## Research, Education and Development Strategy

FOR REGION STOCKHOLM 2021–2024



### Innehåll

Foreword	3
1. Introduction	4
2. Purpose	6
3. Application	6
4. The Stockholm Region will continue to create a good environment for research, education and development	8
4.1 Academic freedom, ethical principles and competition will deliver quality and benefits	8
4.2 Region Stockholm will create long-term, reliable conditions for research	8
4.3 Making data available will enhance analysis, insights and knowledge creation	8
4.4 Region Stockholm will provide appropriate, high-quality learning environments	9
4.5 Region Stockholm will create a more favorable context for research- related education and training	10
4.6 Region Stockholm will promote skills development and lifelong learning	10
5. Organization and working methods	11
5.1. Strategic direction for research, education and development in health and dental care	11
5.2 Strategic directions for research and development in public transport and regional development	15
6 Funding	10

#### **Foreword**

THE NEED FOR CONTINUOUS DEVELOPMENT and improvement applies to the vast majority of organizations, whether they are small businesses or large public sector bodies. Region Stockholm's main areas of responsibility, healthcare and public transport, are of course no exception to this, and in fact we are constantly seeking to put new research advances, working methods and innovations into practice in order to create benefits for our county's inhabitants.

This strategy plays a crucial role in facilitating this specific work. Applicable to all regionally funded services, whether healthcare or public transport and whether the responsible authority is public or private, the strategy will help create a good environment for research, education and development in all parts of the region.

The benefits of translating research advances, evidence and new knowledge into practical use are both extensive and significant. The research being conducted today will improve our public transport system and enable our residents to live longer and healthier lives. Today's research may ultimately lead to a cure, or at least treatment, for today's deadly diseases.

Similarly, it is essential that the region ensures it has the right skills by enabling students in education to work in services funded by the region.

Research, education and development is not a side project, but is, and must remain, a natural and integral part of all our activity, not least throughout the healthcare system.

This strategy also has a key role to play in achieving the region's ambition to become one of the top five regions in the world for health sciences. The region is extremely well placed to take a leading role both nationally and internationally.

Within our county's borders there are not just one, but several, world-class universities. We have a healthcare system of a high international standard, with Karolinska University Hospital the seventh best in the world, and in the county's various life science clusters, businesses in the pharmaceutical, care and medical technology sectors are able to work alongside both healthcare and academia. In short, we have the environment for leading research and innovation that many other cities of our size could only dream of.

The research being conducted today will improve our public transport system and enable our residents to live longer and healthier lives.

A Stockholm where research, education and development thrive will not only lead to new jobs, higher tax revenues and increased growth, the main benefit to the region of a good research environment and the ability to utilize new knowledge is that it ultimately creates benefits for both patients and travelers, for visitors and tax-paying Stockholmers alike. This will enable us to change in step with the world around us, and deliver high-quality services to all Stockholmers year after year.

Iréne Svenonius County Mayor, Region Stockholm

### 1. Introduction

REGION STOCKHOLM'S SERVICES need to constantly evolve in order to provide for residents and visitors in a changing world. Supporting research and development within the region's services means the new knowledge created by research can raise quality standards and generate efficiency gains. Education is essential for securing the skills the region needs. Educational programs should be based on the best available knowledge and evidence so as to equip future employees and researchers with relevant, up-to-date skills. By participating in undergraduate, specialist and postgraduate education and training for all professional groups and by supporting continuous skills development, Region Stockholm ensures it has access to well-trained employees who have opportunities for learning throughout their professional lives. Research, education and development should be a natural and well-integrated element of all services funded by

Region Stockholm, regardless of the mode of operation.

Research is a systematic investigation that seeks to discover new knowledge with the aim of broadening human understanding of the physical, biological or social world beyond what is already known. The systematic application of scientifically proven experience and knowledge creates a favorable context for development. The interaction between research and development leads to the continuous improvement and development of products, services and processes in existing systems. It is not possible to predict what knowledge will be needed to understand and solve current and future challenges. Free, researcher-initiated research, with no requirement for a specific focus or specific results, is essential and must be safeguarded. Research is based on long-term processes conducted in complex systems with multiple parties.



## An effective research system and strong basic research enable solutions to be found when new societal challenges arise.

It is therefore important that the conditions for research are sustainable and create stability. An effective research system and strong basic research enable solutions to be found when new societal challenges arise.

