

17.11.2023

CURRICULUM VITAE

Full name and date

Surname: Pyhäjärvi

First names: Tanja Susanna

ORCID: 0000-0001-6958-5172

Date of CV: 10.11.2023

Degrees

- Title of docent: population genomics, University of Oulu, 1.4.2013
- Doctor of Philosophy, University of Oulu, Genetics, 22.5.2008 (Tel. +358 294 480 000)
- Master of Science, University of Oulu, 18.6.2003

Other education and training, qualifications and skills

- Pedagogical studies (60 ECTS), Oulu University of Applied Sciences, Vocational Teacher Education, 31.10.2011

Linguistic skills

- Mother tongue: Finnish
- Other languages: English (fluent), Swedish (elementary), Spanish (elementary)

Current employment

- Associate Professor, Tenure Track, University of Helsinki, Finland, 2.1.2021-31.12.2024, Research career phase: 3) Independent researcher

Previous work experience

- University of Oulu, Finland, Lecturer, 1.7.2018-1.1.2021 (leave of absence until 31.10.2020)
- Academy Research Fellow, University of Oulu, Finland, 1.11.2015-31.10.2020
- University of Oulu, Finland, Senior Research Fellow, 1.9.2012-31.10.2015
- University of California, Davis, USA, Post Doc, 1.9.2010-31.8.2012
- University of Oulu, Finland, Post Doc, 1.6.2008-30.4.2010
- University of Oulu, Finland, Early Stage Researcher, 1.6.2003-31.5.2008
- Uppsala University, Sweden, visiting scientist, 4 months/2006-2007
- University of Oulu, Finland, Research Assistant, 6 months/2001-2003
- University of Oulu, Finland, Intern, 2 months/2002
- University of Glasgow, UK, Erasmus exchange student and intern, 6 months/2002

Career breaks

- Maternity leave, 28.10.2014-11.9.2015
- Maternity leave, 13.11.2008-28.9.2009

Research funding and grants

- PI "Genetic determinants of embryo destiny in a polyembryonic seed – mortality, inbreeding depression and sibling rivalry in a pine nutshell", Academy of Finland, 2022-2026, (499 095 €)
- Senior Scientist and a Task Leader in Centre of Excellence in Tree Biology, funded by Academy of Finland (2022-2029)

- co-PI “Catching up with climate change by shortcuts in breeding; Joint Nordic efforts to prove the concept of Breeding Without Breeding (BWB)”, Nordic Forest Research (SNS), (35 549 €, 2022-2024)
- co-PI, “Jalostustieto: Ilmastohyötyjä metsänjalostuksella - avoin tietoaalusta metsänjalostuksesta ja hyötyjen viennistä käytäntöön ”, Finnish Ministry of Agriculture and Forestry, (68 000 €, 2021-2023)
- PI, “Efficient nuclei isolation protocols for analysing chromatin level regulation of phenotypic variation in perennial plants” Faculty of Agriculture and Forestry Proof-of-concept funding, University of Helsinki, (13 000 €, 2021)
- Partner PI, “FORGENIUS, Improving access to FOREst GENetic resources Information and services for end-Users”, European Union H2020, (123 888 €, Total funding 7 537 292 €, 2021-2025)
- Consortium leader, “FOREVER, Forest Tree Evolution Via Expression Regulation”, Academy of Finland R’Life programme, (198 724 €, Total funding 910 967 €, 2021-2024)
- Partner, “Genes4Change: Adaptation, mitigation and breeding of trees and crops for future climate” -network” Nordic Forest Research and Nordic Joint Committee for Agricultural and Food Research (~200 000 SEK), 2018-2019
- Co-operation partner “FutureGenes: Resilient future forests via genomics of adaptation to climate in natural forests and breeding populations”, in The Royal Swedish Academy of Agriculture and Forestry, Tandem Forest value project (2 000 000 SEK, 2018-2020)
- Partner PI and Task Leader “B4EST: Adaptive BREEDING for productive, sustainable and resilient FORESTS under climate change”, European Union H2020 (University of Oulu 192 650 €, Total funding 6 000 000 €, 2018-2021)
- Research team member “Genomic Selection: Towards more Efficient, Financially Viable and Resilient Wood Production”, Academy of Finland (318 810 € to Outi Savolainen, 2017-2020)
- Partner PI, Task Leader and species leader, “GenTree: Optimizing the management and sustainable use of forest genetic resources in Europe”, European Union H2020 project (199 000 € to Outi Savolainen, Total funding 7 986 748 €, 2016-2020)
- Group co-Leader “Genomic and statistical analysis of genotype-phenotype relationships”, Biocenter Oulu (385 000 €, 2016-2019)
- PI, “Evolutionary consequences of haploid selection in gymnosperms”, Academy of Finland Research Fellowship (855 249 €, 2015-2020)
- “Teosinten (*Zea mays* spp. *parviglumis*) populaatiogenomiikka – luonnonvalintaa lajitasolta genomien tasolle”. Academy of Finland postdoctoral grant, (97 560 €, 2010-2012)
- EVOLTREE Mobility Grant to visit Uppsala University from European Commission (~7000 €, 2007)

