

Curriculum vitae
Hans Jonas Henrik Böhlenius

1. Personal and contact information.**1.1 Hans Jonas Henrik Böhlenius**

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1.2 Current appointment.

2018 to present. Senior lecturer souther Swedish forest research centre, Swedish university of Agricultural Science. The position includes contact with forest sector to strengthen the collaboration between university and society. The position also includes teaching and research of management of fastgrowing broadleaves (poplar and hybridaspens) at forest and agricultural sites. Teaches at lantmästarprogramet and EURO forester program in management about poplars and hydrid aspen.

Administrative tasks; main safety officer, member of department steering committee and representing young researchers in cooperation group (samverkans gruppen).

1.3 Professional work experience.

2015 to 2018. Researcher at souther Swedish forest research centre, Swedish university of Agricultural Science.

May 2011-Jan2015: Post Doc, Dept. Southern Swedish Forest Research Centre, Swedish University of Agricultural Sciences. Research project "Management of fast growing broad leaves" Teaching at EURO forester master program.

Aug 2008-April 2011: Post Doc, Dept. of Agriculture and Ecology, LIFE, University of Copenhagen. Research about powdery mildew resistance mechanisms in barley and Arabidopsis.

Nov 2007- July 2008: Researcher, Swedish University of Agricultural Sciences, Umeå Plant Science Centre, Dept. of Forest Genetics and Plant Physiology, Sweden. Continuation of Phd research projects.

Feb 2002- Oct 2007: PhD student, Swedish University of Agricultural Sciences, Umeå Plant Science Centre, Dept. of Forest Genetics and Plant Physiology, Sweden.

Jun 2001- Feb 2002: Research assistant, Swedish University of Agricultural Sciences, Umeå Plant Science Centre, Dept. of Forest Genetics and Plant Physiology, Sweden.

Jun-Aug 2000 Research training in Molecular biology. Dept. of microbiology, Umeå University, Sweden. Laboratory work, molecular identification of temperature resistant bacteria

2. Academic degrees

2018: Appointed as associated professor (docent) in (Skogshushållning) at SLU Alnarp.

2007: PhD in Biology specialised in Forest biotechnology, Swedish University of Agricultural

Sciences, Umeå Plant Science Centre, Dept of Forest Genetics and Plant Physiology. Main supervisor Prof Ove Nilsson and Co-supervisor Prof Thomas Moritz. Date PhD were awarded were 19-October 2007.

Thesis title Control of flowering time and growth cessation in *Arabidopsis* and *Populus* Trees.

2001: Master of Science in Molecular Biology, Umeå University, Sweden. Supervisor Ove Nilsson. Thesis title "The flowering meristem gene LEAFY is controlled by gibberellins and a labile repressor".

3. Scientific merits.

3.1 Publication list

1. *CO/FT* regulatory module controls timing of flowering and seasonal growth cessation in perennial trees. **Böhlenius H.**, Haug T., Charbonnel-Campaa L., Brunner AM., Jansson S., Strauss SH., Nilsson O*. **Science**. (2006)
2. GA4 is the active gibberellin in LEAFY transcription and Arabidopsis flower initiation. Eriksson S., **Böhlenius H.**, Moritz T., Nilsson O*. **Plant Cell**. (2006).
3. Powdery mildew fungal effector candidates share N-terminal Y/F/WxC-motif Godfrey D., **Böhlenius H.**, Pedersen C., Zhang Z., Emmersen J., Thordal-Christensen H* **BMC Genomics**. (2010).
4. The multivesicular body-localized GTPase ARFA1b/1c is important for callose deposition and ROR2 syntaxin-dependent pre-invasive basal defense in barley **Böhlenius H.**, Mørch M S., Godfrey D., Nielsen E M., Thordal-Christensen H*. **Plant Cell**. (2010).
5. On ARF1 Localizes to the Golgi and Trans-Golgi Network: Future challenge in Plant Multivesicular Body Studies. Thordal-Christensen H*, **Böhlenius H.**, Mørch SM., Nielsen E M*. **Plant Cell** (2011).
6. Arabidopsis ARF-GTP exchange factor, GNOM, mediates transport required for innate immunity and focal accumulation of syntaxin PEN1 Nielsen M E., Feechan A., **Böhlenius H.**, Ueda T., Thordal-Christensen H*. **Proc Natl Acad Sci U S A**. (2012).
7. Effects of Direct Application of Fertilizers and Hydrogel on the Establishment of Poplar Cuttings **Böhlenius H*** and Övergaard R. **Forests** 2014.
8. Short-rotation bioenergy stands as an alternative to spruce monocultures: Implications for bird biodiversity. Lindbladh M*, Hedwall P.-O., Wallin I., Felton A. M., **Böhlenius H.**, Felton A. **Silva Fennica** (2014).
9. Early development of pure and mixed treespecies plantations in snogeholm, southern sweden Drössler, L*, Övergaard, R., Ekö, P.M., Gemmel, P., **Böhlenius H.** **Scandinavian Journal of Forest Research** (2015).
10. **Böhlenius, H*** and Övergaard, R. Growth response of hybrid poplars to different types and levels of vegetation control. **Scandinavian Journal of Forest Research** (2015).
11. **Böhlenius, H*** and Övergaard, R. Exploration of optimal agricultural practices and seedling types for establishing poplar plantations. **Forests** (2015).
12. **Böhlenius, H*** and Övergaard, R. Impact of seedling type on early growth of poplar plantations on forest and agricultural land. **Scandinavian Journal of Forest Research** (2016).
13. **Böhlenius H***, Övergaard R., Jämtgård S Influence of soil types on establishment and early growth of *Populus trichocarpa*. **Open journal of forest research**, (2016).

