



# Postdoctoral Recruitment in Institutes for Systems Genetics

Editor: Wen DING

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## Institutional Profile

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The Institutes for Systems Genetics of West China Hospital of Sichuan University was established in 2018, aims to integrate existed biobank and support platforms of genomics, proteomics and metabonomics as well as the biomedical big data center in West China Hospital. By cooperating with experts in clinical medicine and basic medicine, our institute has been exploring the occurrence and development of human rare diseases genetic problem and facilitating researching of cutting-edge medicine.

For the moment, our institution has renowned principal investigators (PIs) from related fields, including system genetics, molecular diagnostic design, epigenomics and biomedical information, etc. Professor Jingqiu Cheng is responsible for rare disease platform, while Professor Bairong Shen takes charge in the theoretical computing platform. With the support from our 10 full-time scientific-research-oriented PIs and 10 part-time international PIs, we are striving to develop into the international advanced level of scientific research institution .

*The detail information can be found at:*

<http://www.wchscu.cn/>

<http://en.sysbio.org.cn/>

## Job Description

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Currently, we are looking for suitable candidates for our postdoc position. The detail information is following:

**Job Time:** Full-time



# 华西医院疾病系统遗传研究院

Institutes for Systems Genetics, West China Hospital

**Application Deadline:** Open Until Filled

**Location:** The Institutes for Systems Genetics (ISG), Frontiers Science Center for Disease-related Molecular Network, West China Hospital of Sichuan University (WCH), Chengdu 610041, Sichuan, China.

## Position Information:

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### ➤ *Post-doctor in Medical Informatics*

*Educational background:* PhD

*Professional background:*

Experience in computational science, statistical science, physics, and biomedical informatics, etc

*Supervisor:* Prof. Bairong Shen

*Conditions of application:*

We also welcome candidates with experimental background but willing to learn computational biology.

### ➤ *Post-doctor in Experimental Division*

*Educational background:* PhD

*Professional background:*

Experience in experiments related to cell, molecular and biochemistry, animal models, histopathology, etc

*Supervisor:* Prof. Bairong Shen

*Conditions of application:*

1) Candidates with experience in intestinal flora research, high-throughput experiments and data analysis will be preferred.

### ➤ *Post-doctor in Learning Health System*

*Educational background:* PhD



# 华西医院疾病系统遗传研究院

Institutes for Systems Genetics, West China Hospital

## *Professional background:*

Doctorate in Computer or Software Engineering

*Supervisor:* Prof. Bairong Shen and Dr. AJ Chen

## *Conditions of application:*

- 1) Research direction: The application of the latest international field, Learning Health System (LHS), in intelligent medical systems. Including groundbreaking research LHS software systems, medical information systems, big data acquisition and storage, real-time distributed computing; studies of machine learning methods for LHS, medical natural language analysis; research on methods and techniques for establishing global LHS research networks.
- 2) With background in computing science, software engineering, internet, big data, etc.
- 3) Have the ability of design, implementation and experience of large software projects; familiar with Java, JSP, JavaScript, JQuery, HTML, SQL, NoSQL, Web server and other Internet software system technology; familiar with software development cycle, cloud platforms, source code control.
- 4) Learn about new Front-end tools (such as Node.js), big data tools (such as kafka, cassandra), machine learning, NLP, data modeling; have the potential to become the core force in LHS new field.

## ➤ ***Post-doctor in Biomedical Big Data***

*Educational background:* PhD

*Professional background:*

Bioinformatics, computer, information security, cryptography, etc.

*Supervisor:* Prof. Bairong Shen

*Conditions of application:*

- 1) Future research areas: biomedical big data privacy security protection sharing and analysis.
- 2) Applicants who have strong programming skill (C, Python, MATLAB etc.), algorithm development ability is preferred.

## ➤ ***Post-doctor in RNA Biology***

*Educational background:* PhD

*Professional background:*

Molecular biology or related disciplines; Molecular Biology of RNA, Molecular Evolution, processing, translation of RNA, protein Chemistry, etc.

*Supervisor:* Prof. Bairong Shen and Prof. Juergen Brosius



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Institutes for Systems Genetics, West China Hospital

## *Conditions of application:*

- 1) Research directions: establishing research programs for RNomics and RNA biology (especially circular RNA), its evolutionary mechanisms and products, and their potential role in human diseases.
- 2) Familiar with plasmid vector construction, cell line transfection, qPCR, RNA /DNA sequence analysis, RNA analysis (including Northern blots), protein chemistry and protein mass spectrometry data.

## ➤ ***Post-doctor in Epigenomics***

*Educational background:* PhD

*Professional background:*

Background in genetics, genomics, bioinformatics, statistics, computer science or related fields

*Conditions of application:*

- 1) Future research areas: genomics and epigenomics; explore the development model and potential model of epigenetics, especially DNA methylation, in human genetic diseases; establish epigenetic related disease diagnosis methods.
- 2) Familiar with Linux operating system, R or Python.
- 3) Applicants with experience in epigenetic (BS-Seq, ChIP-Seq) data analysis are preferred

## ➤ ***Post-doctor in Disease Gene & Genome Evolution***

*Educational background:* PhD

*Professional background:*

Experience in molecular evolution, zoology, genetics, genomics, bioinformatics, physiology or related field.

