

NIAID unveils new research project

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U.S. government scientists have unveiled a project aimed at better understanding interactions between infectious organisms and human or animal cells.

Researchers at the National Institute of Allergy and Infectious Diseases want to increase scientific knowledge concerning the complex biochemical networks that regulate such interactions. The Program in Systems Immunology and Infectious Disease Modeling will involve computational systems biology to focus on how pathogens cause disease and how the immune system responds to them.

The cornerstone of the project is said to be a software package called Simmune, which enables biologists to model many types of biological systems. Created by NIAID scientist Martin Meier-Schellersheim and colleagues, the software allows scientists to use a simple graphical interface to easily define the interactions between individual molecules in a large network, or the behaviors of cells in response to external signals.

Before Simmune, making such mathematical models by hand often took months and required extensive expertise in applied mathematics.

"Understanding the daunting complexity of biological systems is the greatest challenge and at the cutting-edge of science in the 21st century," said National Institutes of Health Director Elias Zerhouni.

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