14. **Böhlenius, H***, Övergaard, R.; Asp, H. Growth response of hybrid aspen (*populus × wettsteinii*) and *populus trichocarpa* to different pH levels and nutrient availabilities. **Canadian Journal of Forest Research**, (2016).
15. Cleary M. R*, Blomquist M., Vetukuri R.R., **Böhlenius H.**, and Witzell J. Susceptibility of common tree species in Sweden to *Phytophthora cambivora*, *P. plurivora* and *P. cactorum*. **Forest pathology** (2016).
16. Influence of cutting quality in production of containerized poplar plants. **Böhlenius H***, Holmström E., Fransson Thomas., Carl Salk. **Forests** (2017).
17. Kwaaitaal, Mark; Nielsen, Mads; **Böhlenius, Henrik**; Thordal-Christensen, Hans* The plant membrane surrounding powdery mildew haustoria shares properties with the endoplasmic reticulum membrane. **Journal of experimental botany** (2017).
18. Ding, Jihua; **Böhlenius, Henrik**; Rühl, Mark; Chen, Peng; Sane, Shashank; Zambrano, Jose ; Zheng, Bo; Eriksson, Maria; Nilsson, Ove. GIGANTEA-like genes Control Seasonal Growth Cessation in *Populus* **New Phytologist** 2018

3. External funding.

2017 Received grants as **Main applicant**. Selection method of poplar clones for planting on forest land. Partnerskap Alnarp, 160 000 SEK + additional 160 000 SEK funded by stakeholder member (Skogforsk) within partnerskap Alnarp.

2016 Received grants as **Main applicant**. Improved regeneration methods and seedling material for establishment of poplars on Swedish forest land. Partnerskap Alnarp, 150 000 SEK + additional 150 000 SEK funded by stakeholder member within partnerskap Alnarp.

2015 Received grants as active **co-applicant** taking the lead and responsibility for developing initial idea, contact with stakeholders, design of experiment and final completion of application. Förbättrat plantmaterial och skogsskötselmetoder för etablering av poppel på svensk skogsmark (Improved plantmaterial and methods for establishment of poplar on Swedish forest land). Energimyndigheten. **1 700 000 SEK**. (Main applicant Urban Nilsson)

2013 Received grants as active **co-applicant** taking the lead and responsibility for developing initial idea, contact with stakeholders, design of experiment and final completion of application. Natural defence mechanisms against browsin for sustainable biomass production of poplar. (Naturliga försvarsmekanismer mot betning) Swedish Energy Agency (Energimyndigheten) 3 800 000 SEK. (Main applicant Jens Peter Skovsgaard)

2013 Received grants as **Main applicant**. Identification of browsing tendency of poplar species. Funding from trees and crops for the future (TC4F) 950 000.

2011 Received grants as active **co-applicant** taking the lead and responsibility for the fast growing tree species part of the experiments. More and better biomass from fast growing tree species on forest land (Mer och bättre biobränsle med snabbväxande lövträd på svensk skogsmark), Swedish Energy Agency (Energimyndigheten) 4 080 000 SEK. (Main applicant Urban Nilsson)

2011 Received grants as **Main applicant**. Regeneration and high quality biomass production of poplars on forest land. Funding from trees and crops for the future (TC4F). 1070000 SEK.

2010 Received grants as active **co-applicant** of a large funding "Resistance without defence" were my part were 1 700 000 DK. (Main applicant Hans Thordahl-Christensen).

5. Other scientific achievements and patents.

5.1 Work as referee for peer reviewed journals.

I am regularly contacted by international journals within the forest research area (Journal of forest research and Scandinavian journal of forest research) to act as a referee on submitted manuscripts.

