

Seminars

First Annual Research seminar of UEF top level international research area (RA) on Forests, Global Change and Bioeconomy

Program

- 8:15-8:40 **Welcome and outlines** for the research focus of whole RA in 2015-2020 and key indicators for research activities in year 2015 (Heli Peltola)
- 8:40-10:10 **Topic 1: Outlines for research on responses and acclimation mechanisms of terrestrial plant, fungi and insect species to changing environment**
- 8:40-9:00 Mechanistic responses and acclimation of woody plants to elevated temperature, UV-radiation and carbon dioxide (Riitta Julkunen-Tiitto/Jarmo Holopainen)
- 9:00-9:20 Novel imaging techniques for forest tree research (Elina Oksanen/Markku Keinänen)
- 9:20-9:40 Retention forestry to resolve some global forest sustainability issues (Jari Kouki)
- 9:40-10:00 Peatland ecosystem response to changing climate and climatic variation as modified by vegetation dynamics (Eeva-Stiina Tuittila's presentation by Jinnan Gong)
- 10:00-10:10 General discussion
- 10:10-10:30 Coffee break
- 10:30-12:00 **Topic 2: Outlines for research on development of new technologies for monitoring forest ecosystems, new optimization techniques, and forest ecosystem and risk modelling and their applications in forest research**
- 10:30-10:50 Forest inventory research (Matti Maltamo)
- 10:50-11:10 Utilization of forest big data in forest research (Timo Tokola)
- 11:10-11:30 Integration of uncertainties in timber price and tree growth in the optimization of stand management (Timo Pukkala)
- 11:30-11:50 Forest ecosystem and risk modelling and their applications in forest management research (Heli Peltola)
- 11:50-12:00 General discussion
- 12:00-13:00 Lunch break
- 13:00-14:20 **Examples of research highlights in year 2015**

- Temperature and defensive piperidine alkaloid chemistry of Norway spruce (Virpi Virjamo)

- Forest structure indicators based on tree size inequality and their relationships to airborne laser scanning (Ruben Valbuena)
- Edge-tree correction improves the performance of area-based approach with airborne laser scanning (Petteri Packalen)
- Modeling the functioning and dynamics of water stressed ecosystems (Jinnan Gong)

14:20-14:40 General discussion of research activities of RA

14:40-16:00 Poster session with coffee, and seminar closure

Poster Session

1. Effects of enhanced UV-B and temperature on the growth and phytochemistry of different genders of *Populus tremula* L (Katri Nissinen, Line Nybakken, Tendry Randriamanana, Egbert Beukert, Riitta Julkunen-Tiitto)
2. Impact of climate change on European aspen (*Populus tremula*) and recovery (Norul Alam Sobuj, Unnikrishnan Sivadasan, Katri Nissinen, Virpi Virjamo, Riitta Julkunen -Tiitto)
3. Variations in *Populus tremula* bud phenology under climatic warming and UV radiation (Unnikrishnan Sivadasan, Chenhao Cao, Line Nybakken, Riitta Julkunen Tiitto)
4. Effect of the extraction ethanol and maceration time on the phenolics of Finnish propolis (Anneli Salonen, Anu Lavola, Riitta Julkunen-Tiitto)
5. Metabolite responses of silver birch to elevated air humidity (Jenna Lihavainen, Viivi Ahonen, Markku Keinänen, Sarita Keski-Saari, Sari Kontunen-Soppela, Anu Söber, Elina Oksanen)
6. Phenotypic plasticity and acclimation capacity under climate warming: silver birch (*Betula pendula*) provenances in a common garden experiment (Sari Kontunen-Soppela, Sarita Keski-Saari, Antti Tenkanen, Kaisa Heimonen, Matti Rousi, Elina Oksanen)
7. Differences among provenances and genotypes in leaf traits of silver birch (*Betula pendula*) (Sarita Keski-Saari, Sari Kontunen-Soppela, Raziyyeh Khajvand, Matti Rousi, Elina Oksanen)
8. Variation in the secondary compounds of silver birch leaves by chemical and imaging techniques (Maya Deepak, Laure Fauch, Sarita Keski-Saari, Sari Kontunen-Soppela, Elina Oksanen, Markku Keinänen)
9. Effect of bark beetle (*Ips typographus*) infestation on bark VOC emissions of Norway spruce (*Picea abies*) trees (Rajendra Ghimire, Minna Kivimäenpää, Minna Lyytikäinen, Toini Holopainen, Päivi Lyytikäinen-Saarenmaa, Jarmo Holopainen)
10. Formation of biogenic secondary organic aerosol from real plant emissions (Jorma Joutsensaari, Pasi Yli-Pirila, Ling Hao, Sami Romakkaniemi, Helena Keskinen, Pasi Miettinen, Petri Tiitta, Antti Kortelainen, James Blande, Annele Virtanen, Jyrki Mäkelä, J.N Smith, D.R. Worsnop, Jarmo K. Holopainen, Ari Laaksonen)
11. The climate change mitigation potential of forest biomass production and its utilization in Finland (Antti Kilpeläinen, Heli Peltola, Johanna Routa, Antti Asikainen)
12. Hot-spot of carbon emissions in forestry production: assessment in a life cycle perspective (Ashrafal Alam, Antti Kilpeläinen, Seppo Kellomäki)
13. Restoring dead wood in forests diversifies wood-decaying fungal assemblages but does not quickly benefit red-listed species (Hannes Pasanen, Kaisa Junninen, Jari Kouki)

