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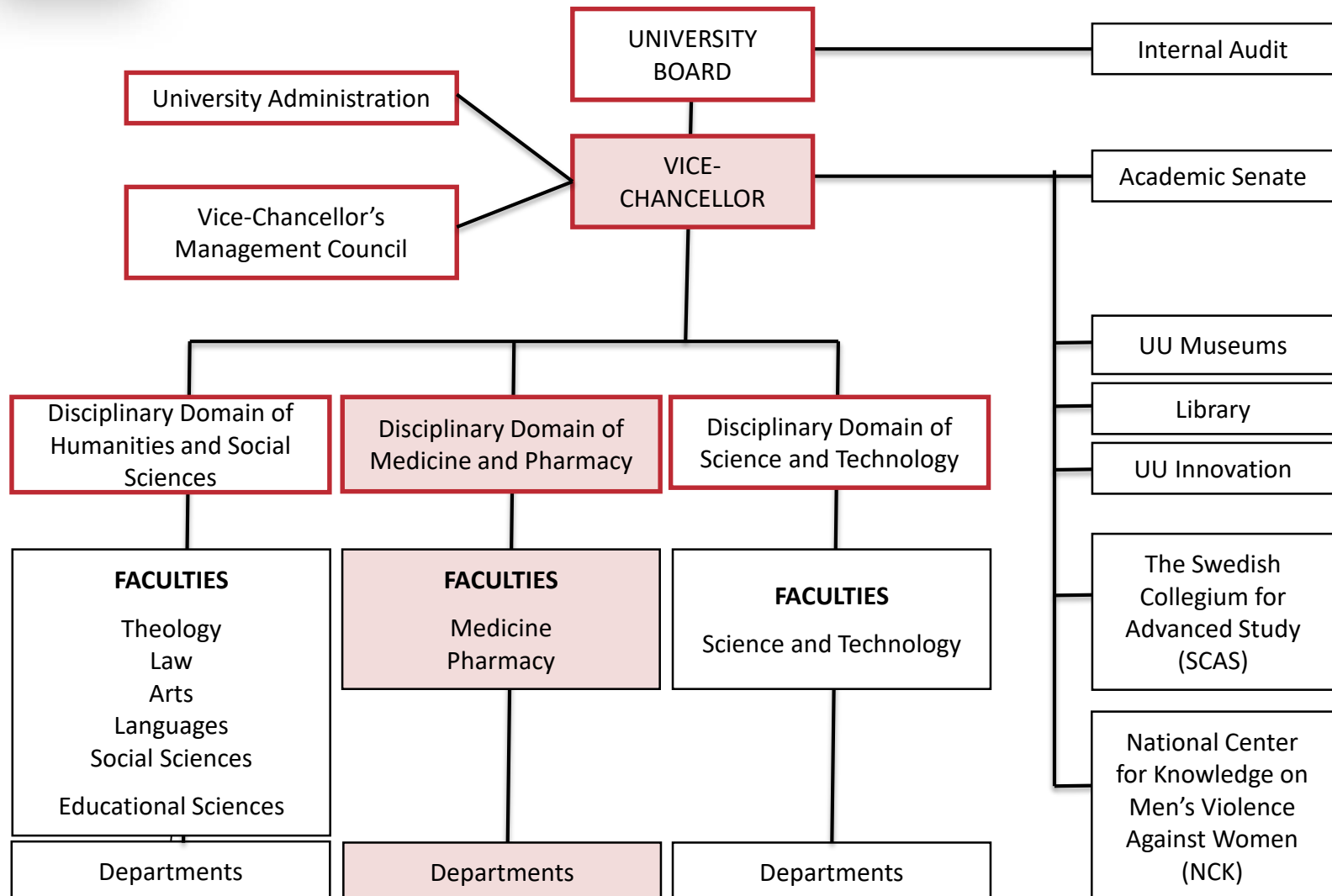
**Margareta Hammarlund-Udenaes**, Dean of the Faculty of Pharmacy  
*mhu@farmbio.uu.se*

**Anders Backlund**, Vice-dean of research training at the DOmaine of Medicine & Pharmacy  
& Vice-chancellor special advisor on internationalisation  
*anders.backlund@fkog.uu.se*



