CURRICULUM VITAE
1/2024

PERSONAL DETAILS

Name	Tuomas Hämälä
Nationality	Finland
Email address	tuomas.hamala@luke.fi
Public profiles	Google Scholar, ResearchGate
ORCID iD	0000-0001-8306-3397
Webpage	thamala.github.io

EMPLOYMENT

1/2024 – present	Natural Resources Institute Finland (Luke), Finland **Senior scientist in plant genetics and genomics**
4/2022 – 12/2023	University of Nottingham, UK **Marie Skłodowska-Curie individual fellow** Supervisor: Levi Yant
9/2021 – 3/2022	University of Oulu, Finland **Academy of Finland postdoctoral fellow**
8/2018 – 7/2021	University of Minnesota Twin Cities, USA **Postdoctoral associate** Supervisor: Peter Tiffin

EDUCATION

1/2014 – 7/2018	University of Oulu, Finland **PhD** in population genetics Thesis title: “Ecological genomics in *Arabidopsis lyrata*: local adaptation, phenotypic differentiation, and reproductive isolation” Supervisor: Outi Savolainen
9/2011 – 12/2013	University of Oulu, Finland **MSc** in genetics
9/2008 – 5/2011	University of Oulu, Finland **BSc** in bioscience

PUBLICATIONS

*equal contribution, ✉corresponding author

13. **Hämälä T**✉, Moore C, Cowan L, Carlile M, Gopaulchan D, Brandrud MK, Birkeland S, Loose M, Kolář F, Koch MA & Yant L✉ (2023). Impact of whole-genome duplications on structural variant evolution in the plant genus *Cochlearia*. *bioRxiv* preprint: 2023/560073.

12. Bray SM, **Hämälä T**, Zhou M, Busoms S, Fischer S, Desjardins SD, Mandáková T, Moore C, Mathers TC, Cowan L, Monnahan P, Koch J, Wolf EM, Lysak MA, Kolář F, Higgins JD, Koch MA & Yant L✉ (2023). Kinetochore and ionomic adaptation to whole genome duplication. *bioRxiv* preprint: 2023/559727.

11. Epstein B, Burghardt L, Heath K, Grillo M, Kostanecki A, **Hämälä T**, Young N & Tiffin P✉ (2023). Combining GWAS and population genomic analyses to characterize coevolution in a legume-rhizobia symbiosis. *Molecular Ecology* 23: 3798-3811.

10. **Hämälä T**✉, Ning W, Kuittinen H, Aryamanesh N* & Savolainen O* (2022). Environmental response in gene expression and DNA methylation reveals factors influencing the adaptive potential of *Arabidopsis lyrata*. *eLife* 11:e83115.

9. **Hämälä T***,✉, Wafula EK*, Guiltinan MJ, Ralph PE, dePamphilis CW & Tiffin P✉ (2021). Genomic structural variants constrain and facilitate adaptation in natural populations of *Theobroma cacao*, the chocolate tree. *PNAS* 118: e2102914118.

8. Takou M, **Hämälä T**, Koch E, Steige KA, Dittberner H, Yant L, Genete M, Sunyaev S, Castric V, Vekemans X, Savolainen O & de Meaux J✉ (2021). Maintenance of adaptive dynamics and no detectable load in a range-edge out-crossing plant population. *Molecular Biology and Evolution* 38: 1820–1836.

7. **Hämälä T**✉ & Tiffin P (2020). Biased gene conversion constrains adaptation in *Arabidopsis thaliana*. *Genetics* 215: 831–846.

6. **Hämälä T***,✉, Gorton AJ*, Moeller AD & Tiffin P✉ (2020). Pleiotropy facilitates local adaptation to distant optima in common ragweed (*Ambrosia artemisiifolia*). *PLOS Genetics* 16: e1008707.

5. **Hämälä T**✉, Guiltinan MG, Marden JH, Maximova S, dePamphilis C & Tiffin P✉ (2020). Gene expression modularity reveals footprints of polygenic adaptation in *Theobroma cacao*. *Molecular Biology and Evolution* 1: 110–123.

4. **Hämälä T**✉ & Savolainen O✉ (2019). Genomic patterns of local adaptation under gene flow in *Arabidopsis lyrata*. *Molecular Biology and Evolution* 36: 2557–2571.

3. Mattila TM*, Laenen B*, Horvath R, **Hämälä T**, Savolainen O & Slotte T✉ (2019). Impact of demography on linked selection in two outcrossing Brassicaceae species. *Ecology and Evolution* 9: 9532-9545.

