Postdoctoral Position - University of Pittsburgh

Postdoctoral position to study retinal development
at the University of Pittsburgh

A postdoctoral position is available to study retinal development and/or age-related retinal degeneration in the zebrafish.

Currently, our lab has two research themes: First, over the past decade, we have been investigating the mechanisms by which polarity genes regulate the development of the retina. In zebrafish, the retina develops within just a couple of days from a polarized undifferentiated neuroepithelium into a functional tissue of complex cytoarchitecture. Our group and others have identified various polarity genes to play critical roles in this dramatic transformation. Despite these findings, many critical questions remain to be answered on how the polarity genes regulate retinal development. Therefore, the majority of our efforts will continue to be focused on addressing these questions. This basic research may provide useful guidance for engineering artificial retinas, which may have clinical applications in the future.

Second, we are interested in understanding the chromatin biology and epigenetic regulations of retinal development and aging. With increasing life expectancy, more and more older people will suffer from age-related diseases, such as age-related macular degeneration. There is huge economic and social significance in understanding how the retina ages as well as in determining if certain interventions can slow down the aging process. Given that the causes of retinal degeneration are heterogeneous, we want to focus our investigation on understanding how chromatin organization and modifications underlie balanced global transcriptional profiles and consequently, the overall fitness of retinal cells, as well as how such regulations might be altered during the aging process. In addition, we are interested in identifying environmental and dietary factors that can slow down the retinal aging process by sustaining a healthy chromatin condition and balanced transcriptional profiles. We have just started making some progress in this exciting research area.

A prospective postdoc is expected to work on projects related to one or both of the above-mentioned themes. The specific projects shall be decided by the postdoc and the PI after careful discussion and evaluation of potential projects. Because our research concerns the disciplines of developmental biology, genetics, molecular biology, cell biology, and biochemistry, we encourage candidates with a Ph.D. degree in one of these fields to apply for the position. In addition, we value candidates who demonstrate independent thinking, prudent organizational skills, and strong motivation. Therefore, it is strongly encouraged that the candidates propose some specific research interests for discussion with the PI. Please send cover letter, CV, and research interests to:

Xiangyun Wei, Ph.D.
Associate Professor
Dept. of Ophthalmology
Dept. of Developmental Biology
Dept. of Microbiology and Molecular Genetics
University of Pittsburgh School of Medicine
Email: weix@upmc.edu

For more information about our past and future research, please refer to the following representative papers:


