CURRICULUM VITAE - Eric C. Lai, Ph. D.

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Education

1999 Ph. D. in Biology, University of California at San Diego
1993 B. A., *magna cum laude* in Biochemistry, Harvard University

Research and Professional Experience

2013-present Member, Memorial Sloan Kettering Cancer Center, New York, NY
• Developmental Biology Program; Center for Stem Cell Biology

Professor, Weill Cornell Graduate School of Medical Sciences, New York, NY
• BCMB Allied Program; Tri-Institutional Computational Biomedicine; Neuroscience Program

2009-2013 Associate Member, Memorial Sloan Kettering Cancer Center, New York, NY
Associate Professor, Weill Cornell Graduate School of Medical Sciences,
Weill Cornell Medicine, NY

2005-2009 Assistant Member, Memorial Sloan Kettering Cancer Center, New York, NY
Assistant Professor, Weill Cornell Graduate School of Medical Sciences,
Weill Cornell Medicine, NY

1999-2005 Postdoctoral fellow, HHMI/Department of Molecular and Cell Biology
University of California at Berkeley, Berkeley, CA
1. "Regulation of the Notch pathway by ubiquitin ligases"
2. "Genomewide analysis of *Drosophila* microRNA function"
Dr. Gerald M. Rubin, postdoctoral advisor

1993-1999 Predoctoral fellow, Department of Biology
University of California at San Diego, La Jolla, CA
"Pattern formation during *Drosophila* sensory organ development"
Dr. James W. Posakony, graduate thesis advisor

1992-1993 Undergraduate thesis research, Department of Molecular Biology
Massachusetts General Hospital/Harvard Medical School, Boston, MA
"Spatial expression of *ceh-20*, a *C. elegans* PBX-class homeobox gene"
Dr. Gary Ruvkun, undergraduate thesis advisor

Selected Awards and Fellowships

2009 Louise and Allston Boyer Young Investigator Award for Basic Research
2008 New York Academy of Sciences-Blavatnik Award for Young Scientists, Finalist
2007-2009 Alfred W. Bressler Scholar
2007-2009 Kimmel Scholar of the Sidney Kimmel Foundation for Cancer Research
2006-2008 V Scholar of the V Foundation for Cancer Research
2005 Career Award in the Biomedical Sciences, Burroughs Wellcome Fund
2004-2006 Special Fellow of the Leukemia and Lymphoma Society
2000-2003 Fellow of the Damon Runyon Cancer Research Foundation
2000 Larry Sandler Memorial Award for *Drosophila* Research, Finalist
1993-1999 Fellow of the Lucille P. Markey Charitable Trust
1993 Phi Beta Kappa, Harvard College
1991 John Harvard Scholarship
1989 National Merit Scholarship

Publications

Research papers

(1) DeCruz, M., S. Khanal, B. Strickland, K. Mansfield, **E. C. Lai** and Alex S. Flynt (2023). A tailed mirtron promotes longevity in *Drosophila*. ***Nucleic Acids Research***, in press. PMID: 38048325

(2) Zhang, B., H. Duan, J. Kavaler, L. Wei, D. F. Eberl and **E. C. Lai** (2023). A non-neural miRNA cluster mediates hearing via repression of two neural targets. ***Genes and Development*** **37**: 1041-1051. (Cover Article). PMID: 38110249

(3) Shang, R. and **E. C. Lai** (2023). Parameters of clustered suboptimal miRNA biogenesis. ***Proc. Natl. Acad. Sci. USA*** **120**(41): e2306727120. PMID: 37788316 PMCID: PMC10576077

(4) Signor, S., J. Vedanayagam, F. Wierzbicki, R. Kofler and **E. C. Lai** (2023). Rapid evolutionary diversification of the *flamenco* locus in the *D. simulans* clade. ***PLoS Genetics*** **19**(8):e1010914. PMID: 37643184 PMCID: PMC10495008

(5) Vromman M., J. Anckaert, S. Bortoluzzi, A. Buratin, C.-Y. Chen, Q. Chu4, T.-J. Chuang, R. Dehghannasiri, C. Dieterich, X. Dong, P. Flicek, E. Gaffo, W. Gu, C. He, S. Hoffmann, O. Izuogu, M. Jackson, T. Jakobi, **E. C. Lai**, J. Nuytens, J. Salzman, M. Santibanez-Koref, P. Stadler, O. Thas, E. Vanden Eynde, K. Verniers, G. Wen, J. Westholm, L. Yang, C.-Y. Ye, N. Yigit, G.-H. Yuan, J. Zhang, F. Zhao, J. Vandesompele, P.-J. Volders (2023). Large-scale benchmarking of circRNA detection tools reveals large differences in sensitivity but not in precision. ***Nature Methods*** **20**: 1159-1169. PMID: 37443337

(6) Vedanayagam, J., C.-J. Lin, R. Papareddy, M. Nodine, A. S. Flynt, J. Wen and **E. C. Lai** (2023). Regulatory logic of endogenous RNAi in silencing *de novo* genomic conflicts. ***PLoS Genetics*** **19**(6):e1010787. PMID: 37343034 PMCID: PMC10317233

(7) Pan A., Y. Zeng, J. Liu, M. Zhou, **E. C. Lai** and Y. Yu (2023). Unanticipated broad phylogeny of BEN DNA binding domains revealed by structural homology searches. ***Current Biology*** **33**(11): 2270-2282.e2. PMID: 37236184 PMCID: PMC10348805

