

NORWEGIAN UNIVERSITY OF LIFE SCIENCES
MDCCCLIX



Transatlantic Science Week 2009, Minneapolis

The Centennial Chair Model

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The University of Minnesota
+
The Norwegian University of Life Sciences

Who are we?



Why us?

- Matching interests in Biotechnology and Bioenergy
- Matching culture
- Wanted by the leaders, and willing to dedicate resources



The University of Minnesota + The Norwegian University of Life Sciences



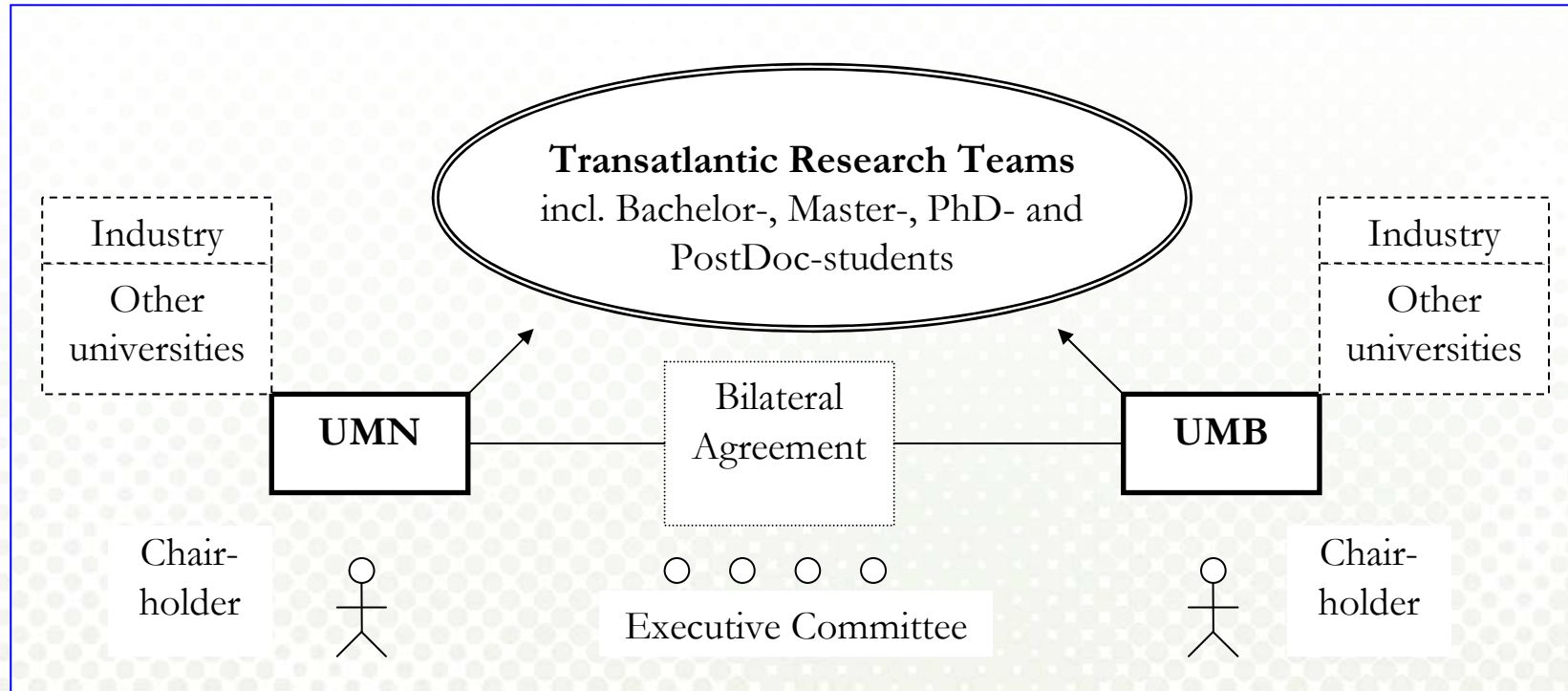
The story in brief

- Cooperation started in 2003 with research “dream teams”
- Funded by the Norwegian ministry of agriculture and food, the Norwegian embassy to USA, the Norwegian Research Council and the University of Minnesota and its Foundation
- The Norwegian Centennial Interdisciplinary Chair was announced in 2005 by His Royal Highness Crown Prince Haakon
- Three agreements between the two universities were signed 2006 to establish the Chair program

Funding

- The two universities provided a total of \$1.5 Million to the University of Minnesota Foundation.
- The earnings from the endowment, about \$ 70,000 per year, provide scholarships, part-time salaries for the chair-holders and workshop arrangements.
- The research teams apply for public or private funding for their R&D-projects.

The Chair Model for collaboration between the two universities



UMN= University of Minnesota

UMB= Norwegian University of Life Sciences

What do we collaborate on?