14. Phenolic Compounds in Different Dead Wood Types in Scots Pine: a Comparative Chemical Analysis (Parvathy Venugopal, Riitta Julkunen-Tiitto, Kaisa Junninen, Jari Kouki)
15. Aerenchymous plant species differ in their CH₄ emission in Siikaneva boreal bog (Aino Korrensalo, Pavel Alekseychik, Janne Rinne, Timo Vesala, Eeva-Stiina Tuittila)
16. Impact of forest machinery on soil physical properties and microbiology of forestry-drained peatlands (Dimitri Lepilin)
17. Forest structure matters – Revealing important habitats in a forest landscape by integrating airborne LiDAR data with animal location data (Markus Melin)
18. Detection of multi-layered forest development classes using airborne laser scanning (Rubén Valbuena, Lauri Mehtätalo, Matti Maltamo, Juho Heikkilä, Petteri Packalen)
19. Relationships between MODIS shortwave albedo and airborne lidar based forest canopy structure (Lauri Korhonen)
20. Effect of plot location errors on management prescriptions in forest planning based on LiDAR inventory (Adrian Pascual)

Participants

Research areas (total of 54)

Research expertise area 1 (17):

- [Riitta Julkunen-Tiitto](#), Virpi Virjamo, Anneli Salonen, Katri Nissinen, Unni Khrisnan, Norul Sobuj, Tommi Nyman, Teemu Tahvanainen, Antti Haapala
- [Elina Oksanen](#), Markku Keinänen, Sarita Keski-Saari, Sari Kontunen-Soppela, Jenna Lihavainen, Maya Deepak, Antti Tenkanen
- [Jarmo Holopainen](#)

Research expertise area 2 (22):

- [Heli Peltola](#), Jyrki Kangas, Antti Kilpeläinen, Zhenming Ge, Katri Luostarinen, Veli-Pekka Ikonen, Harri Strandman, Ashraf Al Alam, Jinnan Gong, Laith Alrahahleh, Tarit Baul, Eino Levkoev, Ben Wang
- [Jari Kouki](#), Osmo Heikkala, Olli-Pekka Tikkanen, Matti Koivula, Parvathy Venugopal, Mihails Cugunovs, Hannes Pasanen
- Aino Korrensalo, Dimitri Lepilin (research team of [Eeva-Stiina Tuittila](#))

Research expertise area 3 (15):

- [Matti Maltamo](#), Petteri Packalen, Ruben Valbuena, Markus Melin, Lauri Korhonen, Juha Keränen, Anton Kuzmin, Syed Adnan, Eetu Kotivuori
- [Timo Pukkala](#), Mari Selkimäki, Adrian Pascual, Olalla Diaz Yanez, Rita Heiskanen
- [Timo Tokola](#)

Others from UEF (3):

- Jukka Mönkkönen, Jaakko Puhakka, Jukka Jurvelin

Second Annual Research seminar of UEF top level international research area (RA) on Forests, Global Change and Bioeconomy

Program

Research seminar of UEF top level international research area (RA) on Forests, Global Change and Bioeconomy

Time and place: June 12th (Monday) 2017, 9:00-15:00 at Natura 100, Joensuu campus, Yliopistokatu 7

8:00-9:00 **(Posters to be put available)**

9:00-9:20 **Welcome and outlines for the research focus of whole RA in 2015-2020 and key indicators for research activities in years 2015-2016** (Heli Peltola)

9:20-11:30 (each talk 15 min + 5 min for question)

Virpi Virjamo: Global warming will change growth and defense capacity of trees – what are the relative differences between Scots pine, Norway spruce and Silver birch seedlings?

Rajendra Ghimire: Biogenic VOC emissions from boreal trees

Aino Korrensalo: The role of vegetation in the temporal and spatial variation of boreal bog carbon sink

Hannes Pasanen: Ecological effects of disturbance-based restoration in boreal forests

Antti Kilpeläinen: Climate impacts of forest biomass production and utilization in managed boreal forests

Tero Heinonen: Scenario analyses for the effects of harvesting intensity on timber supply, carbon balance and biodiversity indicators of Finnish Forestry

11:30-12:30 **Lunch (Posters available)**

12:30-14:00 (each talk 15 min + 5 min for question)

Markku Keinänen: Assessing tree and wood quality with hyper spectral imaging

Ranjith Gopalakrishnan: Generating site index maps for large areas of planted pine in Southeast USA using disparate lidar datasets

Timo Tokola: Development of REDD methodologies in Lao PDR and Nepal

Jyrki Kangas: Combining MCDA and voting methods with SWOT – why and how?