(8) Lu, T.-C., M. Brbić, Y.-J. Park, T. Jackson, J. Chen, S. Kolluru, Y. Qi, N. Kathede, X. Cai, S. Lee, Y.-C. Che, N. Auld, C.-Y. Liang, S. Ding, D. Welsch, S. D'Souza, A. Pisco, R. Jones, J. Leskovec, **E. C. Lai**, H. J. Bellen, L. Luo, H. Jasper, S. R. Quake and Hongjie Li (2023). Aging Fly Cell Atlas identifies exhaustive aging features at cellular resolution. ***Science*** **380**(6650): eadg0934. PMID: 37319212

(9) Vedanayagam J., M. Herbette, H. Mudgett., C.-J. Lin, C. C.-M. Lai, McDonough-Goldstein, S. Dorus, B. Loppin, C. Meiklejohn, R. Dubruille and **E. C. Lai** (2023). Essential and recurrent roles for endogenous RNAi in silencing *de novo* sex chromosome conflict in *Drosophila simulans*. ***PLoS Biology*** **21**(6):e3002136. PMID: 37289846 PMCID: PMC10292708

(10) Lee, S., D. Jee, S. Srivastava, A. Yang, A. Ramidi, R. Shang, D. Bortolamiol-Becet, S. Pfeffer, S. Gu, J. Wen and **E. C. Lai** (2023). Promiscuous splicing-derived hairpins are dominant substrates of tailing-mediated defense of miRNA biogenesis in mammals. ***Cell Reports*** **42**:112111. PMID: 36800291. PMCID: PMC10508058

(11) Lee, S., Y.-C. Chen, A. Gillen, J. M. Taliaferro, B. Deplancke, the FCA Consortium, H. Li and **E. C. Lai** (2022). Diverse cell-specific patterns of alternative polyadenylation in *Drosophila*. ***Nature Communications*** **13**: 5372. doi: 10.1038/s41467-022-32305-0. PMID: 36100597. PMCID: PMC9470587.

(12) Shang R., D. A. Kretov, S. I. Adamson, T. Treiber, N. Treiber, J. Vedanayagam, J. H. Chuang, G. Meister, D. Cifuentes and **E. C. Lai** (2022). Regulated dicing of *pre-mir-144* involves reshaping of its terminal loop. ***Nucleic Acids Research*** **50**: 7637-7654. PMID: 35801921 PMCID: PMC9303283.

(13) Samani, A., R. M. Hightower, A. L. Reid, K. G. English, M. A. Lopez, J. S. Doyle, M. J. Conklin, D. A. Schneider, M. M. Bamman, J. J. Widrick, D. K. Crossman, M. Xie, D. Jee, **E. C. Lai** and M. S. Alexander (2022). miR-486 is essential for muscle function and suppresses a dystrophic transcriptome. ***Life Science Alliance*** **5**: DOI: 10.26508/lsa.202101215. PMID: 35512829 PMCID: PMC9087951.

(14) Zheng L.^, J. Liu^, L. Niu, M. Kamran, A.W.H. Yang, A. Jolma, Q. Dai, T. R. Hughes, D. J. Patel, L. Zhang, S. Prasanth, Y. Yu*, A. Ren*, and **E. C. Lai*** (2022). Distinct structural bases for sequence-specific DNA binding by mammalian BEN domain proteins. ***Genes and Development*** **36**: 225-240. (^, co-first authors; *, co-corresponding authors). PMID: 35144965 PMCID: PMC8887127.

(15) Joseph, B., C. Scala, S. Kondo and **E. C. Lai** (2022). Molecular and genetic dissection of recursive splicing. ***Life Science Alliance*** **5**: e202101063, doi: 10.26508/lsa.202101063. PMID: 34759052 PMCID: PMC8605326.

(16) Vedanayagam J., C.-J. Lin and **E. C. Lai** (2021). Rapid evolutionary dynamics of an expanding family of meiotic drive factors and their hpRNA suppressors. ***Nature Ecology & Evolution*** **5**: 1613-1623. (Featured in ***Nature Ecology & Evolution*** **5**: 1574-1575). PMID: 34862477 PMCID: PMC8665063.

(17) Garaulet, D.L., A. Moro and **E. C. Lai** (2021). A double negative gene regulatory circuit mediates the virgin behavioral state. ***Cell Reports*** **36**: 109335. PMID: 34233178 PMCID: PMC8344067.

(18) Joseph, B. and **E. C. Lai** (2021). The Exon Junction Complex and intron removal prevents resplicing of mRNA. ***PLoS Genetics*** **17**(5):e1009563. doi: 10.1371/journal.pgen.1009563. PMID: 34033644 PMCID: PMC8184009.

(19) Lee, S., L. Wei, B. Zhang, R. Goering, S. Majumdar, J. Wen, J. M. Taliaferro, and **E. C. Lai** (2021). ELAV/Hu RNA binding proteins direct multiple neural alternative splicing programs. ***PLoS Genetics*** 17(4):e1009439. doi: 10.1371/journal.pgen.1009439. PMID: 33826609 PMCID: PMC8055025.