Region Stockholm's employees and various stakeholders should be able to engage with each other to seek solutions to current problems. Region Stockholm will take the initiative to make such engagement possible.

Region Stockholm's aim is for both clinical¹ and public health research undertaken within Region Stockholm's health and medical services, both in-house and private, to lead to breakthroughs that:

- prevent disease, save lives and cure illness
- enable early detection of both ill-health and disease
- relate to the impact on health of environmental exposure and the work environment
- help bring about more accurate and personalized diagnoses
- help reduce suffering and complications
- develop person-centered care
- promote patient safety and quality
- develop logistics: patient flow, healthcare supply
- · chains, emergency preparedness
- relate to population differences and structural barriers to health

Region Stockholm's aim is for public transportrelated research to improve the lives of residents of the county and contribute to sustainable travel. The education and training remit of all regionally funded healthcare includes participation in work-integrated learning (WIL)² for students in upper secondary, higher vocational education and university and higher education. WIL is included in training for all categories of healthcare professionals and at all levels of education, and is an important factor in the development of professional expertise. Region Stockholm is also responsible for specialist training in some professions. In addition, Region Stockholm will work to ensure that all employees are able to develop and maintain their skills through continuous professional development and lifelong learning.

Region Stockholm will promote skills development at all levels to meet the region's current and future needs, taking into account demographic changes, technological developments, new methods and different ways of structuring Region Stockholm's services. New ways of working supported by new technologies and increased collaboration will contribute to development.

The vision incorporated in RUFS 2050, the regional development plan for Stockholm, which has also been adopted as the regional development strategy, seeks to make Stockholm Europe's most attractive metropolitan region. The Research, Education and Development Strategy for Region Stockholm, the Life Sciences Strategy for the Stockholm Region, Region Stockholm's Business and Growth Strategy and Region Stockholm's Innovation Strategy work side by side to achieve the vision.

<sup>&</sup>lt;sup>1</sup> Clinical research is research that requires health care structures and resources and aims to solve a health problem or to identify factors that lead to improved health.

<sup>&</sup>lt;sup>2</sup> Work-integrated learning (WIL) is an umbrella term that includes work-based learning or training in upper secondary schools, higher vocational education and higher education and universities. WIL may also include study visits, observation, internships or field studies.

### 2. Purpose

THE PURPOSE OF REGION STOCKHOLM'S RESEARCH, education and development strategy is to create a favorable environment for research, education and development within the region's services. Such activity should be of benefit to residents and at the same time enable the Stockholm region to continue to be a leading, innovative and sustainable growth engine for the whole of Sweden. A close link between research, education, development and innovation will create a modern, forward-looking organization. Decision-making data for Region Stockholm must be based on science and safeguard

opportunities for research, development and education.

Region Stockholm has decided to create a more favorable environment for universities, colleges and businesses to undertake research, development and innovation and has brought its visions together in the Research Promise (LS 2017-1455). The objective of the Research Promise is to increase numbers of clinical studies and make the Stockholm region one of the world's leading regions for life sciences by 2025.



### 3. Application

CHAPTER 18, SECTION 2 OF THE HEALTH AND SOCIAL SERVICES ACT (2017:30) Section 2 states that "regions and municipalities shall participate in the funding, planning and implementation of clinical research work within healthcare and research activity within public health. Regions and municipalities shall collaborate with each other and with the universities and colleges concerned in these matters to the extent necessary."

