



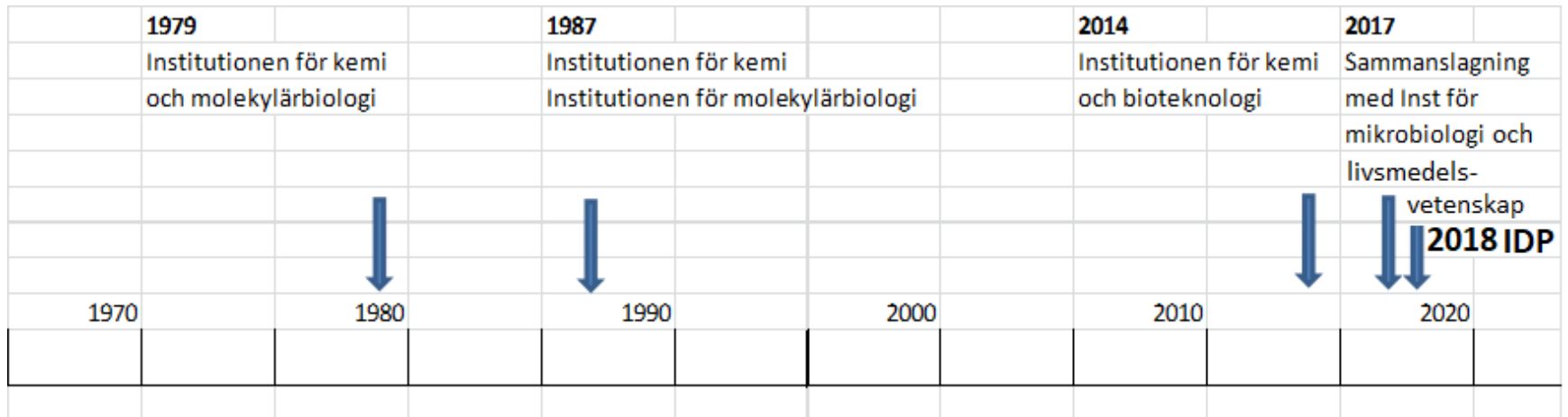
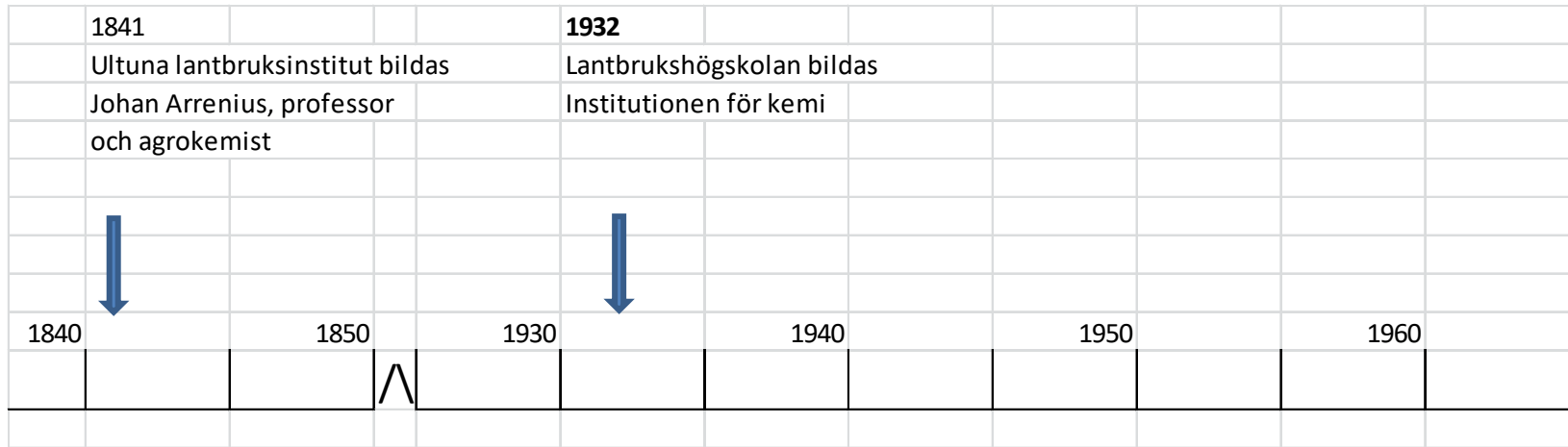
Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# Departement of Molecular Sciences

## History



# SLU's oldest Department...



and youngest!