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# Organization





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# Medicine and Pharmacy

## Disciplinary domaine management

**Stellan Sandler**, Vice-Rector  
professor in medical cell biology

**Mats Larhed**, Deputy Vice-Rector,  
professor in organic pharmaceutical chemistry

**Margareta Hammarlund-Udenaes**, Dean of the Faculty of Pharmacy  
professor in pharmacokinetics

**Eva Tiensu-Janson**, Dean of the Faculty of Medicine,  
professor in endocrin oncology



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# The Faculty of Pharmacy



- Organized in three departments covering chemical, biological and pharmaceutical aspects on drugs and medicines
- Focus on the sciences underpinning the discovery, development and use and abuse of medicines
- Generic as well as focused on therapeutic areas

“With its three departments, the Faculty constitutes a dynamic centre for everything relating to pharmaceuticals” / Research Assessment Exercise Q&R 2011





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# Department of Pharmaceutical Biosciences

Pharmaceutical cell biology -Steroid biochemistry

Drug Safety and Toxicology

Pharmaceutical bioinformatics

Pharmaceutical cell biology -Söderberg

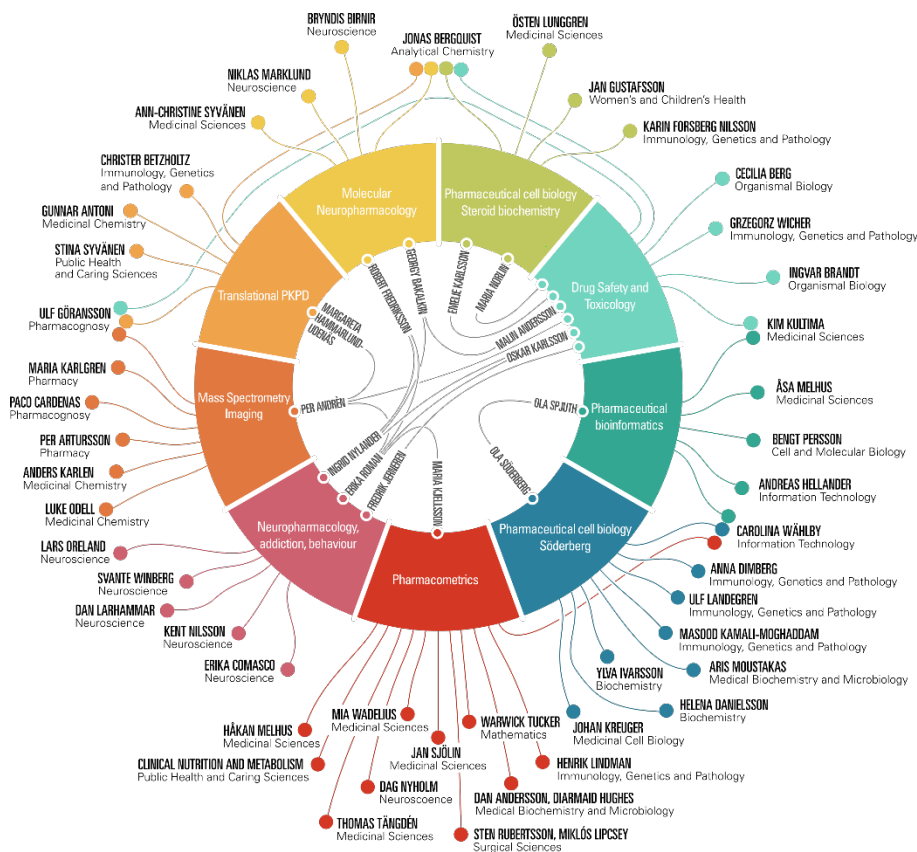
Pharmacometrics

Neuropharmacology, addiction, behaviour

Mass Spectrometry Imaging

Translational PKPD

Molecular Neuropharmacology







# Pharmacometrics Group

Mats O. Karlsson

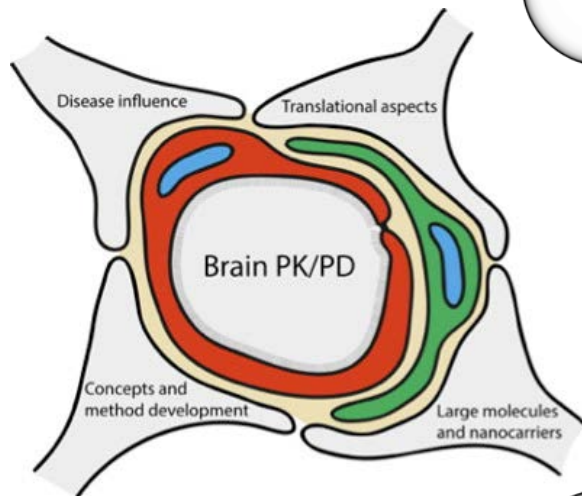
