Overview of Techniques for Various Aspects of the C. elegans Modeling Project

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Introduction

A project as ambitious as realistically emulating the nervous system of an entire organism necessarily consists of many parts and stages. In addition, in our project, there are multiple promising technologies that can serve each of these. In this document, I've identified four main areas, which correspond roughly to the phases of the scientific method—observation, the collection of data about what is happening in the neurons; modeling, the synthesis of this data into predictive models of neuronal function; stimulation, the perturbation of the nervous system so as to collect more nuanced data about its functional relationships; and finally, verification, the techniques for determining the accuracy or fitness of the "models" produced by the coaction of the other parts of the project.

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