drug Design and Target Validation at the Fraunhofer Institute of Cell Therapy and Immunology (IZI) have gained international acclaim.

“I WANT TO CHANGE SOMETHING, NOT JUST MANAGE”

BIRGIT HEINE
Senior Manager, Investment and Marketing Corporation Saxony-Anhalt (IMG)

Birgit Heine is Senior Manager at the Investment and Marketing Corporation Saxony-Anhalt (IMG). She supports investors and companies from the life sciences sector which want to locate in Saxony-Anhalt or are already here. A discussion about location factors, potentials and personal motivation.

These days, “life sciences” is an all-too familiar expression. What does it actually cover?
BIRGIT HEINE: The life sciences sector is extremely wide-ranging. It encompasses pharmaceuticals manufacturers as well as medical technology companies and businesses in the area of biotechnology, all of which are highly innovative, and all of which are currently expanding. Whether it is new buildings, new products or systems that are more efficient. Life sciences is a cross-cutting sector which – depending on the product – overlaps with several areas, from the IT sector all the way through to food production.

What does Saxony-Anhalt offer companies which operate in the field of medicine and healthcare?
BIRGIT HEINE: Our federal state is home to a variety of companies - from start-ups to SMEs, all the way through to global players. They all value three things: ideal locations for expansion, excellent interfaces with research organisations, and great potential for professional staff and skilled workers. Business owners frequently highlight the efficient planning and approvals processes in the federal state. Saxony-Anhalt is also a world-famous location for the pharmaceuticals and chemicals industries, with universities that offer highly regarded courses in the engineering and medical sciences, ensuring a great supply of qualified employees. Life sciences companies are able to interface with these established networks and benefit from these clusters.

How, specifically, does the Investment and Marketing Corporation support these companies?
BIRGIT HEINE: Even the smallest of companies that locate here tend to have big ideas. Businesses that start life in Saxony-Anhalt generally decide to stay here. They do so because their immediate surroundings are very convincing. We act as a scout for companies who want to establish a presence in Saxony-Anhalt and we support them, for example, with their search for the right property and commercial premises, and in their dealings with the authorities. We also advise them with their planning and approval processes and funding applications. We also nurture networks so as to bring investors and the personal contacts who are of importance to them together.

What do you like about your work, what motivates you?
BIRGIT HEINE: Saxony-Anhalt is on the move. At the same time, we haven't reached the limits of our capacity, like some federal states have. We offer businesses the space to shape themselves and grow. I really like the idea of being able to change something and build something rather than simply managing existing structures.
I also like the atmosphere in the sector. The companies here want to succeed, and I feel happy if I can make a personal contribution to their success.

www.invest-in-saxony-anhalt.com/life-science

A DOSE OF SUCCESS

IDT BIOLOGIKA FROM DESSAU-ROSSLAU SUPPLIES THE WORLD WITH VACCINES

High-tech for a high performance: IDT is able to manufacture up to 60 million injection vials per year.

Headquarters with a strong tradition: the origins of IDT in Dessau-Roßlau go back to the year 1921.

In the fight against epidemics and illnesses, vaccines from IDT Biologika find worldwide use. Thanks to the preparations from Dessau-Roßlau, in 2008, it proved possible to eliminate rabies from Germany. The company also introduced the first live salmonella vaccine for chickens in the world. And it developed an effective vaccine for pig farming, which rendered the controversial use of antibiotics superfluous.

THE ORIGINS of IDT Biologika go back to the year 1921. Among other fields, the scientists at the Bakteriologisches Institut der Anhaltischen Kreise (Anhalt Institute of Bacteriology) conducted research into the diagnosis of tuberculosis. Back in the day, they succeeded in creating important bases for manufacturing human and animal vaccines.

Today, IDT Biologika manufactures vaccines on behalf of companies all over the world – including a Japanese pharmaceuticals firm which manufactures its preparations in Dessau-Roßlau. But also the proprietary manufacturing of IDT Biologika is growing all the time. “Over the years to come, our strategic goal is to achieve more turnover with our own products than we do with contract manufacturing,” explains Peter Kellner, director of corporate communications.

The long-established company currently has some 1,800 employees – 1,600 of whom work at the location in Dessau-Roßlau. The number of employees grows in the double digits each year. Since its foundation in 1993, IDT Biologika has invested some 300 million Euros in its headquarters. In this respect, two years ago, a new production hall with the latest facilities for the production of vaccines opened. Here, up to 60 million injection vials can be manufactured per year – four times the previous level of annual production.

IDT'S PATH OF GROWTH was also rolled out at its various locations. With its proprietary products such as its vaccine for oedema disease in pigs, the Dessau-based company established sales businesses in Spain, France, Denmark and the Netherlands to ramp up its sales in the area of animal health. The IDT location has been up and running in the USA since 2015. It is situated in Rockville (Maryland) and specialises in clinical test samples. In Canada, IDT Biologika acquired Gallant Custom Laboratories, the manufacturer of viral and bacterial livestock vaccines. In January 2017, IDT acquired Ridgeway Biologicals in Great Britain, a provider of livestock vaccines for animal and fish breeders.

