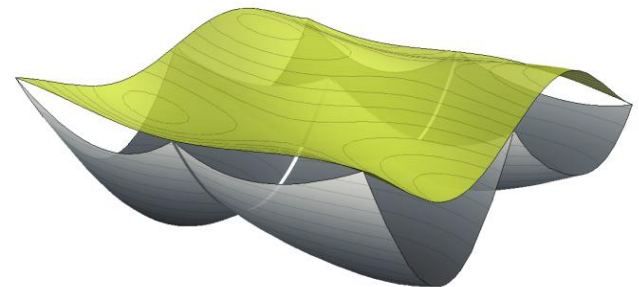


SEMINAR IN

OPTIMIZATION AND SYSTEMS ENGINEERING

November 3rd 2010

Åbo Akademi University



THE OSE RESEARCH GROUP

- The Optimization and Systems Engineering (OSE) group at Åbo Akademi University is an **interdisciplinary research group** focusing on theory, methods and algorithms in systems engineering, optimization and statistics, as well as their applications in science and engineering.
- OSE bridges the systems engineering, systems theory and mathematical disciplines at ÅAU.
- The group was appointed a Center of Excellence within research at the university for the time-period 2010-2014.



THE OSE RESEARCH GROUP



Optimization

Professor Tapio Westerlund

Chairman of the OSE group
Process Design and Systems Engineering
Department of Chemical Engineering