(20) Bejarano, F., C.-H. Chang, K. Sun, J.W. Hagen, W.-M. Deng, and **E. C. Lai** (2021). A comprehensive *in vivo* screen for anti-apoptotic miRNAs indicates broad capacities for oncogenic synergy. ***Developmental Biology*** **475**: 10-20. PMID: 33662357 PMCID: PMC8107139.

(21) Bejarano, F. and **E. C. Lai** (2021). ***Data in Brief*** **36**: 107037. doi: 10.1016/j.dib.2021.107037. PMID: 34007867 PMCID: PMC8111069

(22) Kan, L., S. Ott, B. Joseph, E.S. Park., C. Dai, R. E. Kleiner, A. Claridge-Chang, and **E. C. Lai** (2021). A neural m^6A/YTHDF pathway is required for learning and memory in *Drosophila*. ***Nature Communications*** **12**(1):1458. doi: 10.1038/s41467-021-21537-1. PMID: 33723258 PMCID: PMC7961012.

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(24) Wei, L., S. Lee, S. Majumdar, B. Zhang, P. Sanfilippo, B. Joseph, P. Miura, M. Soller and **E. C. Lai** (2020). Overlapping Activities of ELAV/Hu Family RNA Binding Proteins Specify the Extended Neuronal 3' UTR Landscape in Drosophila. ***Molecular Cell*** **80**: 140-155. PMID: 33007254 PMCID: PMC7546445.

(25) Han, Q., G. Chen, J. Wang, D. Jee, W.-X. Li, **E. C. Lai** and S.-W. Ding (2020). Mechanism and Function of Antiviral RNA Interference in Mice. ***mBio*** **11**: e03278-19 1-18. PMID: 32753500 PMCID: PMC7407090

(26) Shang, R., S. Baek, K. Kim, B. Kim, V. N. Kim, and **E. C. Lai** (2020). Genomic clustering aids nuclear processing of suboptimal pri-miRNA loci. ***Molecular Cell*** **78**: 303-316. PMID: 32302542 PMCID: PMC754644.

(27) Wang J., J. E. Lee, K. Riemondy, Y. Yu, S. M. Marquez, **E. C. Lai** and R. Yi. (2020) XPO5 promotes primary miRNA processing independently of RanGTP. ***Nature Communications*** **11**:1845 | https://doi.org/10.1038/s41467-020-15598. PMID: 32296071 PMCID: PMC7160132.

(28) Yu, Y., C. Andreu-Agullo, B. F. Liu, L. Barboza, M. Toth, **E. C. Lai** (2020). Regulation of embryonic and adult neurogenesis by Ars2. ***Development*** **147**(2) pii: dev180018. PMID: 31969356. PMCID: PMC6983708.

(29) Ueberschär, M., H. Wang, C. Zhang, S. Kondo, T. Aoki, P. Schedl, **E. C. Lai***, J. Wen* and Q. Dai* (2019). BEN-solo factors partition active chromatin to ensure proper gene activation in Drosophila. ***Nature Communications*** **10**(1): 5700. doi: 10.1038/s41467-019-13558-8. (*, co-corresponding authors). PMID: 31836703. PMCID: PMC6911014.

(30) Vedanayagam J., W. K. Chatila, B. A. Aksoy, S. Majumdar, A. J. Skanderup, E. Demir, N. Schultz, C. Sander and **E. C. Lai** (2019). Cancer-associated mutations in DICER1 RNase IIIa and IIIb domains exert similar effects on miRNA biogenesis. ***Nature Communications*** **10:** 3682. doi: 10.1038/s41467-019-11610-1. PMID: 31417090. PMCID: PMC6695490

(31) Mazaud D., B. Kottler, C. Gonçalves-Pimentel, S. Proelss, N. Tüchler, C. Deneubourg, Y. Yuasa, C. Diebold, H. Jungbluth, **E. C. Lai**, F. Hirth, A. Giangrande, M. Fanto, M (2019). Transcriptional regulation of the Glutamate/GABA/Glutamine cycle in adult glia controls motor activity and seizures in *Drosophila*. ***Journal of Neuroscience*** **39**: 5269 –5283. PMID: 31064860. PMCID: PMC6607755.

(32) Teijeiro, V., D. Yang, S. Majumdar, F. González, R. Rickert, C. Xu, R. Koche, N. Verma, **E. C. Lai** and D. Huangfu (2018). DICER1 is Essential for Self-renewal of Human Embryonic Stem Cells. ***Stem Cell Reports*** **11**: 616-625. PMID: 30146489. PMCID: PMC6135725.

(33) Lin C.-J., F. Hu, R. Dubruille, J. Vedanayagam, J. Wen, P. Smibert, B. Loppin and **E. C. Lai** (2018). The hpRNA/RNAi pathway is essential to resolve intragenomic conflict to permit transmission of sons. ***Developmental Cell*** **46**: 316-326. (Featured in ***Developmental Cell*** **46**: 251-253). PMID: 30086302. PMCID: PMC6114144.

(34) Joseph, B., S. Kondo and **E. C. Lai** (2018). Short cryptic exons mediate recursive splicing in *Drosophila*. ***Nature Structural and Molecular Biology*** **25**: 365-371. PMID: 29632374. PMCID: PMC6709686.

