Ole Petter Ottersen – President, Karolinska Institutet (KI), Sweden

Region Stockholm's stated goal is to make Stockholm one of the five most prestigious and successful life sciences clusters in the world by 2023. KI has a crucial role to play in turning this ambition into reality

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Karolinska Institutet

(KI) is a centre of excellence for medical research and education in Sweden and the world. Ole Petter Ottersen has been the president of KI since 2017. Prior to this, he was the president of the University of Oslo and director of the Centre for Molecular Biology and Neuroscience in Norway. Ottersen discusses how he plans to help build a world-class life sciences cluster in Stockholm in collaboration with other leading universities, the public sector and industry. He also shares his thoughts on Sweden's commitment to reach the goals of the UN´s 2030 Agenda for Sustainable Development and the role of KI in this endeavour.

As president of one of the world's leading medical universities, what do you see as the strengths of KI compared to other top medical universities around the world?

First of all, our primary strength is our high-quality research and education which constitute the platform for all life science endeavours. We have a close collaboration with the health care sector and Region Stockholm. This relationship is one of the success factors for the development of a viable life science cluster within Sweden. Another major strength lies in the collaboration between top universities in the region within the context of SciLifeLab. Science for Life Laboratory, which is where Karolinska Institutet, KTH, Royal Institute of Technology, Stockholm University and Uppsala

University join forces to excel in life sciences. This multi-disciplinary approach is the pre-requisite to develop breakthrough treatments and methodologies in life sciences. Furthermore, research shows that proximity between researchers and technologies from different disciplines is crucial to excelling in the life sciences. This is the advantage of SciLifeLab which is large enough to bring all of the “omics” (genomics, proteomics, metabolomics etc) together. This close proximity accelerates the pace of progress compared to a decentralized way of working and enables SciLifeLab to serve as a national resource within the life sciences.

The new strategy of KI is to act as a driving force for the creation of a dynamic life science cluster, both on our campus in Solna and our southern campus Flemingsberg. Both campuses have great potential in this respect.

The Stockholm region has great ambitions regarding life sciences which are commensurate with our own ambitions. Region Stockholm’s stated goal is to make Stockholm one of the five most prestigious and successful life sciences clusters in the world by 2023. KI has a crucial role to play in turning this ambition into reality. The national driving force for life sciences in Sweden is the Life Sciences Office which was created a couple of years ago. However, it relies upon what is happening in the regions. The Stockholm region is by far the most important when it comes to life sciences due to our strength in both basic science and clinical science. Furthermore, about 50 percent of all Sweden’s employees within the life sciences are working in the Stockholm/Uppsala region.

How does Karolinska Institutet promote innovation and entrepreneurship in life sciences?

KI promotes innovation and entrepreneurship in life sciences through education, support to researchers and students, as well as support for startups. Our Unit for Bioentrepreneurship (UBE) conducts research on and education in innovation and entrepreneurship. As an academic unit, UBE can be considered as the first proactive link in KI’s innovation system. It is the KI node of the Stockholm School of Entrepreneurship, an academic collaboration between KI, Stockholm School of Economics, KTH, Royal Institute of Technology, University College of Arts, Crafts and Design, and Stockholm University.

Regarding support for startups, KI differs from most other universities as the innovation support structure includes entities that are separate from but coupled with the university such as KI Innovations. KI Innovations is a startup incubator wholly owned by KI through its holding company, KI Holding. KI Innovations evaluates projects with commercial potential and supports them through

education, professional networks, financing, entrepreneurial expertise and business development.

Karolinska Development is a venture fund that invests in ground-breaking medical innovations with high commercial potential derived from academic research by Karolinska Institutet and other leading universities. The connection to KI is through a small shareholding by KI Holding.

Another way we promote innovation is through events. A few weeks ago we held an event where we presented 20 innovations emanating from our university. Throughout our history, KI has been involved in the development of medical breakthroughs such as the pacemaker, angiography, and more recently the gamma knife which is used for brain surgery.

Multinational pharmaceutical companies are building closer ties with KI. For instance, last month, Bayer inaugurated new Swedish headquarters at campus *Solna*. What role does the global life sciences industry play in fostering research and innovation at Karolinska Institutet?

There have been tremendous structural changes in the pharmaceutical industry over the last two decades. The pharma industry now depends on the innovative power of universities to fuel their R&D pipeline and gain access to new technologies. On the other hand, researchers benefit from competence, expertise, technologies and methodologies of the industry. It is in many ways a win-win situation. KI is in a perfect situation to be able to welcome in companies and build up the industrial arm of our life sciences cluster as Academic Housing have multiple vacant facilities after constructing several new buildings in the past few years. In the future, I would like to see more rotation between industry and academia, which is less prevalent in Sweden than in other countries.

Going forward, we want to work systematically to attract industry. We have been researching the factors international companies and talents are looking for in a life science cluster, the most important one being, of course, the quality of research and education.

In May, Karolinska Institutet formed a university alliance with KTH, Royal Institute of Technology, and Stockholm University. What are the goals of this ‘Stockholm trio’ alliance?

Primarily it is a way to formalize a collaboration that already exists. As I mentioned, SciLifeLab is a collaboration between these three universities and Uppsala University. The key issue is

complementarity. In order to flourish, life sciences need both interdisciplinarity and complementarity. What many people fail to realize is that some of the most important technology companies base much of their activity of the social sciences and humanities. For instance, Google's technology platform creates value through the social sciences and humanities that sit on top of it. To my mind, interdisciplinarity and a richness of perspectives are crucial in order to foster a dynamic life sciences cluster. In addition, we would like to create educational programs that can benefit from the proximity of the universities. Furthermore, we would like to establish a common office in Brussels in order to better collaborate with the EU system. Finally, my vision is that we through Stockholm trio and international collaboration can help develop the dialogue and interaction between medicine and technology. This is essential, shall we ever be able to reduce the gross inequities in health that we see in the world today. A proper synergy between medicine and technology is required to implement new diagnostics and treatments in resource poor settings and in rural areas.

The Swedish government is committed to reaching the goals of the 2030 Agenda for Sustainable Development. What role does Karolinska Institutet play in helping Sweden achieve its ambitions?

This is a very important task for the university, and we have introduced a new strategy with the same time horizon as UN's Agenda 2030. The stated mission of our strategy is to 'strive for a better health for all'. This means that we will work for better health care not only for the Stockholm region and Sweden but for the world at large. Health permeates throughout the 2030 Agenda for Sustainable Development as it is listed in 14 out of the 17 goals. Health and resources are increasingly becoming interlinked due to resources becoming scarce and health problems are increasing in many parts of the world. The interplay between resources and health is an important area of research for us and going forward we would like to incorporate the SDGs into the education programs to a far greater extent than they are today.

What vision do you have for the future of the university within Sweden's research and academic ecosystem?

We not only want to consolidate our present position, but we would also like to be far more visible and successful on a national and an international level. We have a great platform for achieving these goals due to our excellent research and education, modern infrastructure, new buildings and

our collaborations with the healthcare sector, Region Stockholm and other universities – regionally, nationally, and internationally.

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