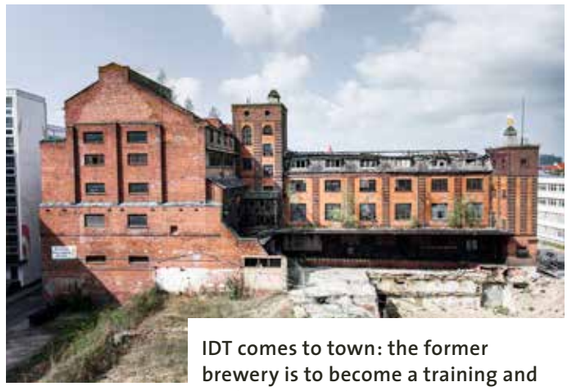
ITS INTERNATIONAL ENGAGEMENT has borne fruit and added to the company’s reputation: IDT Biologika was recently pleased to accept the “Life Science Leader CMO Leadership Award 2017” in New York in several categories. This award recognises quality, reliability and expertise as well as compatibility and development.

THE LOCATION of Dessau-Roßlau is at the heart of the company’s success, which is why IDT is continuing to invest in its headquarters. The company has also purchased the former Schade brewery from the city of Dessau-Roßlau. The old brick building is to become home to an attractive training and conference centre. “With our new conference and training centre, we are fulfilling our company’s demand for conference space for customers and partners who come from all over the world. We also need sufficient space for the further development of our growing staff team,” explained Dr. Ralf Pfirmann, CEO of IDT Biologika. “With the construction of this new centre, IDT Biologika will gain a stronger presence in Dessau-Roßlau. IDT and Klocke Holding are thereby underlining their responsibility for the development of the region. With these measures, we want to make a conscious contribution to the improving Dessau-Roßlau town centre.”

www.idt-biologika.com

BIOPHARMAPARK DESSAU

THE COMPANIES FOR WHOM THE PARK IS HOME employ more than 2,000 people and have considerable expertise in the manufacturing of pharmaceuticals and packaging, as well as in research and development.
At the Biopharma cluster, both start-ups and established companies are able to benefit from experience in the field of product development through to quality management, and rely on an efficient manufacturing infrastructure. The network of services at the Biopharmapark not only minimises costs and business risks. At the same time, it provides access to a global structure of markets and customers.
www.dessau-rosslau-wirtschaft.de



IDT comes to town: the former brewery is to become a training and conference centre.

MOBILITY THROUGH PRECISION WORK

GÜNTHER BIONICS RETURNS FREEDOMS ONCE THOUGHT LOST TO PATIENTS – THANKS TO INNOVATIVE PROSTHETICS

At every turn:
the gait analysis software bionicGAIT® is the latest product from Günther Bionics.

REQUESTED ...

MICHAEL GÜNTHER
Managing Director of
Günther Bionics® GmbH

In-house development: the “Milwaukee Schaft®” transfemoral prosthesis was Günther’s first patent.

Deceptively realistic: individual reproductions of hands and feet.

“For me, it was always important to think outside the box. Looking at the market, the competitors and your own company from such a perspective is of huge importance for sustainable success. We also rely on highly innovative products to fill gaps in the market. Only in this way will we have the opportunity to prevail against the biggest players in our industry”

Michael Günther stands at a workbench, filling the plaster cast of a transfemoral residual limb. Some 30 orthopaedic technicians from all over Germany and Switzerland are standing around him, closely following his explanations. They have come to the small town of Parey in the north-east of Saxony-Anhalt to attend a three-day training course.

AT THE END OF THE TRAINING COURSE they will take the licence for the “Milwaukee Schaft®” home with them – a transfemoral residual limb prosthesis in the premium segment. It features a valve system which makes sure that the air escapes when the patient fits it.

The resulting vacuum caters for a much better fit and provides for a more stable gait as well as more comfort. This also enables the prevention of unpleasant skin irritations from occurring on bony areas. It was six years ago that Michael Günther developed this novel prosthesis socket and submitted his idea to the patent office. Günther made a name for himself in the sector with his development, which has become highly regarded. It was the “Milwaukee Schaft®” that enabled Michael Günther to launch his own business.

“I first became interested in orthopaedics when my father fell ill and was confined to a wheelchair. After completing an internship at an orthopaedic workshop, I knew that working in the area of prosthetics was my vocation,” explains the 36-year-old.

Günther embarked on an apprenticeship as an orthopaedics technician, before spending several years in the USA and Australia, gaining experience in a variety of workshops. On returning to Germany, he sat his university entrance exams and completed a degree in Orthopaedic Technology. After graduating, he became manager of the development department at a manufacturer of prostheses in Munich.

