Discover Life Science in Västra Götaland, Sweden
The field of life science presents a considerable number of challenges and possible solutions, from regional to global level. We believe that these challenges can be successfully met through international collaboration.

The global population is expected to increase to nine billion people by 2050, and we all need to focus on finding new and more resource-efficient ways of living, working and curing illnesses on our planet. The challenges we face are so complex that they will inevitably require cross-boundary collaboration. In Västra Götaland, in Sweden in Northern Europe, we believe in collaboration and that different regions can contribute different things, depending on their specific strengths and resources.

OPEN TO COLLABORATION
Västra Götaland, with Gothenburg as the main city, is characterised by a spirit of openness in relation to other regions in Sweden and the rest of the world. The region is also known for the close relationship between academia and the public and private sectors, not to mention openness between people in general.

EPICENTRE OF LIFE SCIENCE
The cooperative environment and prominent clinical research have contributed to the development of life science in Västra Götaland. The region is home to one of Europe’s largest university hospitals, cutting-edge research in biomedicine and

FACTS VÄSTRA GÖTALAND
- 1.6 million residents, approx. one fifth of Sweden’s population
- Gothenburg largest city (second largest city in Sweden), with 500,000 inhabitants
- 53,000 students at 6 universities and university colleges
- European top ranking for R&D investments
- A transparent business climate with trading traditions
- One of the triple helix collaboration leaders in Europe
- 90% of adult population speaks English
- Home to Scandinavia’s largest port.
the natural sciences, a strong research-based biomaterials industry, AstraZeneca, a “mega-site” within global pharmaceutical development, the list goes on. There are close links between Sahlgrenska University Hospital, the University of Gothenburg through Sahlgrenska Academy and Chalmers University of Technology.

**CROSS-BOUNDARY THINKING**
Organisational cross-boundary thinking has made it possible to take maximum advantage of the work of great life science researchers, such as Nobel Laureate in medicine, Arvid Carlsson. It has also enabled Sahlgrenska University Hospital to establish centres of excellence, for example within transplantation and paediatric heart surgery.

**STRENGTH IN MEDICAL TECHNOLOGY**
Västra Götaland is home to several world-leading companies, particularly in the field of implants and biomaterials, including Astra Tech, Nobel Biocare and Cochlear. Other successful companies in the sector include Mölnlycke Healthcare, the Getinge Group and SCA.

**LIFE SCIENCE FACTS VÄSTRA GÖTALAND**
- Employs about 20% of the life science employees in Sweden
- Has the country’s highest percentage of life science employees with an MD/PhD
- 450 companies with over 7,000 employees
- 5 science parks and 10 incubators
- The Register Center provides help to create new quality registries for quality assessments and improvements in healthcare
- Businesses and industries such as AstraZeneca, Astra Tech, Nobel Biocare, Mölnlycke Healthcare, Getinge, Cellartis, Vitrolife and SCA.

**SAHLGRENSKA UNIVERSITY HOSPITAL FACTS**
- Serves approx. 1.6 million inhabitants
- System of 4 hospitals including Queen Silvia Children’s Hospital
- 2,000 beds and 16,400 employees
- One of Northern Europe’s largest healthcare units
- One of Europe’s largest emergency care hospitals
- National healthcare in Paediatric heart surgery, thorax surgery for adults with congenital heart defects (GUCH), lung, liver and heart transplant, craniofacial surgery, cataract and glaucoma surgery in infants.
_REGION VÄSTRA GÖTLAND HAS EARNED NATIONAL AS WELL AS INTERNATIONAL RECOGNITION FOR ITS SUCCESSFUL AND APPLICABLE MODEL FOR LIFE SCIENCE COOPERATION. THE MODEL IS TRANSPARENT AND INVOLVES ACADEMIA, AS WELL AS THE PUBLIC AND PRIVATE SECTORS.

Västra Götaland is one of the leaders in Europe when it comes to triple helix collaborations. In fact, many analysts believe the long tradition and spirit of cooperation between the public sector, industry and academia is the main reason why Västra Götaland has been able to adapt so well in times of crises, with industry modernising itself and specialising in new innovative domains.

**PUBLIC WELFARE AND BUSINESS BENEFITS**

The demands of tomorrow’s global health-care sector are increasing and involving areas such as quality, accessibility, cost-efficiency and personalised care. There will also be a need for new treatments in order to tackle major diseases such as heart attack, stroke, cancer, obesity and diabetes. The Västra Götaland International Cooperation Model makes it possible to respond to these global life science challenges.

**BIG POTENTIAL IN CAPACITY BUILDING**

An area with great potential for collaboration is capacity building – for example through the training of professional personnel. For increased cost-effectiveness, the training could be developed through virtual training and e-learning as well as through a greater focus on teamwork, including sessions at clinical training centres that offer more practical training. Region Västra Götaland can assist in establishing such training centres as well as professional exchanges and lecture series of particular interest in other countries.

