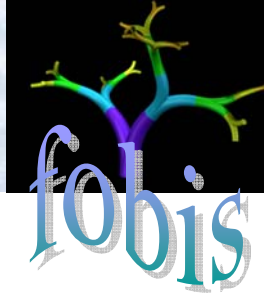


Biomedical Sensors Foresight Workshop 6th – 7th October 2005

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www.sensortec.dk

Some practical informations

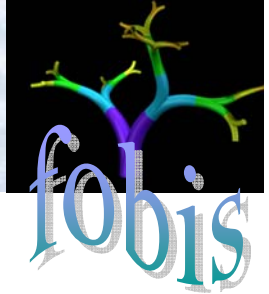


Food and accommodation:

Participation in the workshop is paid by Nordic Innovation Centre. This includes meals – also the dinner tonight. Extras is 'on your own'.

Rooms have to be paid by the participants themselves – unless otherwise agreed with FOBIS.

Objective



To establish status and trends in relation to actual usage, needs and perspectives for biomedical sensors.

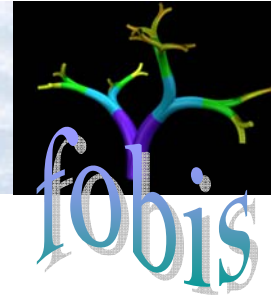
This includes:

Health care structure and future developments

Technology – actual and potential

Agenda Thursday

- 12:00-13:00 Lunch
- 13:00-13:10 Background for the foresight FOBIS
Ingrid Svagård SINTEF
- 13:10-13:20 Introduction and objectives
Lars Lading Sensor Technology Center A/S
- 13:20-14:00 The Hospital Laboratory of the future
Jens F. Rehfeld, Copenhagen University Hospital
- 14:00-14:40 Health technology assessment: an introduction with emphasis on the clinical and economic evaluation of diagnostic tests
Hindrik Vondeling, Centre for Applied Health Services Research and Technology Assessment, University of Southern Denmark
- 14:40-15:20 Security and Defense
Åke Sellström, The Swedish Research Defence Agency
- 15:20-15:40 Coffee
- 15:40-16:20 Marketing Biosensors: Opportunities and Pitfalls based on real world experiences
Ulf Jönsson, CEO of Celectricon and former CEO of Biacore
- 16:20-17:00 Biosensor Technology – an overview.
Lars H. Pedersen, Bioneer A/S
- 17:00-17:15 Summing up
- 17:15-17:45 Tasks of the group workshops
- 18:30- Dinner
- 19:30- Informal discussions



9:00-9:20 Group assignments

9:20-12:00 Group workshops on medical sensors in relation to health care, safety and drug development.

The task of the groups is to evaluate common practice and foresee the impact of biomedical sensing over the next 10 - 15 years on home *care*, *doctors office* and *hospital* diagnostics and surveillance systems.

Home care:

What are the possibilities for home care diagnostics at present and in the years to come? (self testing, remote testing and control, the relation patient-doctor-hospital)

Doctor's office:

Current diagnostic techniques at the doctor's office. What will a doctor's office offer in 15 years? (doctor's office/offices, central vs. decentralized diagnosis and sensing, doctor's office in a high tech health care system etc)

Hospitals:

Central diagnostic units versus decentralized (near patient testing and central labs, hospitals as surveillance centers, hospital vs. doctors office)

Defense and security:

The battlefield: Individual actors, whole theater.
Terrorism: Utilities, transportation, persons

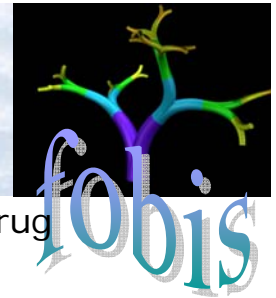
12:00-13:00 Lunch

13:00-15:00 Group presentations, with comments and discussions in plenum

15:00-15:15 Coffee

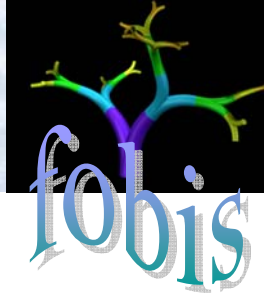
15:15-15:40 Main conclusions of the workshop

