



O : University of Oslo

Professor Ole Petter Ottersen
Rector of the University

Life Science at UiO – a long term perspective



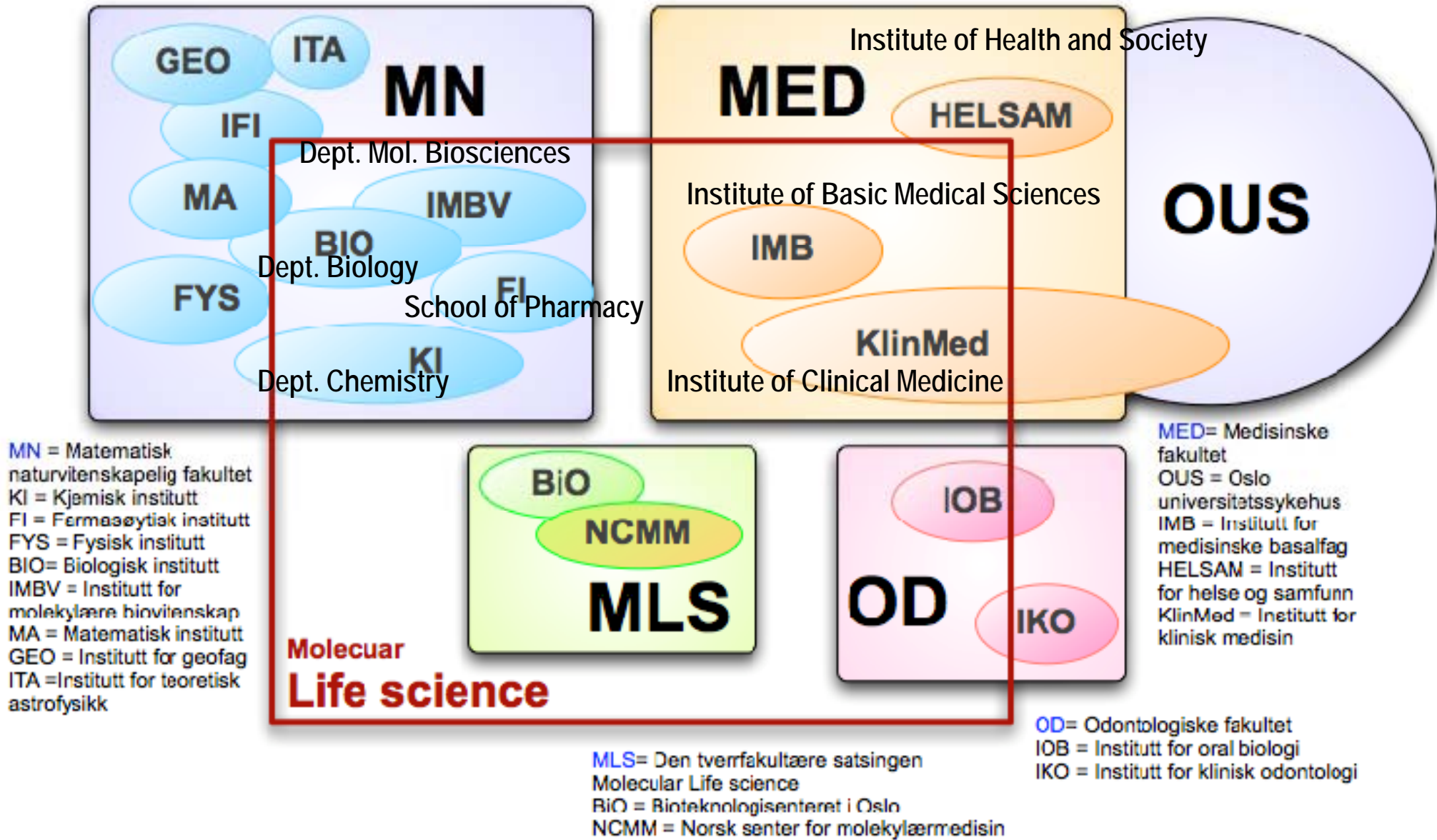
Six messages to take home

UiO • 200



- The Life Science Initiative is the number one priority of the University of Oslo
- The initiative is inextricably coupled to the new facilities planned for the last available spot in Gaustadbekkdalen
- The initiative builds on strength
- The initiative addresses urgent needs in Norway and in the global community and is firmly coupled to innovation competence
- The initiative unites regional, national, and international players – it is *interdisciplinary, interinstitutional, and international*

Significant volume - widespread activity



MN = Matematisk naturvitenskapelig fakultet
 KI = Kjemisk institutt
 FI = Fermeæyrtak institutt
 FYS = Fysisk institutt
 BIO= Biologisk institutt
 IMBV = Institutt for molekylære hinvitenskap
 MA = Matematisk institutt
 GEO = Institutt for geofag
 ITA =Institutt for teoretisk astrofysikk

MED= Medisinske fakultet
 OUS = Oslo universitetssykehus
 IMB = Institutt for medisinske basalfag
 HELSAM = Institutt for helse og samfunn
 KlinMed = Inetitutt for klinisk medisin

Molecuar Life science

MLS= Den tverrfakultære satsingen Molecular Life science
 BiO = Bioteknologisenteret i Oslo
 NCMM = Norsk senter for molekylærmedisin

OD= Odontologiske fakultet
 IOB = Institutt for oral biologi
 IKO = Institutt for klinisk odontologi

The University is now hosting Four Centers of Excellence within the Life Sciences



cancerbiomed.net

Centre for Cancer
medicine



Prof. Harald Stenmark

CB

Centre for

Cancer Biomedicine

www.cees.no

CEES

CEES

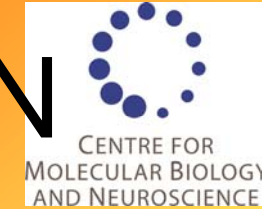
Centre for



www.cmbn.no

CMBN

Centre for
Molecular Biology
and Neuroscience



Prof. Tone Tønjum

www.cir.uio.no

CIR

Centre for
Immune Regulation



Prof. Ludvig Sævi

RC Advanced grants in Life Science



Prof. Harald Stenmark

Prof. Harald A. Stenmark, head of the CoE «Center for Cancer Biomedicine»

ERC Advanced Grants 2008 - project "The PI3K-III complex: Function in cell regulation and tumour suppression"

ology



Prof. Ludvig Sollid

Prof. Ludvig Sollid, head of the CoE «Center for immune regulation».