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# Department of Molecular Sciences

## Personnel

## Personnel

In total 81 full-time employees (July 2018), 140 on e-mail list

15 Professors

5 Senior Lecturers (of which 2 adjunct Senior Lecturers)

12 Senior Researchers

15 Researchers, 7 research assistants/research engineers, 18 postdocs

29 PhD students

4 administrators

Totalt 47 % women, 53 % men

# Department of Molecular Sciences

Research Education

# Research education

- 29 PhD students
  - Chemistry – 6
  - Biologi in total – 13 (3 microbiology, 4 biotechnology, 1 molecular biology and 5 general biology)
  - Food science – 10 (4 industrial PhD students)
- Aktive participation in research schools
  - Focus on Food and Biomaterials, SLU; Organism biology, SLU
- Advanced subject and method courses at SLU, nationally and internationally
  - f.ex. NMR; Mass-Spec; Advanced microscopy, EXAFS, X-ray, Biomaterials on nanoscale etc.

# Thesis defences

Year	2015	2016	2017	2018
PhD	8	9	5	5
Licentiate	1	1	0	0

# Research education



**With us is FUN!**



# Department of Molecular Sciences

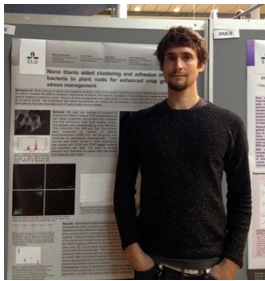
Research

# Organizing role in the molecular research

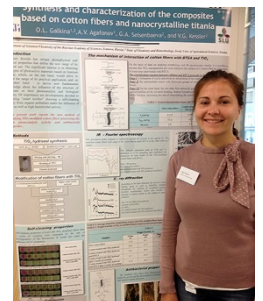


- Chemical Side of SLU conferences

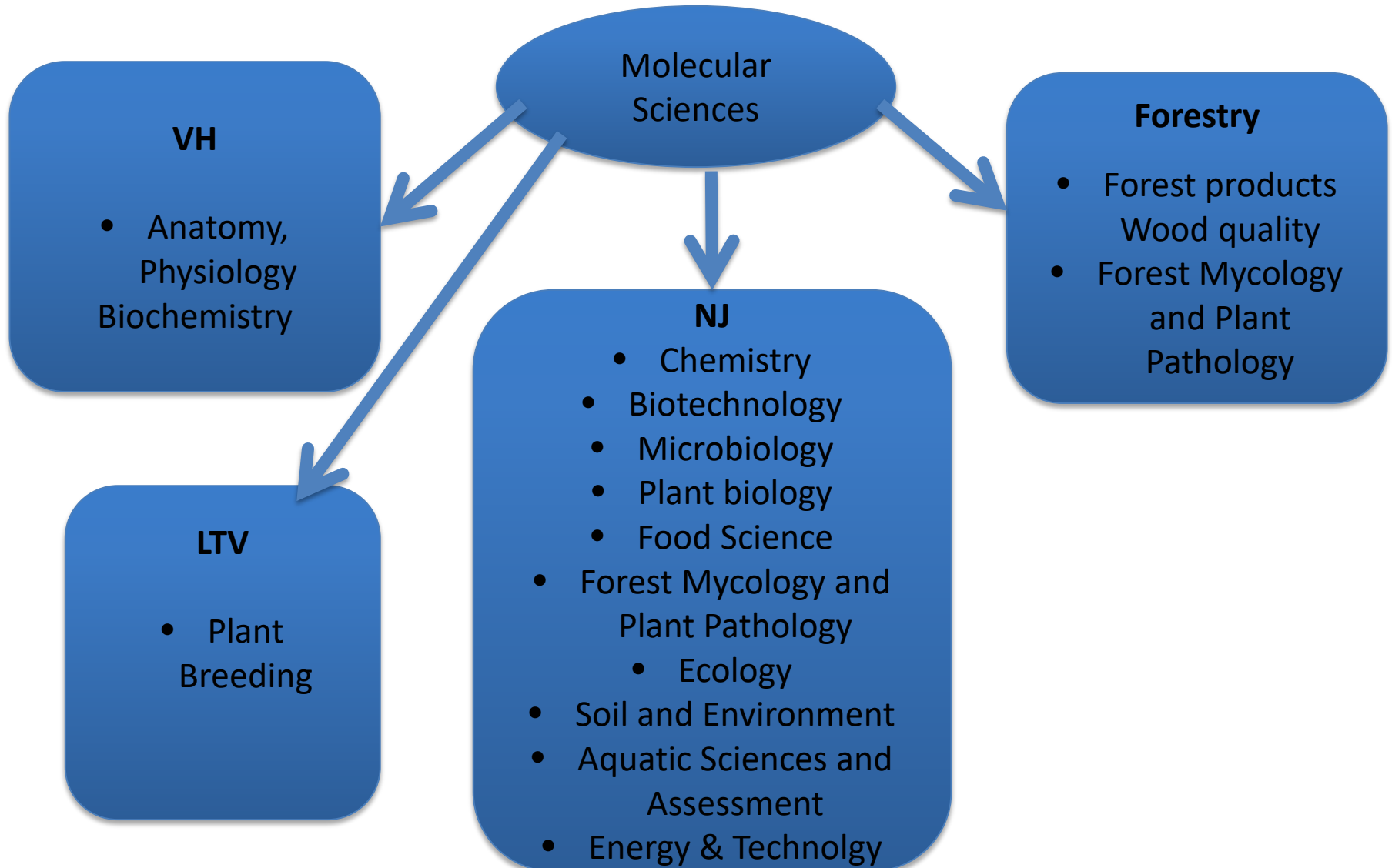
The aim is to provide an updated overview of the chemical research at SLU, help in establishing of new contacts and cooperation.



