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OXfCRISPR: http://oxfcrispr.org

1.1 EDUCATION

1997-2000 PhD, Physiology, Chinese Academy of Sciences
(awarded CAS President Prize)
1992-1995 MSc, Animal Physiology & Biochemistry, China Agricultural University
1988-1992 BSc, Forest Conservation, Beijing Forestry University

1.2 PROFESSIONAL EXPERIENCE

01/2012-present Pregramme Leader (tenured), MRC Functional Genomics Unit, University of Oxford

Developed highly efficient CRISPR technology in *Drosophila*.

I, together with my group members, have recently developed highly efficient genome engineering technologies in *Drosophila* cells and *in vivo* by using the CRISPR/Cas9 system. One of our publications has been selected as the *Cell Reports* Best of 2013. It has also been selected in Cell Special Issue on 'The CRISPR/Cas9 Revolution'.

08/2007-12/2011 Programme Leader-track, MRC Functional Genomics Unit, University of Oxford

Discovered a novel subcellular structure/organelle, the cytoophidium.

After establishing my own lab at the MRC Functional Genomics Unit (University of Oxford) in 2007, I discovered the novel organelle/structure, the cytoophidium, which he found to contain CTPS. My discovery of intracellular compartmentation of CTPS raises fundamental questions concerning the function(s) and contributions of this new organelle to cell function.

01/2003-08/2007 Postdoctoral fellow, Carnegie Institution Department of Embryology
Advisor: Professor Joseph G. Gall

Using *Drosophila* as a model system to study organization of nuclear function.

As a postdoctoral researcher, I identified the long-sought-after Cajal body in the fruit fly and showed for the first time that the Cajal body exists in *Drosophila*. Subsequently, I discovered and named two new subcellular structures in the egg chambers: the histone locus body in the nucleus and the U body in the cytoplasm.

07/2000–12/2002 Postdoctoral fellow, Department of Animal Science/Center for Regenerative Biology, University of Connecticut
Advisor: Professor Xiangzhong (Jerry) Yang

Somatic nuclear transfer in cattle, mice, and rabbits;

Developed the first full-term rabbit from freeze-dried sperm injection.

We showed, for the first time, that freeze-dried rabbit spermatozoa retain their chromosomal integrity and are able to initiate embryo development of oocytes after microinjection and proper activation treatments.

2.1 SELECTED PUBLICATIONS

(six most significant publications, Total 47 publications, full list in the end)

1. **Liu JL.** 2010. Intracellular compartmentation of CTP synthase in *Drosophila*. ***Journal of Genetics and Genomics*** 37(5):281-296.
   [This paper reports the identification of the cytoophidium, a novel subcellular structure/organelle that contains CTP synthase. Subsequently, two groups reported that CTPS can form filaments in bacteria and budding yeast. These studies have been featured in Nature as "the New Cell Anatomy" and considered by peers as "astonishing discoveries".]