ERC Advanced Grant 2010 - project "Coeliac disease: Understanding how a foreign protein drives autoimmunity"

ational



Prof. Trygve Helgaker, at the CoE «Centre for Theoretical and Computational Chemistry» at UiTø and UiO. Computational chemistry - future life science

ERC Advanced Grant 2010. Helgaker's research is directed towards the development of efficient computational methods for large molecular systems, containing hundreds or thousands of atoms such as those encountered in biological

try

National centres for advanced research equipment at UiO - Life Science

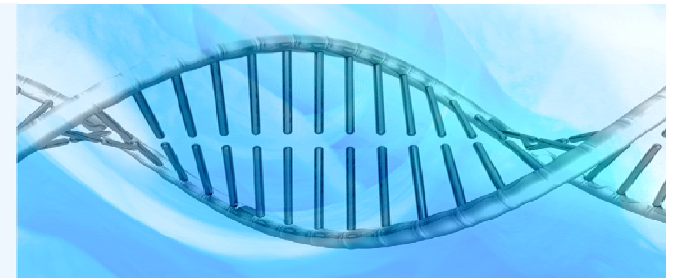
National Financing Initiative for Research Infrastructure
- Competitive calls - recent centres established within the Life Sciences at UiO:

Norwegian High-Throughput **Sequencing** Centre at UiO/OUS (2010)

- UiO node
- OUS node

The Norwegian High-Throughput Sequencing Centre

www.sequencing.uio.no



A National Subcellular **Imaging** Platform at UiO (2011)

- Advanced microscopy and imaging techniques – developed from the Oslo-NorMIC technology platform

ESFRI - Biological and Medical Science

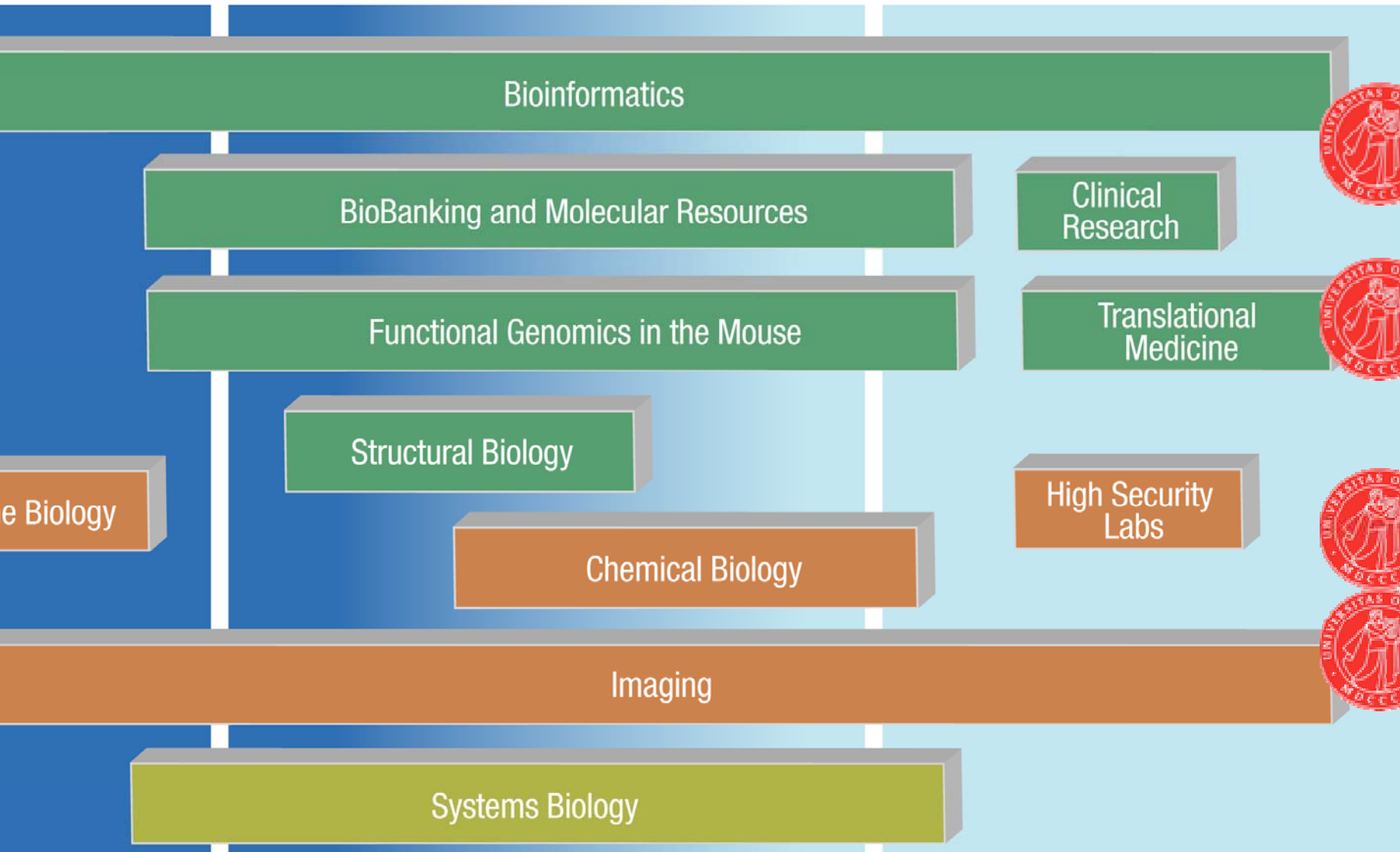


ical
ces

Biological Resources and
Production Systems

Medical
Sciences

The 10 Biome
ESFRI Project



BBMRI: European Biobank
Molecular Resources Infra

EATRIS: European Advan
Translational Research Im

ECRIN: European Clinical
Infrastructure Network

ELIXIR: European Life Sc
Infrastructure for Biologic
Information

EMBRC: European Marin
Resource Centre

EU-OPENSREEN: Eur
Infrastructure of Open Sc
Platforms for Chemical B

EURO-Bioimaging: Euro
Biomedical Imaging Infrac

European High Security E
Laboratories

Infrafrontier: European I
for Phenotyping and Arc
Model Mammalian Gen



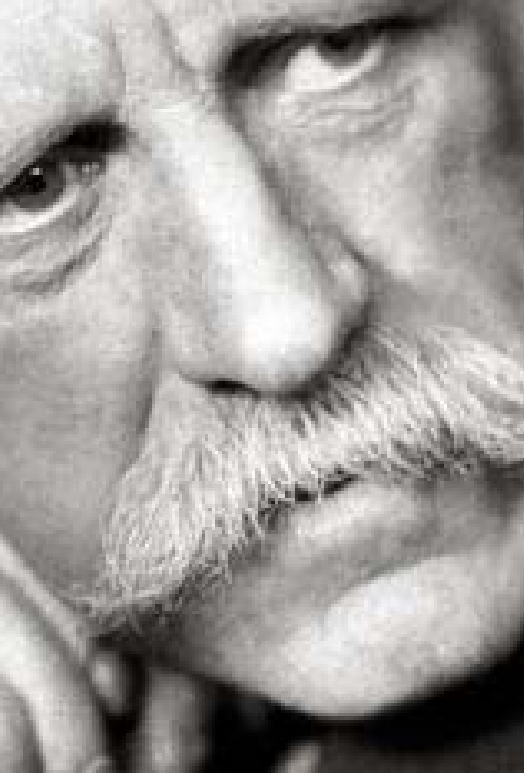


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Lesson 1

Building strong research environments is a long-term effort





What have these scientists in common ?



Long-term efforts,
internationally active,
being part of long-
lasting traditions



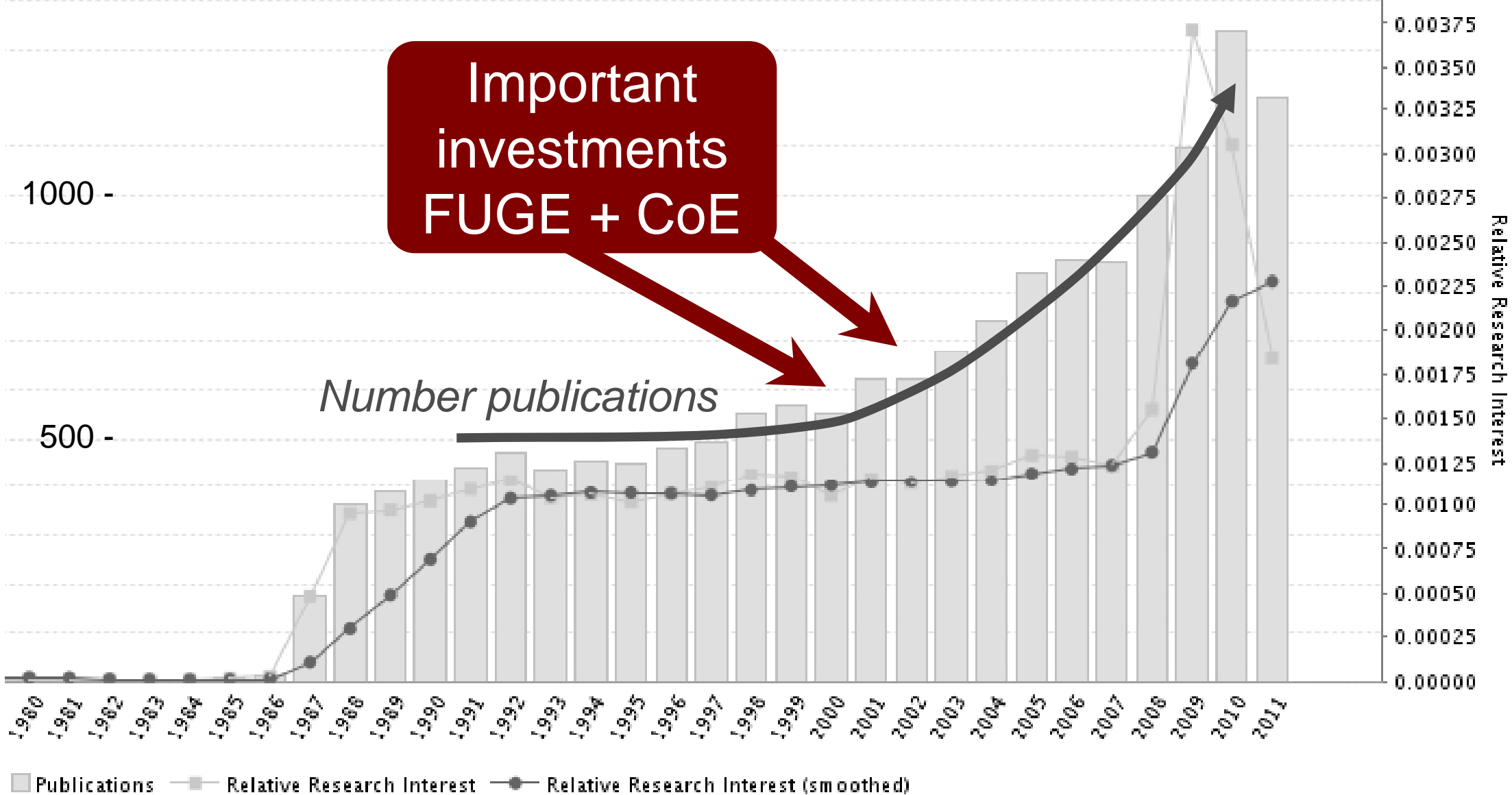


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Lesson 2

Investing in research leads to more and better science





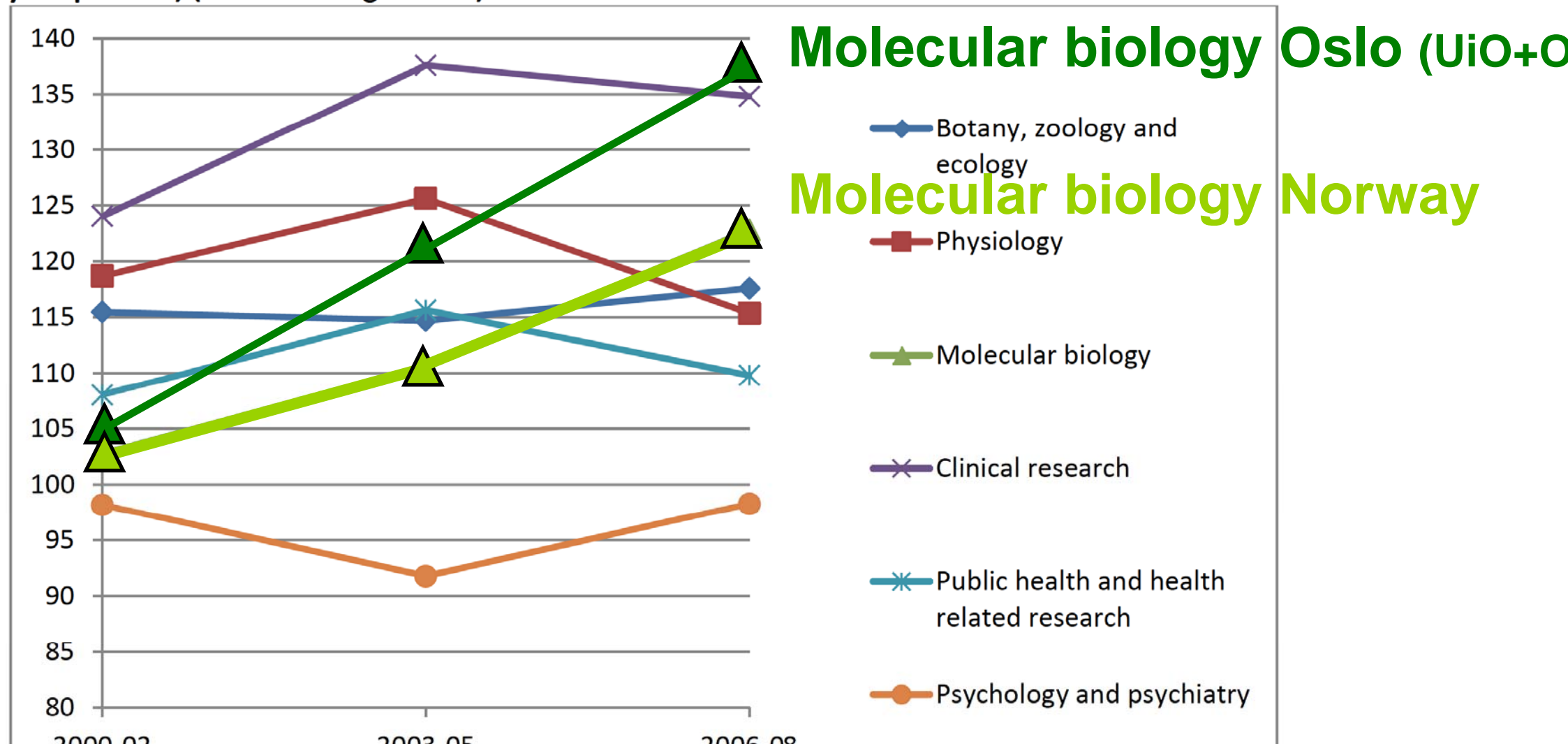
UiO-production - the PubMed database

Quality indicators - The new biology

clear increase in citations of Norwegian contributions

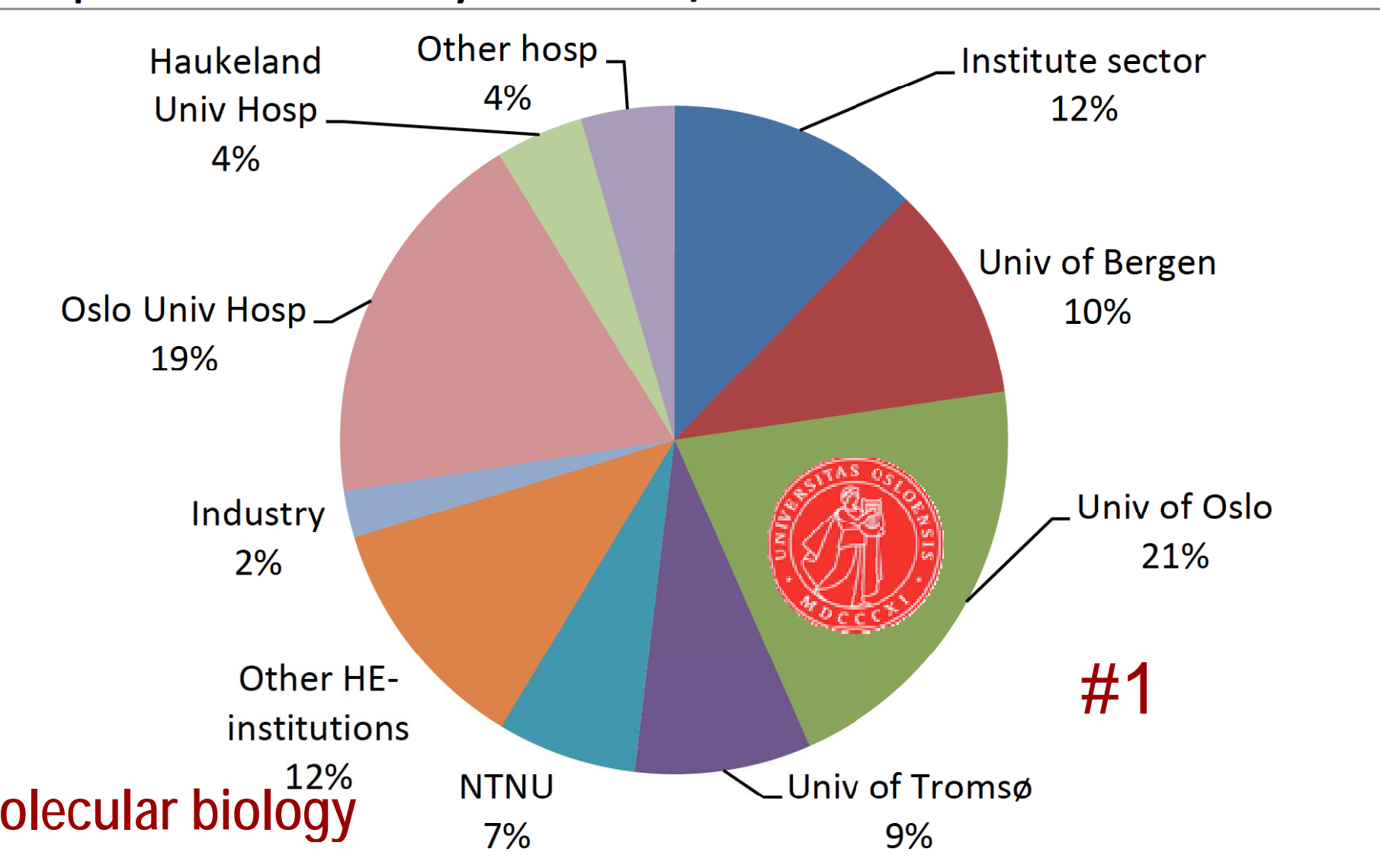
highly significant increase in citations from the Oslo area

Figure 3.1.5 Relative citation index in biology, medicine and health for the period 2000-2008 (year periods) (world average = 100).



PIFU statistics of the Norwegian landscape

Figure 3.4.1 The Norwegian profile of scientific publishing in molecular biology. Proportion of total article production in 2009 by institutions/sectors.





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Lesson 3

Strong research - innovations follow

... something is happening



The first UiO innovation prize - Life Sciences

- Inger Sandlie, 2011 prize winner
- Human albumin superbinders - prolonging the life time of drugs
- Cooperation with Novozymes



DnB NOR's Innovation prize

- Life Sciences