“I always found the idea of running my own business appealing. My head was full of ideas and I wanted to do my own thing,” Michael Günther recalls. He eventually left Munich and moved back to his home town of Parey, founding the company Günther Bionics in 2010, which started life on the premises of a former car workshop.

THE COMPANY NOW has nine employees, and in addition to Parey, further business premises in a modern building at the marina of Magdeburg. Its close proximity to the Sports Science Department of the Otto von Guericke University is a certain boost. Students from the university are welcome to complete work experience programmes with Günther Bionics during their studies, and are given the opportunity to link their

Rapid and exact: sensors on the legs send the data to the gait analysis software.

THE MED-TECH CLUSTER

THE CLUSTER FOR MEDICAL AND HEALTHCARE TECHNOLOGY has the goal of strengthening the competitiveness of Saxony-Anhalt as a centre for the medical technology sector. It brings medical technology companies and research institutes together with the goal of advancing the development of improved and new methods of diagnosis and treatment, as well as technical medical equipment, on a more efficient basis. Its key points of focus are a more intensive transfer of knowledge and more work in the field of innovation through developmental collaborations between companies and research institutes. Above all else, the integration of expert knowledge and the latest technology in regional companies aims to lead to the development of new products over the long term. **www.medizintechnik-sachsen-anhalt.de**

Strong and exact: high quality lightweight alloy joints provide for the maximum mobility.

master's thesis with the profile of the company. In this respect, two of the company's current employees embarked on permanent jobs with Michael Günther directly after their graduation.

Phillip Hügen, who hails from Erlangen and studies sport and technology in Magdeburg, is working at Guenther Bionics during his studies. "I can work here very independently and there is a pleasant family atmosphere in the team," says the 26-year-old. He has been involved in the company's latest development – the bionicGAIT® gait analysis system, which was launched in the spring of 2017. The software is an example of how digitization is also changing the field of orthopaedics.

ORTHOPAEDICS TECHNICIANS CONVENTIONALLY assess a patient's gait on the basis of a visual appraisal. This frequently takes place via photographic and camera footage which is evaluated by video. The method is highly subjective, however, and the decisions are frequently based on "gut decision". With the bionicGAIT® software, by contrast, three sensors are attached to the patient's ankle, knee and thigh or their prosthesis. The sensors send the measured data for all of the relevant gait parameters – such as ground clearance, swing phases or the inclination to the feet – to the computer. The software provides all of the relevant data, processed at a scientific level in the form of clear diagrams and tables, in a matter of seconds. In addition to this, the data can also be stored for future comparative measurements, so that successful treatment is easy to assess.

"In comparison with conventional methods, the time saving and the precision of our gait analysis software is considerable. While a video assessment takes around an hour, with bionicGAIT®, the precise data is available within a few minutes. In this respect, we have written a new chapter in the history of gait analysis," says Michael Günther enthusiastically.

OVER THE MEDIUM TERM, he sees his company expanding to around 20 employees. Its key focus is to remain developmental work and the subsequent awarding of licences to orthopaedic technicians. For Günther Bionics, the associated training and education of the technicians is increasingly becoming a further mainstay of the business.

The latest employee to join the company is Abbas Saderi, a 27-year-old window fitter, who originally arrived in Germany as a refugee from Iraq. Abbas is currently completing an internship, after which he is all set to be trained as an orthopaedic technician. Michael Günther tells us that finding good engineers is easier than finding good technicians. That's why he wants to train his own technicians in the future. "Our door is always open to prospective technicians. We are pleased to offer internships to those who are interested in familiarising themselves with our profession. Hopefully, the internship will subsequently lead to bigger things," says the Managing Director.

Günther himself is only able to work on new developments for around 20 percent of the time. The rest is taken up with his work in the areas of management, marketing and sales. A company is like a prosthesis. When everything fits, it works very well. And prostheses are certainly something that Michael Günther knows lots about.

www.guentherbionics.de

BMD – LIFE SCIENCES AGENCY SAXONY-ANHALT

THE BMD IS A CONSORTIUM of companies and institutes in the area of biotechnology. The BMG coordinates the activities of the Cluster for Biotechnology and Life Sciences in Saxony-Anhalt. The agency supports companies and research organisations with their sustainable development. In this respect, it forges networks between established and new companies as well as players at the scientific and political levels and supports the development of synergy effects. Life Sciences Agency for Saxony-Anhalt also hosts sector and state-spanning co-operations in collaboration with partners in both central Germany and other biotechnology regions. | **www.bmdlifesciences.com**

A FLAIR FOR PROGRESS
SCIENTISTS IN SAXONY-ANHALT DEMONSTRATE THEIR INTUITION FOR THE REQUIREMENTS OF THE FUTURE

MEDIGLOVE | www.mediglove.de

An appointment at the doctor with feeling: two graduates of Integrated Design from Anhalt University of Applied Sciences have developed a glove which enables doctors to assess their patients' condition with the touch of their hands.
The "MediGlove" may eventually replace conventional instruments such as stethoscopes or thermometers. The prototype of the medical glove features sensitive infra-red and temperature sensors. Acoustic signals which display the measured results are also considered possible. The doctor is able to stay by the patient's side and remain in conversation with them. The information is sent to a database on a wireless basis, where it is accessible at all times. In short: Easy to handle and resulting in greater degree of transparency and trust.