2. Bassett AR*, Tibbit C, Ponting CP, **Liu JL*.** 2013. Highly efficient targeted mutagenesis of *Drosophila* with the CRISPR/Cas9 system. ***Cell Reports*** 4(1):220-228. (*Corresponding authors).
   [This paper, which has been selected by *Cell Reports* as the Best for 2013, describes a method for efficiently creating mutations in chosen *Drosophila* genes within a month based on the CRISPR/Cas9 system from bacteria. This paper has also been selected in Cell Special Issue on 'The CRISPR/Cas9 Revolution'. It has been cited for 100 times in 16 months]
3. **Liu JL,** Murphy C, Buszczak M, Clatterbuck S, Goodman R, and Gall JG. 2006. The *Drosophila melanogaster* Cajal body. ***Journal of Cell Biology*** 172:875-884. [**Comment in:** Matera AG. (2006). *Drosophila* Cajal bodies: accessories not included. Journal of Cell Biology 172(6):791-793][F1000 Must Read]
   [F1000 FACULTY OF 1000 MUST READ: "This paper provides a detailed description of the long-sought *Drosophila* Cajal body"; "Remarkably, a second body (i.e. histone locus body) is found, devoted to the processing of histone RNAs".]
4. Aughey GN*, Grice SJ*, Shen QJ*, Xu Y, Chang CC, Azzam G, Wang PY, Freeman-Mills M, Pai LM, Sung LY, Yan J and **Liu JL.** (2014). Nucleotide synthesis is regulated by cytoophidium formation during neurodevelopment and adaptive metabolism. ***Biology Open*** 3(11):1045-1056. (*These authors contributed equally to this work).
   [This paper reports that CTPsyn is compartmentalised in response to nutrient stress in vitro and in vivo. Our study provides experimental evidence, and a mathematical model, for the hypothesis that inactive CTPsyn is incorporated into cytoophidia.]
5. **Liu JL,** Kusakabe H, Chang CC, Suzuki H, Schmidt DW, Julian M, Pfeffer R, Bormann CL, Tian XC, Yanagimachi R, and Yang X. 2004. Freeze-dried sperm fertilization leads to full-term development in rabbits. ***Biology of Reproduction*** 70:1776-1781.
   [EurekAlert: "(This study) has succeeded in fertilizing rabbit oocytes with 'dead' freeze-dried rabbit sperm". The results suggest that freeze-drying could be applied to preserve the spermatozoa from most other species, including human.]
6. Grice SJ and **Liu JL.** 2011. SMN regulates stem cell division, proliferation and differentiation in *Drosophila.* ***PLOS Genetics*** 7(4): e1002030. doi:10.1371/journal.pgen.1002030.
   [This paper identifies SMN as an important factor for stem cells. SMN is the determining factor of spinal muscular atrophy. The study of SMN thus holds the key to understanding the cellular mechanism of this devastating disease.]
7. **Liu JL** and Gall JG. 2007. U bodies are cytoplasmic structures that contain snRNPs and associate with P bodies. ***Proceedings of the National Academy of Sciences U S A*** 104:11655-11659.
   [This paper reports the identification of the U body, a novel cytoplasmic structure that contains snRNPs. The identification of U bodies provides an opportunity to correlate specific biochemical steps of snRNP biogenesis with structural features of the cytoplasm.]
8. Zhang J, Hulme L and **Liu JL.** (2014). Asymmetric inheritance of cytoophidia in *Schizosaccharomyces pombe*. ***Biology Open*** 3(11):1092-1097.
   [This paper shows that CTP synthase can form filamentous cytoophidia in the cytoplasm and nucleus of *S Schizosaccharomyces pombe* cells. The findings on asymmetric inheritance of cytoophidia in *S. pombe* offer an exciting opportunity to study the inheritance of metabolic enzymes in a well-studied model system.]
9. Smibert P*, Yang JS*, Azzam G*, **Liu JL**** and Lai EC**. 2013. Homeostatic control of Argonaute stability by microRNA availability. ***Nature Structural and Molecular Biology*** 20(7):789-795. (*These authors contributed equally to this work; **Corresponding authors).
   [This paper reveals a surprising mechanism of the regulation of miRNA biogenesis and concludes that Argonaute levels are finely tuned by cellular availability of mature miRNAs and the ubiquitin-proteasome system.]
10. Azzam G and **Liu JL.** 2013. Only one isoform of *Drosophila melanogaster* CTP synthase forms the cytoophidium. ***PLOS Genetics*** 9(2):e1003256.
    [This paper shows distinct distribution of different CTP synthase isoforms in *Drosophila*.]
11. Chen K*, Zhang J*, Tastan ÖY*, Deussen ZA, Siswick MY and **Liu JL**. 2011. Glutamine analogs promote cytoophidium assembly in human and *Drosophila* cells. ***Journal of Genetics and Genomics*** (*These authors contributed equally to this work). 38(9):391-402. doi:10.1016/j.jgg.2011.08.004. **(Cover image).**
    [This paper demonstrates CTP synthase forms cytoophidia in human cells.]
12. **Liu JL,** Wu Z, Nizami Z, Deryusheva S, Rajendra TK, Beumer KJ, Gao H, Matera AG, Carroll D and Gall JG. 2009. Coilin is essential for Cajal body organization in *Drosophila melanogaster*. ***Molecular Biology of the Cell*** 20:1661-1670.

[F1000 FACULTY of 1000 RECOMMENDED: "In this paper, Liu and colleagues finally track down the elusive *Drosophila* coilin, following previous work from this group which showed by various markers that *Drosophila* must possess Cajal bodies".]

2.2 GRANTS/RESEARCH SUPPORTS

[My group has been funded by MRC, ERC and RCUK. I have also attracted students and visiting scholars Funded by oversea funding bodies. Furthermore, my research has attracted personal donations.]