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# Collaborations at SLU



# Strategic objectives

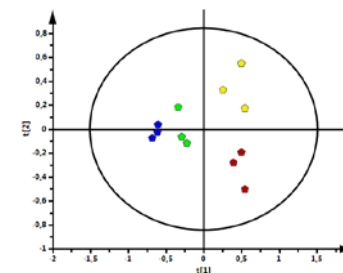
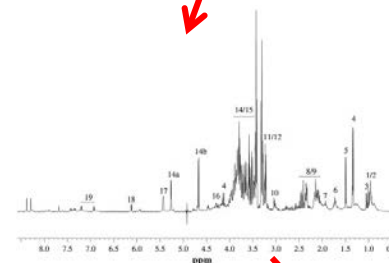
- Development of analytical methods for structural determination of natural products and materials with special focus on biogenic processes in nature.
- Development of biotechnology and bionanotechnology approaches for rational use of natural resources, production of high quality tasty food, functional materials, environmental monitoring and soil and water remediation

# Research areas

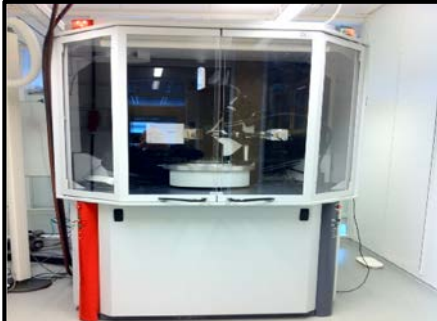
- **Food quality**
- **Food and feed microbiology**
- **Chemistry and biology at interfaces**
- **Functional nanomaterials**
- **Molecular metabolism**
- **Molecular structures**
- **Molecular biotechnology**
- **Biochemistry and molecular cell biology**

# Metabolomics platform

Project	samples
Food	
Metabolic effects of whole grain cereals on humans	1 800
Effect of diets for newborns with rheumatic disease	12
BarleyFunFood project	200
Absorption of nutrients in pigs	220
Is obesity in dogs associated with inflammatory markers and the gut microbiota?	200
Value of different feed in chickens	80
Chronic diseases	
Prostate cancer	1 700
Childhood obesity and Type 2 diabetes	800
Alzheimer disease	800
Breast Cancer biomarkers	2 000
Endometrial cancer	170
Glutamate signaling in brain	100
Aquaculture and feed optimization	500
Microorganisms and plants	
Secondary metabolite comparison of root-rotting fungi	100
Comparison of different genotypes of common ash in response to the phytotoxin viridiol	125
New metabolites from microorganisms in search for new antibiotics	>13 000
Crops	
Growing conditions and developments of roots from seabuckthorn	> 300

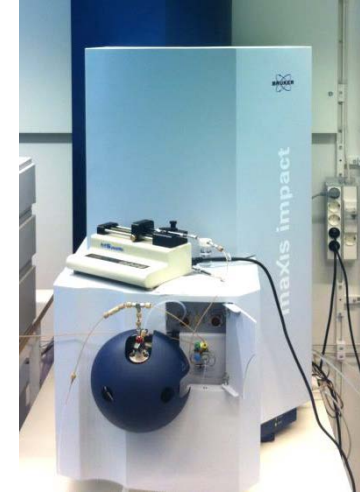


# Strong research infrastructure



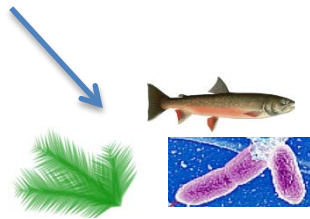
- X-ray diffraction (2015)
- Atomic force microscopy (2016)
- Environmental scanning electron microscopy (2008)
- Thermogravimetric and vibrational spectroscopy (2010)

# Strong research infrastructure



Two NMR-spectrometers (2012)

Four mass spectrometers (2012-2017)



Biomolecules in solution  
Biofluids, extracts

Intact tissues  
Plants, microorganisms

**KoN evaluation**

**August T Larssons  
Industrial donations**



# Synchrotron facilities



# Department of Molecular Sciences

Welcome!