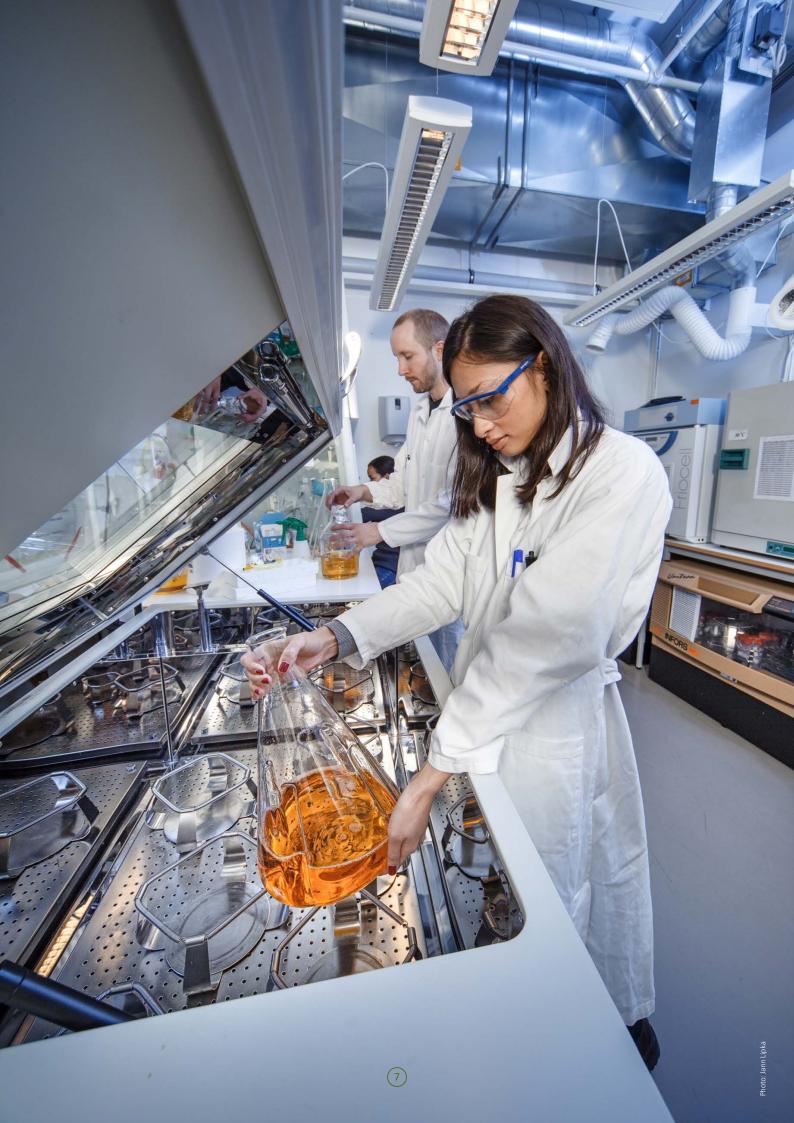
Region Stockholm is responsible for regional spatial planning under Chapter 7 of the Swedish Planning and Building Act (2010:900), and from 1 January 2019 holds responsibility for regional development in Stockholm County under the terms of the current Swedish Act on regional development responsibility (2010:630) and the Ordinance on regional growth work (2017:583).

Region Stockholm is required by Government

to contribute to healthcare education by providing clinical training places for students. This includes ensuring that the right skills are available in all relevant areas.

All bodies funded by Region Stockholm must implement the Research, Education and Development Strategy for Region Stockholm and take it into consideration when preparing governing documents such as budgets and operational plans.

Region Stockholm will ensure continuous and transparent compliance with the Research, Education and Development Strategy. In consultation with the Education Department within the Health and Medical Care Administration, the Research and Innovation unit in the Regional Chief Executive's Office will identify and present actions linked to the strategy in action plans that will be regularly monitored and revised.



## 4. The Stockholm Region will continue to create a good environment for research, education and development

4.1 Academic freedom, ethical principles and competition will deliver quality and benefits

Region Stockholm upholds academic freedom, so that the researcher is free to select the research problem and methodology and publish the results. Funding systems will help to ensure that research conducted in collaboration with Region Stockholm is of good scientific quality and can provide substantial benefits at the regional, national and international level.

Region Stockholm will allocate its funds for research and development through a transparent and impartial competitive process based on scientific quality and benefit. All research conducted in collaboration with Region Stockholm must adhere to good research practice, taking into account research ethics and legal principles relating to the research field in question.

4.2 Region Stockholm will create long-term, reliable conditions for research

Good research requires clear leadership, dedicated, competent researchers and long-term resourcing. Research that seeks solutions to societal challenges increasingly requires researchers from different disciplines to come together and be given time to jointly investigate their research problems. Region Stockholm will create reliable conditions in terms of funding, organization and access to infrastructure, thereby creating an attractive environment for researchers from Sweden and the rest of the world. Region Stockholm will attract more interna-

tional projects and talent, which will enhance scientific quality, diversity and funding.

