

THE UNIVERSITY OF CHICAGO

BAYESIAN INFERENCE TECHNIQUES FOR SYSTEMS BIOLOGY

A THESIS SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE PHYSICAL SCIENCES
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

DEPARTMENT OF PHYSICS

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CHICAGO, ILLINOIS
SPRING 20XX

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ABSTRACT

CHAPTER 1

PRIMER ON EXACT BAYESIAN METHODS AND

VARIATIONAL INFERENCE

CHAPTER 2

VARIATIONAL INFERENCE OF IMMUNOGENIC TUMOR

SUBSTRUCTURE

CHAPTER 3

**A BAYESIAN APPROACH FOR INFERRING NEURONAL
CONNECTIVITY FROM Ca^{2+} IMAGING DATA AND
MONTE CARLO SIMULATIONS**

CHAPTER 4

**BAYESIAN INFERENCE OF THE KINETIC PARAMETERS
OF INTERFERON-GAMMA INDUCED TRANSCRIPTION**