**UNIQUE COLLABORATION FOR CLINICAL RESEARCH**

In Region Västra Götaland, a coordinated effort in clinical research has been made through Gothia Forum. The forum serves as a meeting place and a resource centre for researchers and businesses in the life science sector. Gothia Forum is the product of a unique collaboration between Sahlgrenska Academy, the research industry, Sahlgrenska University Hospital, Chalmers University of Technology and Region Västra Götaland.

**THE VÄSTRA GÖTLAND INTERNATIONAL COLLABORATION MODEL**

Creating Opportunities for International Cooperation and Business Exchange
LEADING ORGANISATIONS IN THE COLLABORATIVE CLUSTER

REGION VÄSTRA GÖTALAND
The regional authority in charge of healthcare, culture, growth and sustainable development in Västra Götlaland. Cooperates with academia and the public and private sectors.

SAHLGRENSKA UNIVERSITY HOSPITAL
One of the largest hospitals in Northern Europe. It is nationally commissioned in certain fields and is widely recognised for its outstanding clinical research.

SAHLGRENSKA INTERNATIONAL CARE AB
Sahlgrenska International Care AB (Sahlgrenska I.C.) is a company dedicated to the task of working actively to export Swedish healthcare quality to the international market.

GOTHIA FORUM
A meeting place for researchers and companies in the life science sector. Offers support in connection with, for example, major clinical trials, research collaborations and quality training.

SAHLGRENSKA SCIENCE PARK
The region’s business incubator. Helps innovators and new companies launch new business ideas within life science. In addition, the park provides laboratories and offices for businesses in the sector.

UNIVERSITY OF GOTHENBURG
The Sahlgrenska Academy, which is the faculty of health sciences at the University of Gothenburg, comprises several strong areas in life science, as well as a holding company that manages life science innovations.

CHALMERS UNIVERSITY OF TECHNOLOGY
Where life science is an Area of Advance. Researchers here are actively involved in advancing nutrition, as well as disease diagnosis and treatment to help society progress from treatment to prevention of many diseases.

GIBBS
Gothenburg International Bioscience Business School is a life science business school at postgraduate level for the entrepreneurs and business leaders of tomorrow.

BUSINESS REGION GÖTEBORG
Promotes growth and employment opportunities in the Gothenburg region. Helps both existing and new companies fulfil their growth ambitions.

GÖTEBORG BIO
A joint project between academia, business and industry, and public organisations aiming to encourage growth in the life science sector.

MEDTECH WEST
MedTech West serves the biomedical industry, healthcare sector and academia. It is a gateway to the frontline technologies, technical knowledge and resources needed to develop and evaluate new ideas.

FROM 24 BEDS TO HIGHLY SPECIALISED CARE
Sahlgrenska Hospital was founded in 1782. A donation from tradesman Nicolaus Sahlgren (1701–1776), one of the founders of the Swedish East India Company, made it possible to set up 24 hospital beds in the city centre of Gothenburg. Eight of them were reserved for people with little money. This is the legacy that very much defines the hospital’s role today – everyone is entitled to good healthcare, regardless of who you are or where you come from.

Those 24 beds have become 2,000, and the staff of 15 has increased to over 16,000. Sahlgrenska is now a prominent university hospital located in the middle of a cluster of related organisations, including Sahlgrenska Academy, Chalmers University of Technology and private as well as public companies.

A history of cooperation between these different organisations has helped to build a creative environment for different areas of expertise. New partnerships generate new opportunities, which is essential if we want to continue to look back on a success story in another 230 years.
Clinical research in a beneficial environment has allowed Region Västra Götaland and Sahlgrenska University Hospital to establish several centres of excellence within highly specialised care. One such centre is the Transplant Institute, where the first kidney transplantation in Sweden was performed in 1965. It is the only full-scale transplant institute in the country.

ICELAND AGREEMENT
Sahlgrenska International Care AB (Sahlgrenska I.C.) is a company wholly owned by Region Västra Götaland. Together with Sahlgrenska University Hospital, they signed an agreement in 2010 with the Health Insurance Agency of Iceland – Sjúkratryggingar – regarding organ donation operations and organ transplantation operations. The Icelandic population is too small to justify major investment in transplant surgery. Instead, patients gain access to leading specialists at Sahlgrenska University Hospital, which in turn is provided with a larger patient flow and more research material. This is necessary to strengthen both clinical expertise and research innovation.

TRANSPLANT PARTNERSHIP
“We can manage kidney transplants with living donors on our own, but other transplant operations need to be performed abroad,” explains Magnús Páll Albertsson, Medical Director at Sjúkratryggingar, Iceland.

“In this matter, we have benefited greatly from an exceptional partnership with Sahlgrenska I.C., which I hope will continue for many years to come.”