PROTEIN COMPETENCE CENTRE | www.uni-halle.de

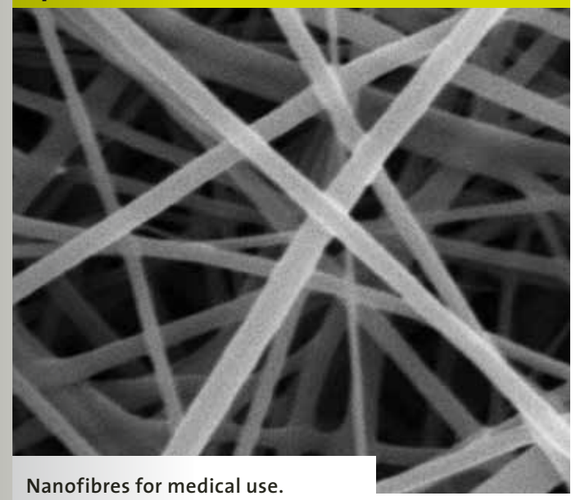
New things are growing at the Weinberg Campus in Halle (Saale): in the Protein Competence Centre at Martin Luther University Halle-Wittenberg. The first working groups will move into the new building this year.
125 laboratories and 62 offices on 5,400 square metres, an investment to the value of 40 million euros by the federal government and the federal state of Saxony-Anhalt: the new flagship of protein biochemistry is to bear the name of the scientist Charles Tanford. Twelve working groups from the natural sciences faculties and the medical faculty may soon work under a single roof at the Protein Competence Centre. Molecular biosciences are already a key focus of the research at the University of Halle.

NIELSEN TELE MEDICAL GMBH | www.nielsen.com

Measuring brain wave activity without undue fuss at home and transferring the data to a doctor's practice on a wireless basis, where it is assessed by specialists? It sounds like a dream for the future. Yet in Magdeburg, it is reality.
"Data for good" is the current motto of the Nielsen Company, which works in the fields of marketing and advertising research. The corporation has settled in the city of Magdeburg with the name of Nielsen Tele Medical GmbH, and is testing a ground-breaking EEG headset together with neurologists from the University Clinic: the brain activity of patients who are at risk can be measured at home with the use of dry electrodes. It is an approach that opens brand new possibilities in the areas of monitoring and diagnosis.

HOMESPUN – BUT WITH BIG IDEAS ALL THE SAME
A STRONG ALLIANCE IS BEING WOVEN IN SAXONY-ANHALT

SpinPlant GmbH



Nanofibres for medical use.

"Bone glue" – the original name of the once natural adhesive which was made on the basis of the structural animal protein of collagen. A ground-breaking discovery for regenerative medicine is making literal use of an old name.

The researchers at the new company SpinPlant GmbH have succeeded in spinning a piece of thread out of collagen. Up until now, the end-product of all of the experiments had always been gelatine. Yet with an electronic spinning machine which operates in the nano-scale, the breakthrough was achieved. Over the years to come, SpinPlant is hoping to obtain approval for its biological nano-fibres. The fibres support the regeneration of bones, cartilage, skin as well as nerve and muscle tissue. Since they also have an anti-inflammatory effect, it is also possible that they could be used to help heal wounds. |
www.spinplant.de

weinberg campus technology park

The weinberg campus in Halle (Saale) remains profitable. It is a place where research ideas can thrive until their implementation – thanks to the transfer between science and business. The site is now one of the biggest business and technology parks in Germany.

The weinberg campus is home to the natural sciences institutes as well as the transfer and founder service of the Martin Luther University Halle-Wittenberg. The university is completely open to collaborations with local customers and leading German research organisations – making it the ideal breeding ground for the founding of new companies. At present, the creation of a central "Innovation Hub" is under way: where scientists and entrepreneurs can develop and implement innovative business ideas together. Contacts are available from the state-wide "Investforum Startup-Service". |
www.technologiepark-weinberg-campus.de

Research projects are thriving on the weinberg campus.

BRAIN WORK FOR SUPERIOR THINKING
MAGDEBURG SCIENTISTS RESEARCH THE MEMORY

neotiv

An app-based memory test: neotiv analyses thinking ability.

