

## CURRICULUM VITAE

3/2021

### PERSONAL DETAILS

Name	Tuomas Hämälä
Nationality	Finland
Language	Finnish (native), English (fluent)
Email address	tuomas.hamala@gmail.com
Public profiles	<a href="#">Google Scholar</a> , <a href="#">ResearchGate</a>
ORCID iD	<a href="#">0000-0001-8306-3397</a>

### CURRENT POSITION

8/2018 – present	University of Minnesota Twin Cities, USA <b>Postdoctoral associate</b> at the lab of Peter Tiffin
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### EDUCATION

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

### PUBLICATIONS

\*Corresponding author, †Equal contribution

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\* (2020). Maintenance of adaptive dynamics and no detectable load in a range-edge out-crossing plant population. *Molecular Biology and Evolution* (in press).
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<sup>†</sup>, Laenen B<sup>†</sup>, 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.

## GRANTS, FELLOWSHIPS AND AWARDS

2021 – 2023	European Commission, Marie Skłodowska-Curie fellowship (225,000€)
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	Population genetics doctoral program, travel grant (500€)
2014 – 2017	Biocenter Oulu, doctoral studies (125,000€)

## SKILLS AND EXPERTISE

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

Bioinformatics: >7 years of experience with high-performance computing and next-generation sequence analysis; familiar with both model (whole-genome and transcriptome) and non-model (transcriptome and RAD-Seq) organism; extensive experience with individual-based simulations (coalescent and forward-in-time); fluent in programming language C

Statistics: proficient 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

2015 – 2016	Master's thesis supervision Margarita Takou, ecology and population genetics
2013 – 2016	Practical trainee supervision Petri Vänni, Weixuan Ning, Elina Haataja, Margarita Takou, Rami-Petteri Apuli, Paul DuBray, Toni Jenfors
2014	Teaching assistant Basics in genetics, 15 h

## SELECTED PRESENTATIONS

- 11/2020      Invited talk, University of Oulu, Finland  
What can the genetic and genomic architecture of adaptation tell about evolution?
- 1/2020      Oral presentation, PAG, San Diego, California  
Gene expression modularity reveals footprints of polygenic adaptation in *Theobroma cacao*
- 8/2019      Poster presentation, ESEB, Turku, Finland  
Gene expression modularity reveals footprints of polygenic adaptation in *Theobroma cacao*
- 8/2018      Oral presentation, Midwest PopGen meeting, Saint Paul, Minnesota  
Local adaptation under gene flow: Recombination, conditional neutrality and genetic trade-off shape genomic patterns in *Arabidopsis lyrata*
- 7/2018      Poster presentation, SBE, Yokohama, Japan  
Local adaptation under gene flow: Recombination, conditional neutrality and genetic trade-off shape genomic patterns in *Arabidopsis lyrata*
- 2/2018      Oral presentation, Arabis symposium, Cologne, Germany  
Genomic patterns of local adaptation under gene flow in *Arabidopsis lyrata*
- 7/2017      Oral presentation, SBE, Austin, Texas  
Transcriptomics and epigenetics in locally adapted *Arabidopsis lyrata*
- 8/2015      Poster presentation, ESEB, Lausanne, Switzerland  
Effects of genetic divergence on hybrid germination between subspecies of *Arabidopsis lyrata*

## REFERENCES

- Peter Tiffin (postdoctoral supervisor)  
Professor at University of Minnesota Twin Cities, USA, [ptiffin@umn.edu](mailto:ptiffin@umn.edu)
- Outi Savolainen (PhD supervisor)  
Emerita professor at University of Oulu, Finland, [outi.savolainen@oulu.fi](mailto:outi.savolainen@oulu.fi)

## OTHER

- Journal referee ([Publons](#)):  
eLife, Evolution, Evolutionary Applications, Evolutionary Ecology, Frontiers in Plant Science, G3: Genes | Genomes | Genetics, Molecular Biology and Evolution, Molecular Ecology, New Phytologist, PNAS
- Programs and scripts written for NGS-data analysis: [Github](#)