- Developing and using mathematical models to understand drug and disease mechanisms, and optimizing drug development and therapy





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# Translational PKPD Group



**Quantitative brain drug delivery - concepts and method development**

**Translational aspects of brain drug distribution in health and disease**

**The role of pericytes in brain drug distribution**

**Biomolecular drugs (peptides) and nanocarriers**



# Pharmaceutical Cell Biology Group

Ola Söderberg, Sara Mangsbo, Greta Hultqvist

- Strategic employments on immunology and large molecule research



Professor  
Protein  
interactions in  
disease



Associate  
senior lecturer  
Immuno  
oncology



Associate  
senior lecturer  
Protein drug  
design





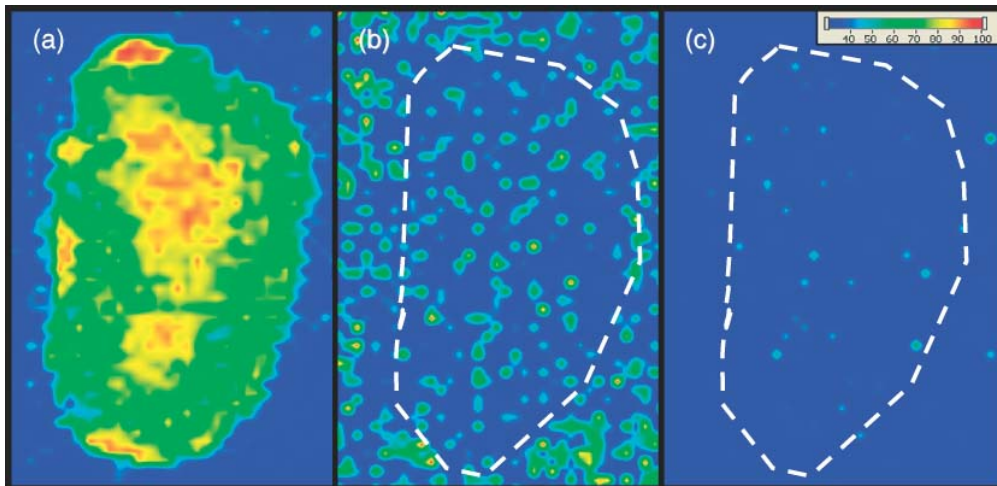
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# Mass Spectrometry Imaging

Per Andréén



- MALDI/IMS method development and tissue distribution of drugs and endogenous compounds





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# Department of Medicinal Chemistry



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# Pharmacognosy

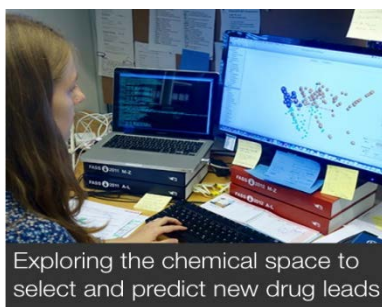
Ulf Göransson

*What can we learn from the chemistry in nature?*



Extracting sponge DNA with magnetic beads

Sponge natural products →



Exploring the chemical space to select and predict new drug leads



Fieldwork: truffle hunting



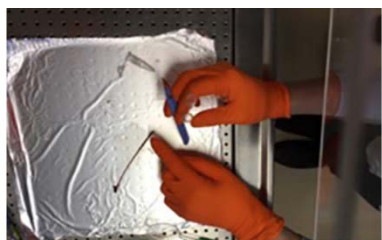
Isolation of cyclic peptides from plants



