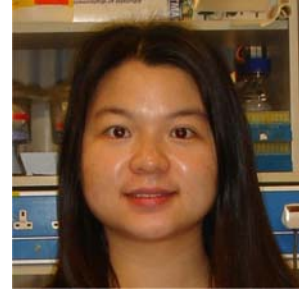


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### Research interests

I am investigating the role of intracellular  $\text{Ca}^{2+}$  transients in the differentiation of enveloping layer cells during the Blastula Period (BP) of zebrafish (*Danio rerio*) development. By loading embryos with the fluorescent  $\text{Ca}^{2+}$  reporter, Calcium green-1 dextran, and using laser scanning confocal microscopy, I have shown that the BP  $\text{Ca}^{2+}$  signals are generated almost exclusively in the enveloping layer (EVL) cells, rather than in the underlying deep cells. In addition, by analyzing data collected from embryos loaded with the luminescent  $\text{Ca}^{2+}$  reporter, aequorin, and imaged with the Photon Imaging Microscope system, I have shown that all the EVL cells generate at least one  $\text{Ca}^{2+}$  transient during the early half of the BP (i.e. from the 64-cell stage till the high stage). I am currently investigating whether the  $\text{Ca}^{2+}$  transients might play a role in the thinning process of the EVL cells.

### Education

09/2007-present	MPhil in the Department of Biology, HKUST Supervisor: Prof. Andrew L. Miller
08/2003-07/2007	BSc., Department of Biological Sciences and Biotechnology, Tsinghua University

### Research Experience

2006-2007	Final Year Project "Expression of <i>Vitreoscilla</i> Hemoglobin Gene in <i>Corynebacterium Glutamicum</i> " in Dr. George Guoqiang Chen's Lab at Tsinghua University. I gained experience in molecular techniques and bacteria culture.
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### Work Experience

2008 Fall	<b>Teaching Assistant, HKUST</b> Helped to teach experiments and laboratory techniques in the Cell Biology Laboratory Course BIOL124 Supervised a group of ~15 UG students in the course
2008 Spring	<b>Teaching Assistant, HKUST</b> Helped to teach experiments related to the yeast model in the Molecular Genetics Research Project I Course. BIOL251 Supervised one UG student

### **Publications**

1. Leung Hang Ma, Sarah E. Webb, Ching Man Chan, **Jiao Zhang** and Andrew L. Miller. (2008) Establishment of a transitory dorsal-biased window of localized  $\text{Ca}^{2+}$  signaling in the enveloping layer during the mid-Blastula Period of zebrafish development. *Developmental Biology*. (Under Review).
2. Qian Liu, **Jiao Zhang**, Xiao-Xing Wei, Shao-Ping Ouyang, Qiong Wu and Guo-Qiang Chen. (2008) Microbial production of L-glutamate and L-glutamine by recombinant *Corynebacterium glutamicum* harboring Vitreoscilla hemoglobin gene *vgb*. *Appl. Microbiol. Biotechnol.* 77: 1297-1304.

### **Awards**

1. Secondary award for Social Practice (2004, 2006);
2. Qing Hua Zhi You Xiang Gang Fu Lun She Zhu Xue Jin (2005, 2006)