



Experience Day 2: Health Care on the Brink of a 4th Industrial Revolution? (Medicon Valley – the Hub for Life Science)

Overview

Medicon Valley is the crucible of Scandinavian life sciences. Located at the gateway to Denmark and Sweden, it has a vibrant ecosystem and deep talent pool underpinned by world-class life science universities and research infrastructure. Set in a competitive business environment with the Scandinavian quality of life close at hand, Medicon Valley is an attractive location for both business and people. Scandinavian innovation is globally recognized, and our life sciences reflect this. Within Medicon Valley we have a rich life science heritage and pioneering spirit that continues to attract many successful companies. Companies like Novo Nordisk, LEO Pharma, Baxter Gambro and Lundbeck are representative, but also large research and innovation institutions as well as many smaller innovative start-ups who continue to energize the area.

The focus for the experience day will be what the World Economic Forum has called the 4th industrial revolution in healthcare – “Precision medicine has the potential to transform medicine by tailoring treatments to individuals. It is an emerging approach for disease treatment and prevention that takes into account individual variability in environment, lifestyle and genes for each person. Precision medicine has great potential to providing high value healthcare by improving outcomes while decreasing cost.”¹

The visit will also look at research and innovation and participants will learn how research-based innovation, start-ups, and health care can create an innovative eco-system for which discovers solutions for tomorrow’s health care.

During the Experience Day, you will visit two exciting research and innovation sites:

The National Genome Center

Around the world important new developments are being made where molecular knowledge is used to provide patients with better, safer and more targeted health care. There are already good examples within cancer care, but the potential is great within many disease areas. In 2017, the Danish Ministry of Health formulated a National Strategy on Personalized Medicine and established the Danish National Genome Center.

The Danish National Genome Center Denmark will have a world-leading and high-tech center for precision medicine. The supercomputer in the center will be one of the world's largest systems designed to develop precision medicine.

During the visit to the Danish National Genome Center you will learn:

¹ <https://www.weforum.org/projects/precision-medicine>



1. How the supercomputing infrastructure of the Danish National Genome Center is designed to collect, store, analyze, process, and combine extremely large and different volumes of data – for better diagnostics and treatment – and for better quality and safety for our patients
2. How the supercomputer's analytical power will enable to uncover patterns and contexts that provide a very accurate picture of patient treatment
3. How supercomputing at the same time endowing health research with a data infrastructure that has great potential for further unique research in personalized medicine.

The Technical University of Denmark - SkyLab

At the Technical University of Denmark (DTU), participants will visit the vibrant innovation hub, DTU Skylab, and learn how research-based innovation, start-ups, and healthcare can contribute to creating an innovative eco-system for new solutions.

Participants will learn how successful cooperation between academia, industry, and health care has resulted in Denmark being the most digitized society, ranking high on innovation and with a life sciences sector which is a dominant growth engine for Danish society.

This track will focus on enabling innovative solution through utilisation of patient data, and how this will affect the healthcare sector of tomorrow. Participants will learn how new solutions for health care will influence patient treatment and care and how collaboration between innovative, start-ups, industry, researchers and the health care sector holds the potential to change how patients will interact with the health care sector in the future.

Attendees will also get an insight into how science gets implemented in clinical settings, and how researchers and students interact with the patients.

During the site visit to DTU SkyLab you will:

1. Learn how health tech innovation and co-creation between researchers, start-ups and the health care sector are created at DTU SkyLab
2. Understand how collaboration between clinical departments and technical and health-based research can create new solutions, which make a difference for patients – and also for quality and safety.
3. Meet some of the researchers and students who are creating innovative health tech start-ups to improve patient care – and experience some great interventions and solutions



Programme for the visit

Time	Activity
8.00	Transport from conference venue, Bella Center
9.00 - 10.15	Introduction to the Danish National Genome Center . The Center has developed a supercomputing infrastructure for Precision and Personalized Medicine. The core of the infrastructure is a powerful supercomputer that can handle large amounts of data, as well as, to facilitate research in health data – we will see examples and perspectives on the work done by the center.
10.15 - 10.30	Refreshments
10.30 - 11.45	Tour around the site and see the supercomputer facilities – the largest in Denmark and one of the largest in the World.
11.45	Lunch
12.30 - 13.15	Transport to The Technical University of Denmark (DTU) Introduction to DTU and SkyLab
13.30	<p>DTU Health Tech creates health technology to improve health and well-being for humans in collaboration with companies, hospitals, as well as national and international researchers. The cross-disciplinarity at the department, which includes mathematics, computer science, physics, chemistry and biology provides the foundation for new and innovative technology for the future.</p> <p>DTU Health Tech will provide new technology and solutions to improve patient care. On 1 January 2019, DTU established a new department, DTU Health Tech, where more than 300 researchers and administrative staff will contribute to the university's new position of strength within the area of health technology.</p> <p>The major challenges of the healthcare system open up for the possibility for technology to play a much more central role in the development of better solutions to benefit patients. Therefore, DTU has gathered big parts of its health-related research in one department. Thus, making DTU Health Tech a world-class research platform to form the basis for new technology, new solutions and new educational directions that will improve the quality of patient care and the population's health and well-being.</p>
15.30	Open space activity to share learning from the different sites
16.15	Transport to Conference venue, Bella Center

Programme subject to change



Facts about medicon valley:

- 40,000 people employed in life sciences
- 90% of Scandinavian life science graduates
- 9 world leading life science universities
- 6,000 PhD students
- 350 biotech, medtech & pharma companies with local R&D
- Medicon Valley has the largest concentration of research and companies in life science in the Nordic region and works purposefully to recruit international talent and attract companies and capital to the region.

Organisation:

Technical University of Denmark (DTU) in DTU Skylab, which is the innovation hub for DTU. DTU Skylab is a 3500 sqm innovation space with workshops, labs, and activities supporting innovation and startups for students and employees at DTU and DTUs ecosystem. DTU Skylab focuses on enabling student innovation and entrepreneurship through three focus areas; student innovation, company collaboration and academia.

Founded in 1829 with the mission of creating value for the benefit of society, DTU is an international elite technical university where education, scientific advice, and innovation rest on a solid foundation of world-class research. The University is at the academic and multidisciplinary forefront of the technical and the natural sciences—with new initiatives in a number of demanding engineering disciplines, including sustainable energy technology and life science.

Danish National Genome Center

Danish National Genome Center (NGC) is a new government agency and is an authority within the Danish Healthcare system.

The Danish National Genome Center's primary task is to lay the foundation for the development of better diagnostics and more targeted treatments for patients using whole genome sequencing. The Center has a national responsibility to develop state of the art infrastructure to enable whole genome sequencing and analysis on big biomedical heterogeneous data together with the Danish healthcare system and researchers. The goal is that the Danish National Genome Center will be able to deliver the large amounts of whole genome analyses requested by the Danish health care system.

#precisionmedicine #bigdata #patientsafety #genomics #qualityoflife #supercomputer #innovation