(35) Duan, H., L. F. de Navas, F. Hu, K. Sun, Y. E. Mavromatakis, K. Viets, C. Zhou, J. Kavaler, R. Johnston, Jr., A. Tomlinson, and **E. C. Lai** (2018). The *mir-279/996* cluster represses receptor tyrosine kinase signaling to determine cell fates in the *Drosophila* eye. ***Development*** **145**: dev159053 doi: 10.1242/dev.159053. PMID: 29540498. PMCID: PMC5963866.

(36) Jee, D., J.-S. Yang, S. M. Park, D.'J. Farmer, J. Wen, T. Chou, A. Chow, M. T. McManus, M. G. Kharas and **E. C. Lai** (2018). Dual strategies for Argonaute2-mediated biogenesis of erythroid miRNAs underlie conserved requirements for Slicing in mammals. ***Molecular Cell*** **69**: 265-278. PMID: 29351846. PMCID: PMC5824974.

(37) Kavaler, J., H. Duan, R. Aradhya, L. F. de Navas, B. Joseph, B. Shklyar and **E. C. Lai** (2018). miRNA suppression of a Notch repressor directs non-neuronal fate in *Drosophila* mechanosensory organs. ***Journal of Cell Biology*** **217**: 571–583. PMID: 29196461. PMCID: PMC5800810. Featured in JCB Collection on Stem Cells and Development).

(38) Mohammed, J., A. S. Flynt, A. M. Panzarino, M. Mondal, M. DeCruz, A. Siepel and **E. C. Lai** (2018). Deep experimental profiling of microRNA diversity, deployment, and evolution across the *Drosophila* genus. ***Genome Research*** **28**: 52-65. PMID: 29233922. PMCID: PMC5749182.

(39) Shenker, S., and **E. C. Lai** (2018). Crossbrowse: A versatile genome browser for visualizing comparative experimental data. https://www.biorxiv.org/content/10.1101/272880v1

(40) Sanfilippo P., J. Wen and **E. C. Lai** (2017). Landscape and evolution of tissue-specific alternative polyadenylation across *Drosophila* species. ***Genome Biology*** **18**: 229. doi: 10.1186/s13059-017-1358-0. PMID: 29191225. PMCID: PMC5707805.

(41) Kondo S., J. Vedanayagam, J. Mohammed, S. Eizadshenass, L. Kan, N. Pang, R. Aradhya, A. Siepel, J. Steinhauer and **E. C. Lai** (2017). New genes often acquire male-specific functions but rarely become essential in *Drosophila*. ***Genes and Development*** **31**: 1841–1846. (Highlighted in ***Genes and Development*** **31**: 1825-1826.) PMID: 29051389. PMCID: PMC5695085.

(42) Yao, L., S. Wang, J. O. Westholm, Q. Dai, R. Matsuda, C. Hosono, S. Bray, **E. C. Lai** and C. Samakovlis (2017). Genome-wide identification of Grainy head targets in *Drosophila* reveals regulatory interactions with the POU-domain transcription factor, Vvl. ***Development*** **144**: 3145-3155. PMID: 28760809. PMCID: PMC5627367.

(43) Sanfilippo, P., P. Miura, and **E. C. Lai** (2017). Genome-wide profiling of the 3' ends of polyadenylated RNAs. ***Methods*** **126**: 86-94. PMID: 28602807. PMCID: PMC5583017.

(44) Kan, L., A. V. Grozhik, J. Vedanayagam, D. P. Patil, N. Pang, K.-S. Lim, Y.-C. Huang, B. Joseph, C.-J. Lin, V. Despic, J. Guo, D. Yan, S. Kondo, W.-M. Deng, P. C. Dedon, S. R. Jaffrey and **E. C. Lai** (2017). The m^6A pathway facilitates sex determination in *Drosophila*. ***Nature Communications*** **8**:15737, 1-16. doi: 10.1038/ncomms15737. PMID: 28675155. PMCID: PMC5500889.

(45) Lin, C.-J., J. Wen, F. Bejarano, F. Hu, D. Bortolamiol-Becet, L. Kan, P. Sanfilippo, S. Kondo and **E. C. Lai** (2017). Characterization of a TUTase/RNase complex required for Drosophila gametogenesis. ***RNA*** **23**: 284-296. PMID: 27974621. PMCID: PMC5311484.

(46) Sanfilippo, P., P. Smibert, H. Duan and **E. C. Lai** (2016). Neural specificity of the RNA binding protein Elav is achieved by post-transcriptional repression in non-neural tissues. ***Development*** **143**: 4474-4485. PMID: 27802174. PMCID: PMC5201049.

(47) Garaulet, D., K. Sun, W. Li, J. Wen, A. M. Panzarino, J. L. O'Neil, P. R. Hiesinger, Michael W. Young, and **E. C. Lai** (2016). miR-124 regulates diverse aspects of rhythmic behavior in *Drosophila*. ***Journal of Neuroscience*** **36**: 3414-3421. PMID: 27013671. PMCID: PMC4804003.

(48) Lin, C.-J., P. Smibert, X. Zhao, J. F. Hu, J. Ramroop, S. M. Kellner, M. A. Benton, S. Govind, P. C. Dedon, R. Sternglanz and **E. C. Lai** (2015). An extensive allelic series of *Drosophila kae1* mutants reveals diverse and tissue-specific requirements for t6A biogenesis. ***RNA*** **12**: 2103-2118. PMID: 26516084. PMCID: PMC4647464.

