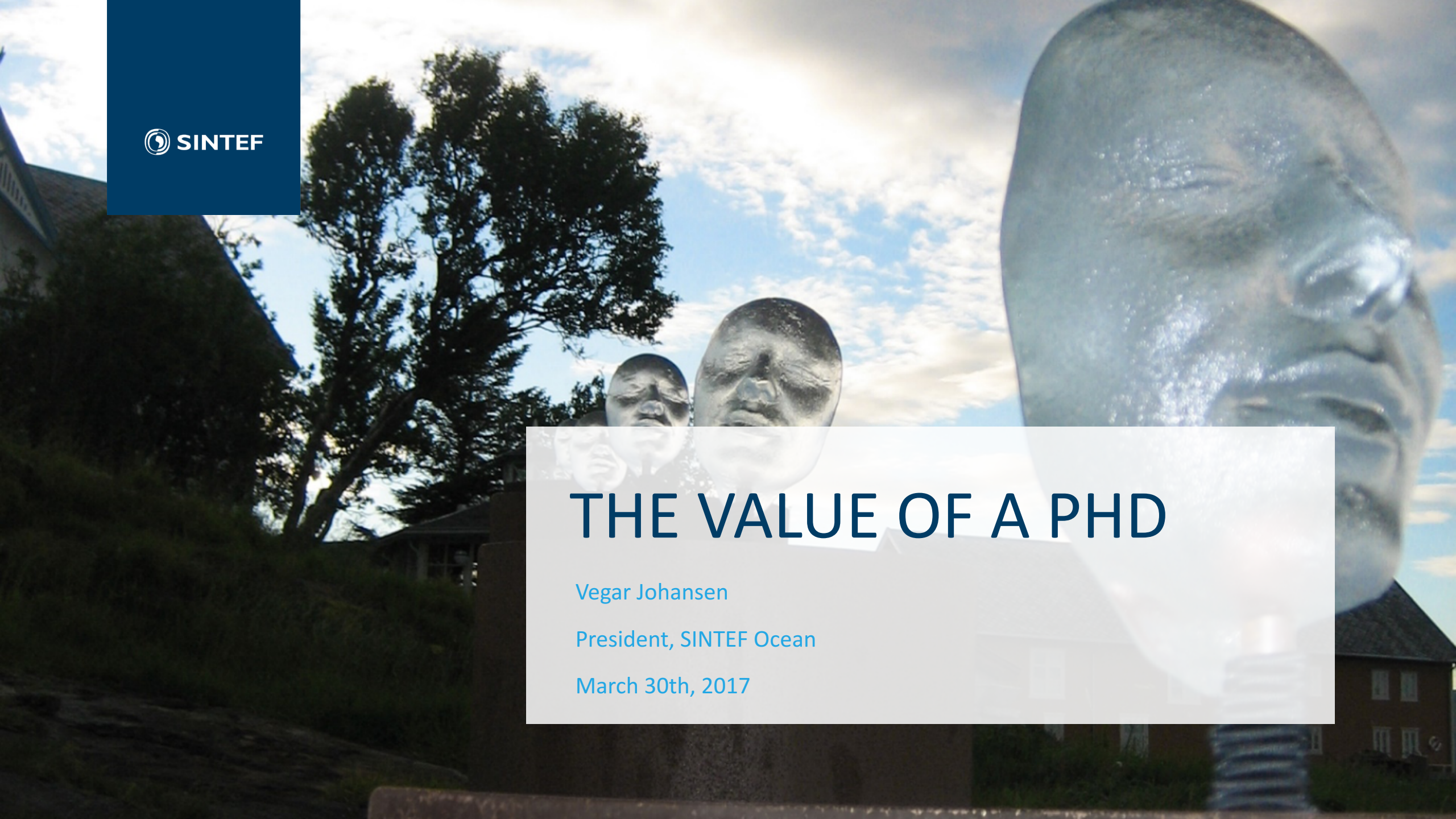




THE VALUE OF A PHD

Vegar Johansen

President, SINTEF Ocean

March 30th, 2017

Scandinavia's largest independent research organization



NOK 3,2 billion
Revenues

NOK 500 MILL
International sales

Applied research, technology and innovation

Expertise from ocean space to outer space:



Renewable energy



Ocean space



Industry



Buildings and
infrastructure



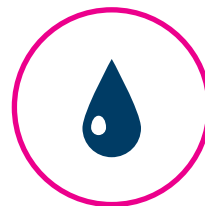
Materials



Micro-, nano- and
biotechnology



Climate and environment



Oil and gas



Health and welfare



Society

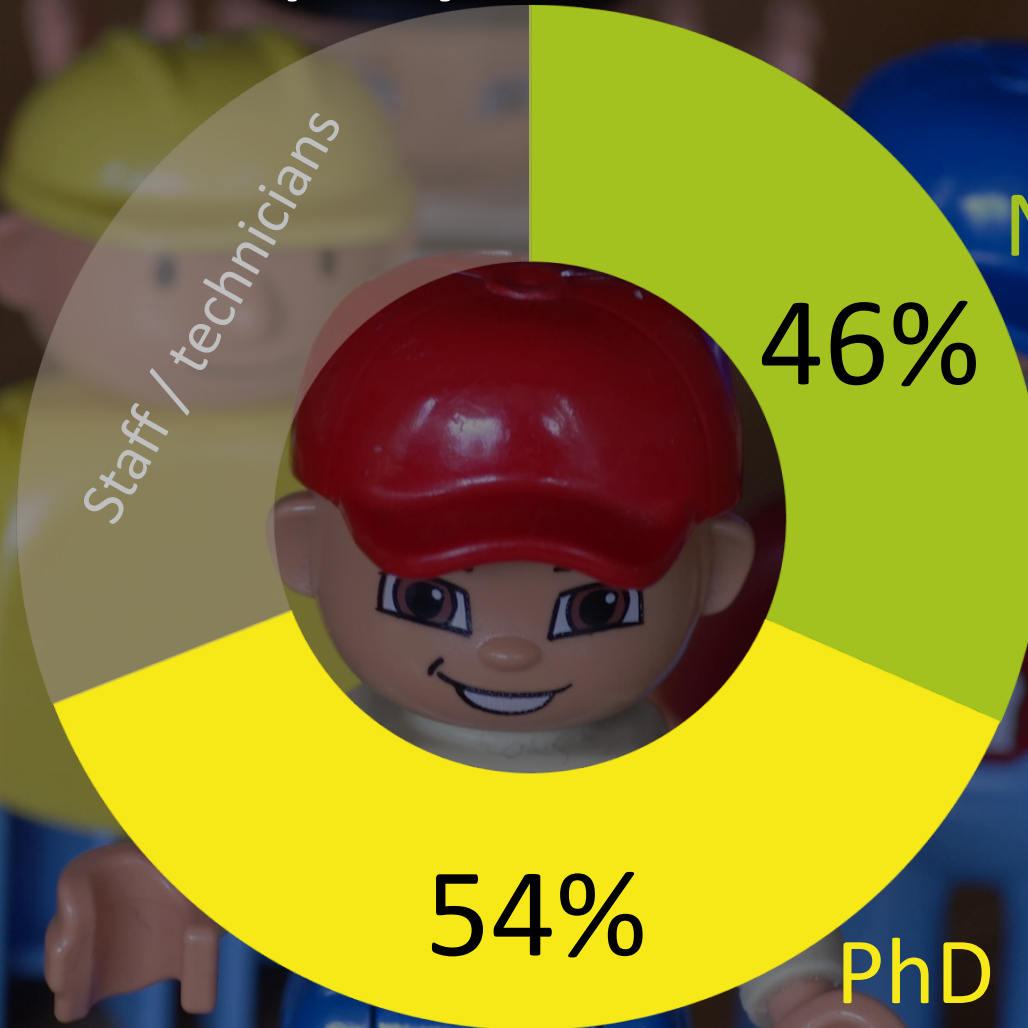


ICT



Transport

SINTEF Ocean employees





Norwegian University of Science and Technology
Faculty of Engineering Science and Technology

hereby awards

Vegar Johansen

date of birth 19 July 1973

the degree of

Doktor ingeniør

in Marine Hydrodynamics

The doctoral thesis is entitled

Modelling of Flexible Slender Systems for Real-time Simulation and Control Applications