What things support a good memory, and which factors have a negative impact on thinking? The Magdeburg company neotiv has developed an app which analyses the impact of lifestyle on an individual's thinking ability by brief memory tests.

The results are sent to the German Center for Neurodegenerative Diseases (DZNE) and are supporting the research which is being completed by the dementia experts. Therefore, users of the neotiv app aren't only able to find out how their thinking ability can be changed by physical training and lifestyle changes. They also help support the research in the fight against Alzheimer's disease. Behind the start-up is a small team consisting of business engineers, neuroscientists as well as software and hardware developers, who are in turn being supported by the Transfer and Start-up Centre (TUGZ) at the Otto von Guericke University Magdeburg. | **www.neotiv.com**

DZNE

Research focus: learning by electrical impulses.

The Magdeburg location of the German Centre for Neurodegenerative Diseases (DZNE)

As life expectancy increases, the risk of developing dementia also increases. According to forecasts, in the year 2050, Germany will be home to some three million dementia patients. Scientists at the DZNE centre in Magdeburg are currently researching the ways in which targeted training can prevent both Alzheimer's disease and other dementia illnesses. The scientists have found that cardiovascular training and mental stimulation can improve and stabilize certain thought activities – despite the loss of nerve cells. In a multidisciplinary approach, the researchers at the Magdeburg centre are investigating the mechanisms and treatment perspectives offered by this stimulation. In comparable animal models, they are researching which specific molecular and cellular changes are relevant. In addition to this, trials are also under way that have the goal of improving the early diagnosis of dementia with new imaging techniques and brain performance tests. | **www.dzne.de**

SUCCESS IN NUMBERS:
DID YOU KOW?

149,800
people were employed in the healthcare sector in Saxony-Anhalt in 2016.

Dorothea Erxleben of Quedlinburg, who graduated in 1754, was the first ever woman to qualify as a medical doctor in Germany.

The gross value added of the healthcare sector in Saxony-Anhalt in 2016 totalled **6.5** billion EUR.

In 1863, the Municipal Hospital in Magdeburg became home to the first operating theatre with washable surfaces in Europe.

1 billion EUR has been invested in the weinberg campus in Halle (Saale) since 1990.

In **August 1995**, the **first ever Asprin® tablets** hit the conveyor belts at Bayer in Bitterfeld.

Saxony-Anhalt is home to **125** life sciences companies, most of which are small and medium sized businesses.

Approximately **1,000** people are currently conducting research in the field of red biotechnology in Saxony-Anhalt.

CONTACTS:
EXPERTISE IN RESEARCH AND NETWORKS

UNIVERSITIES AND NON-UNIVERSITY RESEARCH ORGANISATIONS	Otto von Guericke University Magdeburg (OvGU), Faculty of Medicine, Faculty of Electrical Engineering and Information Technology	**www.inf.ovgu.de, www.med.uni-magdeburg.de/en/, www.eit.ovgu.de**
	Martin-Luther-University Halle-Wittenberg (MLU), Faculty of Medicine and Faculty of Natural Sciences	**www.medizin.uni-halle.de, www.natfak1.uni-halle.de**
	Harz University of Applied Sciences	**www.hs-harz.de/en/**
	Anhalt University of Applied Sciences	**www.hs-anhalt.com**
	Magdeburg-Stendal University of Applied Sciences	**www.hs-magdeburg.de**
	Project Group for Molecular Active Agent Biochemistry and Therapy Development (IZI-MWT) Halle at the Fraunhofer Institute for Immunology and Cell Therapy, Leipzig	**www.izi.fraunhofer.de/de/ueber-uns/standorte-und-infrastruktur.html#Halle**
	Max Planck Institute for Dynamic Complex Technical Systems, Magdeburg	**www.mpi-magdeburg.mpg.de**
	Fraunhofer Institute for the Microstructure of Active Agents and Systems	**www.imws.fraunhofer.de**
	Fraunhofer Institute for Factory Operation and Automation (IFF)	**www.iff.fraunhofer.de**
	Leibniz Institute for Neurobiology, Magdeburg (LIN)	**www.lin-magdeburg.de**
	Leibniz Institute for Plant Biochemistry (IPB)	**www.ipb-halle.de/en/**
	Leibniz Institute for Plant Genetics and Crop Science (IPK), Gatersleben	**www.ipk-gatersleben.de**
TRANSFER AND RESEARCH CENTRES	The *"STIMULATE"* research campus, OvGU	**www.forschungscampus-stimulate.de**
	Centre for Neuroscience Innovation and Technology, ZENIT GmbH	**www.zenit-magdeburg.de/en/**
	Biocentre Halle	**www.biozentrum.uni-halle.de**
	KAT – Centre of Expertise for Life Sciences (HS Anhalt)	**www.hs-anhalt.de/forschung/kompetenznetzwerk/kompetenzzentrum-life-sciences**
	Interdisciplinary Centre for Ageing, Halle (IZAH), MLU	**www.izah.uni-halle.de**
	BioPharma Translations Institute Dessau Research GmbH	
CLUSTERS AND NETWORKS	Med-Tech Cluster, Saxony-Anhalt Medical and healthcare technology	**www.medizintechnik-sachsen-anhalt.de**
	InnoMed – Network for Medical Technology Saxony-Anhalt e. V.	**www.innomed-magdeburg.de**