Research supervision and leadership experience

- Supervision of post-doctoral researchers Meiting Hou (2022-2023), Chedly Kastally, (2019-2023), Alina Niskanen (2020-2023), Dorota Paczesniak (2020, 2022), Jaana Vuosku (2020-2021), Dario I. Ojeda Alayon (2017-2018) and Sonja Kujala (2017)
- Officially appointed primary post-graduate supervisor of Eeva Vakkari and Jenni Sirén in the University of Helsinki; and Jaakko Tyrmi (graduated 2020), Sandra Cervantes and Robert Kesälahti in the University of Oulu
- Officially appointed secondary post-graduate supervisor of Juho Kontio, Olli Sarala, Tiina Mattila (graduated 2017), Marja Heikkinen (graduated 2017), Alina Niskanen (graduated 2014) and Tuomas Toivainen (graduated 2014) in the University of Oulu

- Officially appointed primary undergraduate supervisor of Ilona Kortelahti in the University of Helsinki; and Robert Kesälahti (graduated 2020), Sami Saarenpää (graduated 2022) and Iida Ronkainen (graduated 2022) in the University of Oulu
- Officially appointed secondary undergraduate supervisor of Santtu Urpilainen (graduated 2020), Emmi Aikio (graduated 2018), Annika Marjamäki (graduated 2014), Matti Salmela (graduated 2007) in the University of Oulu

Merits in teaching and pedagogical competence

- Pedagogical studies (60 ECTS), Oulu University of Applied Sciences, Vocational Teacher Education, 31.10.2011
- Test lecture for docenture in population genomics, University of Oulu, 7.2.2013, score: 5/5
- Major responsibility in designing teaching in the following undergraduate courses in the University of Helsinki: FOR-278 Forest Tree Breeding and Genetic Resources (5 ECTS), FOR-279 Forest Tree Genomics, Evolution and Adaptation (5 ECTS); and in the University of Oulu: DNA Analysis in Population Genetics (10 ECTS), Basics in Population Genetics (8 ECTS), Basics of Bioinformatics (3 ECTS), and Human Genetics (4 ECTS).
- Developing Forest tree breeding material and infographs for the Library of Open Educational Resources (Ministry of Education and Culture), <https://aoe.fi/#/materiaali/2909> and <https://aoe.fi/#/materiaali/2916>, (2023) in JALOTIE project.
- Supervision of 5 completed PhD theses
- Ongoing supervision of 6 PhD theses
- Member of Master's Degree Programme Board in Forest Sciences, University of Helsinki 2021-2022
- Member of 3 follow-up groups for doctoral training in University of Oulu and University of Helsinki