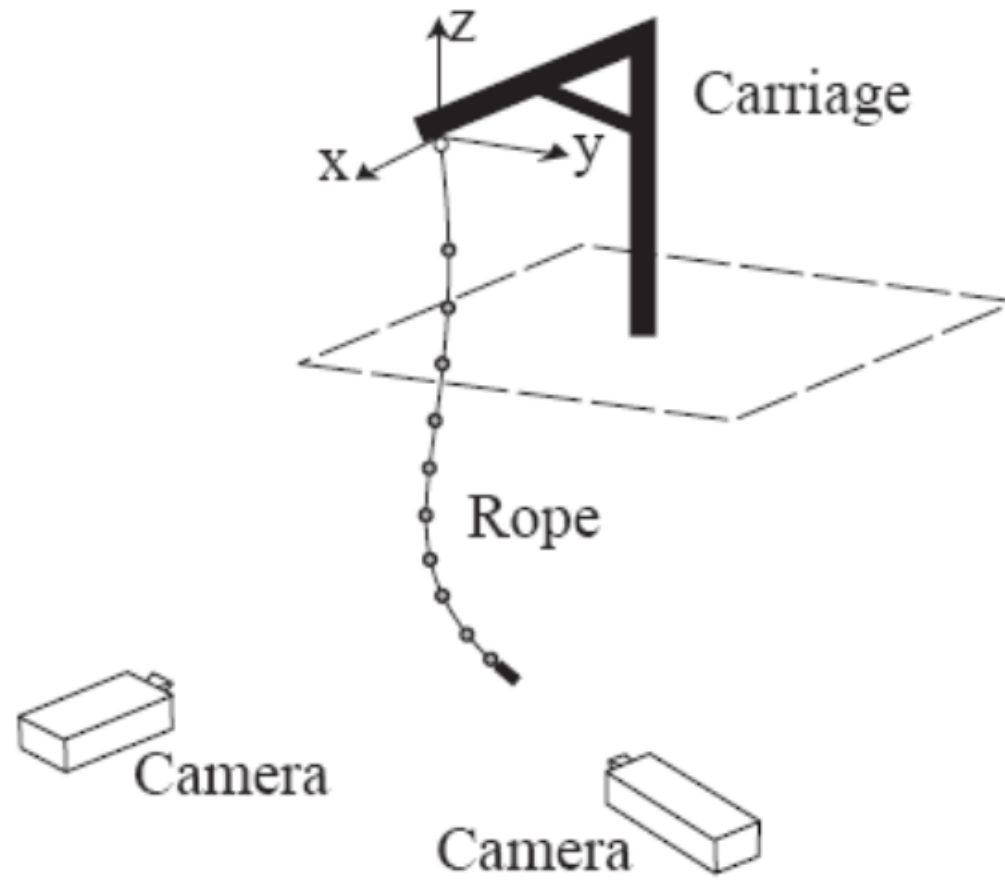
Trondheim 26 February 2008

David Skjerve

Dean of Faculty

The transcript issued with this certificate gives a complete list of subjects included in this programme of study and the marks awarded for each subject.

$$\ddot{\mathbf{b}} = \frac{6}{m} (\mathbf{f}_b - \mathbf{f}_a) - \frac{\mathbf{b}}{L^2} \left(\frac{6}{m} \mathbf{b}^T (\mathbf{f}_b - \mathbf{f}_a) + \dot{\mathbf{b}}^T \dot{\mathbf{b}} - 2 \left(L \ddot{L} + \dot{L}^2 \right) + u_L \right)$$





Biologists
Chemist
Hydrodynamics

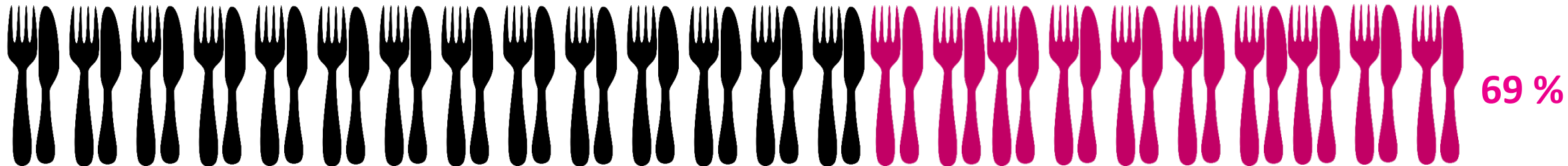
Fishery science
Quantum mechanics
Nautical science