A STIMULATING FOCUS ON THE SMALL THINGS

THE *STIMULATE* RESEARCH CAMPUS IN MAGDEBURG PROVIDES FOR VISIBLE ECONOMIC EFFECTS

Image-supported medicine: *STIMULATE* develops minimally invasive methods.

Prof. Dr. Georg Rose of the *STIMULATE* research campus

"When you use the phrase 'focusing on the small things', we mean much, much smaller," says a man who does big things: Prof. Dr. Georg Rose is the spokesman of the *STIMULATE* research campus. He represents an extensive network of collaborations – between the Otto von Guericke University Magdeburg, Siemens Healthcare GmbH and a variety of other players in the field of medical technology.

WITH HIS EXPLANATION of the word "small", Board Chairman Prof. Dr. Georg Rose explains the focus of the partnerships: STIMULATE stands for new and innovative technologies surrounding image-guided minimally invasive methods in the field of medicine. With a close practical relevance, work is ongoing on the optimisation of the methods of examination and treatment – by improving the medical imaging and developing specialist instruments, such as needles and catheters. Image-guided minimally invasive procedures are particularly important in the treatment of strokes and tumours.

THE KEYWORDS of "small" and "big" also describe the most recent coup at the research campus: a newly founded company, Neoscan Solutions GmbH, has emerged from the special cooperation between science and business in Magdeburg. Neoscan develops MRI devices which are so small and compact that they can be used directly at children's wards. In combination with incubators, they are even available to the very youngest of patients. Until now, the complex technology for magnetic resonance imaging systems (MRI) has had to be permanently installed in several rooms. "We have succeeded in gaining the support of the local industrial companies," enthuses Prof. Dr. Georg Rose. "We have also found reliable private investors who want to advance Magdeburg as a location due to their own interests." This will provide excellent opportunities to launch the MRI devices on the market in a few years' time.

RESPONSIBLE FOR PROPELLING AND STIMULATING all of the partners is a shared vision. *STIMULATE* wants to become established as the "German center for image-supported medicine". Rose and his fellow travellers envisage a campus at the Magdeburg Science Port, at the heart of which is the university, with its exceptionally successful courses in Medical Systems Engineering (master's) and Medical Technology (bachelor's), which are receiving increasing numbers of applications each year. Business partners have settled in direct proximity – science and business next door to each other. The distances are small, but the economic effects are big.

www.forschungscampus-stimulate.de

FACTS

***STIMULATE* –** the "Solution Centre for Image Guided Local Therapies" – is also supported by the German Federal Ministry of Education and Research, and by the Ministry of Economic Affairs, Science and Digitalisation of the federal state of Saxony-Anhalt.

Otto von Guericke University, Siemens Healthcare GmbH and the *STIMULATE* association are working together on an equal footing in the form of a public-private partnership.

In the *STIMULATE* association, extramural research institutions, universities and companies from the area of medical technology cooperate and work together.

IMPROVED VISION – THANKS TO ALTERNATING CURRENT

The Savir method: alternating current stimulates the residual eyesight.

Eyesight is one of the most precious things an individual can possess. Limited vision reduces a person's quality of life to an exponential degree. Following a stroke or a disease of the optic nerve or the retina in particular – such as in the case of glaucoma – patients can suffer from severe physical impairment.

The "Sabel Vision Restoration" (SAVIR) Centre in Magdeburg offers such patients an innovative and holistic form of therapy which has the goal of improving their vision once again. In the course of the SAVIR alternating current stimulation, optimum use is made of the remaining residual vision ability. "We strengthen the patient's remaining visual ability which has been neglected or even suppressed by the eye and the brain. We don't focus on what has already been lost, we rather activate the residual vision that still exists. The brain is able adapt to loss of vision due to its considerable flexibility and its ability to adapt," explains Prof. Dr. Bernhard Sabel of the Savir Centre in Magdeburg.

The stimulation with the alternating current is a non-invasive method for the activation of the residual vision. On this basis, electrodes are applied over the eyes and on the wrist which provide alternating current pulses of very low strength – lower than those in a heart pacemaker. The treatment takes place with the patient lying down and lasts for up to three-quarters of an hour; its side effects are very minor, such as fatigue or tingling.