5.2 Patents and patent applications

My scientific work has resulted in one approved patent (Modulation of flowering time and growth cessation in hardwood trees) and one patent application medicine transport across cellular membranes (not approved).

5.3 Board member and election committees.

2018-member of the steering committee at for Southern Swedish Forest Research Centre

2015- Member of election committee for National Poplar Commission of Sweden.

6. Teacher training at SLU; equivalent numbers of week education in parenthesis.

2016 Supervisor course (3 weeks).

2015 Research connected teaching –how and why? Forskningsanknuten undervisning - hur och varför (1 week).

2005 Pedagogic basic course (9 weeks).

7. Pedagogic qualifications, teaching at post-graduate education, course leader are shown in brackets

7.1 Teaching responsibilities in basic (post-graduate) education.

2016- Teaching at “Sverige resan” study trip for forest master education (Per-Magnus Ekö).

2015- Teaching for lantmästar “Introduktion till skogsbruk” in Växtproduktionens teknik och arbetsmiljö samt introduktion till skogsbruk. (Desiree Mattsson)

2015 Teaching at “Sverige resan” study trip for skogsmästare forest master education (Hans Högberg).

2012- Teaching every fall for master course sustainable forestry in southern Sweden. (Per-Magnus Ekö)

2013-15 Teaching at master course planning in sustainable forest management. (Per-Magnus Ekö 2013-2014 and Lars Drössler 2015)

2012, 2013 Teaching at “Sverige resan” study trip for forest master education. Outdoor teaching (Per-Magnus Ekö).

2003-2007. Teaching at laboratory exercise at the forest master education Cell biology (Ove Nilsson).

7.2 Teaching responsibilities in research education. Course leader in parenthesis

2016-2017 Developed the PhD course “Introduction to forest management research, basic data handling and statistical analysis”. This is a distance course that can be followed online in real time or viewed afterwards. (Henrik Böhlenius)

2015- Teaching at GCUA Graduate Summer School “The Future of Forests – Managing Forests for People” (Lars Drössler).

7.3 Production of teaching material and teaching aids.

I have produced teaching material and instructions in several areas. I developed the PhD course “Introduction to forest management research, basic data handling and statistical analysis”, exercise in scientific writing with focus on addressing and making comments to a scientific text and exercise experimental design. I have furthermore developed an

exercise in risk assessment for forester students.
5. Instruction for field measurements of experiments.

8. Scientific networks.

8.1. Swedish research networks and membership.

Member of the *National Poplar Commission of Sweden*,
http://www.npcsweden.se/index_eng.html. Organization that connects research and researchers to practical users interested in poplar plantation forestry.

Member of *Trees and crops for the future (TC4F)*, an interdisciplinary research initiative that creates new values and findings in the interface between different specialist areas. Participant since 2011.

Member of *Bio4energy (B4E)* a research environment that aims to create environmentally-sound bio refinery processes, new bio-based materials from forests or organic waste. Participant between 2011 and 2015.

9. Collaboration with stakeholders with in the forest sector.

I have continually good collaboration with the forest companies, **Bergvik AB, SCA, Holmen skog and skogssällskapet** that are hosting several of our experiments. One poplar clone trial on both forest and agricultural land are on co-financed by **Bergvik AB**. Moreover **Energy Poplars** (company in Denmark) financed establishment and transplant material of a clone test located in Halland. Collaboration with **SweTree Technologies** are important for my research were we together investigate usage of different fertilizers in plant nursery and under field conditions and usage of poplar material not available on the market.

9.1 Collaborators at university's outside my home department.

Sten Stymne SLU Alnarp (Oil in poplars), Stefan Jansson Umeå University (Phenology of transgenic poplars), Ola Wallberg LTH (Ethanol fermentation of poplar wood), Judith Felten, SLU Umeå (Mycorrhiza on poplars roots) and Håkan Asp SLU Alnarp (Changes in pH and poplars sensitivity to toxic soil compounds). Part of this collaboration was recently published (paper 14, Sup H4).

10. Supervision of MSc student thesis.

2015/2016. **Principal supervisor** of master student Thomas Fransson. "Production of poplar containerized plants" This thesis were awarded that highest grade and has been published in a peer-reviewed journal *Forests*.

2014/2015. **Principal supervisor** of master student Andreas Jönsson. Thesis title "Betesstorlekens påverkan på andelen skador orsakade av vilt i poppel bestånd"

2016. Co-supervisor of master student Elin Anander "Hybridaspens utveckling på skogsmark En studie av bestånd planterade efter stormen Gudrun"

2014-2015. Co-supervisor of master student Sandra Westerström "Klöviltets besöksfrekvens och betesmönster i *Populus* planteringar i södra Sverige" Ungulates occupation rate and browsing patterns in plantations with *Populus* in south Sweden"

2015. Co-supervisor of master student Veronika Engelmann. Why fast growing broadleaves? A study of forest owner's tree species choice after the storm Gudrun.