(49) Wen, J., E. Ladewig, S. Shenker, J. Mohammed and **E. C. Lai** (2015). Analysis of nearly one thousand mammalian mirtrons reveals novel features of Dicer substrates and miRNA evolution. ***PLoS Computational Biology*** **11** (9): e1004441. PMID: 26325366. PMCID: PMC4556696.

(50) Bortolamiol-Becet, D., F. Hu, D. Jee, J. Wen, K. Okamura, C.-J. Lin, S. L. Ameres and **E. C. Lai** (2015). Selective suppression of the splicing-mediated microRNA pathway by the terminal uridyltransferase Tailor. ***Molecular Cell*** **59**: 217-228. (Highlighted in ***Molecular Cell*** **59**: 141-143). PMID: 26145174. PMCID: PMC4517475.

(51) Sun, K., D. Jee, L. F. de Navas, H. Duan and **E. C. Lai** (2015). Multiple biological processes are mediated by functionally redundant activities of *Drosophila mir-279* and *mir-996.* ***PLoS Genetics*** **11**: e1005245. PMID: 26042831. PMCID: PMC4456407.

(52) Fulga, T. A., E. McNeill, R. Binari, J. Yelick, A. Blanche, M. Booker, M. Schnall-Levin, Y. Zhao, T. DeLucca, F. Bejarano, Z. Han, **E. C. Lai**, D. Wall, N. Perrimon and D. V. Vactor (2015). Unbiased screening by conditional competitive inhibition reveals novel functions of conserved *Drosophila* miRNAs during development and adult behavior. ***Nature Communications*** **6:** 7279 (doi:10.1038/ncomms8279). PMID: 26081261. PMCID: PMC4471878.

(53) Chak, L.-L., J. Mohammed, **E. C. Lai**, G. Tucker-Kellogg and K. Okamura (2015). A deeply conserved, non-canonical miRNA hosted by ribosomal DNA. ***RNA*** **3**: 375-384. PMID: 25605965. PMCID: PMC4338334.

(54) Wen, J., H. Duan, F. Bejarano, K. Okamura, L. Fabian, J. A. Brill, D. Bortolamiol-Becet, R. Martin, J. G. Ruby and **E. C. Lai** (2015). Adaptive regulation of testis gene expression and control of male fertility by the *Drosophila* hairpin RNA pathway. ***Molecular Cell*** **57**: 165-178. PMID: 25544562. PMCID: PMC4289472.

(55) Dai, Q., A. Ren, J. O. Westholm, H. Duan, D. J. Patel and **E. C. Lai** (2015). Common and distinct DNA-binding and regulatory activities of the BEN-solo transcription factor family. ***Genes and Development*** **29**: 48-62. PMID: 25561495. PMCID: PMC4281564.

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(59) Fagegaltier, D., A. König, A. Gordon, **E. C. Lai**, T. R. Gingeras, G. J. Hannon and H. R. Shcherbata (2014). Sexually dimorphic expression and functions of *Drosophila* miRNAs (2014). ***Genetics*** **198**: 647-668. PMID: 25081570. PMCID: PMC4196619.

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Review Articles, Book chapters and Opinion pieces

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(177) **Lai, E. C.** and V. Orgogozo (2004). A hidden program in *Drosophila* peripheral neurogenesis revealed: fundamental principles underlying sensory organ diversity. ***Developmental Biology* 269**: 1-17. PMID: 15081353.

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(181) **Lai, E. C.** (2003). RNA sensors and riboswitches: self-regulating messages. ***Current Biology* 13**: R285-R291. PMID: 12676109.

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Selected Oral Presentations at Symposia

2005
Small but powerful: The regulatory roles of non-coding RNAs (September 2005) Villars, Switzerland.

2006
Keystone Symposium: ***RNAi and Related Pathways*** (January 2006) Vancouver, Canada.
The Genome Conference (February 2006) Lorne, Australia.
47th Annual Drosophila Research Conference (March-April 2006) Houston, TX
15th International Workshop on the Molecular and Developmental Biology of Drosophila (June 2006) Crete, Greece
11th Annual SCBA International Symposium (July 2006) San Francisco, CA

2007
48th Annual Drosophila Research Conference (March 2007) Philadelphia, PA.
Keystone Symposium: ***MicroRNAs and siRNAs: Biological Functions and Mechanisms*** (January 2007) Keystone, CO.
Society of Developmental Biology, Northeast Regional Meeting (April 2007) Woods Hole, MA.
2nd MicroSymposium on Small RNAs (May 2007) Vienna, Austria.

Small RNAs in Development, Immunology and Cancer (October 2007) New York Academy of Sciences.
Expanding the Genetic toolkit for Drosophila (October 2007) Janelia Farm, VA.

2008
RNAi, MiRNA, and Non-Coding RNA, Keystone Symposium (March 2008), British Columbia, Canada
49th Annual Drosophila Research Conference (April 2008), San Diego, CA. modENCODE workshop.
Small RNAs: Biology and Technology (June 2008) IRIC Montreal, QC, Canada.
Computational Systems Biology 2008 (August 2008) Stanford, CA.
9th International Congress on Cell Biology (October 2008) Seoul, Korea.
International Symposium on Molecular Biology: RNA & Diseases (October 2008) Yongin, Korea.