This is one example of how innovative and cooperative solutions within Region Västra Götaland have enabled long-term and effective international partnerships.

“"In this matter, we have benefited greatly from an exceptional partnership with Sahlgrenska I.C., which I hope will continue for many years to come.””

MAGNÚS PÁLL ALBERTSSON, MEDICAL DIRECTOR AT SJÚKRATRYGGINAR, ICELAND
CASE STUDY: CLINICAL RESEARCH COLLABORATION
NEW WAYS OF MAPPING DISEASE MECHANISMS

Through the SCAPIS project, Region Västra Götaland conducts one of the world’s largest and most detailed study of cardiac, vascular and pulmonary diseases – when carried out on a large scale.

It all started in June 2011 with an announcement from the board of the Heart-Lung Foundation in Sweden. In competition with three other university hospitals, the Gothenburg consortium, comprising Sahlgrenska University Hospital, the University of Gothenburg and Gothia Forum, was awarded SEK 5 million to fund a pilot study to test the feasibility of SCAPIS (Swedish CardioPulmonary bioImage Study). The Gothenburg project was reviewed by international experts. In his evaluation, Professor Russel V. Luepker stated: “This is a well-designed proposal from an experienced group. The plans for follow-up care of incidental findings are well considered and state-of-the-art.”

IMPROVED WAYS OF CHARACTERISING DISEASE MECHANISMS
The pilot study in Gothenburg includes 1,000 randomly selected residents in Västra Götaland. The aim of the full-scale SCAPIS is to extensively map cardiac, vascular and pulmonary function in a Swedish cohort of 30,000 men and women aged 50 to 65 years over three years, and to use the acquired information to characterise disease mechanisms. This will facilitate the prevention, prediction of prognosis and improved treatment of cardiovascular and pulmonary diseases.

A LOGISTIC CHALLENGE
The pilot study has been a successful project at every stage, from planning to implementation. It demonstrates the power of well-functioning collaboration between healthcare, academia and industry.

UNIQUE RESEARCH OPPORTUNITIES
SCAPIS on a large scale will be one of the world’s most detailed and extensive study of cardiac, vascular and pulmonary diseases. The full-scale national SCAPIS project will be carried out between 2013 and 2016.

“
This is a well-designed proposal from an experienced group. The plans for follow-up care of incidental findings are well considered and state-of-the-art.”

PROFESSOR RUSSEL V. LUEPKER, M.D., M.S. AT THE UNIVERSITY OF MINNESOTA CANCER CENTER
**Case Study: Elderly Care Collaboration**

**Holistic Approach to Elderly Care**

Region Västra Götaland’s goal for elderly care is for older people to age in a secure environment, with access to good care and the power to make decisions about their own lives. The care approach is based on a cohesive care chain featuring holistic assessment and patient empowerment.

Sweden and Region Västra Götaland have a unique system for elderly care based on close cooperation and coordination between municipalities, primary healthcare centres and hospitals. The goal is for older people to age in a secure environment, with access to good care and the power to make decisions about their own lives.

**Cohesive Care Chain**
The focus is on a cohesive care chain with a proactive work method providing as much assistance as possible in the home and offering other preventive measures. An important task is to delay the point at which an elderly person falls ill and when it does happen, to offer the best available healthcare. The result is better quality of life for elderly people and less hospitalisation.

**New Health Check Initiative**
As part of a new initiative in Region Västra Götaland, elderly people are offered a health check at their primary healthcare centre including, for example, a review of prescribed medicines and rehabilitation measures. This proactive approach aims to prevent illness. The measures at the primary healthcare centre are coordinated by a nurse, but teamwork is essential for a successful outcome.

**Holistic Assessment of the Individual**
However, many elderly people suffer from multiple illnesses. This requires a holistic assessment of the individual, taking in their living situation, various needs, symptoms and pains. Effective elderly care involves a high degree of continuity, overview and coordination across professional and organisational boundaries.

**Patient Empowerment and Focus on Problems**
Since elderly patients often have complex needs, clinical measures are led by specially-trained personnel. Focusing on problems rather than adopting an organ-centred approach is beneficial for elderly people with multiple diseases. The process is based on patient empowerment, which entails transprofessional assessments and follow-up, in close cooperation with the patient.

“Effective elderly care involves a high degree of continuity, overview and coordination across professional and organisational boundaries.”
FOR FURTHER INFORMATION OR IDEAS REGARDING COLLABORATION WITH REGION VÄSTRA GÖTALAND, PLEASE CONTACT:

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Production: WBL. Photos provided by Region Västra Götaland, MedTech-West, Sahlgrenska I.C., Sahlgrenska Science Park, Gothia Forum, Göteborg BIO, Sahlgrenska University Hospital and Marie Ullner.