

# PhD Gene-environment interactions in *Caenorhabditis elegans*

## Job description

Environmental variation is an important driver of evolution. Gene-environment interactions are at the heart of this selection process affecting traits in numerous organisms. Goal of the project is to identify gene-environment interactions underlying complex traits in the soil nematode *Caenorhabditis elegans*. The characterization of genes will be performed in natural as well as laboratory populations using quantitative genetic and genetical approaches. The PhD candidate will investigate the genetic variation of gene expression (genetical genomics) in laboratory strains of *C. elegans* exposed to different environmental conditions. Natural field populations of *C. elegans* will be assessed for comparative gene expression in response to selected soil parameters. Traits to be studied can be body size, feeding behaviour and mobility in response to anoxia, temperature, pH and toxic stressors. Recent papers of our group include:

Kammenga JE, Doroszuk A, Riksen JAG, Hazendonk E, Spiridon L, Petrescu AJ, Tijsterman M, Plasterk RHA, Bakker J (2007) A *C. elegans* wild-type defies the temperature-size rule owing to a single nucleotide polymorphism in *tra-3*. *PLoS Genetics* 3: 358-366.

Kammenga JE, Herman M, Ouborg NJ, Johnson L, Breitling R (2007) Microarray challenges in ecology. *Trends Ecol. Evol.* 22: 273-279.

Li Y, Alvarez OA, Gutteling EW, Tijsterman M, Fu J, Riksen JAG, Hazendonk E, Prins P, Plasterk RHA, Jansen RC, Breitling R, Kammenga JE (2006) Mapping determinants of gene expression plasticity by genetical genomics in *C. elegans*. *PLoS Genetics* 2: e222.

Gutteling EW, Riksen JAG, Bakker J, Kammenga JE (2007) Mapping phenotypic plasticity and genotype-environment interactions affecting life history traits in *Caenorhabditis elegans*, *Heredity*, 98: 28-37.

Gutteling EW, Doroszuk A, Riksen JAG, Prokop Z, Reszka J, Kammenga JE (2007) Environmental influence on the genetic correlations between life-history traits in *Caenorhabditis elegans*. *Heredity*, 98: 206-213.

## Requirements

- MSc degree in Biology, genetical and/or evolutionary sciences or comparable education
- experience in genetic mapping and knowledge of bioinformatics is preferred
- good writing (English) and communication skills
- accurate, systematic worker

## Organization

Wageningen University and Researchcentre, Laboratory of Nematology

## Conditions of employment

Estimated maximum salary per month: eur 2000 - 2500

Employment basis: Temporary for specified period

Duration of the contract: 1-4 years

Maximum hours per week: 38

Temporary contract for 1 year. After a positive evaluation of this first year an extension of 3 years will be given. Salary from € 1933,- in the first year to € 2472,- in the fourth year, per month, based on full time employment.

## Additional information about the vacancy can be obtained from:

Dr. Jan E. Kammenga, Laboratory of Nematology, Wageningen University, Binnenhaven 5, 6709 PD, Wageningen, The Netherlands, Tel: +31 317 482998/482197, Fax: +31 317 484254, email: Jan.Kammenga@wur.nl

No rights can be obtained from this notification.