STUDIES IN

It was suggested some years ago that Petri nets might be well suited to modeling metabolic networks, overcoming some of the limitations encountered by the use of systems employing ODEs (ordinary differential equations). Much work has been done since then which confirms this and demonstrates the usefulness of this concept for systems biology. Petri net technology is not only intuitively understood by scientists trained in the life sciences, it also has a robust mathematical foundation and provides the required degree of flexibility. As a result it appears to be a very promising approach to modeling biological systems.

This unique compilation of articles is the first book from the journal *In Silico Biology* (ISB) on Biological Petri Nets. Subjects covered include a summary of essential topics, basic requirements and constraints; quantitative modeling of metabolic networks, gene regulatory and cell-cell communication processes; the concept of hybrid Petri nets; modeling signal transduction pathways; net models of metabolic steady states as well as a number of further applications of Petri net based modeling.

The book helps to illustrate the value of Petri net approach to modern life sciences. It is dedicated to the memory of Prof. Dr. Carl Adam Petri.

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