2009
Keystone Symposium: ***The Biology of RNA Silencing*** (April 2009) Victoria, Canada.
50th Annual Drosophila Research Conference (April 2009) Chicago, IL. modENCODE workshop.
Keystone Symposium: ***MicroRNA and Cancer*** (June 2009), Keystone, CO.
42nd Meeting of the Society for the Study of Reproduction (July 2009), Pittsburgh, PA.
Non-coding RNA Species in Nervous System Development and Function (November 2009), New York Academy of Sciences, NY. Symposium co-organizer and speaker.
21st European Drosophila Research Conference (November 2009), Nice, France.

2010
51th Annual Drosophila Research Conference (April 2010) Washington DC. modENCODE workshop.
2nd Annual NYU RNAi Symposium (June 2010) New York, NY.
17th International Workshop on the Molecular and Developmental Biology of Drosophila (June 2010), Crete, Greece.
5th London Fly meeting (September 2010), London, England.
8th Annual Symposium in Plant Biology (October 2010) Amherst, MA.
Yale Symposium on RNA and Development (October 2010) New Haven, CT.
IRCM Meeting on Systems Biology (October 2010) Montreal Canada.

2011
Keystone Symposium: Mechanism and Biology of Silencing (March 2011) Monterey, CA.
52nd Annual Drosophila Research Conference (April 2011) San Diego, CA. (Plenary speaker).
The Cellular Functions of RNA Nucleases (November 2011). Symposium co-organizer and speaker. New York Academy of Sciences, NY.
44nd Annual Meeting of the American Society of Nephrology (November 2011) Philadelphia PA.

2012
microRNA 2012: International Symposium (March 2012) São Paulo, Brazil.
Fondation des Treilles: Small silencing RNA Biology and Mechanism (April 2012) Tourtour, France.
7th Microsymposium on Small RNAs (May 2012) Basel, Switzerland.
18th International Workshop on the Molecular and Developmental Biology of Drosophila (June 2012), Crete, Greece.
2012 Janssen Award for Biomedical Research Symposium (Sept 2012) New York Academy of Sciences, NY.
13th Annual Riboclub meeting (Sept 2012) Sherbooke, Quebec Canada.

2013
7th International Conference on Structural Biology and Functional Genomics (December 2013) National University of Singapore, Singapore.

2014
13th Annual McGill Barbados Workshops on Systems Biology (January 2014). Barbados.
IMP-IMBA-BI Meeting on "microRNAs in Human Disease" (January 2014). Vienna Austria.
Keystone Symposium: RNA silencing (January 2014). Seattle, WA
9th Microsymposium on Small RNAs (May 2014) Vienna, Austria.
19th International Workshop on the Molecular and Developmental Biology of Drosophila (June 2014), Crete, Greece.

2015
Society of Developmental Biology, Northeast Regional Meeting (April 2015) Woods Hole, MA.
10th Microsymposium on Small RNAs (May 2015) Vienna, Austria.
Cell Press LabLinks symposium: RNA and the Nervous System (July 2015) New York, NY

2016
EMBO Workshop Multiple functions of piRNAs and PIWI proteins (April 2016) Montpellier, France
20th International Workshop on the Molecular and Developmental Biology of Drosophila (June 2016), Crete, Greece.
Society for Developmental Biology 75th Annual Meeting (August 2016) Boston, MA
39th Annual Meeting of The Molecular Biology Society of Japan (November 2016) Yokohama, Japan

2017
Emerging roles of non-coding RNAs in nervous system development, plasticity and disease (June 2017) Marburg, Germany

2018
CSHL Regulatory & Non-Coding RNAs (May 2018) CSHL, New York
13th Microsymposium on Small RNAs (May 2018) Vienna, Austria
21th International Workshop on the Molecular and Developmental Biology of Drosophila (June 2018), Crete, Greece
ELAVENICE workshop on Elav proteins (September 2018), Venice, Italy

2019
2nd Asian Pacific Drosophila Neuroscience Conference (January 2019) Taipei, Taiwan
Keystone Symposium on Small Regulatory RNAs (March 2019) Daejeon, Korea
Brandeis Genetics Training Grant Symposium (October 2019) Boston, MA

2020
CSHL Regulatory & Non-coding RNAs (May 2020). Virtual conference.

2021
CSHL Eukaryotic mRNA Processing (August 2021). Virtual conference.

2022
CSHL Regulatory & Non-coding RNAs (May 2022) CSHL, NY
23rd International Workshop on the Molecular and Developmental Biology of Drosophila (June 2022), Crete, Greece

2023
McGill Workshop on RNA-mediated silencing (April 2023) Bellairs Station, Barbados.
NCI RNA Biology Symposium (April 2023) NIH Bethesda, MD
University of Michigan Human Genetics Department Retreat, MI, keynote speaker
The International Porphyrias Symposium: Advancing the Science and Art (Oct 2023) Bethesda, MD
Keystone Symposium on Regulatory RNAs: Emerging Mechanisms (Dec 2023) Banff, Canada

2023
The Argonautes meeting (August 2024). Copenhagen, Denmark.

Invited Lectures

2006 Fox Chase Cancer Center, Philadelphia PA
New York Academy of Sciences, New York City NY
Skirball Institute, New York City NY
University of Vermont, Burlington VA