Lars Lading



Agenda Friday

A sensor

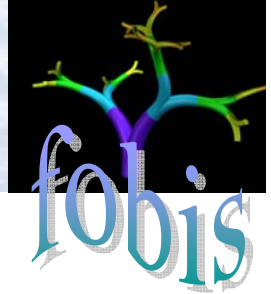


A device that provides information about the state of a physical system

Often compact and robust

Matched to the system - not the other way around

A Biomedical Sensor



A biosensor:

1. A specific biochemical reaction (e.g. 'Molecular pattern recognition') \Rightarrow change of a physical parameter (e.g. refractive index)
2. Detection of the physical parameter (optical, electrical, thermal, mechanical, or magnetic)

A biomedical sensor:

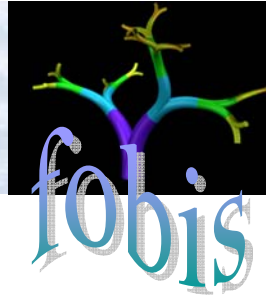
A biosensor for a medical application

Or a sensor for a bio application

We will not be rigorous about the definition.

However, we are confined to sensors relevant for health care

National Institute of Public Health:



About 1.8 bn Danes suffer from chronic diseases like:

Diabetes

Cardio-vascular

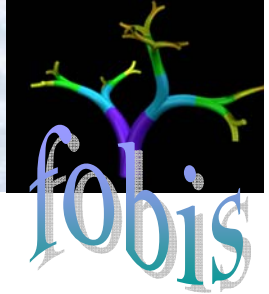
Arthritis

The growth is > 3% annually.

"We cannot continue with the traditional way of hospitalizing people for diagnostics and treatment. We must find better and less costly methods. Otherwise, an increasingly larger part of the GNP will be used by the health care system."

Finn Kamper-Jørgensen, director of the Danish National Institute of Public Health.

Hypothesizes I

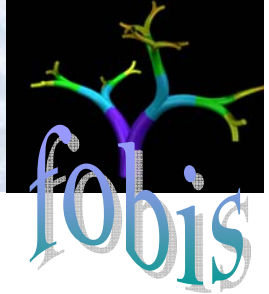


The low-cost part of the health care system must take responsibility for a larger part of diagnostics and therapy?

A shorter *distance* between samples, diagnostics/decisions, and treatment?

Admittance to hospitals should be done so that a larger part of those admitted really needs the competences of the hospitals?

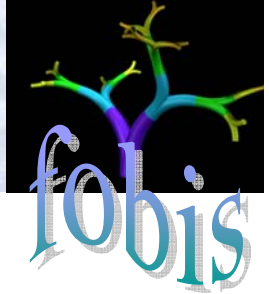
Hypothesizes II



Health care, well being, security and defense will increasingly depend on the ability to detect small amounts of substances important to human welfare?

This has to be done 'on the spot' with a fast response?

Hypothesizes III



Technology is available?

However, viable solutions are scarce?

Non-invasive and non-interfering are essential?