4.3 Making data available will enhance analysis, insights and knowledge creation

Developing new knowledge requires access to information and data. Region Stockholm has a substantial volume of good-quality, coherent data. The area is evolving rapidly and developments affect the entire chain, from basic research to clinical diagnostics and care. Region Stockholm will have the ability to manage, preserve and supply data over time through a long-term, sustainable environment for storing information and making it available.

The provision of data must always be subject to ethical principles and respect for the privacy of the individual.

Region Stockholm's hospital libraries offer the region's employees access to national and international journals, providing access to continuously updated knowledge that is important for their day-to-day work.

Good research requires clear leadership, dedicated, competent researchers and long-term resourcing.



4.4 Region Stockholm will provide appropriate, high-quality learning environments

Region Stockholm will provide appropriate, highquality learning environments in line with current educational research. The region will offer tutoring expertise, facilities and support for learning and professional development.

Region Stockholm will help achieve the degree objectives for educational programs and ensure that learning is based on students' learning outcomes and the patient's care needs, focusing on a person-centered approach that respects the patient's involvement and privacy.

Region Stockholm will be a national and international pioneer in interprofessional learning and provide appropriate learning environments for this purpose.

Region Stockholm will provide excellent clinical skills training and simulation environments for staff and students.

Patients' opportunities for participation and self-determination will be enhanced in line with the Swedish Patient Act (2014:821). Health-promoting, preventive and rehabilitative approaches will inform all aspects of training and activity throughout the healthcare system and also influence the ability to work in new care settings supported by digital tools where digital and physical ways of working are integrated.

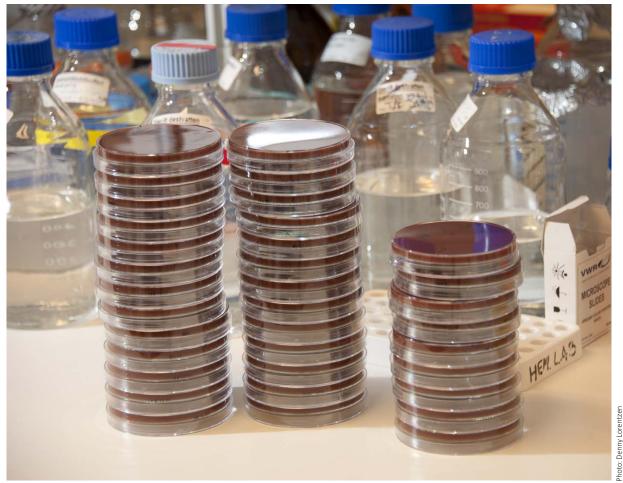
4.5 Region Stockholm will create a more favorable context for researchrelated education and training

Research-based education enables new knowledge to be put into practice. Using the research process as a model, learning will support the development of a critical and reflective approach. The learning will help to make students aware of how new knowledge and evidence can be applied in their future professional practice. Region Stockholm promotes medical education research within workintegrated learning.

4.6 Region Stockholm will promote skills development and lifelong learning

Region Stockholm employees will be constantly learning and continuously developing knowledge and skills based on the latest evidence and the needs of the organization. Each committee and company is responsible for ensuring that employees have opportunities to develop and maintain their skills and that they have the up-to-date knowledge needed to enable them to carry out their work. In organizations with an education and training remit, supervisor skills must be part of systematic skills development.

Region Stockholm will help to ensure that the content, quality and design of education and training programs meet the current and future skills needs of the healthcare sector.



### 5. Organization and working methods

REGION STOCKHOLM CREATES the conditions for in-depth partnerships and strategic collaboration through agreements and declarations of intent with universities and colleges.

Region Stockholm has an agreement with the Swedish Government on the training of doctors, clinical research and the development of healthcare (known as the national ALF agreement -LS 1408-0943). The agreement is supplemented by a regional agreement with Karolinska Institutet on the training of doctors, work-based training for certain other health professionals, clinical research and development of healthcare (LS 1411-1389), which describes what form cooperation will take and the structure for collaboration. Region Stockholm has also signed letters of intent relating to research, development, innovation and education with KTH Royal Institute of Technology (LS 2015-1096), Stockholm University (LS 1406-0706) and K2, Sweden's national center for research and education on public transport (TN 2018-1335).