The holistic approach at the SAVIR Centre doesn't only focus on the eye, however. Impaired vision often causes patients to fear the loss of their personal independence, and can also make them feel isolated from social contacts. In this respect, the patients don't only receive medical treatment at the centre, they are also offered psychological counselling on how to deal with their illness. Patients from all over the world come to Magdeburg to receive the specialist therapy available at the SAVIR Centre.

Professor Bernhard Sabel has been developing treatment options and diagnostic methods for improving his patients' residual vision for more than 30 years. His research in Germany, the USA, Italy, India and China has led to the development of new therapies that can be used to further improve a patient's visual function after the initial healing process is complete.

www.savir-center.com/en/

THE FITNESS PROGRAMME FOR MANAGERS

MARCEL HEROLD
Group Leader of the Education and Employment Department at the Investment Bank of Saxony-Anhalt

The field of medical technology is a highly complex professional area. New scientific discoveries continuously have a direct impact on day-to-day professional life, resulting in changes to processes and procedures. Without highly qualified specialists, however, nothing can be achieved. The Investment Bank of Saxony-Anhalt is therefore helping to ensure the long-term success of the field: with the funding programmes of "Saxony-Anhalt FURTHER TRAINING DIRECT" and "Saxony-Anhalt FURTHER TRAINING FOR BUSINESSES".

MARCEL HEROLD: Regardless of the professional group, we support individual qualification and company training programmes. No matter whether it is a large-scale organisation, a small company, someone who is self-employed or apprentices who have selfinitiative: the programmes that we offer are becoming increasingly popular. In this way, the federal state of Saxony-Anhalt is contributing to both the safeguarding of jobs and the retaining of skilled staff.

Which specific areas do you support?
MARCEL HEROLD: With the "Saxony-Anhalt FURTHER TRAINING FOR BUSINESSES" programme for instance, we support steps with which the skills of the employees which are of relevance to the respective business can be improved. And that doesn't just mean professional expertise. It also means attributing importance to social skills and personal development. "Saxony-Anhalt FURTHER TRAINING DIRECT" specifically addresses employees as private individuals. If an employee decides that they would like to gain new qualifications which support their professional development, for example, then we are pleased to support them.

How much support is available to such individuals?
MARCEL HEROLD: That depends on their personal income. Those whose average earnings are less than 1,500 Euros gross per month, for example, can receive a grant which covers up to 90 percent of the costs of their training. All in all, however, all of those who participate in the training can expect at least 60 per cent of their cost of their training to be covered.

What is the situation for companies and organisations which opt to spend money on the further training of large numbers of employees, all at the same time?
MARCEL HEROLD: When companies decide to act in such an exemplary way and to actively support their employees' skills, everyone is a winner. For this reason, we support company training programmes – depending on the size of the company – with grants which cover up to 60 percent of the overall costs. As far as older workers and workers in part-time positions who rely on welfare benefits are concerned, the grants which we offer are even higher. Personnel and organisational development programmes are eligible for funding that covers up to 80 percent of such costs.

How can I find out which funding guidelines apply to me?
MARCEL HEROLD: We are always pleased to provide personal assistance to people who want to know about the funding which is available to them.

INNOVATIVE SUCCESS STORIES

AURA
AUSZEICHNUNG FÜR HERAUSRAGENDES UNTERNEHMERISCHES WIRKEN IN SACHSEN-ANHALT

WINNER OF THE AURA 2014
SERUMWERK BERNBURG AG
TOPIC: **Ambassadors** for great entrepreneurship in Saxony-Anhalt

The company Serumwerk Bernburg AG manufactures and distributes human and veterinary pharmaceutical products. Its existing products are optimised on a continual basis, and new active ingredients are researched and brought to the market. It is with this spirit of innovation that Serumwerk Bernburg AG – which was originally founded in 1954 – has developed into a globally active manufacture and supplier. The medicines offered by the long-established company is bought by customers in more than 60 different countries worldwide. | **www.serumwerk.com/en/**

THE "VORREITER 2016" PRIZE FOR TOURISM
HALBERSTADT WOHNUNGSGESELLSCHAFT MBH,
WITH THE HAWOGE SPIELE-MAGAZIN GAMES PARK
TOPIC: Handicapped accessible leisure offers

VORREITER

The HaWoGe Spiele-Magazin is the most attractive indoor games park in Germany. The 3,000 sq. m. complex, which was once home to military barracks, stood empty for decades. In 2014, the Halberstadt Wohnungsgesellschaft (housing association) took ownership of the premises, however, and created an indoor games park at which children with or without disabilities can play together. Every level is accessible by wheelchair, for example. Illuminated steps and door surrounds, as well as a guidance system for blind and partially sighted visitors, provide for orientation outside. | **www.hawoge-spiele-magazin.de**

HUGO JUNKERS PREIS
FÜR FORSCHUNG UND INNOVATION AUS SACHSEN-ANHALT

3RD PLACE IN THE 2016 HUGO JUNKERS INNOVATION PRIZE
THE MOST INNOVATIVE APPLIED BASIC RESEARCH PROJECT
OTTO VON GUERICKE UNIVERSITY MAGDEBURG
FACULTY OF INFORMATION TECHNOLOGY
TOPIC: Blood flow in the heart

