Mar 24, 2025 9:35 PM
Zhonghua Liu

Position Overview:
The Department of Biostatistics at Columbia University invites applications for a Postdoctoral Fellow to work under the mentorship of Dr. Zhonghua Liu (Assistant Professor). The successful candidate will develop cutting-edge statistical methods at the intersection of causal inference, machine learning, and multi-omics data science, with applications to neurodegenerative diseases such as Alzheimer's disease.

This position offers the opportunity to lead methodological research on scalable causal inference for multi-omics data, leveraging vast genomic datasets to uncover molecular mechanisms of complex diseases. The fellow will collaborate with interdisciplinary teams across Columbia and partner institutions, benefiting from a vibrant research environment at the Mailman School of Public Health (located in Manhattan, NYC).

Duties and Responsibilities:

The postdoctoral fellow will conduct methodological research to develop novel statistical and machine learning approaches for scalable causal inference in high-dimensional multi-omics data (including genomics, proteomics, and metabolomics), with applications to neurodegenerative diseases such as Alzheimer's. Key tasks include designing and implementing statistical and computational tools to identify causal disease mechanisms and publishing methodological advances in high-impact journals. The fellow will collaborate with biologists and clinicians to analyze large-scale multi-omics datasets, translate statistical innovations into biological insights, and present findings at conferences and research meetings.

Key Qualifications:

- A Ph.D. in Statistics, Biostatistics, Bioinformatics, Computer Science, or a related quantitative field.
- Strong methodological background in causal inference, machine learning, or omics data analysis.
- Proficiency in R and/or Python for statistical computing.
- Prior experience with large-scale genomics or multi-omics data is preferred.

Why Join Us?

- Work in a dynamic, collaborative research group with access to high-impact multi-omics datasets.
- Engage with leading scientists across Columbia and national networks.
- Contribute to statistical innovation with direct applications to

pressing biomedical challenges.

Application Details:

Interested candidates should email the following materials to Dr. Zhonghua Liu (zl2509@cumc.columbia.edu) with the subject line "Biostatistics Postdoc Application":

- Cover letter (highlighting research interests and fit)
- Curriculum Vitae (CV)
- Contact information for three references

Review of applications will begin immediately and continue until the position is filled. For more information, visit Dr. Liu's lab website.

Zhonghua Liu
Assistant Professor
Columbia University