

Master's project in host-pathogen interactions, Fall 2014:

Contributions of environment and genetics to infection risk within wild plant populations

Environmental factors and host-pathogen genetics can jointly determine the distribution of disease within wild populations. But what is the relative importance of spatial variation in environmental conditions vs. host and pathogen genotypes? We are addressing this question using *Plantago lanceolata* host plants and their powdery mildew (härmä) pathogen. This summer, hosts of known genetic background ('traps') will be placed into naturally infected populations in the Åland islands, and we will compare their infection risk to that of nearby wild plants. At the end of summer, we will collect seeds and mildew from the traps and the surrounding wild plants. This Master's project involves growing plants from seeds of wild and trap plants and experimentally inoculating them with field-collected mildew. The aim is to test if wild and trap plants differ in their susceptibility to field-collected mildew strains under controlled conditions. The results of this experiment will shed light on the processes governing the arrival and establishment of pathogens within wild populations.

- Supervisor: Dr. Rachel Penczykowski (postdoctoral researcher in Dr. Anna-Liisa Laine's group)
- Location: Viikki campus, University of Helsinki
- Start date: week of **15.9.2014**, or as negotiated
- Responsibilities: ≈10% greenhouse, 90% laboratory work
- Time commitment: There will be many partial work days, especially in September-October when planting seeds and purifying mildew isolates. Expect some full work days during the inoculation experiment, likely in November.
- Salary: Paid for 2 months of lab training



Requirements:

- Strong spoken and written English
- Commitment to completing thesis within a timeframe agreed upon with the supervisor



To apply, please email the following to Rachel Penczykowski <rachel.penczykowski@helsinki.fi> by **Monday, 2.6.2014**:

- Letter of intent (Why are you interested in this project?)
- CV and current transcript (ote opintosuoritusrekisteristä)
- Names and contact information of 2 references, if possible