Systems Theory

Professor Olof Staffans

Mathematics and Statistics
Department of Natural Sciences



Systems Engineering

Professor Hannu Toivonen

Industrial Systems Engineering
Department of Information Technologies



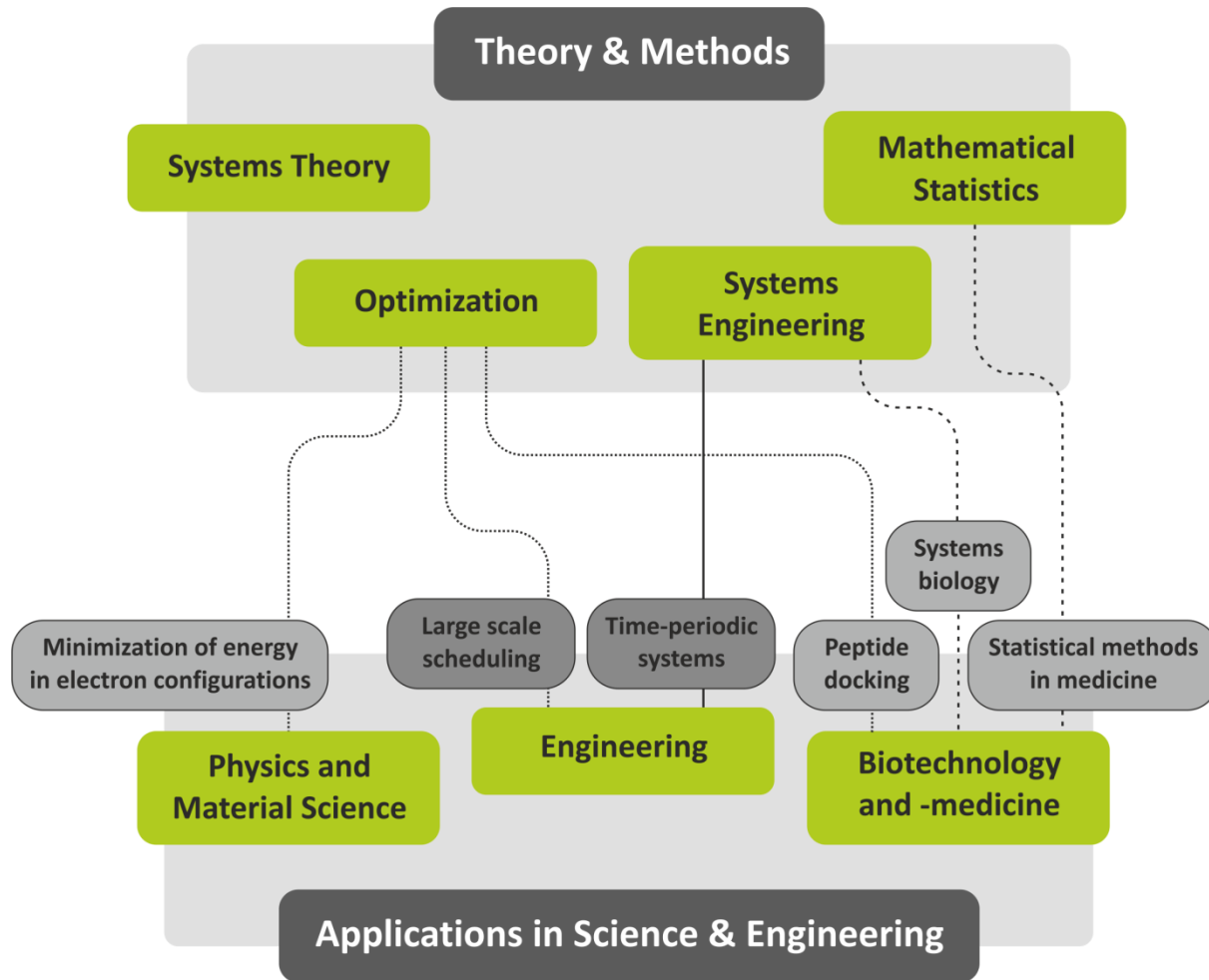
Mathematical Statistics

Professor Jukka Corander

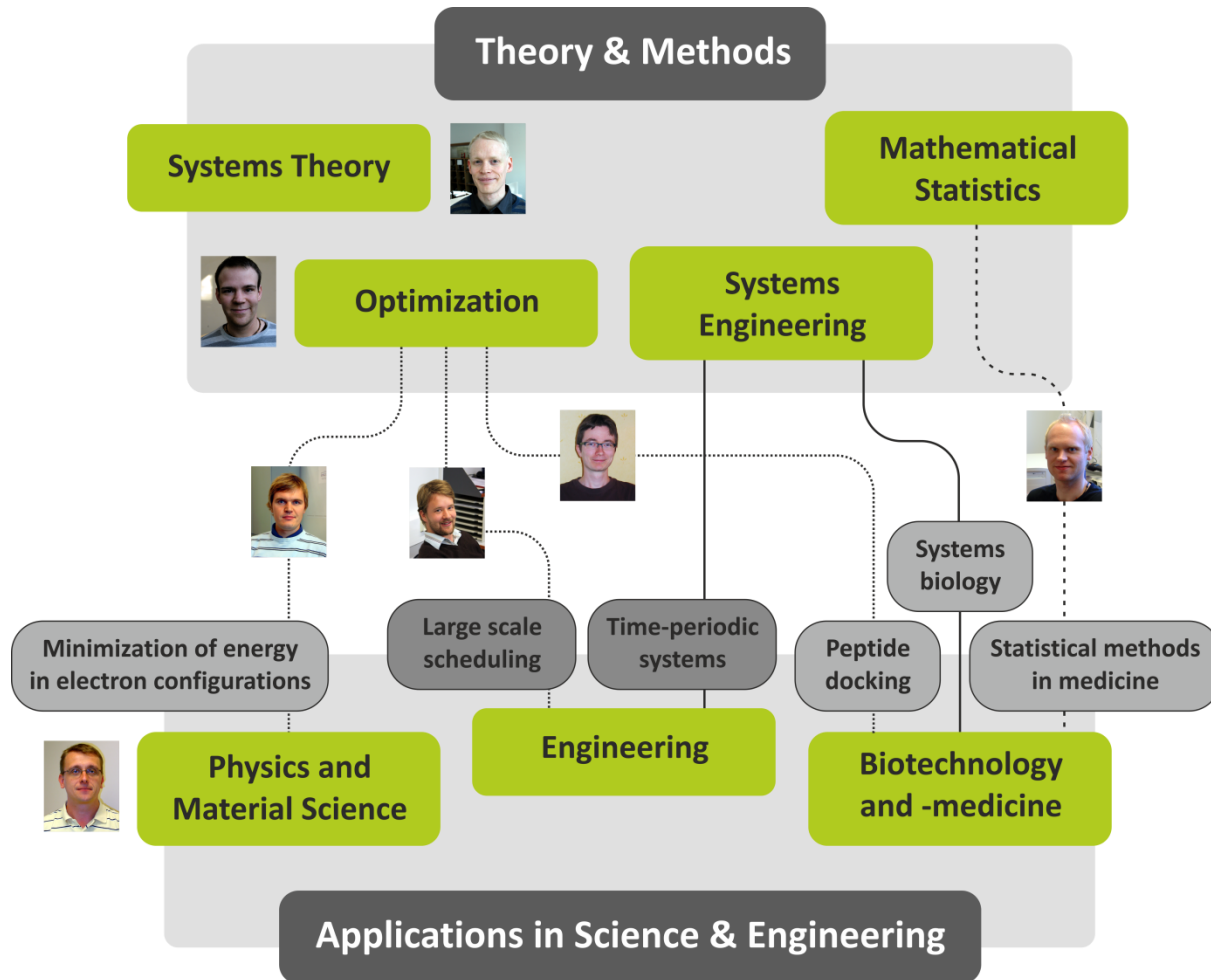
Mathematics and Statistics
Department of Natural Sciences

