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

Postdoctoral Fellow, Software Engineer, or graduate student in online simulation and visualization

The Karr lab in the Institute for Genomics & Multiscale Biology at the Icahn School of Medicine at Mount Sinai is seeking talented, ambitious individuals to help develop cutting-edge dynamical modeling tools. Despite the explosion of experimental data, we do not understand the details of how phenotype arises from genotype. We are developing tools to enable more comprehensively and more predictive models of cells. Our goal is to use models to transform bioengineering and medicine. Our research is highly interdisciplinary, involving systems biology, genomics, numerical simulation, and software engineering, and highly team-oriented.

Responsibilities. To enable more comprehensive and more predictive models, the candidate will develop new tools for simulating models and visualizing simulation results online. This will include developing a universal simulator that can execute a wide range of simulations including steady-state, logical, deterministic kinetic, stochastic kinetic, and spatial simulations; a repository for simulation results; a system for large-scale analysis of simulation results; and tools for using biologically-intuitive diagrams to visually analyze simulation results. These tools will be web-based to enable researchers to collaboratively build and simulate models, as well as to enable journal reviewers and readers to simulate reported models. The candidate will work with our team at Mount Sinai, as well as with our collaborators at the University of Washington (Herbert Sauro and John Gennari), the University of Connecticut Health Center (Ion Moraru, Jim Schaff, and Michael Blinov), and the University of Auckland (David Nickerson) and our partner journals. The candidate would also have many opportunities to work with our team to build and analyze models.

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

- BS, MS, or PhD in computer science, applied math, or a related field;
- Strong experience in modeling, software engineering, and/or visualization;
- Deep commitment to innovation and desire to tackle the most challenging problems;
- Abilities to solve challenging problems by thinking creatively and integrating diverse concepts;
- Passion for transforming bioengineering and medicine;
- Excellent oral and written communication skills; and
- Abilities to work independently and within a team.

Career development, compensation & benefits. The Karr Lab and Mount Sinai offer numerous opportunities for career development. Compensation will be commensurate with experience and education. All employees are eligible for medical, dental, and health insurance.

How to apply. Please send a cover letter indicating your scientific/engineering interests and your career goals and a CV to Jonathan Karr (karr@mssm.edu). Prospective graduate students should also apply to one of Mount Sinai's graduate programs by December 1.

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.