14:00-15:00 **Poster session with coffee, and seminar closure (best posters awarded)**

Poster Session

1. Visible to midwave infrared (400-5000 nm) spectral imaging in estimation of water content of lichens (Lars Granlund, Sarita Keski-Saari, Timo Kumpula, Elina Oksanen, Markku Keinänen)
2. Genotypic variation and provenance-related clinal patterns in leaf surface secondary compounds of silver birch (Maya Deepak, Jenna Lihavainen, Sarita Keski-Saari, Sari Kontunen-Soppela, Antti Tenkanen, Elina Oksanen, Markku Keinänen)
3. Finnish silver birch provenances in a common garden: gas exchange as affected by latitude (Antti Tenkanen, Kaisa Heimonen, Elina Oksanen, Markku Keinänen, Sarita Keski-Saari, Sari Kontunen-Soppela)
4. Recovery of soil physical properties and microbiology in forestry drained peatlands from the impact of forest machinery (Dmitrii Lepilin, Bryn Kimura, Jori Uusitalo, Raija Laiho, Hannu Fritze, Ari Lauren, Eeva-Stiina Tuittila)
5. Vegetation community succession as forced by water table changes (Nicola Kokkonen, Jukka Laine, Harri Vasander, Kirsi Kurki, Jinnan Gong, Eeva-Stiina Tuittila)
6. CH₄ fluxes of six different microhabitats of a boreal bog in three subsequent years (Elisa Männistö, Aino Korrensalo, Pavel Alekseychik, Ivan Mammarella, Timo Vesala, Eeva-Stiina Tuittila)
7. Forest management inspired by natural DISTurbance DYNamics (DISTDYN) – a large-scale, long-term research project (Matti Koivula, Timo Kuuluvainen, Jari Kouki, Risto Savolainen, Juha Siitonen, Sauli Valkonen)
8. Modified phenolic metabolism of silver birch affects leaf consumption, but not growth, of *Epirrita autumnata* (Paula Thitz, Panu Välimäki, Tommi Andersson, Tendry Randriamanana, Riitta Julkunen-Tiitto, Tommi Nyman)
9. Comparison of Sentinel-2 and Landsat 8 in the estimation of boreal forest canopy cover and leaf area index (Lauri Korhonen, Hadi, Petteri Packalen, Miina Rautiainen)
10. The length of photoperiod affects photosynthesis efficiency of *Betula pendula* (Sarita Keski-Saari, Tarja Silfver, Flobert Ndah, Tihomir Simin, Sari Kontunen-Soppela, Juha Mikola, Markku Keinänen, Matti Rousi, Elina Oksanen)
11. Integrating fine-scale heterogeneities to soil C-flux modeling for dryland ecosystems (Jinnan Gong, Ben Wang, Xin Jia, Wei Feng, Tianshan Zha, Heli Peltola)
12. Soil pyrene contamination affects young Norway spruce (*Picea abies*) growth and phenolics (Yaodan Zhang, Virpi Virjamo, Riitta Julkunen-Tiitto, Hongyan Guo)
13. Desiccation in air with lowered humidity – practical pre-treatment method for leaves used for quantitative phenolic analyses? (Virpi Virjamo, Riitta Tegelberg, Riitta Julkunen-Tiitto)

14. Variation of *Populus tremula* bud phenology under climate warming and UV radiation (Unnikrishnan Sivadasan, Chenhao Cao, Line Nybakken, Riitta Julkunen-Tiitto)
15. Effects of enhanced UV-B and temperature on the growth of different genders and genotypes of *Populus tremula* L. (Katri Nissinen, Tendry R. Randriamanana, Riitta Julkunen-Tiitto, Line Nybakken, Egbert Beuker)

Participants

Total of 40

1. Antti Kilpeläinen
2. Antti Tenkanen
3. Arnan Martorell
4. Ashraful Alam
5. Eetu Kotivuori
6. Eevastiina Tuittila
7. Elisa Männistö
8. Heli Peltola
9. Jaakko Karvonen
10. Janne Rätty
11. Jari Kouki
12. Jarmo Holopainen
13. Jinnan Gong
14. Jyrki Kangas
15. Katri Luostarinen
16. Katri Nissinen
17. Lars Granlund
18. Lauri Mehtätalo
19. Markku Keinänen
20. Matti Maltamo
21. Maya Deepak
22. Nicola Kokkonen
23. Norul Sobuj
24. Paula Thitz
25. Petri Kärenlampi
26. Petteri Packalen
27. Rajendra Ghimire
28. Ranjith Gopalakrishnan
29. Riitta Julkunen-Tiitto
30. Roope Ruotsalainen
31. Sari Kontunen-Soppela

32. Sari Pitkänen
33. Sarita Keski-Saari
34. Tarit Baul
35. Tendry Randriamanana
36. Tero Heinonen
37. Timo Tokola
38. Unnikrishnan Sivadarán
39. Veli-Pekka Ikonen
40. Virpi Virjamo