



# Exploring the Performative Potential of Models and Computer Simulations

## A NEW FORM OF EXPERIMENT?

October 18–19, 2005 Workshop  
Riggs Room, Linde Activities Center  
Harvey Mudd College, Claremont, Calif.

Models and computer simulations have become an integral part of modern science. In recent years, philosophers, sociologists and historians of science have emphasized that models and simulations mediate between theoretical investigation and experimental practice in interesting ways. The workshop will give a twist to this view by focusing on the performative potential of models and simulations. Based on simulation, computer experiments are employed to substitute, displace, precede or parallel “traditional” experiments. Simulations allow scientists to vary parameter settings and produce different data sets very like what happens in a “real” experiment. In addition, models of different kinds provide interesting playgrounds to explore theoretical structures. The aim of the workshop is to explore the similarities as well as the differences in methodological, epistemological and social aspects regarding the scientific practice of modeling and simulation and experimental practice. The workshop will bring epistemological and social insights regarding the scientific practice of modeling from various scientific disciplines.

### TUESDAY, OCTOBER 18

- 9:00 A.M.–9:30 A.M.  
WELCOME AND INTRODUCTION  
Andrea LOETTIGERS and Martina MERZ
- 9:30 A.M.–10:30 A.M.  
SIMULATIONS AND EXPERIMENTS: QUESTIONS OF VALIDATION  
Eric WINSBERG, Professor of Philosophy, University of South Florida, Tampa, Fla.
- 11:00 A.M.–12:00 P.M.  
THE DIVERSITY-STABILITY DEBATE: MODELS, MORALITY AND METHODOLOGY  
Jay OLDENBAUGH, Professor of Philosophy, Lewis and Clark College, Portland, Ore.
- 12:00 P.M.–1:00 P.M.  
LIZARDS, RACETRACKS AND RAINFALL: TWO EXAMPLES OF MODELING USING RANDOMLY SAMPLED DATA  
Stephen ADOLPH, Professor of Biology, Harvey Mudd College, Claremont, Calif.
- Lunch
- 2:30 P.M.–3:30 P.M.  
LIVING EXTREMELY FLAT: THE LIFE OF AUTOMATON—  
JOHN VON NEUMANN’S CONCEPTION OF SIMULATING LIFE  
Giora HON, Professor of Philosophy and History of Science, University of Haifa, Israel
- 3:30 P.M.–4:30 P.M.  
SYNTHETIC MODELS: THE FORMATION OF HYBRIDS  
Andrea LOETTIGERS, Hixon-Riggs Professor of Science, Technology and Society, Harvey Mudd College, Claremont, Calif.
- 5:00 P.M.–6:00 P.M.  
ON THE EPISTEMIC LIMITATIONS OF COMPUTER EXPERIMENTS  
Wendy PARKER, UC San Diego, San Diego, Calif.

### WEDNESDAY, OCTOBER 19

- 9:00 A.M.–10:00 A.M.  
THE PERFORMATIVE IDIOM OF COMPUTER SIMULATIONS  
Martina MERZ, University of Lausanne & EMPA St.Gallen, Switzerland
- 10:30 A.M.–11:30 A.M.  
INTERACTIONS BETWEEN MODELS AND MATHEMATICS:  
TWO-PERSONS ZERO-SUM GAMES AND LINEAR PROGRAMMING  
Tinne HOFF KJELDEN, Professor of History of Mathematics, Roskilde University, Denmark
- 11:30 A.M.–12:30 P.M.  
TWO-SIDED MATCHING MARKETS  
Frederico ECHENIQUE, Professor of Economics, California Institute of Technology, Pasadena, Calif.
- Lunch
- 2:30 P.M.–3:30 P.M.  
DISSIMILAR SIMULATION: THE EPISTEMICS OF SIMULATION IN THE HUMANITIES  
Matt RATTO, Netherlands Institute for Scientific Information Services, The Netherlands
- 3:30 P.M.–4:30 P.M.  
ROBOTS AS WORKING MODELS OF NEUROSCIENCE  
Peter ASARO, Gallery of Research, Vienna, Austria
- 5:00 P.M.–6:00 P.M.  
ABSTRACTING TO MODEL, HANDLING TO UNDERSTAND: THE CASE OF *Arabidopsis thaliana*  
Sabina LEONELLI, Vrije Universiteit, Amsterdam, The Netherlands

Participation is open and free of charge to students and faculty interested in reflecting on the character of modeling and computer simulation practices. Students and scholars in Southern California will have a rare opportunity to interact with scholars from Switzerland, Israel, Finland, Austria, Denmark and The Netherlands, as well as from throughout the U.S., who are here to participate in the upcoming International Society for the Social Studies of Science convention being held in Pasadena Oct. 20.

The workshop is organized by Andrea Loettgers, 2005–06 Harvey Mudd College Hixon-Riggs Visiting Professor of Science, Technology and Society, and sponsored by the Hixon Forum for Responsive Science and Engineering at HMC. Interested participants should contact Prof. Loettgers (loettgers@hmc.edu) by October 11. For more information contact Andrea Loettgers at loettgers@hmc.edu or Martina Merz at martina.merz@unil.ch. Location map at <http://www.hmc.edu>.

Harvey Mudd College is the coeducational liberal arts college of engineering, science and mathematics that also places strong emphasis on humanities and the social sciences. The college's aim is to graduate engineers, scientists and mathematicians sensitive to the impact of their work on society. To find out more about the Harvey Mudd College Hixon Forum or the HMC Hixon-Riggs Visiting Professorship visit our Web site at [http://www2.hmc.edu/www\\_common/HixonForum](http://www2.hmc.edu/www_common/HixonForum).



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