Region Stockholm has collaboration agreements with several universities and colleges relating to work-integrated learning within various educational programs. In addition, the Stockholm Region works in partnership with Vård- och omsorgscollege Stockholm (the Health and Social Care College Stockholm) on work-based learning in upper secondary schools and higher vocational education healthcare and medical programs. Region Stockholm is also actively involved in both the national and regional Health Competence Councils.

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Region Stockholm is actively involved in both the national and regional Health Competence Councils. The Stockholm Gotland Regional Health Competence Council, which includes representatives from Region Stockholm, Region Gotland, municipalities, universities and private healthcare providers, is tasked with promoting dialogue and collaboration between the relevant healthcare actors at the regional level.

Region Stockholm also collaborates with the county's various research and innovation foundations, research platforms and competence centers with the aim of finding solutions to common challenges.

### 5.1. Strategic direction for research, education and development in health and dental care

5.1.1 Region Stockholm will make structured health data available in a coordinated, secure, ethical and consistent manner

The opportunities offered by digitalization represent a paradigm shift for healthcare. The analysis of large volumes of data from large numbers of patients can lead to breakthroughs in medical research in areas such as how people's genetics and lifestyles affect their health. This, in turn, allows for tailored prevention, diagnosis, treatment and cure.

Region Stockholm will seek to ensure that researchers have access to high-quality structured health data and to make biobanks' sample collections available, thus enabling the development of new knowledge and new technologies. Collaboration between healthcare providers is critical, as healthcare research and development is entirely dependent on access to quality-assured data from across the healthcare system if it is to be able to generate knowledge that will benefit patients both today and in the future. Region Stockholm will ensure that health data is made available in accordance with regulations in a coordinated, secure,

ethical and consistent manner, with due regard to the privacy of the individual. Residents and patients in the Stockholm region will be able to donate health data for research and healthcare development if they so wish.

Region Stockholm will also seek to make available the data recorded in the National Quality
Registers for which it is the responsible authority.

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5.1.2 Clinical research across the healthcare system

Effective and successful clinical research is dependent on all elements of the research chain – from sampling and data collection from patients receiving care to systematic documentation and dissemination of results obtained. The changing healthcare system, with patients increasingly dispersed within networked healthcare, calls for closer collaboration and new types of alliances between and within healthcare providers. It is crucial that Region Stockholm is able to ensure that research can follow the patient and the course of their illness throughout the entire care chain, irrespective of whether the patient's care provider is publicly run or private. Where relevant, therefore, Region Stockholm will set out clear requirements for healthcare providers to take part in clinical research in various types of healthcare Region Stockholm will enable more healthcare providers to participate in clinical studies. To assist with this, healthcare agreements will make it clear that providers are required to take part in clinical studies, for example by collecting patient data or samples or recruiting patients to take part in research. Healthcare providers must carry out this work in accordance with established rules and regulations and good ethical standards.

When undertaking the required monitoring of the contracts signed with healthcare providers, Region Stockholm will request and monitor the outcomes of, and conditions for, clinical research.

Complementary models for monitoring the outcomes of, and conditions for, clinical research will also be developed.

Health and dental care research is concerned not only with clinical studies but also with topics such as technology, process and organization, in which aspects of the natural and social sciences and human culture have an important role to play.

5.1.3 Education and training across the healthcare system

Clinical education and training is an integral part of healthcare.

In the Stockholm region, all healthcare providers, whether regionally owned and private, have an education and training remit. Region Stockholm will ensure healthcare providers comply with their education and training remit by setting out clear quantity and quality requirements in healthcare agreements. The agreements will underpin and contribute to skills provision in the region.

Region Stockholm will seek to ensure that education and skills development in healthcare adapt and evolve so that they match future knowledge and skills needs connected with the ongoing transition to integrated healthcare, while other aspects of healthcare become more focused and more highly specialized. Collaboration and coordination between healthcare providers in the region creates better conditions and incentives for the development of the education and training remit.

5.1.4 University healthcare and knowledge management will work together to turn research outcomes into day-to-day clinical practice

University healthcare is that part of healthcare that has particular regard to the needs of research and education, as governed by the national ALF agree-



ment. In a university healthcare unit, research, education and healthcare development should be considered core activities and as important as the provision of healthcare. The university units will contribute to the development of healthcare in the Stockholm region. All university healthcare managers must have undergone Good Clinical Practice training.