Other academic merits

- Member of the Managing Board of PCI Evolutionary Biology, 4.2.2021-
- Associate Editor, G3: Genes, Genomes, Genetics, Genetics Society of America, 14.5.2019-
- Recommender in Peer Community in Evolutionary Biology, 1.12.2018-
- Associate Editor, Evolutionary Applications, 1.1.2019-31.12.2019
- Expert panel member, Ecosystems and biodiversity on land, Swedish Research Council Formas, 2019
- External peer-reviewer and member of the pre-proposal evaluation panel for French National Research Agency (ANR), 2015-2016
- PhD thesis opponent, Xi Wang, Umeå University, Sweden, 2020
- Pre-examiner of PhD thesis of Aleksia Vaattovaara (2019) Kean-Jin Lim (2019), University of Helsinki 2017
- PhD committee member for Robert Horvath, Stockholm University, Sweden (2020), Aude Rogivue, Swiss Federal Institute of Technology Zurich (2018) and Agathe Hurel, INRA-Université de Bordeaux, (2017)
- Referee for the following journals: PNAS, Evolution, eLife, Scientific Reports, Molecular Biology and Evolution, Genetics, Genome Biology and Evolution, New Phytologist, Genome Biology, American Journal of Botany, Molecular Ecology, Heredity, Biology Letters, BMC Evolutionary Biology, PLoS ONE, G3: Genes | Genomes | Genetics, Evolutionary Applications, Tree Genetics &

Genomes, Theoretical and Applied Genetics, European Journal of Forest Research, Annales Botanici Fennici, Plant Communications, Molecular Ecology Resources, PCI Evolutionary Biology, Trees, Silva Fennica, Trees, Annals of Forest Science, Forestry, Tree Physiology

- Ranked 2nd among 21 applicants in recruitment committee proposal for a Tenure track position in Evolutionary genomics, University of Oulu, 22.1.2018
- Shortlisted for Tenure Track Professor position in Translational Plant Science, Genomics-based plant sciences and Plant Biology, University of Helsinki, (2020)
- A chair of Publication Forum (JUFO) Panel 6 (Biosciences I), The Federation of Finnish Learned Societies 2022-2025
- Main organizer of Workshop on Evolutionary, Developmental and Population Genetics, September 12-13, 2013, University of Oulu
- A vice chair of Publication Forum (JUFO) Panel 6 (Biosciences I), The Federation of Finnish Learned Societies 2018-2021
- A member of the Working group for open science and research, University of Oulu, 2018-2019
- Deputy student representative in Departmental Board of Biology, University of Oulu, ca. 2002

Invited presentations abroad:

- “Mystery of local adaptation in Scots pine”, International Congress of Genetics, 2023, Melbourne, Australia
- “Evolutionary genomic peculiarities of conifer reproductive system”, Online IDEEV Paris Saclay seminar, 2021, Université Paris-Saclay, France
- “Adaptive and purifying selection in *Pinus sylvestris* - a conifer with gigantic genome”, Webinar series at the Institute of Botany and Biodiversity Research, 2021, University of Vienna, Austria
- “Tree population genomics”, EEB/EEOB seminar series, 2019, Iowa State University
- “Natural selection in a giga-genome: In search of adaptive variation in Scots pine”, Department of Biological Sciences Seminar, 2019, North Dakota State University
- “All the flowers of tomorrow are in the seeds of yesterday”, Plant and Microbial Biology Colloquim Series, 2018, University of Minnesota
- “Introduction to coalescent theory and methods utilizing it”, GenTree Training course “From genotypes to phenotypes: assessing forest tree diversity in the wild”, 2018, Aleksandro Stulginskio Universitetas, Lithuania
- “The beginning of speciation? Gene flow, local adaptation and divergence among plant populations” Genomics of the speciation continuum, 2014 Fribourg, Switzerland
- “Population genetics of complex plant genomes - lessons from teosinte and maize” ProCoGen Training Workshop on Genome sequencing and gene discovery, 2013, Umeå University

