Recruiting: Postdoctoral Researcher in Bioinformatics, Data Sciences

for Precision Health Program

Tao Wang Lab at the UT Southwestern Medical Center

Peter O'Donnell Jr. School of Public Health

Lab introduction

The University of Texas Southwestern Medical Center (UTSW) is an elite research institution, with ongoing support from the National Institutes of Health and other federal agencies, foundations, individuals, and corporations. The faculty includes many distinguished members who have inspired the development of the Medical Center over this time, including Nobel laureates, National Academy of Science members, National Academy of Medicine members and investigators in the Howard Hughes Medical Institute.

The Tao Wang Lab is a top and well-established bioinformatics research group at UTSW. Statistics, informatics, medicine, and biology are the four integral pillars of Tao Wang Lab's interdisciplinary research program. Dr. Wang's group has been working on mining public and in-house high throughput data to achieve a deeper understanding of the immunology of various human diseases, with a heavy emphasis on cancers, and its implications for diagnosis, prognosis, and treatment. The core research interest of Wang Lab is in development of methodologies for analyses of tumor immunogenomics, computational immunology, scRNA-seq data, and spatial transcriptomics data. The ultimate goal is to impact the prognosis and treatment of patients suffering from cancers and other diseases, through modeling of high dimensional data, especially genomics data. Tao Wang Lab has published 70 papers in top journals, such as Nature Machine Intelligence (2022, Zhang and Park et al), Nature Machine Intelligence (2021, Lu et al), Nature Methods (2021, Zhang et al), Science Immunology (2020, Lu et al), Cancer Discovery (2018, Wang et al), SMMR (2020, Park et al), Cell (2019, Zhu et al), since its establishment in 2016. Wang Lab holds two patents.

At UTSW, there are great opportunities for scientists to collaborate with outstanding biomedical investigators and work on exciting research projects. UT Southwestern and the Tao Wang Lab provide a friendly, dynamic, collaborative, and integrative research and training environment with state-of-the-art facilities.

Position Title

Postdoctoral Researcher (Bioinformatics/Biostatistics/Computer Science/Computational Biology/Machine or Deep Learning)

Duties & Responsibilities

The projects include (1) developing novel methods for analysis and integration of cancer genomics, proteomics, spatial/imaging and other forms of high-dimensional -omics data, and developing prediction models for patients' clinical outcomes, (2) assembling and statistical analyses of big clinical data, (3) creating databases and websites for management of big biological data. (4) Application for independent funding under the support of the PI.

<u>Position Qualifications</u>

Candidates should have a doctoral degree (or will have one soon) in either one of the following fields, including genetics/genomics, bioinformatics, computer science, biostatistics, computational biology or a related field.

<u>Lab website</u>

Lab website: https://qbrc.swmed.edu/labs/wanglab/index.php

Google scholar: https://scholar.google.com/citations?user=nu0-Gn4AAAAJ&hl=en

QBRC with which Wang lab is affiliated with: https://qbrc.swmed.edu/

School of Public Health with which Wang lab is affiliated with: https://www.utsouthwestern.edu/education/public-health/ (newly founded with significant investments from the Texas Government and donations from philanthropists)

<u>Recent publications</u>

(1) Netie: Inferring the evolution of neoantigen-T cell interactions in tumors. *Nature Methods*. 2022
(2) Sprod for De-noising Spatial Transcriptomics Data Based on Position and Image Information. *Nature Methods*. 2022.
(3) Benisse for Interpreting the B Cell Receptor Repertoire with Single Cell Gene Expression. *Nature Machine Intelligence*. 2022.
(4) Deep learning-based prediction of the T cell receptor-antigen binding specificity. *Nature Machine Intelligence*. 2021.
(5) Mapping the Functional Landscape of T Cell Receptor Repertoire by Single T Cell Transcriptomics. *Nature Methods*. 2020.
(6) Tumor Neoantigenicity Assessment with CSiN Score Incorporates Clonality and Immunogenicity to Predict Immunotherapy Outcomes. *Science Immunology*. 2020.
(7) Somatic Mutations Increase Hepatic Clonal Fitness and Regeneration in Chronic Liver Disease. *Cell*. 2019.

<u>Contact</u>

Please send your CV to: Dr. Tao Wang (Tao.Wang@UTSouthwestern.edu). Please don't add compressed files (e.g. zip files) in the email attachment, which will be blocked by UTSW firewall.

<u>Application Deadline</u>

Until filled

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