2011- 2003. Regularly Co-supervision of 4 master student's thesis during my post doc and PhD work.

11. Experience from communicating results to stakeholders

11.1 Publications in popular media

1. 2016- Article in tidningen skogen "Gallring skall ge svar" (Karin Bernle)
2. 2015- Article in tidningen skogen "Lyckas med odling på åker" (Karin Bernle)
3. 2014 Article in tidningen skogen "Klarar sig snabbväxarna norrut?" (Karin Bernle)
4. 2014- Two television news reports (TV4) about browsing on poplars. "Ett smörgåsbord av poppel" och "nu skall djuren fastna på bild".
5. 2012- Article in Hallandsposten "Skogsforskare tar genvägen i Våxtorp", (Fredrik Magnusson)
6. 2011- Article in skogsaktuellt "Marktäckning ökar tillväxten hos poppel", (Teresia Borgman).

11.2 Dissemination of results at relevant meetings, workshops and conferences.

2018 **Invited** speaker at Energimyndigheten "Biobränslen för ett hållbart energisystem" (audience; government agency, politicians, researchers and bioenergy companies).

2017. **Invited** speaker at Nordgen" Poplars as energy source- a good climate solution at nordgen Alnarp (audience; government agency, politicians from the Nordic countries).

2016. **Invited** speaker at Hushållningssällskapet "Poppel & Hybridasp och vill du veta mer!" at skogforsk research station Ekebo (audience; private land owners, government agency representatives, academics).

2016- 2012 **Invited** speaker at National Poplar Commission of Sweden yearly meeting (audience; private land owners, government agency representatives, academics).

2015. **Invited** speaker at IPS conference excursion in Våxtorp Sweden (audience; researchers).

2015. Active participant in Nordic forest production meeting Theme "mixed forestry" Halland Sweden (audience; researchers).

2014 Active participant in Enerwood nurse-tree tour/workshop, (audience; researchers).

2014. **Invited** speaker at The 8th IUFRO Conference on Vegetation Management vegetation management conference Halmstad, Sweden (audience; researchers).

2014. **Invited** speaker at the agroforestry workshop "Hur kan vi stärka lantbruksföretagens långsiktiga hållbarhet i vårt område?" Hushållningssällskapet at Rådde gård (audience; private land owners, government agency representatives, academics)

2014. Four consecutive talks about establishment, browsing of hybrid aspen and poplars at the broadleaves **excursion** Southern Swedish research center at Toftaholm (audience; private land owners, government agency representatives, academics, forest companies).

2013. Four consecutive talks about hybrid aspen and poplar production at forest sites at the exotic tree species **excursion** Southern Swedish research center at Asa research station (audience; private land owners, government agency representatives, academics, forest companies).

2013. Three consecutive talks about thinning of second generation poplar stands at **excursion** Southern Swedish research center at Snogeholm (audience; private land owners, government agency representatives, academics, forest companies).

2012. **Invited** speaker at NordGen Forest Conferences Odense, Denmark (audience; private land owners, government agency representatives, academics).

2012. **Organizing** a two day workshop concerning management of poplars, genetics, and available material (audience; private land owners, government agency representatives, academics, forest companies).

2011. Active participant and poster viewing at ESF Research Conference on Future role of bio-energy from tree biomass in Europe, Vienna, (audience; researchers).

2011 **Invited** speaker at poplar work shop Åhus, Denmark (audience; private land owners, government agency representatives).

2006-2008: **Invited** speaker of how a plant recognizes seasonal changes and their response and how this influences hardiness of garden plants (audience; mixture of public with different background).

2006. **Invited** speaker PhD meeting, Lycksele, Sweden 2006. Title; Regulation of flowering time in trees (audience; researchers).

2005. **Invited** speaker at IUFRO, Tree biotechnology 2005, Pretoria, South Africa. Title; Regulation of flowering time in trees (audience; researchers).

2004 **Invited** speaker at 18th International Conference on Plant Growth Substances, Canberra, Australia (audience; researchers). Title; Transcriptional regulation of the flower meristeam gene LEAFY (audience; researchers).

2003- 2007: Representative for Umeå Plant Science Center explaining about the research and techniques for visiting groups (audience; high school students).

12. Other information

12.1. Leave of absence

6 month parental leave January to June 2013 and 5 month July to November 2017.

12.2. Language and other skills.

I am bilingual in Swedish and proficient in English and Danish.