Ph.D. position in Amsterdam

Computational modelling of Diabetes type 2 from the cell-biological scale to the socio-economic scale

Applications are invited for a mathematical/computational modelling position to work within the Health Systems Complexity team at the Institute of Advanced Study in the University of Amsterdam. The team is an interdisciplinary group of researchers devoted to the use of mathematical and computational methods to understand biomedical and health related processes.

Background

There is a growing consensus among public health researchers that the complexities underlying population health and its distribution cannot be unraveled by traditional methods; a shift in research paradigm to systems thinking is imperative to move this field forward. Complex systems approaches will be essential for understanding population health and health inequalities. The expertise in this field is still limited, however. To build this expertise we take up the challenge of applying systems thinking to type 2 diabetes (T2D). T2D is inherently a result of multiple processes acting at multiple scales, from cell-biological (nutrition and immune response) to population level (socio-economic status and public health policy). The link between these factors and T2D is complex, involving multifaceted, dynamic causal pathways. A systems approach that encompasses the complexity of these pathways can support public health policy and practice in effectively tackling health inequalities.

Goal

This computational modelling Ph.D. will collaborate closely with a second Ph.D. position focused on public health and qualitative data gathering. The goal of this Ph.D. position is to use computational modelling and simulation, complex systems analyses techniques, data analysis, and applied mathematical analysis to:

1. analyze the causal pathways that link the relevant factors across scales to T2D, based on an interdisciplinary approach that includes immunology, epidemiology and ethnographic studies;
2. identify leverage points within the system that have the potential to reduce socio-economic inequalities in health.
Skills

The ideal candidate for this position will have a master or equivalent degree in physics, computational science, bioinformatics, or a related field such as mathematics or engineering. Candidates should have a solid foundation in computer programming, mathematical modeling and data analysis. The candidate should have good demonstrated programming skills in C/C++ language and at least one scripting language (e.g. Perl or Python). Knowledge of programming environments (e.g., R, Mathematica or Mathlab) and experience in modelling biological phenomena are a plus.

In addition, the candidate should possess strong multi-tasking capabilities and thrive in a multi-disciplinary research environment. Strong interpersonal and communication skills are essential as is the ability to work as part of a team as the candidate will interact with computational scientists, biologists as well as public health experts.

Additional Information

This is a full-time position, in Amsterdam (The Netherlands). Informal enquiries can be addressed to Prof. Peter Sloot (p.m.a.sloot@uva.nl)
The selection procedure will include a (video) interview to get into the short list.

How to Apply:

Send an email to ias@uva.nl containing your CV and a cover letter with motivations. Please be prepared to provide two letters of references.

Closing Date: September 1st 2018.

The University of Amsterdam is committed to equal opportunities and welcomes applications worldwide.

Useful links:
IAS ias.uva.nl
UvA http://www.uva.nl