Major domestic invited presentations

- “Genetic load revealed - purifying selection in conifer gametophytes”, 2023, Organismal and Evolutionary Biology Research Programme seminar, Helsinki, Finland
- Keynote speaker, “Genomics of conifer reproductive system peculiarities”, LUOVA symposium, 2020, University of Helsinki
- “Plant adaptation to extrinsic and intrinsic factors, genetic response to environmental and haploid selection pressures”, Ecology and Evolutionary biology seminar, 2017, University of Helsinki
- “How population history and phylogeography affect intraspecific genetic diversity? - Case of Scots pine (*Pinus sylvestris*)”, Seminars in Ecology and Evolution, 2009, University of Turku

- “What molecular diversity can tell us about the species' demographic history? - Scots pine during glacial periods as an example”, Weekly Research Seminar, 2008, University of Jyväskylä
- “Phylogeography of Scots pine – genetic approach”, PINE 4th Milestone meeting. 2005, Kevo Research Station

Scientific and societal impact of research

- Total number of publications: 50
- Google Scholar h-index: 22
- Member of Steering group of MEKA2.0, Natural Resources Institute Finland, 2023 -
- Presentation in the Faculty of Agriculture and Forestry Alumni Event “Metsänjalostus ja genomiikka”, 10.5.2023
- Invited presentation in Metsänhoitoklubi summer webinar, “Geenit metsäpuiden siementen ja taimien käyttöalueiden takana”, 14.6.2021
- Commentator in “Metsien kasvatusta muuttuvassa ilmastossa” webinar, Finnish Ministry of Agriculture and Forestry, 30.3.2021
- Panel member in Oulu Bioscience Networking Event, “Linking Nordic Biosciences – Over the Arctic”, Oulu, 3.11.2016
- Rapporteur in Millennium Talks workshop “Asking more from research”, Technology Academy Finland, Helsinki, Aalto University School of Business, 17.-18.5. 2017

Publications intended for the general public:

- Pyhäjärvi T (2019) How to genotype hundreds of trees in a blink of an eye? B4EST project blog 14.6.2019
- Pyhäjärvi T (2018) Puiden syksy inspiroi metsägeneetikkoa. <https://www oulu fi/blogs/science-with-arctic-attitude/metsagenetiikka>, 2.11.2018
- Pyhäjärvi T (2018) Untangling nature and nurture in forest trees. <http://www.gentree-h2020.eu>, 16.8.2018
- Pyhäjärvi T (2011) Kalifornian runsaudensarvi avautui. *Aktuumi*, 1/2011:31.
- Pyhäjärvi T (2007) Carl von Linné nimesi jumalanluomat. *Sanomalehti Kaleva*, 12.3.2007

Research covered in media

- Maaseudun tulevaisuus (2022) Maailman pisimmät puut kasvavat yli 100 metrin korkeuteen – mutta miksi Suomessa ei ole sellaisia? 15.8.2022
- Metsälehti (2018) Yhteistutkimus pureutuu metsien tuottoon ja terveyteen. 3.5.2018
- Verkkouutiset.fi (2018) Eurooppalaiset tutkijat yhteisvoimin parantamaan metsien terveyttä, 03.05.2018
- Interview in local Oulu Radio in Night of the Scientists Event, 29.9.2017
- Miettinen A (2016) Perimä kertoo männyn sopeutumiskyvystä. <http://www oulu fi/yliopisto/node/42972>, 28.10.2016
- Tekniikka & Talous (2012) Maissin perimästä paljastui huikea monimuotoisuus, 4.6.2012

Positions of trust in society and other societal merits

- Member of The National Advisory Board for Genetic Resources 1.4.2022-31.3.2027
- Member in Advisory board of forest tree breeding and seed production, Ministry of Agriculture and Forestry, 25.2.2020-31.12.2023
- Deputy member in Advisory board of forest tree breeding and seed production, Ministry of Agriculture and Forestry, 17.3.2016-31.12.2019