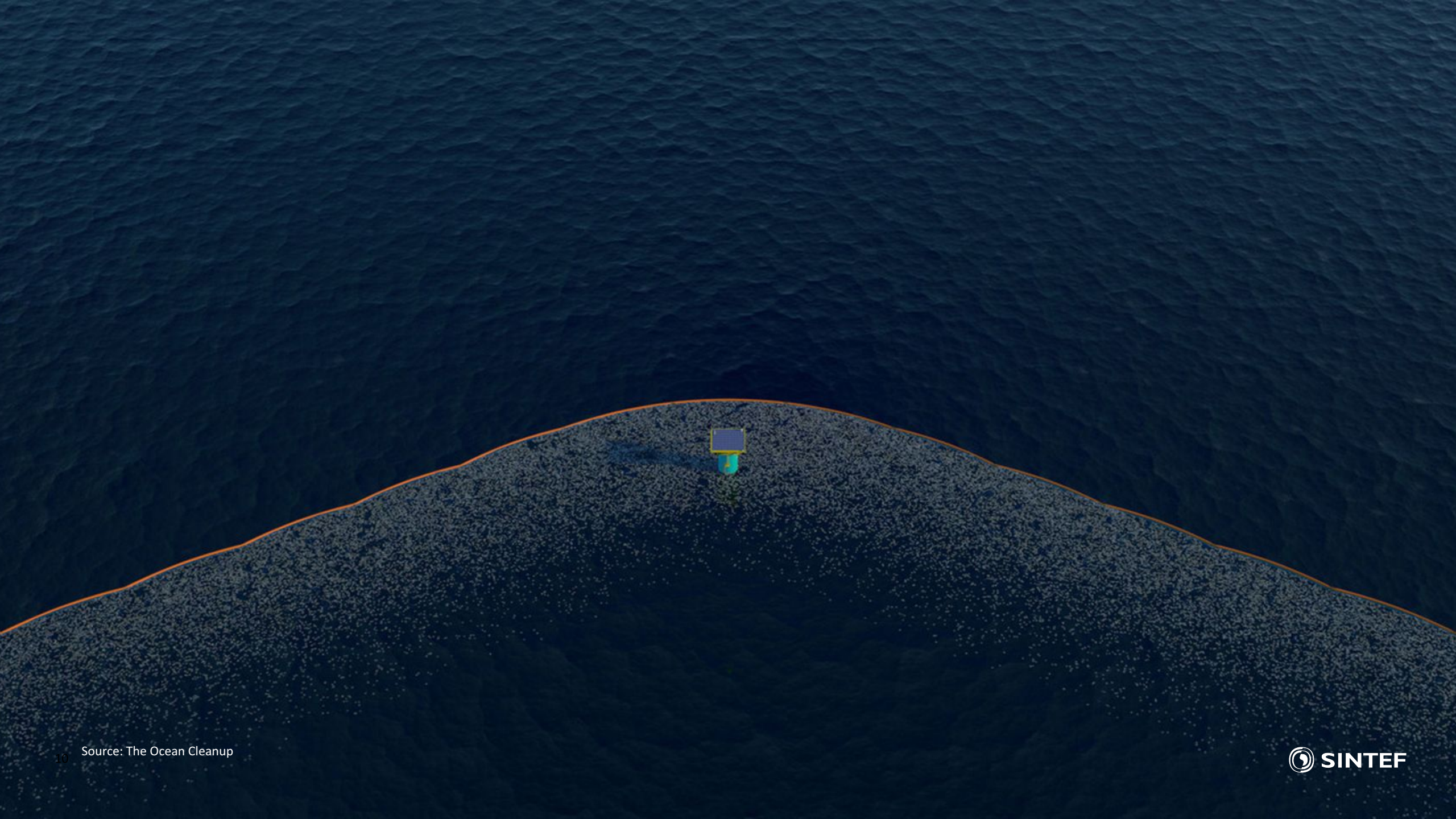
Social anthropologist
Economist
Structural Mechanics

Fish behaviour
Microelectronics
Robotics

Combine to make new solutions

The food gap challenge









Teknologi for et bedre samfunn