Ji-Long Liu (with Prof Dame K. E. Davies, Prof C. P. Ponting and Dr C. Webber) (2011-2016)
Medical Research Council core funding for the MRC Functional Genomics Unit.
Ji-Long Liu (2011-2016)
Medical Research Council Programme Grant. 2.5 x PDRA
Intracellular compartmentation in *Drosophila*.
Ji-Long Liu (with Prof C.P. Ponting) (2010-2015)
European Research Council. 5 x PDRA
Derived and Ancestral RNAs: Comparative Genomics and Evolution of ncRNAs (DARCGENs)
Ji-Long Liu (with Y. Huang) (2014-2016)
Chinese Scholarship Council Studentship
Studentship for Y. Huang – CRISPR and lncRNAs.
Ji-Long Liu (with H. Kassim) (2014-2017)
Malaysia Government Scholarship
Studentship for H. Kassim – Cytoophidium and cancer.
Ji-Long Liu (with Q. Shen) (2012-2015)
Chinese Scholarship Council-Oxford Studentship
Studentship for Q. Shen – Biology of the cytoophidium.
Ji-Long Liu (2014)
Anonymous donation to the Liu group.
Ji-Long Liu (with Dr X. Yu): (2014)
Chinese Academy of Sciences
Scholarship to Dr X. Yu - Biology of the cytoophidium.
Ji-Long Liu (with Prof Dame K. E. Davies, Prof D. B. Sattelle, and Prof C. P. Ponting) (2007-2011)
Medical Research Council core funding for the MRC Functional Genomics Unit.
Ji-Long Liu (2007-2011)
Medical Research Council Programme Grant. 2.5 x PDRA
Small RNA regulation in *Drosophila*.
Ji-Long Liu (with G. Azzam) (2009-2012)
Malaysia High Education Scholarship
Studentship for G. Azzam – Argonaute and CTP synthase in *Drosophila*.
Ji-Long Liu (with Dr K. Gou) (2012-2015)
Chinese Scholarship Council
Scholarship to Dr K. Gou - Biology of the cytoophidium.
Ji-Long Liu (with Prof D.B. Sattelle) (2008)
Research Council UK
UK-China Workshop on model organisms for neurodegenerative disease.

3. LECTURES GIVEN IN OXFORD

[I have been invited to give more than 20 lectures/seminars for graduate student, postdocs and colleagues in Oxford.] These include:

1. October 2007, Oxford Fly Club, "RNA granules".
2. October 2007, DPAG Seminar, "Small RNAs: In and Out of the Cell Nucleus".
3. November 2007, UK SMA, "The U body-P body pathway".
4. November 2007, FGU Talk, "A story about 'U'".
5. June 2009, FGU Talk, "Model human disease in *Drosophila*".
6. April 2010, DPAG Retreat, "Intracellular compartmentation in *Drosophila*".
7. November 2010, FGU Retreat, "Intracellular compartmentation".
8. February 2011, DPAG Morning Seminar, "Cytoophidia".

9. July 2011, FGU Retreat, “SMN and piRNAs”.
10. November 2012, FGU Retreat, “Organelles in health and disease: What we can learn from the fruitfly?”
11. December 2012, Oxford Developmental Biology Symposium, “The cytoophidium: What we have learned from ‘the snake in a cell’ so far?”
12. March 2013, Oxford Stem Cell Institute Annual Symposium, “Stem cells in health and disease: What can we learn from the fruit fly?”
13. April 2013, DPAG Seminar, “Cytoophidia: snakes in the cell”.
14. May 2013, Oxford Ludwig Cancer Institute, “Cytoophidia, CTP synthase and cancer”
15. July 2013, FGU Retreat, “From the fruitfly: Genes, genetics, genomics and disease”.
16. September 2013, CLSSUK, “The cytoophidium: a snake in the cell”.
17. November 2013, MRC Centennial Symposium, “Cytoophidia and disease”.
18. June 2014, FGU Retreat, “Overview of the *Drosophila* group research”.

4. GRADUATE SUPERVISION

[Since 2007, I have served as the primary supervisor for 11 DPhil students. Among them, 2 former Students have taken University Lectureships. I have also served as the secondary supervisor for 3 DPhil students.]

Primary Supervisor for the following students:

Ruben Cauchi (graduated in 2008, now University Lecture at the University of Malta)
Lin Lee (graduated in 2009, now Senior Editor for the journal *BMC Medicine*)
Stuart Grice (graduated in 2009, now postdoc fellow at the University of Oxford)
Ghows Azzam (graduate in 2012, starting as Assistant Professor at the University of Science Malaysia in July 2014)
Sian Davies (graduated in 2012, now scientific writer)
Gabriel Aughey (graduated in 2014)
Jing Zhang (current DPhil student, 2011-)
Jenna Schwartz (current DPhil student, 2011-)
Qingji Shen (current DPhil student, 2012-)
Hakimi Kassim (current DPhil student, 2014-)
Yong Huang (cuurent DPhil stydent, 2014-)

Secondary Supervisor for the following students

Stephen Meader (graduated in 2010, now scientific officer at MRC)
Robert Young (graduated in 2011, now postdoc fellow at the University of Edinburgh)
Gregory Weir (current DPhil student, 2010-)

5. UNIVERSITY EXAMINING

[I have been invited to serve as examiner for students in Oxford, as well as for students oversea.]