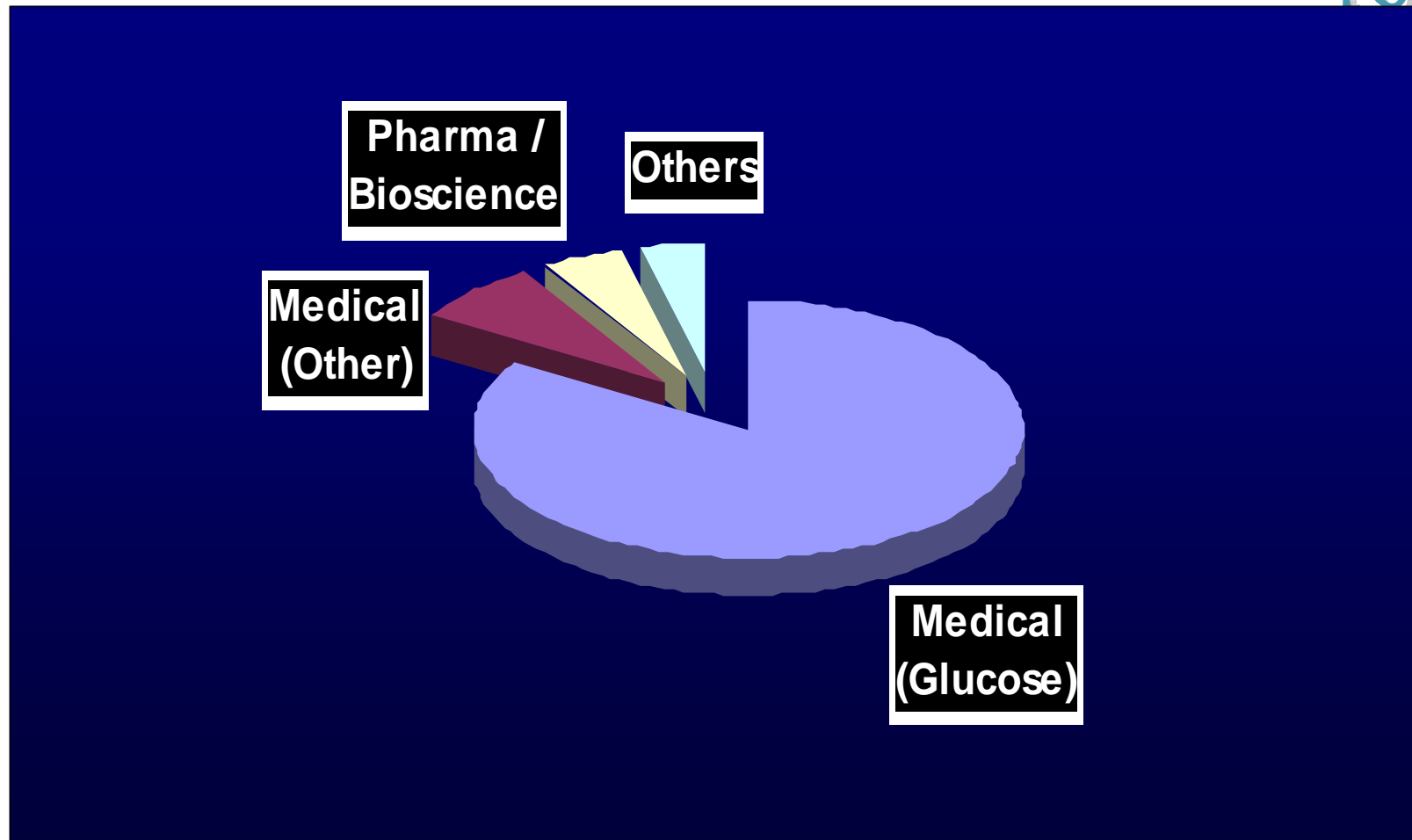
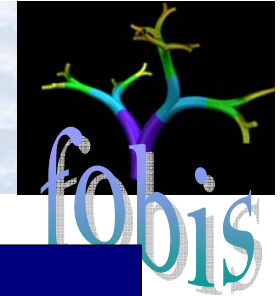
Some key technologies (?):

- Molecular and supramolecular recognition

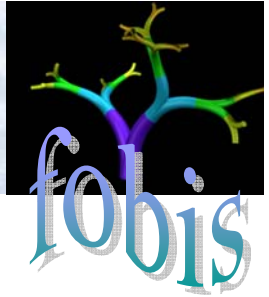
- Wireless

- Disposable – low cost and environmentally friendly

The Biosensor Market



Total World Market in 2002 = \$2.1b



Your contribution is appreciated

Hope you will enjoy the workshop