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Undergraduate or Master Summer Research Assistant

The Karr lab in the Icahn Institute and Department of Genetics & Genomic Sciences at the Icahn School of Medicine at Mount Sinai is seeking talented, ambitious individuals to help develop cutting-edge dynamical models of individual cells. Despite the explosion of experimental data, we do not understand the details of how phenotype arises from genotype. We are developing whole-cell computational models which comprehensively predict how cell behavior emerges from the molecular level by representing all of the biochemical activity inside cells. Our goal is to use whole-cell models to transform bioengineering and medicine. For example, we believe that whole-cell models could enable bioengineers to design microorganisms for a variety of industrial applications, as well as enable physicians to tailor medical therapy to individual patients. Our research is highly interdisciplinary, involving systems biology, genomics, numerical simulation, and software engineering, and highly team-oriented.

Responsibilities. The candidate will help develop detailed computational models of individual cells. This will include aggregating and organizing data; designing, testing, and calibrating models; and developing software tools to enable researchers to build more comprehensive and more predictive models. The candidate will also have opportunities to participate in group meetings and attend seminars. The candidate will work closely with Prof. Karr and one of our postdoctoral fellows.

Desired skills/experience. Whole-cell modeling is a highly interdisciplinary problem. Consequently, we're looking for team members with a broad range of skills. The ideal candidate has the following skills. Applicants with related experience are also encouraged to apply.

- Majoring in systems biology, computational biology, bioinformatics or a related field;
- Strong interest in computational modeling;
- Broad knowledge of biology and computer programming; and
- Abilities to solve challenging problems.

Dates and duration. The internship will be full-time for 10 weeks, with the possibility to extend into the academic year. The start and end dates are flexible.

Stipend. The stipend for the 10-week internship is \$6,800.

Housing. Unfortunately, we are not able to offer housing.

How to apply. Please send a brief description of your interests and your CV to Jonathan Karr (karr@mssm.edu).

More information. Please visit our website (www.karrlab.org) or contact Jonathan Karr (karr@mssm.edu).

About the Institute for Genomics & Multiscale Biology. The Institute for Genomics & Multiscale Biology is an interdisciplinary group of scientists, engineers, and clinicians who are passionate about making medicine more precise and personalized. The Institute's research spans a wide range of systems biology, genomics, bioinformatics, and clinical informatics. Mount Sinai is a leader in basic and clinical research.