

## Candidate Information

<b>Position:</b>	Research Fellow
<b>School/Department:</b>	The Wellcome-Wolfson Institute for Experimental Medicine
<b>Reference:</b>	22/109925
<b>Closing Date:</b>	Monday 18 July 2022
<b>Salary:</b>	£34,304 - £40,927 per annum
<b>Anticipated Interview Date:</b>	Tuesday 26 July 2022
<b>Duration:</b>	Fixed term for 12 months

### JOB PURPOSE:

The Tiwari Lab ([www.tiwarilab.com](http://www.tiwarilab.com)) is looking for a computational postdoc. Our team works on single-cell genomics and gene regulation, combining new single-cell and spatial omics technologies with bioinformatics and machine learning. In this project the candidate will develop new computational strategies to identify human genetic variation linked to cell fate changes in the human brain, with a particular focus on brain regions affected by neurodevelopmental disorders. The candidate can use and combine single-cell ATAC-seq, single-cell RNA-seq, spatial gene expression, and whole-genome sequencing (with long reads) data. The candidate will get the opportunity to explore new analysis methods using deep learning. Depending on the interest, it is also possible to be involved in the wet-lab, to perform single-cell sequencing and other experiments.

### MAJOR DUTIES:

1. Develop, plan and deliver an area of personal research and expertise, and/or undertake research under supervision within a research programme aimed at understanding gene regulatory networks underlying brain development and its disruption in neurodevelopmental disorders. Computational workflows will include analysis of genomics and epigenomics datasets for solving complex biological questions as well as develop novel analytical tools for improved data analysis. The following publications from Tiwari lab can be referred to for learning about the ongoing research program and assess a fit:
  - a. Nature Cell Biology, 2022, in press; Genes & Development, 2020, Sep; 34(17-18):1190-1209; Nature, 2019, Mar; 567(7746):113-117; Cell Stem Cell, 2018, Oct 4; 23(4):557; Nature Communications, 2017 Nov 15;8(1):1523; The EMBO Journal, 2016 Jan 4;35(1):24-45; J Cell Science, 2015 Dec 1;128(23):4380-94; The EMBO Journal, 2015 Aug 13;34(16):2162-81; Genome Research, 2015 Sep;25(9):1309-24; Nature Communications, 2013, Sep 27; 4:2478; Cancer Cell, 2013, 23, 768-783; PNAS, 2012 Apr 17;109(16): E934-43; Nature Genetics, 2012 Jan; 18;44(1):94-100; Nature, 2011 Dec 14;480(7378):490-5.
2. Develop and implement, with support, a highly ambitious personal career development plan in the course of the post.
3. Maintain up-to-date knowledge of the field of interest at the cutting edge and communicate same to the group.
4. Carry out analyses, critical evaluations and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research.
5. Present regular progress reports on research to members of the research group, other groups within the Institute/University, to external audiences nationally and internationally to disseminate and publicise research findings.
6. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
7. Assist grant holder in the preparation of funding proposals and applications as well as project progress reports to external bodies.
8. Prepare competitive applications for own funding such as travel grants, project grants and fellowship applications.
9. Carry out routine administrative tasks associated with the research projects/group to ensure that projects are completed on time and within budget and that the group functions efficiently. These might include organisation of project/group meetings and documentation, financial control, stock management/procurement, risk assessment of research activities and development of SOPs. Carry out routine administrative tasks associated with the day-to-day running of the research group in a communal lab setting.

10. Carry out school/undergraduate/post-graduate student and visiting researcher training and supervision, demonstrating, tutoring or lecturing duties within the post holder's area of expertise and under the guidance of a member of academic staff.
11. Participate, and in some cases lead outreach activities on behalf of the group/Institute.
12. Participate in local research-related activities such as journal clubs, training sessions, seminar series etc.
13. Assist in assessment of research communications and data, particularly within the group.
14. Additional research and/or laboratory related duties including outreach activities, within the general range of the post and competence of post holder.

**ESSENTIAL CRITERIA:**

1. Have or about to obtain a PhD in Bioinformatics or Computational Biology or Systems Biology or related areas.
2. 3 years recent relevant work experience (includes PhD) to include:
  - Programming skills in one of the following languages: R, Perl, Python, C/C++, SBML, Fortran or Shell scripting; and
  - Experience in analysing high throughput genomics datasets such as single-cell RNA-seq, ATAC-seq.
3. At least one recent high-quality original research publication in a reputable peer-reviewed journal, commensurate with career stage.
4. Methodical approach to project management and meticulous in regards to experimental procedures and record keeping.
5. Highly ambitious, motivated, efficient, organised and show a commitment to, and interest in, research topic.
6. Competent in maintaining knowledge of cutting-edge of field of expertise.
7. Competent in giving effective and informative oral and poster presentations.
8. Competent in communicating stipulated research skills essential to the post in CV/job application.
9. Strong ability to work from own initiative.
10. Excellent team working skills in multiple internal and external team settings.
11. Leadership qualities.
12. Excellent problem-solving skills.
13. Irregular hours including evening, weekend and other out-of-hours working will be a component of the research at times.
14. Must be willing to travel to national and international meetings and collaborative laboratories.

**DESIRABLE CRITERIA:**

1. Research project management.
2. Up-to-date knowledge in the field of gene regulatory mechanisms underlying cell-fate decisions.
3. Experience working in outreach settings.