Fieldwork: sponge collecting



A deep-sea sponge crude extract with some antibacterial activity



Extracting RNA from marine worms for transcriptomics



Growing and collecting violet leaves for peptide extractions



Setting up a Leishmania assay



Designing grafted peptides as new drug leads





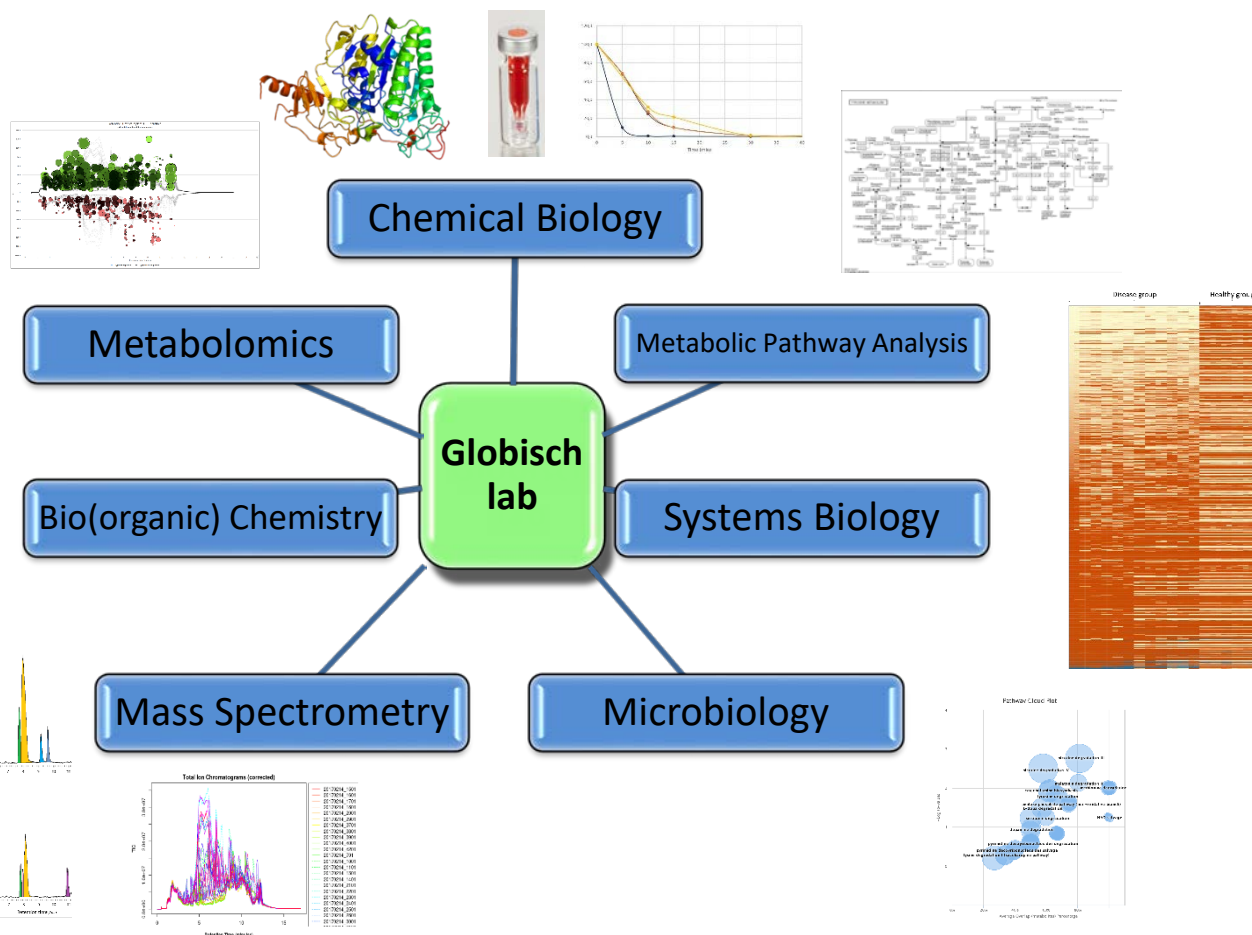
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# Chemical biology for biomarker discovery

Daniel Globisch



SciLifeLab





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# Drug design and discovery

Anders Karlén



We perform basic research in both experimental and computational medicinal chemistry. New strategies are developed for both design and synthesis of small drug-like molecules.