2007 University of Maryland Biotechnology Institute, College Park MD
Johns Hopkins University, Baltimore MD
Yale University, New Haven CT
Oregon State University, Corvallis OR
University of Oregon, Eugene OR

2008 University of Texas at Southwestern Medical School, Dallas TX
Emory University, Atlanta GA
Mount Sinai School of Medicine, New York City NY
New York University, New York City NY
University of Washington, Seattle WA
Seoul National University, Seoul Korea
Korea Advanced Institute of Science and Technology, Daejon Korea
Duke University, Durham NC

2009 Purdue University, West Lafayette IN
Indiana University, Bloomington IN
University of California, Berkeley CA
Columbia University Medical Center, New York City, NY
University of Illinois, Chicago IL
Institut de Biologie Moléculaire et Cellulaire, Strasbourg France
Institut de Génétique et de Biologie Moléculaire et Cellulaire, Illkirch France

2010 Colby College, Waterville ME
Florida State University, Tallahassee FL
University of Colorado, Boulder CO
Hunter College, City University of New York NY
The Waksman Institute, Rutgers, The State University of New Jersey, Piscataway, NJ
University of Texas Southwestern Medical School, Dallas TX

2011 Jefferson Medical College, Thomas Jefferson University, Philadephia PA
The City College of New York, NY
Sanford | Burnham Medical Research Institute, San Diego CA
Max Planck Institute of Molecular Cell Biology and Genetics, Dresden Germany

2012 University of Colorado Anschutz Medical Campus, Aurora, CO
McGill University Centre for Research in Neuroscience, Montreal Canada
Boston University School of Medicine, Genome Science Institute, Boston MA

2013 MRC Centre for Developmental Neurobiology, King's College, London England

2014 University of Texas Health Science Center, San Antonio TX
Stockholm University, Sweden

2015 Rutgers New Jersey Medical School, Newark NJ
University of Nevada, Reno NV
Brandeis University, Waltham MA
National Institute of Diabetes and Digestive and Kidney Diseases, NIH Bethesda MD

2016 Michigan Technological University, Houghton MI
University of Tokyo, Japan

2017 St. Johns University, New York City NY
University of Wisconsin, Madison WI
Temasek Life Sciences Laboratory, Singapore
Cornell University, Ithaca NY
Institute of Molecular Biology, Mainz Germany
New England Biolabs, Ipswich MA

2018 Buck Institute, Novato CA
National Institutes of Health (NIH-NIDDK), Washington DC

2019 Chang Gung University, Taiwan
University of Illinois at Urbana-Champaign, Champaign IL
University of California, San Francisco CA

2020 University of Florida, Tallahassee FL

2021 Institute of Molecular Pathology, Vienna BioCenter, Austria (virtual)
University of Pennsylvania, PA (virtual)

2022 MD Anderson Cancer Center, Houston TX (virtual)
University of Southern Mississippi, Hattiesburg MS
Syracuse University, Syracuse NY
University of California at Riverside, Riverside CA
The Waksman Institute, Rutgers University, The State University of New Jersey, Piscataway, NJ
University of California at Santa Barbara, Santa Barbara CA
The Francis Crick Institute, London England
University of Colorado Anschutz Medical Campus, Aurora CO
Colorado State University, Fort Collins CO

2023 University of Massachusetts Chan Medical School, Worcester MA
University of California at San Francisco, San Francisco CA
Emory University, Atlanta GA

Rutgers New Jersey Medical School, Newark NJ
University of Utah, Salt Lake City UT
University of Michigan, Ann Arbor MI
University of Toronto, Toronto Canada

2024 Boston University, Boston MA

Academic Service

regular reviewer for: *Cell, Science, Nature, Nature Genetics, Nature Structural Molecular Biology, Nature Reviews Molecular Biology, Nature Protocols, Nature Communications, eLIFE, Developmental Cell, Molecular Cell, Cell Host Microbe, Current Biology, Genes & Development, Development, RNA, Developmental Biology, EMBO Journal, Molecular and Cellular Biology, PNAS, Genome Research, Genome Biology, PLoS Biology, PLoS Genetics, PLoS Computational Biology, Genetics*, *G3, etc.*

2006 **NIH NIMH** special emphasis panel study section, *ad hoc* member
2007 **NIH GCAT** study section, *ad hoc* member
2010 **NSF** Kansas EPSCoR, *ad hoc* reviewer
2013 **FWF-Austrian Science Fund**, "RNA Biology" Doctoral Program, external review panel
2016 **NSF** *ad hoc* reviewer
2017 **Human Frontiers Science Program**, Career Development Awards, *ad hoc* reviewer
2017-19 **NIH MNG** study section, *ad hoc* member (2 times/year)
2018 **NIH NIGMS-MIRA** grants (ZRG1-CB-J55), *ad hoc* reviewer
2018 **Boehringer Ingelheim Fonds**, Foundation for Basic Research in Medicine, *ad hoc* reviewer
2019 **Swiss National Science Foundation**, *ad hoc* reviewer
2020 **European Research Council**, *ad hoc* reviewer
2019-2023 **NIH MNG** study section, standing member (2-3 times/year)
2023 **FWF-Austrian Science Fund**, *ad hoc* reviewer
2023 **Czech Science Foundation**, *ad hoc* reviewer

