



# Tema Teknologi och biomaterial = *FIRST2*

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**FRST** 



# Forest-Industry Research School on Technology

-a joint Swedish-Finnish initiative

**Historical description**

(Umeå 2017-05-18)



# Background

The Swedish/Finnish forest sector, universities and research institutes agreed on that a PhD research school in Forest Technology is important for the future

The decision was to establish the:

**Forest-Industry Research School on Technology (FIRST)**



FIRST



Partners in Sweden: **SLU and Skogforsk**

Partners in Finland: **Helsinki university,  
University of eastern Finland  
Metla  
Metsäteho**

**Five years, starting 2009-10**

**(Four years of studies and one year of host company practice)**

## **11 Dissertations in FIRST1&2**

Gunnar Svenson 2017. Optimized Route Selection for Logging Trucks - Improvements to Calibrated Route Finder. SLU.

Emanuel Erlandsson 2016. A triadic approach to the tailoring of relationships for wood harvesting services. SLU

Mattias Eriksson 2016. Developing client-supplier alignment in Swedish wood supply. SLU.

Jussi Manner 2015. Automatic and Experimental Methods to Studying Forwarding Work. SLU.

Carola Häggström 2015. Human Factors in Mechanized Cut-To-Length Forest operations. SLU.

Johannes Windisch 2015. Process Redesign in Development of Forest Biomass Supply for Energy. UEF, Joensuu.

Kalvis Kons 2015 (Lic.). Forest Biomass Terminal Properties and Activities. SLU.

Simon Berg 2014. Technology and Systems for Stump Harvesting with Low Ground Disturbance. SLU.

Back Tomas Ersson 2014. Concepts for Mechanized Tree Planting in Southern Sweden. SLU.

Aaron Petty 2014. Opportunities for cost mitigation and efficiency improvements through rationalization of small-diameter energy wood supply chains. Helsinki University.

Jeanette Edlund 2012 (Lic.). Harvesting in the Boreal Forest on Soft Ground. SLU.

## Two upcoming dissertations in FIRST2

Teresa de la Fuente, June 9 2017. *System analysis and life cycle assessment of forest supply chains with integrated biomass production*. SLU Umeå.

Lars Fridh, June 16 2017. *Measuring Forest Fuel Quality for Trade and Production Management*. SLU Uppsala.

## Current projects in FIRST2

### ***PhD students***

Malin Johansson (start in June): Logging business development

Mikael Lundbäck (start in Aug): Future's supply chains

Örjan Grönlund (Lic): Conservation logging (Skogforsk, SLU)

Lena Jonsson: Improved soil scarification (FTC, SLU)

Raul Fernandez Lacrus: Biomass from marginal lands

Kalvis Kons: Forest Biomass Terminals

Sima Mohtasami: GPS and navigation paths (Skogforsk, SLU)

Björn Edlund: Family forestry safety

Peter Fransson: Modeling of optimized thinning (UmU)

Håkan Lideskog: Detection of obstacles in forest terrain (LTU)

Maria Johansson: Gender equality in forestry (LTU)

*...plus others*

## Current projects in FIRST2

### ***PostDocs***

Bosko Blagojevic (start in Sept): Multi-criteria evaluation of forest operations and transports.

Omar Mendoza Trejo (start in Sept): Designing and prototyping innovative ideas for smart forestry systems.

Ahmad Hosseini: Modelling of optimized strip-road networks. (UmU)



## FIRST2 in Finland (UEF, LUKE, UH)

- Kari Väätäinen: Discrete-event simulation of wood harvesting and transport
- Karri Pasanen: Decision making in biomass supply and impacts of RES regulation on biomass supply systems
- Otto Läspä: Energy wood harvesting technology
- Tanja Ikonen: Economic sustainability of energy wood supply systems
- Robert Prinz: New technology for chipping and transport of chips for improved fuel economy
- Sami Lamminen: Virtual tutoring systems for forest machine operators
- Heikki Korpunen: Value of a logging subject in different end uses
- Harri Lindeman: Wood harvesting on sensitive soils

## FIRST2 themes



Forest operations (misc.), incl.  
systems analyses



Smart forestry machines and tools



Biomaterials and green chemistry...