Examiner of theses/transfer reports for the following students in Oxford

Elizabeth Ashley, S Goodwin Lab
Dirk Daumer, K Talbot Lab
Aaron Leiblich, C Wilson Lab
Sophia Malandraki-Miller, K Clarke Lab
Lawrence Mensah, C Wilson Lab
William Motley, K Talbot Lab
Leigh Paton, K Davies Lab
Metta Pratt, J Raff Lab
Suat Tan, K Clarke Lab

Examiner of theses/transfer reports for the following students internationally

Wei-Fang Chang, LY Sung Lab (National Taiwan University)
Heidy Ortiz, B Zimmermann Lab (Columbia)

6. UNIVERSITY ADMINISTRATION AND ACADEMIC LEADERSHIP

6.1 OXFORD COMMITTEE

2014- Chair, Olser Memorial Fund Committee, Department of Physiology, Anatomy and Genetics, University of Oxford

6.2 OXFORD COMMUNITY

2013 Organiser and Host, Special Jenkinson Seminar (Invited Speaker: Professor Allan Spradling, Gruber Genetics Prize Laureate)
[This Special Jenkinson Seminar was hosted jointly by Oxford Fly Club, Oxford Stem Cell Institute, MRC Functional Genomics Unit, *and* Department of Physiology, Anatomy and Genetics, University of Oxford]

2013- Created OXfCRISPR (Oxford Fly CRISPR Resources) website (http://oxfcrispr.org)
[This website hosts a collection of updated publications, protocol, methods, tips and reagents for researchers who are interested in using the CRISPR/Cas9 technology]

2011-present Organiser and Host, Oxford Fly Club monthly seminars
[My group has organised and hosted Oxford Fly Club monthly seminars for 4 years. We have invited many renowned international/national speakers, as well as speakers from local *Drosophila* communities. Our invited speakers included Anne Ephrussi (EMBL, Germany), Allan Spradling (Carnegie Institution, USA), Barry Thompson (LBI, London), Ralf Stanewsky (Queen Mary, London), Stein Aerts (Belgium), Marc Dionne (KCL, London), Steve Russell (Cambridge), Alex Gould (NIMR, London), Juan-Pablo Couso (Sussex) et al.]

2011 Organiser, Weekly Lunchtime Seminars, MRC Functional Genomics Unit
[I initiated the lunchtime seminars which provided speaking opportunity for graduate students and postdocs]

6.3 INTERNATIONAL MEETING ORGANIZER

2014 Organizer, Special Interest Subgroup on 'Cytoophidia, sankes within the cell: filamentation and compartmentation of metabolic pathways', The 2014 American Society for Cell Biology / International Federation for Cell Biology Meeting, Philadelphia, Pennsylvania, USA

2014 Organiser, ICAP Club (A community for researchers working in arginine and pyrimidines)

2014 Organizer, The 24th International Conference on Arginine and Pyrimidines (ICAP2014), Oxford, UK

2013 Co-Chair, Organising Committee, The 19th Annual Meeting of Chinese Life Scientists Society in the UK (CLSSUK2013), Oxford, UK

2013 Co-organizer, Joseph Gall 85th Birthday Symposium, Baltimore, Maryland, USA

2012 Organizer, Chinese Academy of Sciences – Oxford Workshop on Genetics and Developmental Biology, Oxford, UK

2012 Co-organizer, Workshop on Organelles in the *Drosophila* Ovary, The 53rd Annual *Drosophila* Research Conference, Chicago, Illinois, USA

2010 Co-organizer, The Cell Biology of Metabolic Pathways, Special interest subgroup meeting, The 50th American Society for Cell Biology Annual Meeting, Philadelphia, Pennsylvania, USA

2008 Co-organizer, UK/China Workshop on Model Organisms for Neurodegenerative Diseases, Beijing, China

6.4 SPECIAL ISSUE EDITOR

2014 Editor, *Journal of Genetics and Genomics* Special Issue on Metabolism of Arginine and Pyrimidies (Scheduled publication date: Match 2015).

6.5 INVITED TALKS

[~70 national/international invited talks since 2005.] These include:

1. December 2005, "The *Drosophila* Cajal body", The 45th American Society for Cell Biology Annual Meeting, San Francisco, California, USA.
2. September 2006, "The Cajal body and histone locus body", Cold Spring Harbor Meeting on Dynamic Organization of Nuclear Function, Cold Spring Harbor, New York, USA.
3. March 2007. "The *Drosophila* coilin", The 48th Annual *Drosophila* Research Conference, Philadelphia, Pennsylvania, USA.
4. December 2007, "The U body", American Society for Cell Biology 47th Annual Meeting, Washington, District of Columbia, USA.

