Jonathan Karr, PhD
Fellow, Inst and Dept of Genetics & Genomics Sciences
Mount Sinai School of Medicine, New York, NY
www.karrlab.org | karr@mssm.edu | 212-824-9664

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 student 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 student will also have opportunities to participate in group meetings and attend seminars. The candidate will work closely with Prof. Karr or 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. Students with related experience are also encouraged to contact Jonathan.

- 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. Start and end dates are flexible. Summer internships should last 8-12 weeks and winter internships should last 3-4 weeks.

Stipend. Students will receive a stipend for their research.

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.