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## Genomics of experimental selection for parasitoid resistance in *Drosophila*

Jalvingh, Kirsten Marjorie

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Propositions accompanying the PhD thesis:

## **Genomics of experimental selection for parasitoid resistance in *Drosophila***

Kirsten Jalvingh

1. In populations with a high level of recombination, strong selection results in highly localized genome changes. (*This thesis, Chapter 4*)
2. The main advantage of select & re-sequence approaches is their ability to gain power from a high level of natural variation, rather than to be hampered by it.
3. Experimental selection for increased parasitoid resistance in *Drosophila melanogaster* does not modulate the induced cellular immune response, but rather the density and differentiation of hemocytes in the absence of a triggered immune response. (*This thesis, Chapter 2*)
4. The evolution of higher densities of specific hemocyte types at the onset of parasitism implies that it is the initial response to parasitoid infection that is crucial in determining the success or failure of the immune response. (*This thesis, Chapter 2 & 6*)
5. Selection on parasitoid resistance targeted the development of the immune system, rather than the inducible defenses. Therefore, developmental genes that influence cell differentiation and proliferation are of particular interest in studies of parasitoid resistance in *Drosophila*. (*This thesis, Chapter 2, 5 & 6*)
6. Gene variants enabling a successful immune response do not act deterministically, but rather increase the probability of complete encapsulation and subsequent survival of the host. (*contra Carton & Nappi, 2001, Immunogenetics 52: 157-164*)
7. To assert adaptive explanations in whole-genome sequencing studies requires associating fitness consequences to genomic variants.
8. It is easier to resist at the beginning than at the end.  
*Leonardo da Vinci*
9. It's annotated genes we recall. We really don't know *Drosophila's* genes at all.  
*After Joni Mitchell*
10. There's no limit to how complicated things can get, on account of one thing always leading to another.  
*EB White*
11. Life is what happens while you're not busy making selection plans.  
*After John Lennon*