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# Web watch

## HOW TO BUILD A BIOLOGICAL MODEL

- http://vcell.org/index.html

The National Resource for Cell Analysis and Modeling (NRCAM) has developed a unique software modelling environment, the Virtual Cell, for quantitative cell biological research.

The Virtual Cell has been designed as a tool for scientists from diverse fields — from cell biologists to theoretical biophysicists. Likewise, the creation of models can range from simple ones to evaluate hypotheses or to interpret experimental data, to complex multilayered models that can probe the predicted behaviour of intricate, highly non-linear systems. Such models can be based on both experimental data and purely theoretical assumptions.

The user can build complex models with freely available Java software. The Virtual Cell automatically converts the biological description into mathematical equations. A single graphical interface includes biological and mathematical frameworks. The mathematics-savvy user can directly specify the complete mathematical description of the model and bypass the schematic interface. The Virtual Cell then solves the equations by generating the appropriate software code to perform and analyse simulations. The biologist-friendly user interface allows experimentalists to create models, define cellular geometry, specify simulations and analyse the simulation results. The results can be reviewed online and exported in various popular formats.

All published models are available in the Virtual Cell Database and could serve as platforms for the construction of more refined models. Models can also be updated as relevant experimental data continues to emerge.

For a more hands-on approach to learning how to develop a Virtual Cell model, experimentalists and theorists alike can attend a short course in June 2007 at the University of Connecticut Health Center, USA.

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