

Ching Kai Douglas Wu

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EDUCATION

The University of Texas at Austin (UT Austin)

Austin, TX

PhD student, (GPA of 3.81), Institute of Cellular & Molecular Biology

Fall 2013-present

- Joint advisors: Dr. Alan M. Lambowitz and Dr. Claus O. Wilke

University of Illinois at Urbana Champaign (UIUC)

Urbana, IL

B.S. (GPA of 3.67), Biochemistry

Fall 2009-Spring 2013

- Biochemistry High Distinction Award
- Dean List (Fall 2010, Spring 2011)
- Member of Alpha Lambda Delta Honor Society (Since 2009)

RESEARCH EXPERIENCE

Prof. Alan Lambowitz's Lab

Austin, TX

Institute of Cellular and molecular Biology

Winter 2013-present

The University of Texas at Austin

- Whole cell RNA-seq library
- RNA-seq analysis for exosomal RNA-seq and plasma RNA-seq data
- Applying mathematical models on RNA-seq data
- Statistical learning predictions of RNA modifications

Prof. Claus Wilke's Lab

Austin, TX

Institute of Cellular and molecular Biology

Winter 2013-present

The University of Texas at Austin

- Bioinformatics: RNA-seq analysis on plasma RNA library

Prof. Laura Sugg's Lab

Austin, TX

Department of Biomedical Engineering

Fall 2013

University of Texas at Austin

- Computer simulation for quantifying magnetic-induced force that directs embryoid bodies into mesodermal lineages

Prof. Ning Wang's lab

Urbana, IL

Department of Mechanical Engineering

Spring 2010 - Spring 2013

University of Illinois at Urbana Champaign

- Study force-induced biochemical changes in embryonic stem cells
- Examine the stress-induced disruption of cajal body using CFP-SMN, YFP-Coilin Hela cells
- 3D-culturing melanoma B16F1 cells, tumorigenic cells, Embryonic stem cells in fibrin matrix

Prof. Mary Waye's Lab

Hong Kong

Department of Biochemistry

Summer 2010

Chinese University of Hong Kong

- Investigate KIAA0319 gene on suicide and musically perfect pitch using human DNA extracted from saliva as experimental subject

PUBLICATION

- Ryan M. Nottingham*, **Douglas C. Wu***, Yidan Qin, Jun Yao, Scott Hunicke-Smith, and Alan M. Lambowitz. RNA-Seq of human reference RNA samples using a thermostable group II intron reverse transcriptase. *RNA*. Vol. 22, no. 4, pp. 597-613. (*Contributed equally)
- Yidan Qin, Jun Yao, **Douglas C. Wu**, Ryan M. Nottingham, Sabine Mohr, Scott Hunicke-Smith and Alan M. Lambowitz (2015). Profiling of circulating RNAs in human plasma by using thermostable group II intron reverse transcriptase template switching. *RNA*. Vol. 22, no. 1, pp. 111-128.
- Laura R. Geuss, **Douglas C. Wu**, Divya Ramamoorthy, Corinne D. Alford, Laura J. Suggs (2014). Paramagnetic Beads and Magnetically Mediated Strain Enhance Cardiomyogenesis in Mouse Embryoid Bodies. *PLoS ONE*. Vol. 9, no. 12.
- Youhua Tan, Arash Tajik, Junwei Chen, Qiong Jia, Farhan Chowdhury, Lili Wang, Junjian Chen, Shuang Zhang, Ying Hong, Haiying Yi, **Douglas C. Wu**, Yuejin Zhang, Fuxiang Wei, Yeh-Chuin Poh, Jihye Seong, Rishi Singh, Li-Jung Lin, Sultan Doganay, Yong Li, Haibo Jia, Taekjip Ha, Yingxiao Wang, Bo Huang, Ning Wang (2014). Matrix softness regulates plasticity of tumour-repopulating cells via H3K9 demethylation and Sox2 expression. *Nature Communication*. Vol. 5, no. 4691.
- Yeh-Chuin Poh, Junwei Chen, Ying Hong, Haiying Yi, Shuang Zhang, Junjian Chen, **Douglas C. Wu**, Lili Wang, Qiong Jia, Rishi Singh, Wenting Yao, Youhua Tan, Arash Tajik, Tetsuya S. Tanaka, Ning Wang (2014). Generation of organized mouse germ layers from single embryonic stem cell. *Nature Communication*. Vol. 5, no. 4000.
- Yeh-Chuin Poh, Sergey P. Shevtsov, Farhan Chowdhury, **Douglas C. Wu**, Sungsoo Na, Miroslav Dundr, Ning Wang (2012). Dynamic force-induced direct dissociation of protein complexes in a nuclear body in living cells. *Nature Communication*. Vol. 3, no. 866.
- Yuhei Uda, Yeh-Chuin Poh, Farhan Chowdhury, **Douglas C. Wu**, Tetsuya S. Tanaka, Masaaki Sato, and Ning Wang (2011). Force via integrins but not E-cadherin decreases Oct3/4 expression in embryonic stem cells. *Biochemical and Biophysical Research Communications*. Vol. 415, no. 2, pp. 396-400.
- **Douglas Wu** and Mary Wayne (2011). The relationship between MicroRNA and Tumor Suppressors, *Tumor Suppressors*, eds Susan D. Nguyen (Nova Science Publishers, New York), pp. 175-188.

MANUSCRIPT

- **Douglas C. Wu**, Alfreed Lentzsch, Jun Yao, Ryan M. Nottingham, Yidan Qin, Claus O. Wilke, and Alan M. Lambowitz. TGIRT-HAMR: Thermostable Group II Intron Reverse Transcriptase High Throughput Annotation of Modified Ribonucleotides. (In preparation)

SKILLS

- Languages: Fluent in writing and speaking Mandarin Chinese, Cantonese Chinese
- Programming Languages: *Python*, *R*, *Bash*, *Matlab*, *Octave*, \LaTeX , *C++/C*, *MySQL*, IGV scripts (Ordered by proficiency)
- Working knowledge of High Performance Computing: SGE Batch Environment (TACC Ionestar), SLURM (TACC stampede, Ionestar 5)
- Working knowledge of High throughput Computing/ Grid computing: HTcondor
- Working knowledge of machine learning

INVITED TALK

- High-throughput RNA sequencing with Thermostable Group II Intron Reverse Transcriptase
Molecular Bioscience retreat
The University of Texas at Austin, Austin, TX. Mar 5, 2016
- Next generation sequencing of circulating RNA in plasma
Byte club meeting
The University of Texas at Austin, Austin TX. Feb 19, 2014