5. March 2008, "When U met P", The 1st RNA Granules Meeting, Howard Hughes Medical Institute, Chevy Chase, Maryland, USA.
6. October 2008, "Modelling spinal muscular atrophy in *Drosophila*", UK/China Workshop on Model Organisms for Neurodegenerative Diseases, Beijing, China.
7. August 2009, "The U body-P body pathway", The 21st IUBMB and 12th FAOBMB International Congress of Biochemistry and Molecular Biology, Shanghai, China.
8. December 2010, "*Drosophila* cytoophidium: a filamentary structure containing CTP synthase", The 50th American Society for Cell Biology Annual Meeting, Philadelphia, Pennsylvania, USA.
9. May 2011, "The cytoophidium: another organelle for energy metabolism?", The 1st Asia-Pacific *Drosophila* Research Conference, Taipei, Taiwan.
10. May 2011, "A SteMNess model for SMA", National Taiwan University, Taipei, Taiwan.
11. March 2012, "Cytoophidium", The 53rd Annual *Drosophila* Research Conference, Chicago, Illinois, USA
12. July 2012, "The cytoophidium: Intracellular compartmentation of CTP synthase", The 23rd International Conference on Arginine and Pyrimidines, Bogata, Columbia
13. November 2012, "miRNAs in *Drosophila* oogenesis", miRNAs Europe 2012 Meeting, Peterhouse, University of Cambridge, Cambridge, UK
14. December 2012, "The cytoophidium - what we have learned about 'the snake in a cell' so far", Annual Oxford Developmental Biology Symposium, University of Oxford, Oxford, UK
15. April 2013, "CTP synthase and the cytoophidium", Gall Symposium 2013, Baltimore, Maryland, USA
16. April 2013, "The cytoophidium: A snake in the cell", DPAG Seminar, University of Oxford, Oxford, UK
17. June 2013, "Cytoophidia, CTP synthase and cancer", Frontiers on Biological Sciences, Tsinghua University, Beijing, China
18. Sep 2013, "CTP synthase and the cytoophidium", EMBO Workshop on *Drosophila* Cell Division Cycle, Totnes, Exeter, UK
19. Sep 2013, "CTP synthase, cytoophidium and CRISPR", The 19th Annual Meeting of Chinese Life Scientists Society in the UK (CLSSUK2013), Oxford, UK
20. May 2014, "CTP synthase, cytoophidia and cancer", National Taiwan University, Taipei, Taiwan
21. May 2014, "CTP synthase, cytoophidia and brain development", National Cheng Kung University, Tainan, Taiwan
22. May 2014, "Cytoophidia and CRISPR", Chang Gung University, Taiyuan, Taiwan
23. May 2014, "CTP synthase, cytoophidia and brain development", National Health Research Institute, Miaoli, Taiwan
24. June 2014, "Intracellular compartmentation", EMBO Conference - The Molecular and Developmental Biology of *Drosophila*, Crete, Greece
25. August 2014, "CTP synthase and cytoophidia", China Medical Institute, Beijing, China
26. December 2014, "Cytoophidia: how many snakes in the cells", The 2014 American Society for Cell Biology / International Federation for Cell Biology Meeting, Philadelphia, Pennsylvania, USA
27. December 2014, "Learning from the fruit fly: Cytoophidia and CRISPR", Duke University, Durham, North Carolina, USA
28. December 2014, "CTP synthase and cytoophidia", University of Florida, Gainsville, Florida, USA
29. February 2015, "Cytoophidia from fly to fission yeast", Carnegie Institution for Science, Baltimore, Maryland, USA (Scheduled)
30. May 2015, "Cytoophidia during *Drosophila* development", The 3rd Asia-Pacific *Drosophila* Research Conference, Beijing, China (scheduled).

6.6 MEMBERSHIPS

American Society for Cell Biology (ASCB)
Biophysical Society
Genetic Society
Genetics Society of America (GSA)
The American Association for the Advancement of Science (AAAS)

6.7 EDITORIAL BOARD

Journal of Genetics and Genomics (2010-)

6.8 AD HOC REVIEWER FOR JOURNALS AND FUNDING BODIES

Reviewer for Journals:

Biology of Reproduction, Biology Open, BMC Biotechnology, Cellular and Molecular Life Sciences, Cell Reprogramming, Development, Developmental Cell, eLIFE, FASEB Journal, Genesis, Human Molecular Genetics, Journal of Cell

Biology, Journal of Cell Science, Journal of Genetics and Genomics, Journal of Neuroscience Methods, Journal of Visualized Experiments, Proceedings of the National Academy of Sciences U S A, Methods, Nature Communications, Nature Methods, PLOS Genetics, PLOS One, Reproduction, Theriology, WIREs RNA

Reviewer for funding bodies:
Association Française contre les Myopathies (AFM, France), Austrian Science Fund (FWF), Biotechnology and Biological Sciences Research Council (BBSRC), Fonds Wetenschappelijk Onderzoek (FWO, Belgium), Hong Kong Research Grants Council, Medical Research Council (MRC), Medical Research Council Technology (MRCT), Motor Neurone Disease Association (MND), National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), National Science Foundation (USA), Netherlands Organization for Scientific Research

7. UNDERGRAUDATE TEACHING

**[Since 2010, I have supervised 9 FHS students for the Medical Science Division.
Among them, 2 students won international/national prizes, and
4 students co-authored in publications. Furthermore, I have supervised 12 summer students.
Among them, 4 students have contributed to publications.]**