- September 2011, PCI Biotech was awarded both the prestigious DnB NOR's Innovation prize 2011 and the Peoples award.
- PCI Biotech has developed a unique and patented photochemical drug delivery technology for use in cancer therapy and other diseases.



- a successful company within OC

The Norwegian biotech company Algeta recently signed an agreement with
partner Schering Pharma AG worth **1 billion US \$**

ALGETA

US

PRODUCTS

CLINICAL TRIALS

R & D

NEWS & MEDIA

INVESTORS

PARTNERS

CONTACT

Algeta is a focused oncology company developing
targeted therapies for patients with cancer based
on its alpha-pharmaceutical platform.

Algeta's lead product based on radium-223 is a first-in-class, highly targeted alpha-
pharmaceutical under clinical evaluation to improve survival in patients with bone
metastases from advanced cancer. It is partnered with Bayer Schering Pharma AG,
a pharmaceutical company, and is in a global phase III clinical trial
(MPCA) to treat bone metastases resulting from prostate cancer.



in Norwegian Life Science companies



Forskningrådet

Brukerstyrt innovasjonsarena (BIA)

Norges mest innovative bedrift 2009:

Revolusjonerende diagnostisering

- Hvorfor samle kunnskap hvis du ikke skal bruke den, spør gründer bak Norges mest innovative bedrift 2009.