2. **Hämälä T**✉, Mattila TM & Savolainen O (2018). Local adaptation and ecological differentiation under selection, migration, and drift in *Arabidopsis lyrata*. *Evolution* 72: 1373–1386.

1. **Hämälä T**✉, Mattila TM, Leinonen PH, Kuittinen H & Savolainen O (2017). Role of seed germination in adaptation and reproductive isolation in *Arabidopsis lyrata*. *Molecular Ecology* 26: 3484–3496.

FUNDING

2021 European Commission, Marie Skłodowska-Curie individual fellowship, 213 000€

2021 Academy of Finland, postdoctoral fellowship, 330 000€

2019 MPGI, travel grant, $800

2018 Emil Aaltonen foundation, travel grant, 3000€

2018 SMBE, young investigator travel award, $2000

2017 Emil Aaltonen foundation, research fellowship, 13 350€

2017 UniOGS, travel grant, 1500€

2015 PGDP, travel grant, 500€

SKILLS AND EXPERTISE

Population genetics, ecology, and genomics: local adaptation, polygenic adaptation, structural variants, genome evolution, speciation

Bioinformatics: > 10 years of experience with high-performance computing and next-generation sequence analysis; familiar with both model (whole-genome, transcriptome, long-reads, assemblies) and non-model (transcriptome, RAD-Seq) organism; extensive experience with individual-based simulations (coalescent and forward-in-time); fluent in programming language C

Statistics: fluent in R; regression analysis (e.g., linear mixed models, model selection); machine-learning (e.g., random forest, neural networks); data visualization

Field and laboratory experiments: designed and maintained large-scale reciprocal transplant, common garden, and growth-room experiments

TEACHING AND MENTORING EXPERIENCE

2023 MSc thesis supervision
Xiuzhiping Quan (bioinformatics major)

2022 MSc thesis co-supervision
Ana Da Silva, Matthew Gaskins (bioinformatics majors)

2015 – 2016 MSc thesis supervision
Margarita Takou (ecology and population genetics major)

2013 – 2016 Practical trainee supervision
Petri Vänni, Weixuan Ning, Elina Haataja, Margarita Takou, Rami-Petteri Apuli, Paul DuBray, Toni Jenfors

2015 Co-instructor
Graduate-level workshop on population genomics, 6 h

2014 Teaching assistant
Basics in genetics, 15 h

PRESENTATIONS

Invited departmental seminars and conference talks

8/2023	Department of Ecology & Evolution, University of Sussex, UK
5/2023	Department of Evolution, Ecology & Behaviour, University of Liverpool, UK
3/2023	Milner Centre for Evolution, University of Bath, UK
11/2021	Agricultural Genomics Institute at Shenzhen, online
11/2020	Department of Ecology & Genetics, University of Oulu, online
1/2020	PAG conference, San Diego, California

Contributed conference talks and posters

7/2023	Oral, SMBE, Ferrara, Italy
8/2022	Oral, ESEB, Prague, Czech Republic
1/2022	Oral, PopGroup, online
8/2019	Poster, ESEB, Turku, Finland
8/2018	Oral, Midwest PopGen meeting, Saint Paul, Minnesota
7/2018	Poster, SMBE, Yokohama, Japan
2/2018	Oral, Arabis symposium, Cologne, Germany
7/2017	Oral, SMBE, Austin, Texas
8/2015	Poster, ESEB, Lausanne, Switzerland

REFERENCES

Levi Yant (postdoctoral supervisor)
Professor at University of Nottingham, UK, levi.yant@nottingham.ac.uk

Peter Tiffin (postdoctoral supervisor)
Professor at University of Minnesota Twin Cities, USA, ptiffin@umn.edu

Outi Savolainen (PhD supervisor)
Emerita professor at University of Oulu, Finland, outi.savolainen@oulu.fi

OTHER

Journal referee
Annals of Botany, eLife, Evolution, Evolution Letters, Evolutionary Applications, Evolutionary Ecology, Frontiers in Plant Science, G3: Genes | Genomes | Genetics, Journal of Heredity, Molecular Biology and Evolution, Molecular Ecology, Molecular Ecology Resources, Molecular Plant, New Phytologist, The Plant Cell, PLOS Genetics, PNAS

Programs and scripts written for NGS data analysis: GitHub