Transatlantic Research Teams +(number of researchers involved)

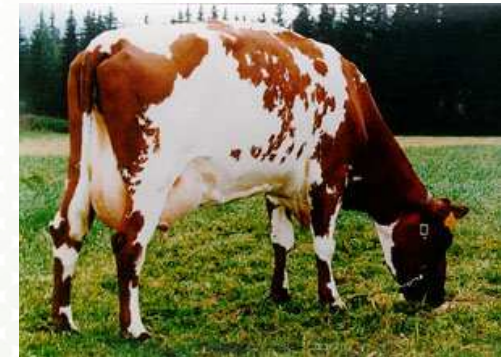
- Functional genomics to advance dairy cattle health (5)
- Mycotoxin in cereal crops by enhanced plant resistance (10)
- Airborne sampling of forest for biomass and carbon estimation (10)
- Ecological, technical and economic aspects of bioenergy from forest (9)
- Thermochemical conversion of biomass to biofuel (pyrolysis) (10)
- Lignocellulose to biofuels (enzyme technology) (9)
- NEW Cell wall (8)
- NEW Aquaculture (8)
- NEW Algae (8)
- NEW Response to climate change - system approaches (10)

- **In total 10 teams and 87 researchers**
- **16 industry involved, most of them without formal agreements**



The team activity

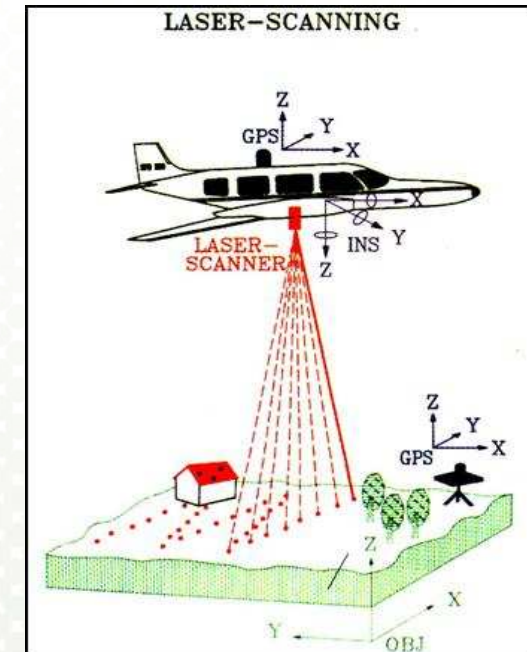
- **Functional genomics to advance dairy cattle health** - utilizing state-of-the-art technologies in functional genomics to identify genetic factors affecting bovine disease (clinical mastitis) and productivity
 - Papers: 3 joint
 - Projects funded: 3
 - PhD and Post.doc: 4
- **Mycotoxin in cereal crops by enhanced plant resistance** - using genetic and molecular tools to develop strains of cereal grains resistant to the conditions that promote the growth of mycotoxin producing fungi
 - Papers: 2 joint, 6 non-joint
 - Projects funded: 11
 - PhD and Post.doc: 6



The team activity

- **Airborne sampling of forest for biomass and carbon estimation** - exploring relationships between data from airborne LiDAR (Light Detection and Ranging), biomass/carbon stocks and the carbon sequestration of boreal and temperate forest ecosystems
 - Papers: 3 joint, 2 non-joint
 - Projects funded: 5
 - PhD and Post.doc: 6
- **Ecological, technical and economic aspects of bioenergy from forest** - exploring ways to integrate forest biofuels production with existing timber production and forest management
 - Papers: 2 non-joint
 - Projects funded: 10
 - PhD and Post.doc: 3

The production 2 of 3



The team activity

- **Thermochemical conversion of biomass to biofuel (pyrolysis)** - exchanging technical information and expertise to speed up the development of a micro-wave-assisted pyrolysis technology to convert biomass into bio-oils and other biobased products
 - Papers: 2 joint, 15 non-joint
 - Projects funded: 10
 - PhD and Post.doc: 7
- **Lignocellulose to biofuels (enzyme technology)** - using molecular, biochemical, and genetic tools to develop carbohydrate modules (CBMs) and other approaches for more effective enzymatic conversion of lignocellulosic biomass into products (e.g. ethanol) for bioenergy and other uses
 - Papers: 12 non-joint **started 2007**
 - Projects funded: 13
 - PhD and Post.doc: 14



Experiences

Money and people

- External project funding is crucial, without projects – no collaboration
- Find team leaders who are willing to be a driving force

Mobility

- Researcher mobility makes successful teams
- Student mobility outside the research teams not easy, requires special efforts

Matching competency

- Scientific match and relevant competence level needed
- Spend time on team building, especially in the start
- Be open to involve institutions outside the bridgeheads

Experiences

Operation

- Find resources to operate the collaboration as a whole
- Frequent meeting points are needed, workshops once a year is not enough, SKYPE is a useful tool
- IPR issues are important, trust required
- Concentrate on production (project funding, papers, mobility)

Industry

- Competition and risk for leakage of confidential information is not easy to handle
- Few Norwegian companies in the collaboration have interests in USA, and vice versa

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