*Conditions of application:*

- 1) Future research areas: contemporary gene and genome evolution disciplines incorporate a variety of interdisciplinary disciplines such as bioinformatics, structural biology, molecular physiology, and genomics to comprehensively elucidate molecular genetics and molecular evolution from multiple perspectives.
- 2) Applicants with experience in molecular cell biology and animal experiments.



## General Information

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**The age limited:** *under 40 years old ( $\leq 40$ ).*

**General requirement:**

- 1) Applicants should have great capability of English reading and writing, be able to write and *publish SCI papers independently*; be able to *carry out scientific research work* independently and actively apply and undertake *different scientific research projects*.
- 2) Candidates with **at least 1-2 papers** published in international high-level journals are preferred; applicants who have achieved *significant scientific research results* are preferred.
- 3) Applicants should have the *independent* scientific research ability, the strong *self-study* ability and the *communication ability*, and has the *strong spirit* and the scientific research enthusiasm, also can carry out the fruitful scientific research work, **lead the team** to move forward projects.
- 4) **Personality is to a person what perfume is to a flower, so discipline, honest integrity and good morals, those significant personal qualities are also important criteria to evaluate each applicants.**

**Postdoctoral salary and benefits:**

Salary, Research Performance and Retention Requirements is in accordance with the 'Regulations of Postdoctoral Administration of West China Hospital of Sichuan University'. Postdoc with excellent achievement can get access to stay and work for the hospital.

 If you are interested in our postdoc positions and have intention to join us, please do not hesitate to contact with me and send your curriculum vitae (**Notes: Please mark ISSN number of each your publication**) to :

**Email address:** [wdingd1@sina.com](mailto:wdingd1@sina.com),

**Subject of the email:** 'Name of Postdoc Position + Name of applicant'

**Contact number:** 0086+ 28 61528681 (International line)

028+ 61528681 (Domestic line)



## Supervisor Profile

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### ➤ *Prof. Bairong Shen*

*Research fields: Biomedical informatics; Artificial intelligence*

Since 2018, he has been Professor & Executive Director-General of Institutes for Systems Genetics, West China Hospital of Sichuan University. In 1997, he graduated from Fudan University with a Ph.D. and served as an associate professor in 1999. In 2000, he moved to biomedical informatics area and worked at the University of Tampere, Finland (2004 Assistant Professor/Associate Professor), Tongji University (2005-2008, Professor, Ph.D.) and Soochow University (2008-2018, professor, director of Center for Systems Biology) and so on. Since returning to China in 2008, he has hosted more than 10 major projects and national fund projects, and published more than 100 papers in international journals such as Bioinformatics, Genome Biology, Journal of Translational Medicine, Nucleic Acids Research, Briefs in Bioinformatics. He has published 4 works in English and 1 work in Chinese. He is also a professor at the Institute of Systems Biology in Seattle, the executive director & vice chairman of the China Society of Bioinformatics, the executive director of the Medical Information Branch of the Chinese Medical Association, the vice chairman of the Computing Systems Biology Branch of the China Operations Research Society, the first director of the Information Society, the second-instance expert of the Fund Committee, and the expert of the major project of precision medicine for the Health Planning Commission, etc. He has trained more than 50 doctoral and master students after returning to China. Since 2012, he has been advocating translational biomedical informatics, promoting the fusion of medical and bioinformatics and medical informatics internationally. He is the founding chairman of the International Conference on Transforming Biomedical Informatics (ICTBI).



### ➤ *Dr. AJ Chen:*

*Research directions: Learning Health System*

He aims to use artificial intelligence and big data to innovate the Internet medical and health service model to help redress the balance of global medical service. With more than 20 years working experience in the big health information industry, he has been a member of the United States Department of Health Medical Informatization Expert Group, Southwest and Pacific Regional Health Equality Committee Co-Chair, and twice won the Ministry of Health National developer Challenge Award.





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## ➤ **Prof. Juergen Brosius**

*Research directions: RNA Operon genetic sequencing; Gene expression plasmid design*

He is the professor and director of the Institute of Experimental Pathology at the University of Münster, as well as an internationally renowned molecular genetic and evolutionary biologist. In 1977, he graduated from the Max Planck Institute for Molecular Genetics. From 1977 to 1982, he studied at the University of California and Harvard University. In 1982, he established his own experimental team. In 1994, he was a professor at the University of Münster in Germany. He has outstanding contributions in the following scientific fields: genetic sequencing of the first ribosomal RNA operator, plasmid design of gene expression, high expression of recombinant proteins and RNA, RNA biology, RNA omics, transposon elements, life origin and evolution, etc. At present, he has published more than 300 articles in related fields, cited nearly 20,000 times, and the h index reaches 73.



*For more information about supervisors, please refer to the ISG website:*

<http://en.sysbio.org.cn/>