Claims:

1. A method, comprising:

(a) performing measurements of a time course variation of a dosage of at least one drug in a biological system to which the drug has been applied;

(b) performing measurements of a time course variation of a therapeutic outcome of the biological system in response to the drug;

(c) fitting results of the measurements of the dosage and the therapeutic outcome into a model of the therapeutic outcome; and

(d) using the model of the therapeutic outcome, identifying an optimized dosage of the drug,

wherein:

the at least one drug is a combination of N drugs, with N being 2 or more;

performing in (a) includes performing measurements of a time course variation of dosages of the N drugs in the biological system;

performing in (b) includes performing measurements of a time course variation of a therapeutic outcome of the biological system in response to the N drugs;

fitting in (c) includes fitting results of the measurements of the dosages and the therapeutic outcome into a model of the therapeutic outcome; and

identifying in (d) includes, using the model of the therapeutic outcome, identifying an optimized combination of characteristics of the N drugs,

wherein the model of the therapeutic outcome is a quadratic function of the dosages of the N drugs,

wherein:

the quadratic function includes m parameters, with $m = 1 + 2N + (N(N - 1))/2$, and fitting the results of the measurements includes deriving the m parameters; or

the quadratic function includes m parameters, with $m = 1 + 2(N - 1) + ((N - 1)(N - 2))/2$, and fitting the results of the measurements includes deriving the m parameters.

2. The method of claim 1, wherein identifying the optimized combination of characteristics of the N drugs includes identifying optimized dosages of the N drugs.

3. The method of claim 1, wherein identifying the optimized combination of characteristics of the *N* drugs includes identifying optimized dosage ratios of the *N* drugs.

4. The method of claim 1, wherein identifying the optimized combination of characteristics of the *N* drugs includes identifying optimized time instances of applying the *N* drugs.

5. The method of claim 1, wherein identifying the optimized combination of characteristics of the *N* drugs includes identifying optimized frequencies of applying the *N* drugs.