POSITION OPENING: COMPUTATIONAL MICROBIOLOGY AND URBAN HEALTH

Massachusetts Institute of Technology with the Weizmann Institute of Science

Position Title: Postdoctoral Researcher in Computational Microbiology and Urban Health

Job Location: Cambridge, MA

The Senseable City Lab (SCL) at the Massachusetts Institute of Technology (MIT) is looking for exceptional candidates to fill a research position that focuses on understanding how human health and the environment interact to influence Alzheimer's disease risk. This project, titled "Dissecting the impact of environmental factors and the microbiome on Alzheimer's disease", will apply experimental and computational methods to quantify, characterize, and model the relationship between the urban environment, the human microbiome, and Alzheimer's disease.

Since its inception, SCL has acquired massive and unique data sets about different aspects of human behavior in cities all over the world. The Lab together with its partners – world leading industrial companies and organizations – has launched a major interdisciplinary initiative to harness these unprecedented data sets in order to better understand cities as 'complex systems', being able to model their dynamics and create innovative solutions for improving urban life. Leveraging access to unique urban data sets, the Lab has recently established a collaboration with the Broad Institute and pioneered the study of virus and bacteria colonies of viruses in urban sewage – and their impact on citizens' health.

JOB DESCRIPTION:

- Apply bioinformatic and biostatistical methods to analyze and interpret the multiomic data (e.g., metagenomics, metabolomics) of study participants.
- Identify and collect metadata (e.g., socio-demographic, diet, lifestyle, geographic, clinical tests) from study participants
- Analyze unique urban data sets available at Senseable City Lab to characterize the urban environment and associated environmental exposures (e.g. air pollutants).
- Develop and apply statistically robust methodologies to study the associations between the microbiome, patient metadata, urban environment and the risk of Alzheimer's disease.
- Collaborate with team members at the Weizmann Institute of Science on research design, analysis, and publication.
- Actively contribute to the design and initiation of new research projects and ideas in the field of Computational Microbiology and Urban Health.
- Present research results at top international workshops and conferences, exhibits, as well as at internal project meetings.
- Co-author articles for publication in leading peer-reviewed journals and top conferences.

REQUIREMENTS:

The successful candidate must hold a Ph.D. in microbiology, computational biology, bioinformatics, biostatistics, medicine or related field.

- Ability to work in a multidisciplinary team environment together with problem solving skills and high creativity are very welcome.
- Experience in multiomics techniques (metagenomics, metabolomics).
- Experience in handling and analyzing large-scale biological data sets.
- Advanced programming skills are expected.
- Strong experience in statistics and machine learning is a plus.
- Advanced to strong verbal and written English skills are expected.

We invite interested applicants to submit the following material to https://podio.com/webforms/20990155/1447915

- A Cover Letter (usually up to 1 page) stating the applicant's interest in working with Senseable City Lab and in particular including: research areas and/or projects of particular interest within the given scope, key relevant competencies of the applicant, dates of availability.
- CV, which should include relevant projects earlier accomplished and key relevant publications of the applicant (up to 5).
- Complete publication list, key relevant publications full text attached.
- An applicant should be ready to provide letters of recommendation or contacts of the academic referees upon request.

International scholars are welcome to apply.

If you have any questions, please contact senseable-applicants@mit.edu.

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