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Postdoctoral Fellow or Senior Scientist in bacterial whole-cell modeling

The Karr lab in the Institute for Genomics & Multiscale Biology at the Mount Sinai School of Medicine is seeking talented, ambitious individuals to develop cutting-edge dynamical models of human and bacterial cells. Despite the explosion of experimental data, we do not comprehensively understand how phenotype arises from genotype. Our approach is to develop computational models which predict how behavior emerges from the molecular level by integrating diverse data into a single model. Our goal is to use models to make medicine more precise and personalized by predicting disease progression and drug responses. We are also using our models to engineer bacteria. Our research is highly interdisciplinary involving computational modeling, software engineering, data visualization and curation. We have close collaborations with several experimental groups to build and test our models.

Responsibilities. The scientist will be responsible for developing a whole-cell model of *Mycoplasma pneumoniae* and using the model to design Mycoplasmas for bacterial-based drug delivery. This will include expanding the scope of our existing whole-cell models, incorporating new sources of high-throughput genomic data, and improving the accuracy of whole-cell models. The scientist will work closely with software developers to design a software platform for whole-cell modeling. The scientist will also collaborate with Luis Serrano's laboratory at the Center for Regulatory Genomics in Barcelona, Spain.

Desired skills/experience. The ideal candidate has the following skills. Applicants with deep experience in related fields are also encouraged to apply.

- PhD in computational biology or related field;
- Deep experience in dynamical and genome-scale modeling;
- Strong knowledge of biology, physics, mathematics, and computation;
- Several years experience in computational systems biology is a plus;
- Excellent object-oriented programming skills in Python and MATLAB;
- Ability to learn new skills and concepts;
- Excellent oral and written communication skills; and
- Abilities to work independently and within a team effort.

Compensation & Benefits. Compensation will be commensurate with experience and education. All employees are eligible for medical, dental, and health insurance. Subsidized housing is available for postdoctoral fellows.

How to apply. Please send a cover letter indicating your research and career goals, a CV, and 2-3 letters of reference to Jonathan Karr (karr@mssm.edu).

More information. Please visit our website (research.mssm.edu/karr) 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 and engineers who are passionate about using computation and technology to make medicine more precise and personalized. Our research spans several areas of computational biology and biotechnology including systems biology, genomics, and bio- and medical informatics. Mount Sinai is an internationally recognized leader in clinical and basic science research.