7.1 FINAL HONOUR SCHOOL OF MEDICAL SCIENCES SUPERVISION

Mickey Buckingham (2010-2011,
**Published a first-author publication for the FHS study in the Liu Lab;
Won Undergraduate Poster Award at the 53rd Annual *Drosophila* Research Conference, 2012**)
Joshua Harvey (2010-2011,
Won Wurtman Prize from Balliol Medical Society in 2011)
Luke Freeman-Mills (2011-2012,
Published a co-author publication for the FHS study in the Liu Lab)
Thomas Moens (2011-2012,
Published a co-author publication for the FHS study in the Liu Lab)
Yuhao Zhao (2012-2013)
Katherine Wensley (2013-2014,
Co-authored a manuscript for the FHS study in the Liu Lab)
Gabriel Trueblood (2013-2014)
Arron Thin (2014-2015)
Daniel Jones (2014-2015)

7.2 SUMMER STUDENT SUPERVISION

Tom Whittaker (2009, high school student from Magdalen College Oxford)
Anita Gola (2010, undergraduate from University of Southampton)
Kangni Chen (2010, medical student from Imperial College
Published a co-first-author publication for the study in the Liu Lab)
Jing Zhang (2010, undergraduate from Peking University, China
Published a co-first-author publication for the FHS study in the Liu Lab)
Issac Santos (2011, undergraduate from Spain)
Qingji Shen (2011, undergraduate from Peking University, China)
Aline Dominques (2012, undergraduate from France)
Mohima Sanyal (2012, undergraduate from College of William & Mary, USA)
Aphrodite Zhao (2013-2014, undergraduate student from Oxford University
Preparing a first-author manuscript for the study in the Liu Lab)
Chia Chun Chang (2014, PhD student from National Taiwan University, Taiwan
Co-authored three publications)
Jennifer He (2014, undergraduate student from Imperial College London)
Helen Wang (2014, High school student from D'overbroeck College Oxford)

8: PUBLICATION LISTS

[47 publications]

2014

1. Grice SJ, **Liu JL** and Webber C. Synergistic interactions between Drosophila orthologues of genes spanned by de novo human CNVs support multiple-hit models of autism. ***PLOS Genetics*** (in press).
2. Tastan OY and **Liu JL.** (2014). Visualising the *Drosophila* Ovary via Immunohistochemistry. In: McNeil G and Bratu D (eds) Methods in Molecular Biology Series. *Drosophila* Oogenesis: Methods and Protocols. Springer (in press).
3. Zhang J, Hulme L and **Liu JL.** (2014). Asymmetric inheritance of cytoophidia in *Schizosaccharomyces pombe*. ***Biology Open*** 3(11):1092-1097.
4. Aughey GN*, Grice SJ*, Shen QJ*, Xu Y, Chang CC, Azzam G, Wang PY, Freeman-Mills M, Pai LM, Sung LY, Yan J and **Liu JL.** (2014). Nucleotide synthesis is regulated by cytoophidium formation during neurodevelopment and adaptive metabolism. ***Biology Open*** 3(11):1045-1056. (*These authors contributed equally to this work).
5. Aughey GN*, Tastan ÖY* and **Liu JL.** (2014). Cellular serpents and dreaming spires: new frontiers in arginine and pyrimidine biology. ***Journal of Genetics and Genomics*** 41(10):561-565. (*These authors contributed equally to this work).
6. Bassett AR, Azzam G, Wheatley L, Tibbit C, Rajakumar T, McGowan S, Stanger N, Ewels PA, Taylor S, Ponting CP, **Liu JL,** Sauka-Spengler T and Fulga TA. (2014). Understanding functional miRNA-target interactions in vivo by site-specific genome engineering. ***Nature Communications*** 5:4640.
7. Chang WF, Xu J, Chang CC, Yang SH, Li HY, Hsieh-Li HM, Tsai MH, Wu SC, Cheng WTK, **Liu JL*** and Sung LY*. (2014). SMN is required for the maintenance of embryonic stem cells and neuronal differentiation in mice. ***Brain Structure & Function*** [Epub ahead of print 17 Mar 2014]
8. Bassett AR and **Liu JL.** (2014). CRISPR/Cas9 mediated genome engineering in *Drosophila*. ***Methods*** 69:128-136. [Epub ahead of print 24 Feb 2014] [Cover][OXfCRISPR]
9. Gou KM*, Chang CC*, Shen QJ, Sung LY** and **Liu JL**.** (2014). CTP synthase forms cytoophidia in the cytoplasm and nucleus. ***Experimental Cell Research*** 323(1):242-253. (*These authors contributed equally to this work; **Corresponding authors).
10. Davies SE, Hallett PJ, Moen T, Smith G, Mangano E, Kim HT, Goldberg AL, **Liu JL,** Isacson O, Tofaris GK. (2014). Enhanced ubiquitin-dependent degradation by Nedd4 portects against α-synuclein accumulation and toxicity in animal models of Parkinson's disease. ***Neurobiology of Disease*** 64C:79-87.
11. Bassett AR and **Liu JL.** (2014). CRISPR/Cas9 and genome editing in *Drosophila*. **Journal *of Genetics and Genomics*** 41(1):7-19. [Cover][OXfCRISPR]
12. Bassett AR*, Tibbit C, Ponting CP and **Liu JL*.** (2014). Mutagenesis and homologous recombination in *Drosophila* cell lines using CRISPR/Cas9. ***Biology Open*** 3(1):42-9. (*Corresponding authors). [OXfCRISPR]

