# Hanwen Zhang

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## Objective

To obtain the research technician that will utilize my academic, experimental skills and provide me the chance to study industrial problems. No geographic preference.

## Education

Northwestern University, Evanston, IL — September 2012 – expected June 2014
Master of Science in Biotechnology
Relevant courses: Bioprocess Engineering I, Biotechnology Laboratory, Bioprocess Engineering Laboratory
GPA: 3.8

Peking University, Beijing, China — September 2008 – June 2012
Bachelor of Science in Biology
Relevant courses: Biochemistry, molecular biology, microbiology, cellular biology, genetics, immunology, environmental microbiology, introduction of biotechnology

## Work Experience

**Co-op, Amgen, CA** — June 2013 – December 2013

1) Developed *in vitro* glycosylation assay to study impact of metal ions on glycosylation process in CHO cells
2) Developed *in vitro* cytochrome C oxidase assay to study enzyme activity in different CHO cell lines under different copper conditions
3) Assisted in developing chemostat reactors to study cell line stability and productivity in different media
4) Assisted in developing fed-batch reactors to study metabolism and glycan profile variance in CHO cells in different media components
5) Assisted in developing cell-free perfusion reactors to study the impact of filter on metal ion transfer
6) Assisted in developing perfusion cultures to study the impact of trace metals in media on cell line stability and protein quality

**Graduate Research Assistant, Northwestern University, IL** — January 2013 – expected June 2014

1) Inhibited centrosome duplication as a potential therapeutic approach to pancreatic cancer with few side effects
    1. Cultured mammalian cancer cell lines including Hela, Panc1, Mia PaCa2, Capan-1, TSA54 and regular cell lines including HPDE6E7, 76NtertG and MCF10-A
    2. Utilized bioassay and spectrophotometer to measure cell viability through enzyme activity or ATP concentration
    3. Constructed recombinant plasmid to express tubulin-binding domain of centrobin in BL21 cells and treated cancer cells with purified proteins to inhibit centrosome duplication
    4. Utilized immunostaining to examine duplication of centrosome and expression of centrobin
    5. Designed cell-penetrating peptides based on tubulin-binding domain of centrobin to interrupt interactions between centrobin and alpha-tubulin and treated cancer cells with peptides to inhibit centrosome duplication
    6. Utilized $Ca_3(PO_4)_2$ transfection to produce retrovirus in TSA54 cell line
    7. Built inducible RNAi to inhibit expression of centrobin through retrovirus system in pancreatic cancer cells
2) Study impact of centrobin defects on mouse germline stem cell self-renewing, proliferation and differentiation
    1. Utilized immunofluorescence staining in seminiferous tubules and tissue sections to check spermatogonia

differentiation status

**Summer internship, Peking University**, Beijing, China July 2012 - August 2012

1) Utilized yeast one-hybrid system to screen transcription factor that can activate transcription of *AteIF1*
2) Used yeast two-hybrid system to screen binding partners of AteIF1
3) Eliminated false-positive results and confirmed several binding partners using colony PCR and DNA sequencing

**Undergraduate research, Peking University**, Beijing, China November 2010 - June 2012

1) Constructed recombinant plasmid to express AteIF1 through pET-BL21 system and purified protein using chromatography
2) Utilized phage display and ELISA to screen the peptide ligands of AteIF1
3) Selected candidate protein ligands of AtelF1 genes through BLAST using NCBI database
4) Cloned candidate genes and verified interaction with *AteIF1* through yeast two-hybrid system

## Skills

**Lab**: experienced in bioreactor preparation & operations, mammalian cell culture, cell transfection, protein purification, ELISA, SDS-PAGE, immunostaining, DNA electrophoresis, PCR, gene cloning, plasmid extraction, yeast transformation, bacterial transformation, yeast one-hybrid system, two-hybrid system, phage display,

**Computer**: proficient in Microsoft Word, PowerPoint, Excel, experienced in SuperPro, OriginPro

**Language**: native Chinese speaker