IA GENIC
early disease signatures



Forskningrådet

OM MIDLER

ARRANGEMENTER

NYHETER

POLITIKK



moleX

Eurostars:

Norge i Europa

«It is companies like these we shall live on in the future»

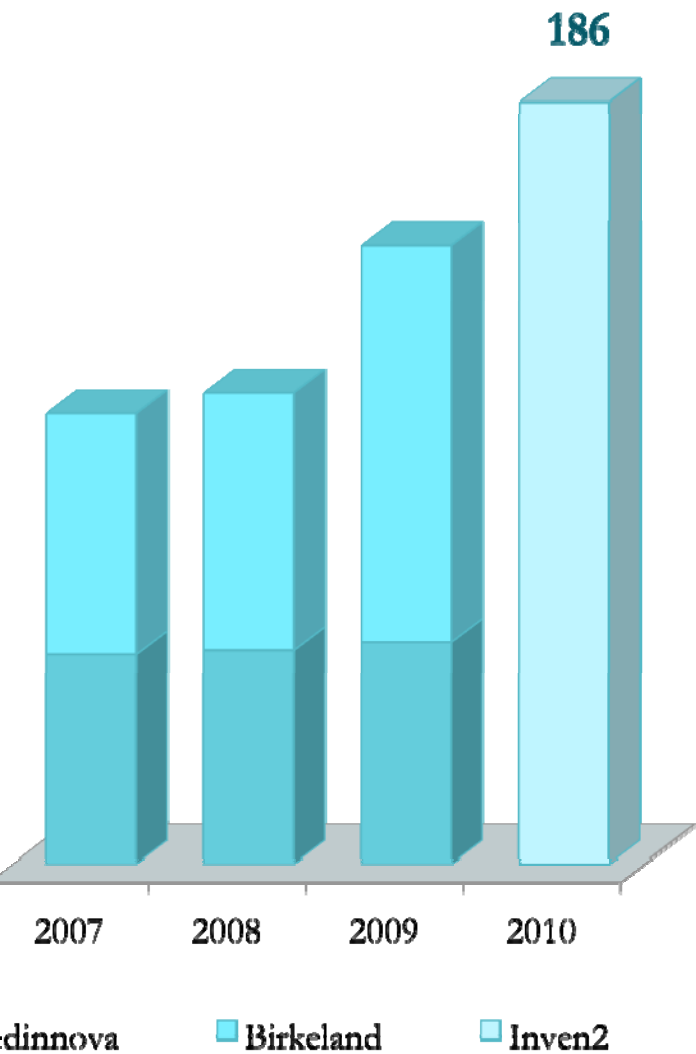
CEO, The Research Council of Norway,
Arvid Hallén



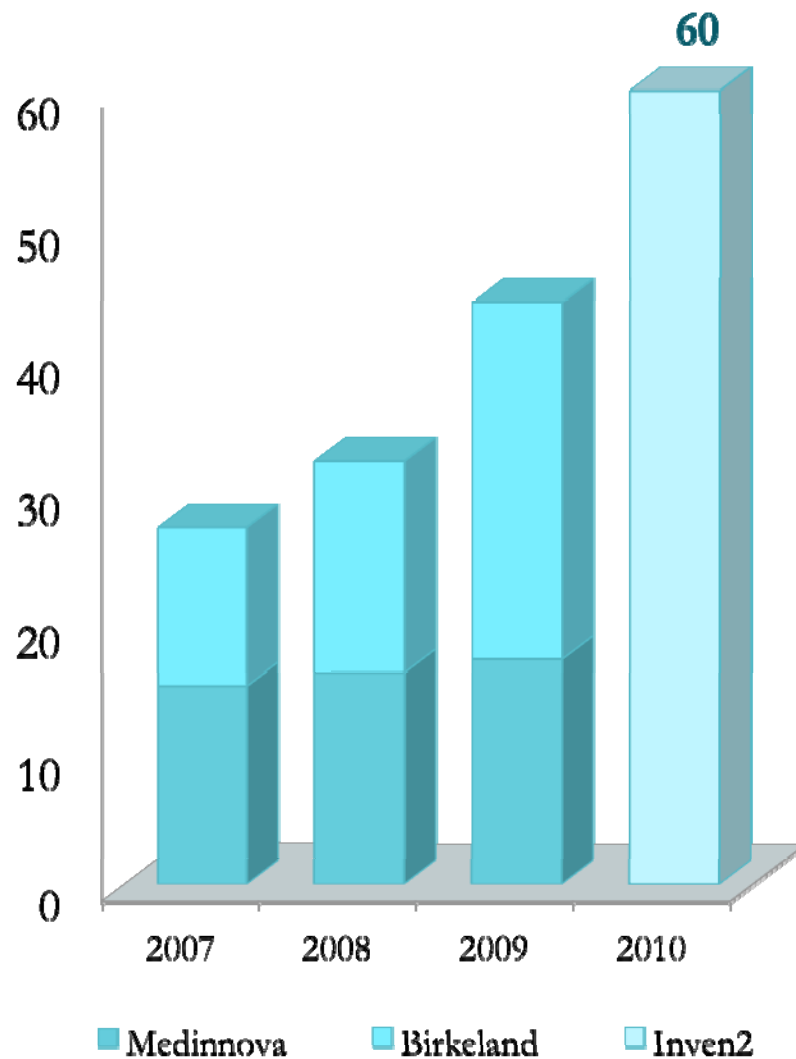
IN

FINANCIAL GROWTH

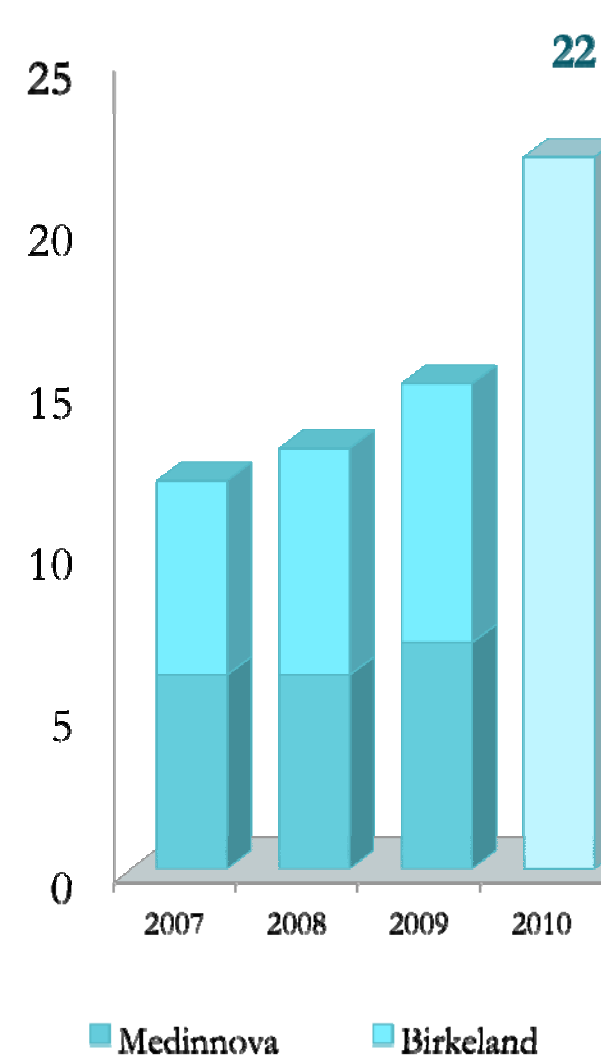
New Inventions



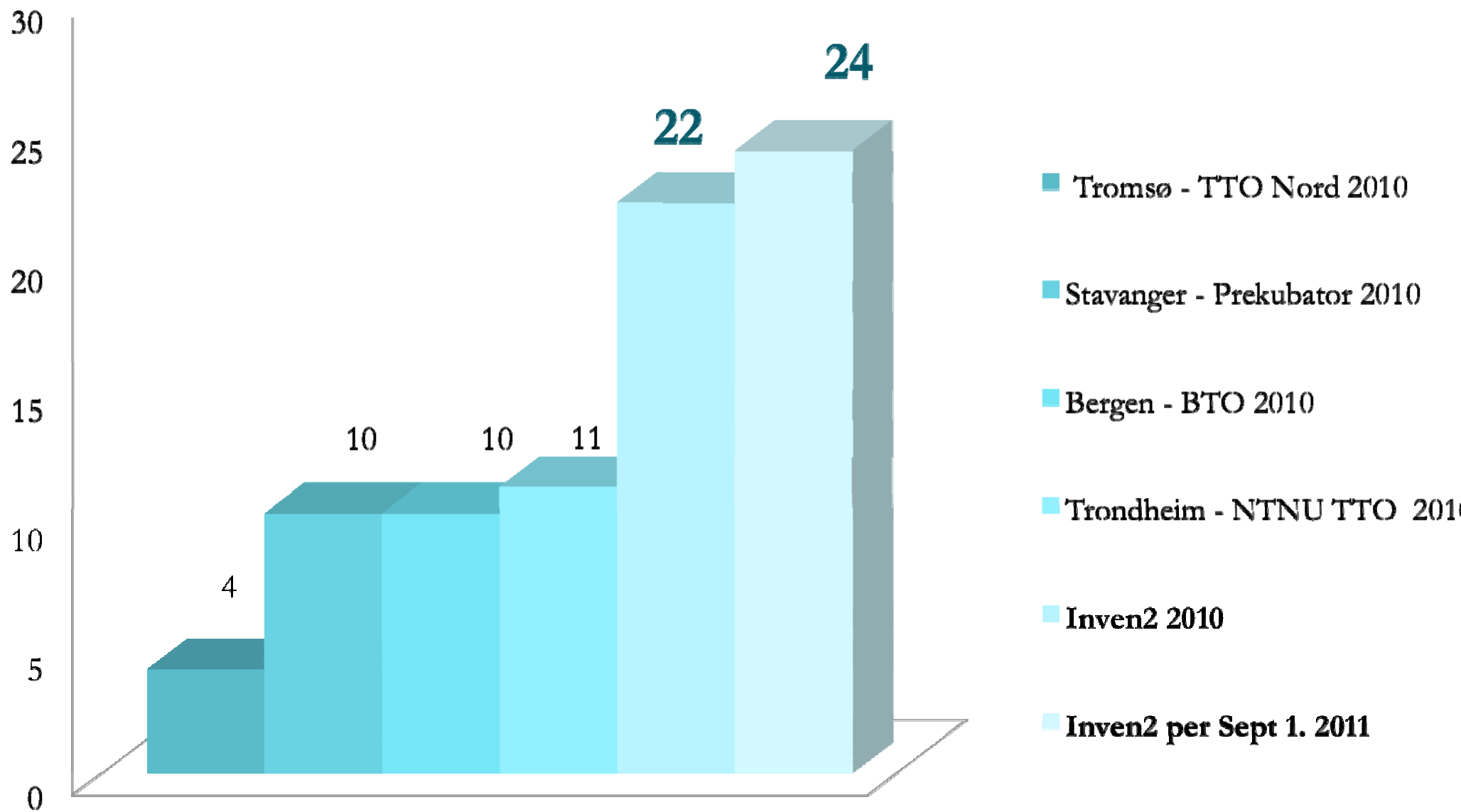
New Patent Applications



Commercialization



OF COMMERCIALIZATIONS





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Lesson 4

The emergence of a Life Science cluster in the Oslo region




Biotechnology in Oslo

An emerging promising cluster



June 2008 Genome Technology identified Oslo as an emerging new biotech cluster highly ranked.

«It's certainly not the biggest biotech cluster, but for its size, the efforts to cement a bioscience segment here in Norway are impressive».



Oslo Cancer Cluster

Cancer Cluster - strengthens and facilitates cooperation between industry and academia





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How to proceed?

Three strategies at UiO:

- 1. new ways of organizing interfaculty research**
- 2. new types of international research centers**
- 3. new premises for multidisciplinary research**

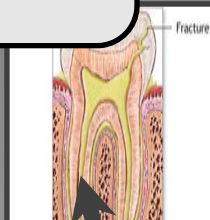
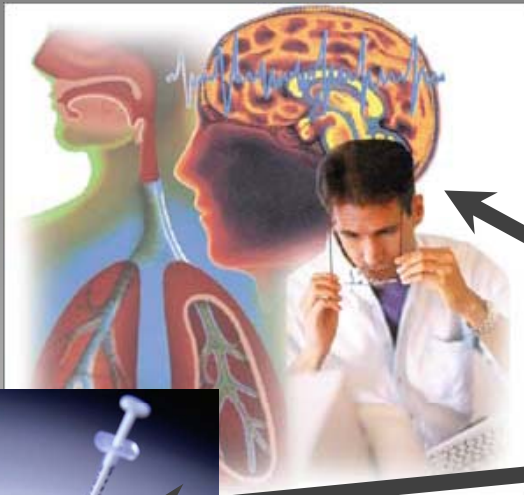


.Organization - new interfaculty ocused research area within molecular life sciences

The Faculty of
Medicine

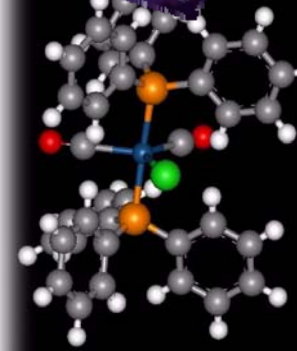
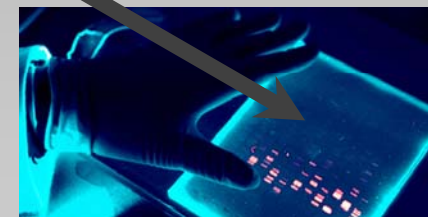
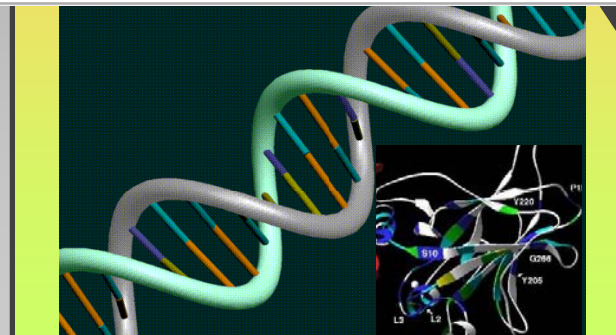
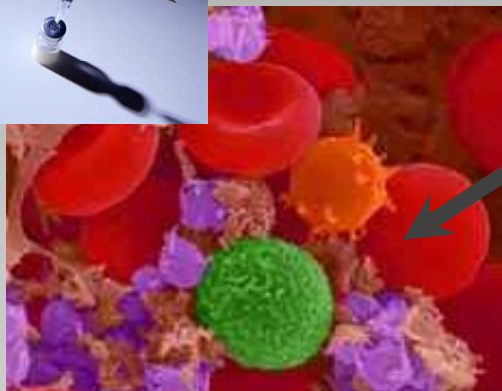
The Faculty of
Dentistry