2013

13. Bassett AR*, Tibbit C, Ponting CP and **Liu JL*.** (2013). Highly efficient targeted mutagenesis of *Drosophila* with the CRISPR/Cas9 system. ***Cell Reports*** 4(1):220-8 [Published 1 July 2013]. (*Corresponding authors) [OXfCRISPR][Cell Reports Best of 2013]
14. Smibert P*, Yang JS*, Azzam G*, **Liu JL**** and Lai EC**. (2013). Homeostatic control of Argonaute stability by microRNA availability. ***Nature Structural & Molecular Biology*** 20(7):789-95. [Epub 26 May 2013]. (*These authors contributed equally to this work; **Corresponding authors).
15. Grice SJ*, Praveen K*, Matera AG** and **Liu JL**.** (2013). Spinal muscular Atrophy: Insights from the fruit fly. In: ***Drosophila Models of Motor Neuron Disease.*** Cauchi R (ed.). Nova Publishers, New York, USA. pp171-84. (*These authors contributed equally to this work; **Corresponding authors). [PDF] [Cover]
16. Azzam G and **Liu JL.** (2013). Only one isoform of *Drosophila melanogaster* CTP synthase forms the cytoophidium. ***PLOS Genetics*** 9(2): e1003256. [Cell Picture Show]

2012

17. **Liu JL** and Gall JG. (2012). Induction of human lampbrush chromosomes. ***Chromosome Research*** 20(8):971-978.

18. Azzam G, Smibert P, Lai EC and **Liu JL.** (2012). *Drosophila* Argonaute 1 and its miRNA biogenesis partners are required for oocyte formation and germline cell division. ***Developmental Biology*** 365(2):384-394. [Cover]

19. Young RS, Marques AC*, Tibbit C*, Haerty W, Bassett AR, **Liu JL**** and Ponting CP**. (2012). Identification and Properties of 1,119 candidate lincRNA loci in the *Drosophila melanogaster* Genome. ***Genome Biology and Evolution*** 4(4):427-442. (*These authors contributed equally to this work; **Corresponding authors).

2011

20. Grice SJ*, Sleigh JN*, **Liu JL**** and Sattelle DB**. (2011). Invertebrate models of spinal muscular atrophy: insights into mechanisms and potential therapeutics. ***BioEssays*** 33(12):956-65. (*These authors contributed equally to this work; **Corresponding authors). [Cover]

21. Buckingham M and **Liu JL.** (2011). U bodies respond to nutrient stress in *Drosophila*. ***Experimental Cell Research*** 317(20):2835-44.[Cover]

22. Chen K*, Zhang J*, Tastan ÖY*, Deussen ZA, Siswick MY and **Liu JL.** (2011). Glutamine analogs promote cytoophidium assembly in human and *Drosophila* cells. ***Journal of Genetics and Genomics*** 38(9):391-402. (*These authors contributed equally to this work). [Cover][Oxford Science Blog][Cell Picture Show]

23. Grice SJ and **Liu JL.** (2011). Survival motor neuron protein regulates stem cell division, proliferation and differentiation in *Drosophila*. ***PLOS Genetics*** 7(4): e1002030.

24. **Liu JL.** (2011). The enigmatic cytoophidium: compartmentation of CTP synthase via filament formation. ***BioEssays*** 33(3):159-64.[Cover]

2010

25. **Liu JL.** (2010). Intracellular compartmentation of CTP synthase in *Drosophila*. ***Journal of Genetics and Genomics*** 37(5):281-96.[NATURE | News Feature]

26. Cauchi RJ, Sanchez-Pulido L and **Liu JL.** (2010). *Drosophila* SMN complex proteins Gemin2, Gemin3, and Gemin5 are components of U bodies. ***Experimental Cell Research*** 316:2354-64.

2009

27. Lee L, Davies SE and **Liu JL.** (2009). The spinal muscular atrophy protein SMN affects *Drosophila* germline nuclear organization through the U body-P body pathway. ***Developmental Biology*** 332(1):142-55.

28. **Liu JL,** Wu Z, Nizami Z, Deryusheva S, Rajendra TK, Beumer KJ, Gao H, Matera AG, Carroll D and Gall JG. (2009). Coilin is essential for Cajal body organization in *Drosophila melanogaster*. ***Molecular Biology of the Cell*** 20(6):1661-70.[F1000 Recommended]

2008

29. Beumer KJ, Trautman JK, Bozas A, **Liu JL,** Rutter J, Gall JG and Carroll D. (2008). Efficient gene targeting in *Drosophila* by direct embryo injection with Zinc-finger nucleases. ***Proceedings of the National Academy of Sciences of the United States of America*** 105(50):19821-6.