Only when new knowledge is systematically applied in healthcare can it lead to quality improvement and create added value for patients and residents. Knowledge management is the system used within healthcare for developing high- quality care that is more knowledge based, equitable and resource efficient. The systematic development of healthcare requires access to data from person-centered care and healthcare processes as well as a well-developed infrastructure for useful knowledge-based support.

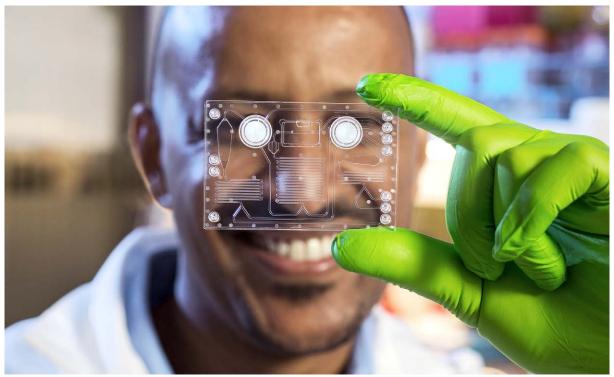
It is important for the link between university healthcare and Region Stockholm's knowledge management system to be strengthened, as this helps to ensure that research outcomes can be rapidly and effectively translated into practice. Knowledge-based work requires good, sustainable provision of skills and access to well-trained employees. Models for this will continue to be developed. The university units will also be involved in the work on national highly-specialized healthcare.

5.1.5 An enquiring culture, expertise, research time and infrastructure at Region Stockholm will create the conditions for medical breakthroughs

Health and dental care need to be continuously developed to provide the best possible care and treatment that is evidence-based, safe, person-centered and equitable. Region Stockholm will create good environments for clinical research that make use of residents' knowledge, experience and willingness to participate in clinical research

In clinical research, leadership is key to ensuring that staff are continuously developing their scientific skills and are given the resources and time required for the complex task of reconciling clinical research with the healthcare remit. Governing documents should take into account the need for both infrastructure and the processes needed to foster collaboration with universities and the life sciences industry.

Working with the region's higher education institutions, Region Stockholm will support researchers in their development through clear career paths (from student to associate professor) linked to a transparent incentive structure.



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### Integrated research contributes to longterm solutions to major societal challenges.

5.1.6 The leadership culture at Region Stockholm creates the conditions for excellent learning at all levels

The educational and training remit will be a natural, integrated part of the day-to-day work of all Region Stockholm employees. Leadership is crucial to achieving this. A characteristic of the leadership culture at all levels of healthcare will be a view of education, development, research and skills development as an integral part of the healthcare remit. The education and training remit should be familiar to staff throughout the organization and represented on all management bodies, whoever is the responsible authority.

Ensuring that all employees have adequate educational supervisor skills enables them to help train the employees of tomorrow.

5.1.7 Region Stockholm will stimulate company-initiated clinical research for the benefit of residents, patients and relatives

Region Stockholm will build on its strong tradition of collaboration with businesses and universities, thereby maintaining its role as host for leading knowledge organizations with successful research and for prominent knowledge-intensive companies.

The business community has a key role to play in commercializing the knowledge produced within Region Stockholm's healthcare system in collaboration with universities and colleges in both the short and long term. Businesses also play a crucial role in developing and disseminating socially-important medical breakthroughs within Region Stockholm's services.

Business-initiated clinical research benefits society through improved quality of care, patient

safety, skills development for employees, increased productivity, job creation and savings on pharmaceuticals and medical technology.

Region Stockholm will develop clear contact channels and transparent rules for collaboration with businesses, and a culture that supports collaboration between healthcare and business in line with the relevant regulations. Region Stockholm will have clear incoming contact channels and be able to offer test environments for the research and development of new products or services.

### 5.2 Strategic directions for research and development in public transport and regional development

5.2.1 Region Stockholm will stimulate research and development in the public transport system

Region Stockholm will endeavor to make the Stockholm region a climate-neutral region with a high proportion of sustainable travel that involves walking, cycling and public transport. The proportion of motorized journeys taken by public transport will increase to meet both climate and mobility targets. Region Stockholm will also develop its partnership with the county's municipalities to increase the attractiveness and efficiency of public transport.

As the challenges of public transport systems span many research areas, we need to stimulate high-quality research across various research disciplines to find solutions for a safe, reliable transport system with a low carbon footprint.

Region Stockholm collaborates with K2, Sweden's national center for research and education on public transport, which is a multidisciplinary research environment that explores issues that cut across different research areas and perspectives.

Region Stockholm will promote research in the field of public transport by providing researchers with information about public transport, such as forms of collaboration, plans, guidelines and agree-



# Increasing population growth in the region will go hand in hand with sustainable social development.

ments for the governance and management of public transport, about outcomes from public transport services delivered and about experiences and lessons learned. Region Stockholm will make public transport information and data available by providing depersonalized information on passenger experiences, travel habits and transport provision.

Region Stockholm has identified the need forknowledge in areas such as:

- Future mobility
- Public transport for all
- · Technology
- Integrated urban planning
- · Markets and funding
- · Decisions and impact
- · Digitalization

5.2.2 Region Stockholm will contribute to sustainable societal development

The increasing population growth in the region will go hand in hand with sustainable societal development. Regional planning helps to create the conditions for long-term sustainability and resource efficiency in both transport systems and land use. Research can contribute to solutions in a range of areas associated with spatial planning, such as public transport resilience and accessibility, mobility solutions for society's travel needs, development of the built environment, housing issues and sustainability solutions linked to construction and climate footprints. The potential of spatial planning to create conditions for improved public health and social sustainability are also areas where research and development are needed.

Region Stockholm will also:

- find new solutions for sustainable urban planning through interdisciplinary research projects
- contribute to spatial planning that strengthens strategic research pathways and innovation environments to make the Stockholm region a leading knowledge region
- participate in preventive public health work, for example through research on different modes of transport and urban planning
- collaborate with academia, the Government, municipalities and other actors to discover new knowledge in the field of sustainability, and
- as one of Sweden's largest contracting authorities, develop and apply new knowledge on how
  procurement can be used as a tool to reduce the
  environmental impact of its services

5.2.3 Region Stockholm will actively promote interdisciplinary and integrated research

Collaboration between different actors is essential for cross-boundary research partnerships that can achieve long-term, innovative solutions contributing to the attractiveness of the Stockholm region. Scientists, social scientists, humanists, representatives from the cultural sector and various professions within Region Stockholm will therefore work together to identify challenges and research questions.

Integrated research contributes to long-term solutions to major societal challenges through an inclusive way of working in which researchers, decision-makers and other societal actors collaborate across boundaries with each other and the community around them around a shared problem area. Region Stockholm therefore aims to promote research that involves knowledge, methods, terminology and expertise from different disciplines.

Region Stockholm will work toward establishing the academic corridor proposed to link Karolinska Institutet, the KTH Royal Institute of Technology and Stockholm University. The sharing of research concepts and the development of new research methodologies will be stimulated by mobility of staff between healthcare, universities, colleges and the business community.

### 6. Funding

The Government makes an annual payment to the relevant regions for their participation in universities' clinical research and the clinical element of doctors' basic training, known as the 'ALF funds'.

Collaboration with Karolinska Institutet encompasses both ALF funds and the FoUUI funds that Region Stockholm agrees annually for collaboration between research and education.

Funds relating to collaboration with Karolinska Institutet will be allocated through a consultative process within the Karolinska Institutet and Region Stockholm collaborative body.

Funding for the education and training remit consists partly of state remuneration (ALF funds and WIL payments) and partly budgetary funds set aside by Region Stockholm. The budgetary funds set aside by Region Stockholm include funds for collaboration with Karolinska Institutet in accordance with the regional ALF agreement and other funds for activity relating to the education and training remit. Healthcare providers' education and training commitments and the related financial contribution are governed by Region Stockholm's

annual education and training terms of reference.

Region Stockholm's R&D budget also includes funds for research and development initiatives in collaboration with the KTH Royal Institute of Technology and Stockholm University and funds for various support structures for clinical research and development.

Region Stockholm's services will attract external funding for research projects against national and international competition, as the public sector offers unique opportunities for measuring the societal benefit of research and development projects. This is increasingly a requirement of research funders. Horizon Europe, the EU Framework Programme for research, provides good opportunities for Region Stockholm to get involved in European research projects alongside academia and industry. Region Stockholm will develop the capacity of its services to apply for and run EU-funded projects.

Collaboration with the business community must be governed by an agreement in accordance with the relevant legislation.



hoto: Denny Lorentzen