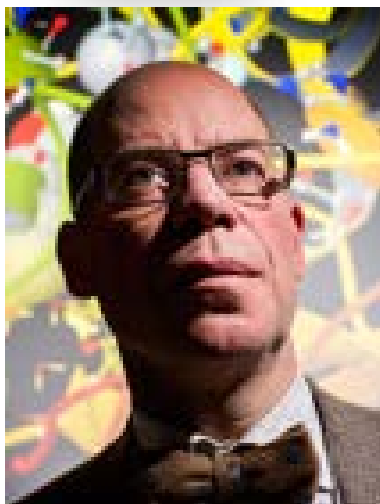
The division is host for a number of research initiatives, including the SciLifeLab DDD Medicinal Chemistry – Lead Identification Facility, the IMI antibiotic development project ENABLE and the Medicinal Chemistry Node of The Beijer Laboratory for Drug Discovery.



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# Preparative Medicinal Chemistry

Mats Larhed



The research interests encompass a range of protein targets of pharmaceutical relevance, including proteases and G-protein coupled receptors (GPCRs). Lead compounds are preferentially synthesized using new efficient transition metal-catalyzed reactions developed in our laboratory. Considerable efforts have in particular been devoted to the development of new robust and useful palladium-catalyzed C-C bond forming reactions and novel equipment for microwave and/or flow synthesis.

Research is conducted to identify novel ligands that interfere with proteins in the renin/angiotensin system. The first drug-like selective and potent angiotensin II, type II receptor (AT2R) agonist (M24/C21) was discovered in our laboratory.





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# Department of Pharmacy



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# Drug delivery group

Per Artursson &  
Christel Bergström



- A number of experimental models for measuring properties of importance for drug delivery (dissolution, solubility, transport across cells, formulate-ability).
- First world-wide to introduce computational modelling to identify successful drug-specific formulation pathways.

In 2014 Christel Bergström received the European Research Council Starting Grant



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# Pharmaceutics

Göran Alderborn



The study of solid systems, their formulation and manufacturing (solid dosage form technology), with the overall aim to develop new and improved methods and strategies to predict and manipulate the properties of particles and particle systems.

In addition, the group conduct research on new drug delivery solutions for controlled drug release, currently focused on topical drug delivery systems





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# UAC – Uppsala Antibiotic Centre



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Uppsala  
Antibiotic Center

PhD school



**Dan Andersson**

Director,  
Spec. in development of  
Bacterial Antibiotic Resistance



**Anders Karlén**

Medicinal Chemistry



**Åsa Melhus**

MedFarm



**Staffan Svärd**

(SciTech)



**Francesco Ciabuschi**

(HumSam)





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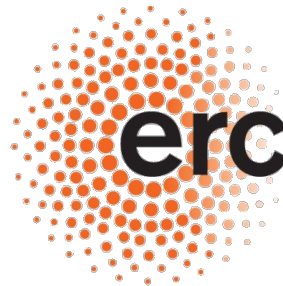
# Developing collaborations





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# Some supportive organizations



European Research Council  
Established by the European Commission



SciLifeLab



Innovative Medicines Initiative

PET-MR

U-CAN



Biobank Sweden

U-CARE



Vetenskapsrådet





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# See more information on specific research projects at:

- Department of Pharmaceutical Biosciences
  - <http://www.farmbio.uu.se/research/?languageId=1>
- Department of Pharmacy
  - [http://www.farmfak.uu.se/farm/research\\_en.shtml](http://www.farmfak.uu.se/farm/research_en.shtml)
- Department of Medicinal Chemistry
  - <http://www.ilkk.uu.se/research/>