



Doctoral student, Aykanat

Doctoral student position in salmon ecology and evolution

A Doctoral student position, is available at the University of Helsinki, Finland, to work in Academy Research Fellow Tutku Aykanat's research group. The position is a part of a 5-year Academy of Finland funded project, and aims to understand the processes shaping Atlantic salmon demography in the wild.

Atlantic salmon is a great organism to study gene-phenotype-fitness relationship in the wild. The presence of substantial material from past research and monitoring efforts, and a simple 2-locus system broadly controls important life history variation (see refs below) allow for an integrated framework to track adaptive genetic variation in Atlantic salmon in the wild.

Using multigenerational, multi population datasets composed of genetic and phenotypic information, the PhD student will employ age structured population models and whole food web approaches to understand the evolutionary processes and ecological constraints shaping Atlantic salmon life history variation and demography.

Professor Anna Kuparinen from the University of Jyväskylä will co-supervise the PhD student. The student is expected to visit Kuparinen's group at the University of Jyväskylä up to 12 months to master dynamic food web modelling and apply it on Atlantic salmon.

The ideal candidate should demonstrate strong mathematical / statistical understanding, experience in a statistical computing software such as R, JAGS, or matlab, and interests in ecology and evolution, and familiarity with quantitative genetics.

The appointee should either already have the right to pursue a doctoral degree at the University of Helsinki by the start of the appointment, or apply for the right and obtain it within the probationary period of six months of their appointment. If the candidate does not already have the right to pursue a doctoral degree at the University of Helsinki, it must be applied for separately. (www.helsinki.fi/en/research/doctoral-education/the-application-process-i...).

Funding is for 3 year 8 months for the four-year project. Funding for the remaining four months is uncertain due to covid-19 related complications, but good opportunities exists to fill this gap. The starting date is January 2020.

The salary will be based on level 2 of the demands level chart for teaching and research personnel in the salary system of Finnish universities. In addition, the appointee will be paid a salary component based on personal performance with the overall starting salary amount being about 2240 EUR per month, before taxes.



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Your application should include (in a one pdf-file) a motivation letter with a summary of your interests, your CV, and two letters of reference.

Please submit your application, together with the required attachments, using the online application form using the University of Helsinki electronic recruitment system by clicking on Apply for the position. The deadline for applications is 2 August 2020.

Informal inquiries should be directed to Tutku Aykanat ([tutku.aykanat\(at\)helsinki.fi](mailto:tutku.aykanat@helsinki.fi)).

Finland is a member of the EU, has high quality free schooling (also in English), generous family benefits and healthcare, and was recently ranked as the happiest country in the world. The University of Helsinki is a top 100 ranked university in most ranking lists, and is currently investing heavily in life sciences research (see <https://www.helsinki.fi/en/helsinki-institute-of-life-science>).

Relevant research:

Barson NJ*, Aykanat T*, Hindar K, Baranski M, Bolstad GH, et. al (2015) Sex-dependent dominance at a single locus maintains variation in age at maturity in salmon. *Nature*, 528, 405-408 (*: equal contribution).

Kuparinen A, Hutchings J (2017) Genetic architecture of age at maturity can generate divergent and disruptive harvest-induced evolution. *Philosophical Transactions of the Royal Society B* 372: 20160035.

Czorlich Y, Aykanat T, Erkinaro J, Orell P & Primmer CR (2018) Rapid sex-specific evolution of age at maturity is shaped by genetic architecture in Atlantic salmon. *Nature Ecology and Evolution*, 2, 1800-1807.

Kuparinen A, Perälä T, Martinez NDM, Valdovinos FS (2019) Environmentally-induced noise dampens and reddens with increasing trophic level in a complex food web. *Oikos* 128:608-620.

Aykanat T, Rasmussen M, Ozerov M, Niemelä E, Paulin L, et. al. (2020) Life history genomic regions explain differences in Atlantic salmon marine diet specialization. *bioRxiv* doi: <https://doi.org/10.1101/754440>