The Faculty of Mathematics
and Natural Sciences



MLSUiO

Molecular Life Science
- an interfaculty focused research area at UoO





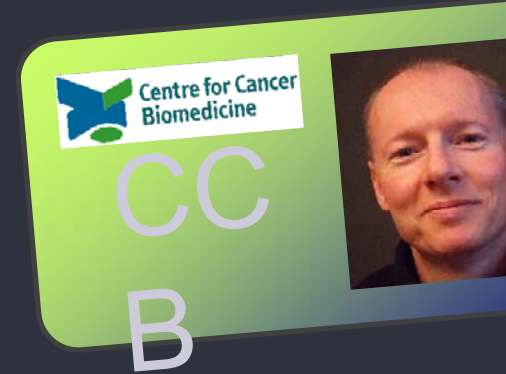
HELSE  SØR-ØST

 Oslo
universitetssykehus

Organizational strength

Research collaboration between
university and hospitals

New types of International research centres



From molecule to patient
Clear interdisciplinary profile

premises for multidisciplinary Life Science

including chemistry
and pharmacy

an instrument for
strengthening Norwegian
Life Science,

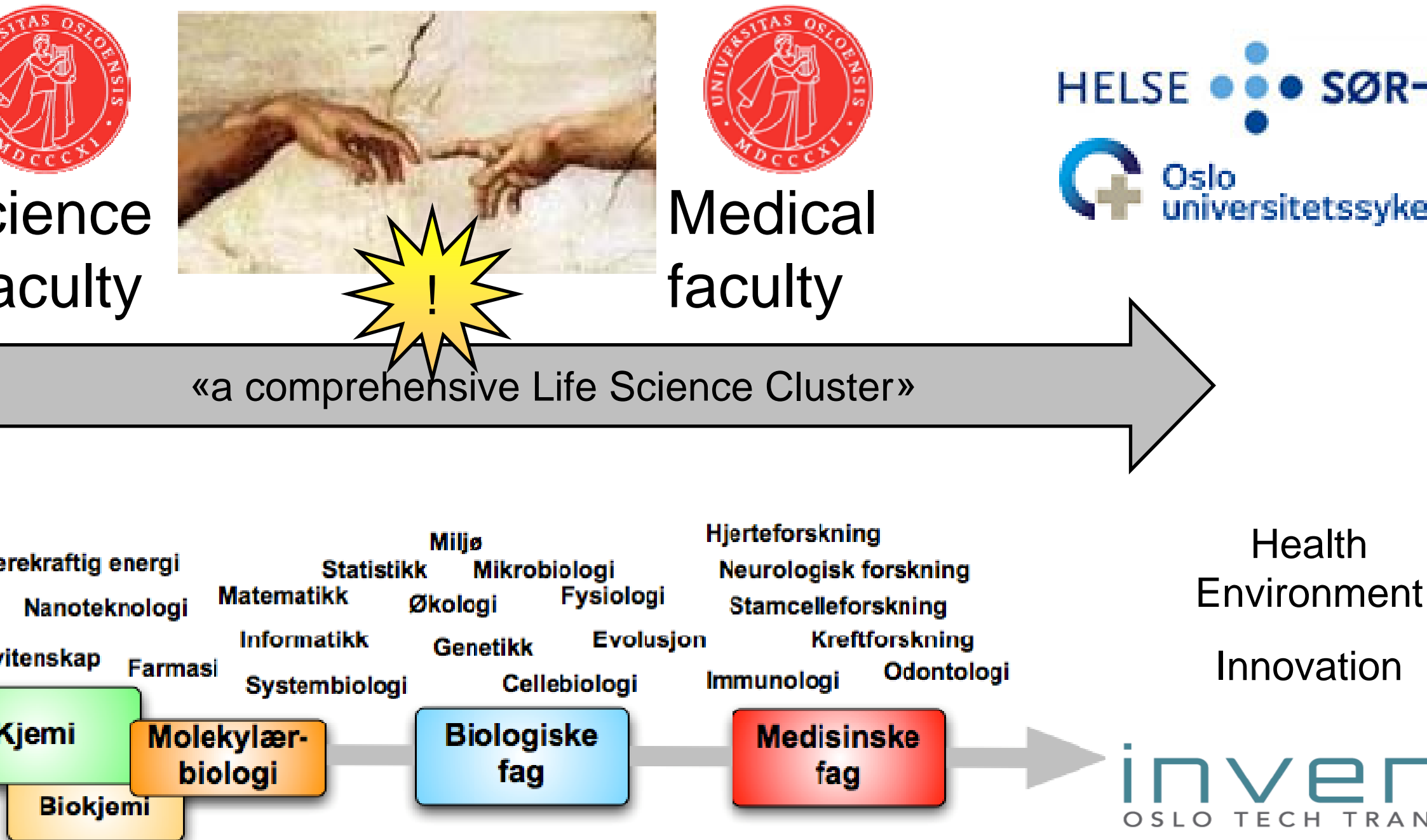
spanning from chemistry to
biomedicine,

with Norway's largest
hospital as neighbor

with Norway's largest
Department of informatics as
neighbor



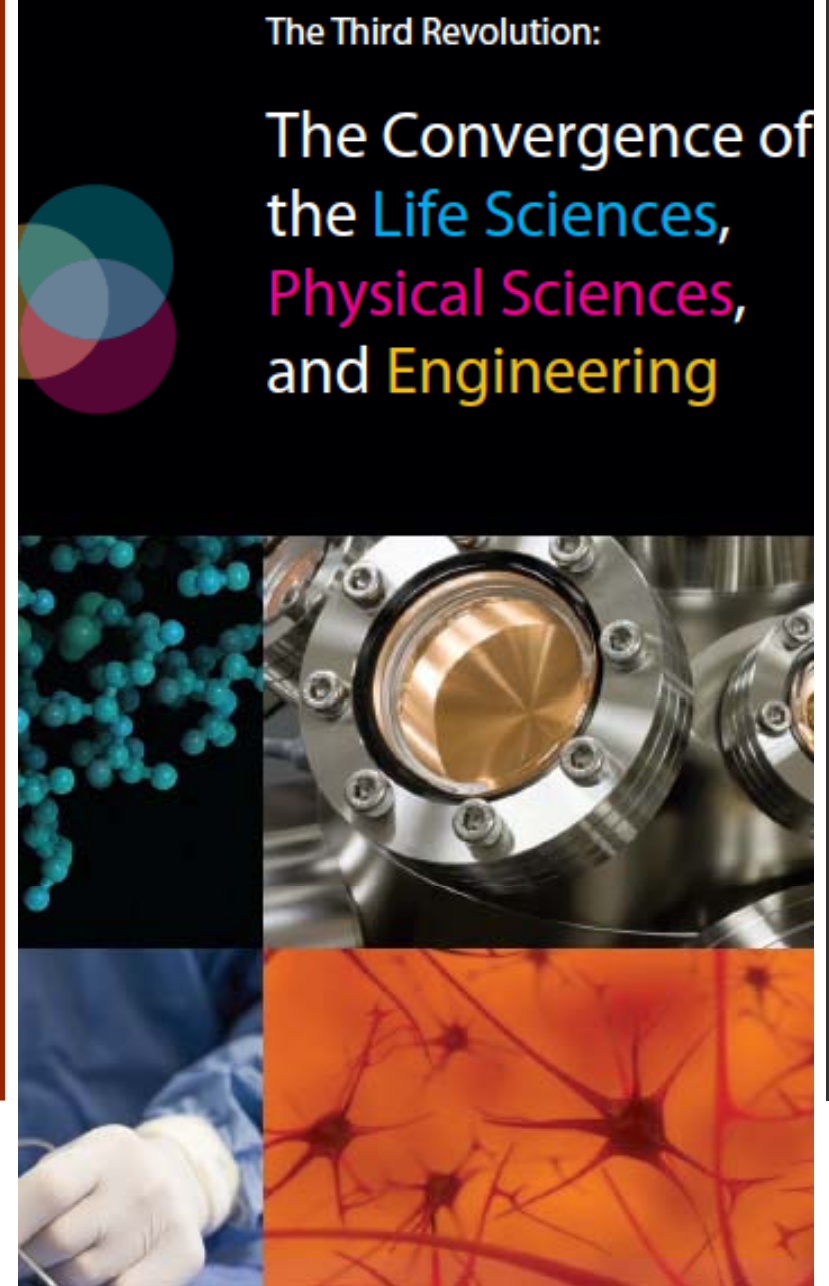
The entire value chain



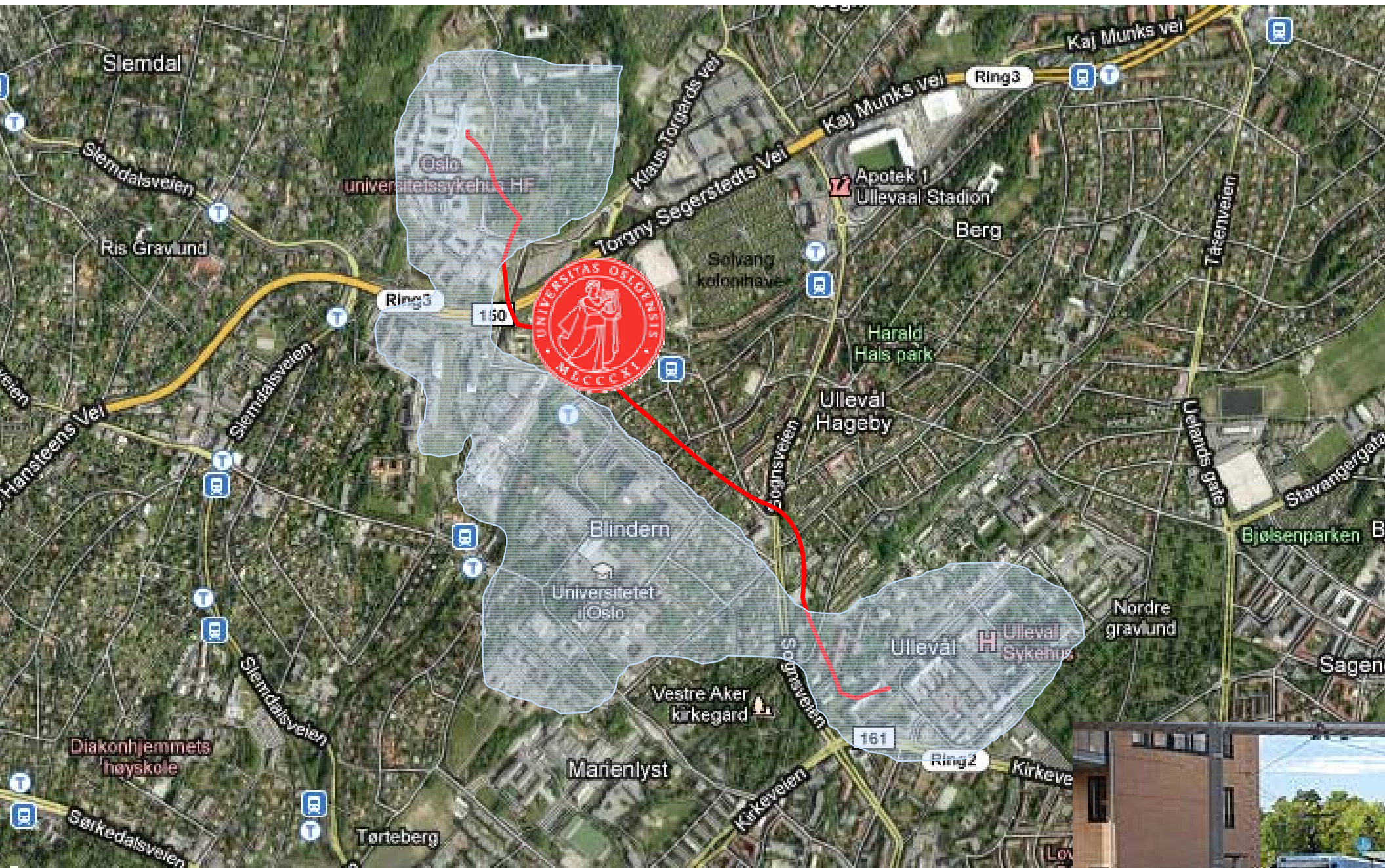
Inspired by strategy report from MIT

Convergence is a new paradigm that can yield critical advances in a broad array of sectors, from health care to energy, food, climate, and water.

- ◆ convergence - a **blueprint for innovation**
- Convergence means a **broad rethinking** of how all scientific research can be conducted.
- A major beneficiary of convergence will be in **biomedicine**



A great future opportunity



Rector W.C. Brøgger:

"Hvert Videnskabens,
Literaturens og Kunstens
Storværk er for et lidet
Folk som vort et langt
sikrere Værn for vor Frihed
og vor Selvstændighed,
end baade Armeer og
Kanoner og Torpedoer og
Panserskibe og Fæstninger"

*A small nation may make a
difference simply because it has*

Six messages to take home

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- The initiative is inextricably coupled to the new facilities planned for the last available spot in Gaustadbekkdalen
- The initiative builds on strength
- The initiative addresses urgent needs in Norway and in the global community
- The initiative unites regional, national, and international players – it is *interdisciplinary, interinstitutional, and international*
- The absorption capacity is not a limiting

Thank you for your
attention