Cardiovascular diseases are responsible for some 40 percent of all deaths in Germany. These can be caused by turbulences of the flow of blood around the vascular walls of the heart. Together with the Leipzig Heart Centre, the team of researchers at the Otto von Guericke University Magdeburg Faculty of Information Technology have developed a software package called "Bloodline", which depicts the flows of blood in the heart using MRT, and analyses turbulences in detail. With this package, doctors are able to make more accurate diagnoses and gain a better understanding of disease progressions. | **www.ovgu.de/en/**

ATTRACTIVE:

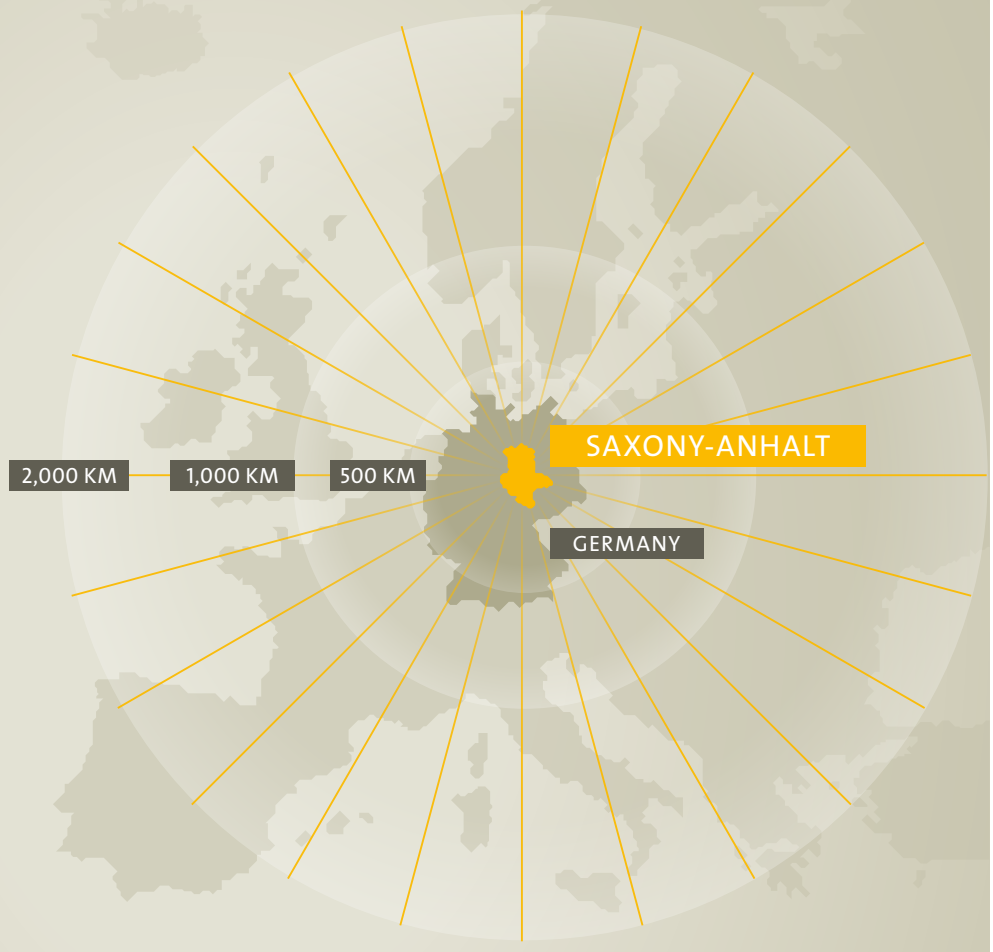
Saxony-Anhalt's **moderate cost structure** ensures competitive advantages for every investor: At approx. 13 Euros the average price per square metre for a fully developed industrial zone is substantially below the German average. The rate of funding that is available to support wage costs amounts to up to 10% of the specified wage costs.

OPTIMAL:

Saxony-Anhalt has the **highest funding rates in Germany**. Small companies are funded up to 30%, medium-sized ones up to 20% and large ones up to 10%.

FAST:

The IMG acts as a one-stop agency**; fast decision-making channels and realisation periods** will facilitate your market entry in Saxony-Anhalt.



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Our support in the **search for a site,** in **funding and financing,** in **dealing with public authorities,** and **project realisation** is free of charge for you, and is treated with absolute confidentiality. Allow yourself to be assisted by IMG Saxony-Anhalt, one of the **best regional economic development agencies in Western Europe,** which was once again the recipient of the **"Top Investment Promotion Agency Award"** of Conway Data Inc. in 2016.

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