30. Cauchi RJ, Davies KE and **Liu JL.** (2008). A Motor Function for the DEAD-Box RNA Helicase, Gemin3, in *Drosophila*. ***PLOS Genetics*** 4(11):e1000265.

2007

31. **Liu JL** and Gall JG. (2007). U bodies are cytoplasmic structures that contain uridine-rich small nuclear ribonucleoproteins and associate with P bodies. ***Proceedings of the National Academy of Sciences of the United States of America*** 104(28):11655-9.

1999-2006

32. **Liu JL,** Buszczak M, Gall JG. (2006). Nuclear bodies in the *Drosophila* geminal vesicle. ***Chromosome Res*** 14:465-475.

33. **Liu JL,** Murphy C, Buszczak M, Clatterbuck S, Goodman R, and Gall JG. (2006). The *Drosophila melanogaster* Cajal body. ***J Cell Biol*** 172:875-884.
34. Chang CC, Nagy ZP, Abdelmassih R, **Liu JL,** Yang X, Tian XC. (2006). Interactions of the meiotic spindle with mitotic chromosomes in GV mouse oocytes. ***Reprod BioMed Online*** 13:213-221.
35. **Liu JL,** Kusakabe H, Chang CC, Suzuki H, Schmidt DW, Julian M, Pfeffer R, Bormann CL, Tian XC, Yanagimachi R, and Yang X. (2004). Freeze-dried sperm fertilization leads to full-term development in rabbits. ***Biol Reprod*** 70:1776-1781.
36. **Liu JL,** Sung LY, Du F, Julian M, Jiang S, Barber M, Xu J, Tian XC, and Yang X. (2004). Differential development of rabbit embryos derived from parthenogenesis and nuclear transfer. ***Mol Reprod Dev*** 68:58-64.
37. **Liu JL,** Sung LY, Tian XC, and Yang X. (2002). Hypertonicity-induced projections reflect cell polarity in mouse metaphase II oocytes: involvement of microtubules, microfilaments, and chromosomes. ***Biol Reprod*** 67:1853-1863.
38. **Liu JL,** Sung LY, Barber M, Yang X. (2002). Hypertonic medium treatment for localization of nuclear material in bovine metaphase II oocytes. ***Biol Reprod*** 66:1342-1349.
39. Wang MK, **Liu JL,** Lian L, Chen DY. Delivery and storage of single embryos, sperm, or cells in microglass capillaries. (2002). ***In Vitro Cell Dev Biol Anim*** 38:59-61.
40. **Liu JL,** Wang MK, Sun QY, Zhang XR, Jiang LK, and Chen DY. (2001). Refrigeration of donor cells in preparation for bovine somatic nuclear transfer. ***Reproduction*** 122:801-808.
41. Wang MK, Chen DY, **Liu JL,** Li GP, Sun QY. (2001). In vitro fertilisation of mouse oocytes reconstructed by transfer of metaphase II chromosomes results in live births. ***Zygote*** 9:9-14.
42. Wang MK, **Liu JL,** Li GP, Lian L, and Chen DY. (2001). Sucrose pretreatment for enucleation: an efficient and non-damage method for removing the spindle of the mouse MII oocyte. ***Mol Reprod Dev*** 58:432-436.
43. Li GP, Chen DY, Lian L, Sun QY, Wang MK, **Liu JL,** Li JS, Han ZM. (2001). Viable rabbits derived from reconstructed oocytes by germinal vesicle transfer after intracytoplasmic sperm injection (ICSI). ***Mol Reprod Dev*** 58:180-185.
44. **Liu JL,** Wang MK, Sun QY, Xu Z, and Chen DY. (2000). Effect of telophase enucleation on bovine somatic nuclear transfer. ***Theriogenology*** 54:989-998.
45. **Liu JL,** Chen YC, Sun QY, Song XF, Chen DY. (1999). Culture of skeletal muscle cells from giant panda. ***In Vitro Cell Dev Biol Anim*** 35:553-554.
46. Chen DY, Sun QY, **Liu JL,** Li GP, Lian L, Wang MK, Han ZM, Song XF, Li JS, Sun Q, Chen YC, Zhang YP, Ding B. (1999). The giant panda *(Ailurapoda melanoleuca)* somatic nucleus can dedifferentiate in rabbit ooplasm and support early development of the reconstructed egg. ***Sci China C Life Sci*** 42:346-353.
47. **Liu JL,** Wang MK, Lian L, Li JS, Gao SR, Han ZM, Sun QY, Song XF, Zhang DM, Li YH, Xu Z, Chen DY. (1999). Nuclear transfer using nonquiescent adult fibroblasts from a bovine ear. ***Chin Sci Bull*** 44:1971-1974.