- Currently the research group consists of about 25 PhD students and post doctoral researchers.

STRUCTURE OF THE OSE RESEARCH



STRUCTURE OF THE OSE RESEARCH



SEMINAR PROGRAM

10.00 Professor Tapio Westerlund
Chairman of the OSE group
Opening statement

Rector Jorma Mattinen
Åbo Akademi University
Words of welcome

10.15 Professor Christodoulos Floudas
*Deterministic Global Optimization:
Advances in Theory and Applications*

11.00 COFFEE BREAK



11.15 Professor Christodoulos Floudas
*De Novo Design of Proteins and Protein-Peptide
Complexes: Advances and Challenges*

12.00 LUNCH BREAK
Café Arken



13.15 Mikael Kurula, PhD
*An overview of the state/signal approach
to infinite-dimensional systems theory*

13.40 Ray Pörn, PhD
*Three applications of semidefinite programming
for 0-1 quadratic programs*

14.05 Andreas Lundell, PhD
*The signomial global optimization (SGO)
algorithm*

14.30 COFFEE BREAK



15.00 Anders Skjäl, PhD student
*Implementation of an α BB-type underestimator
in the SGO-algorithm*

15.20 Henrik Nyman, PhD student
*Stochastic Bayesian learning algorithm for
graphical models*

15.40 Mikael Nyberg, PhD student:
*Modeling a complex production process
using a State-Task-Network formulation*

WORDS OF WELCOME

RECTOR JORMA MATTINEN

ÅBO AKADEMI UNIVERSITY



INVITED SPEAKER

PROFESSOR CHRISTODOULOS FLOUDAS

PRINCETON UNIVERSITY, USA

- Professor of Chemical and Biological Engineering at Princeton University since 1994
- Awarded the Stephen C. Macaleer '63 Professorship in Engineering and Applied Science in 2007
- Author of the textbooks
 - Nonlinear and Mixed-Integer Optimization (Oxford University Press, 1995)
 - Deterministic Global Optimization (Kluwer Academic Publishers, 2000)
- Co-editor of several monographs/books and is the chief co-editor of the Encyclopedia of Optimization (Kluwer Academic Publishers, 2001; Springer, 2008)
- Has over 230 refereed journal publications in the area of global optimization and have given over 320 invited lectures and seminars
- *“Research interests lie at the interface of chemical engineering, applied mathematics, and operations research.”*



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