

# Introducing iota, a logic for biological modeling

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Stochastic graph rewriting formalisms such as Kappa are a step towards natural knowledge representation. Yet they still lock the user at a fixed abstraction level and force the use of various encodings. In particular, abstraction building is key to large-scale programming in general, and to biological modeling in particular. On the other hand, pure knowledge representation frameworks may lack executability and model synthesis, or be too expressive to allow automated reasoning.

We propose a logical framework called iota composed of several fragments, from the most expressive to the most tractable. Composition of formulas allows abstraction building, and many interesting questions become decidable under reasonable restrictions. We also give a quick view into a planned 2nd-layer called Robin, a programming language for biologists.