New York Academy of Sciences, RNAi and ncRNA Discussion Group, Committee co-chair (2005-2013)
Editorial Board, ***Fly*** 2006-present
Editorial Board, ***Genome Biology*** 2010-present

Fellowships and Awards of group members

Joshua Hagen, Ruth Kirschstein NRSA Fellowship (2007-2010)
Jr-Shiuan Yang, Frank Horsfall Lappin GSK Fellowship (2011)
Katsutomo Okamura, Japan Society for Promotion of Science (2006-2007)
Charles Revson Senior Fellow In Biomedical Science (2007-2009)
Japan Society for Promotion of Science (2010-2012)
Qi Dai, Swedish Research Council Postdoctoral Fellowship (2008-2010)
Zhigang Jin, National Cancer Institute of Canada-Terry Fox Foundation (2009-2010)
Celia Andreu-Agullo, EMBO Longterm Postdoctoral Fellowship (2009-2011)
NYSTEM fellowship (2011-2013)
Jakub Westholm, Swedish Research Council Postdoctoral Fellowship (2011)
Swedish Society for Medical Research Fellowship (2011-2012)
Pedro Miura, CIHR Post-doctoral Fellowship (2011-2013)
Yang Yu, NYSTEM fellowship (2015-2017)
Seungjae Lee, NYSTEM fellowship (2020-2022)
Jeffrey Vedanayagam, NIH K99/R00 Pathway to Independence Award (2021-2025)
David Jee, NIH T32 Weill Cornell Training Grant in Molecular and Cellular Biology (2014-2016)
Weill Cornell Clinical & Translational Science Center Fellowship (2023-2025)

Selected current positions of former group members

David Raleigh (undergrad mentee): Assistant Professor, UC San Francisco
Peter Ly (SURP student): Assistant Professor, UT Southwestern Medical Center
Katsutomo Okamura (PD): Professor (with tenure), Nara Institute of Science and Technology, Japan
Alex Flynt (PD): Associate Professor (with tenure), University of Southern Mississippi, Hattiesburg MS
Pedro Miura (PD): Associate Professor (with tenure), UConn Health, Farmington CT
Qi Dai (PD): Associate Professor (with tenure), University of Stockholm, Sweden
Jiayu Wen (PD): Associate Professor (with tenure), Australian National University, Australia

Rajaguru Aradhya (PD): Assistant Professor, Amrita Institute of Medical Sciences and Research, India
Yang Yu (PD): Assistant Professor, Peking Union Medical College, China
Jeffrey Vedanayagam (PD): Assistant Professor, University of Texas San Antonio
Wei-Jen Chung (tech): Director, Discovery Bioinformatics, Loxo Oncology at Lilly
Sol Shenker (PhD): Director, Computational Biology, KSQ Therapeutics
Nicolas Robine (PD): Director, Computational Biology, New York Genome Center
Jakub Westholm (PD): Staff Scientist, SciLifeLab, Stockholm Sweden
Celia Andreu-Agullo (PD): Director, Biomarkers - Volastra Therapeutics (formerly Principal Scientist, Rgenix)
Peter Smibert (PD): Vice President, Biology - 10X Genomics
(formerly Director of Technology Innovation Laboratory, New York Genome Center)

Research Support

Ongoing Research Support:

NIH-NINDS R01 NS083833-10 1/15/2014-12/31/2023
Mechanism and biology of widespread distal 3'UTR utilization in the CNS
Role: PI

NIH-NIGMS R01 GM083300-16 9/1/2007-4/31/2025
Supplemental award: R01 GM083300-16S1
Non-canonical miRNA biogenesis mechanisms in *Drosophila* and mammals
Role: PI

NIH-NICHD R01 HD108914-02 05/01/2022-03/31/2027
Essential roles for RNAi/hpRNAs to resolve intragenomic conflicts in the male germline
Role: PI

Tow Center for Developmental Oncology, Pilot Grant 10/1/2023-9/30/2025
microRNA deregulation in embryonal tumors with multilayered rosettes (ETMR)
Role: PI

Tri-Institutional Stem Cell Initiative (Tri-SCI) #2023-010 12/1/2023-11/30/2025
BEND3, a novel transcription factor linking heterochromatin and polycomb regulation in hESCs
Role: PI (Dr. Yicheng Long, co-PI)

Completed Research Support:

NIH-NICHD R01 HD095897-05 08/17/2018 – 05/31/2023
A miR-486/Dock3 signaling axis modulates dystrophin-deficient pathology
Role: subcontract (Dr. Matthew Alexander, PI)

Equinox Cycle for Survival 1/1/2021-12/31/2022
Functional analysis of Dicer hotspot mutations in cancer
Role: PI

NIH-NHLBI R01 HL135564-05 04/10/2017 – 01/31/2021
Molecular and genetic analysis of novel Slicer-dependent miRNA pathways in blood
Role: lead PI/MPI

BSF 2015398 11/1/2016-10/31/2020
The role of microRNAs in the decline of germline stem cell functionality during aging
Role: co-PI (co-PI, Dr. Hila Toledano)

NIH-NINDS R01 NS074037-05 9/1/2011-8/31/2016
BEN factors are conserved CSL co-repressors in Notch-mediated neural development
Role: PI

Functional Genomics Initiative, MSKCC 5/1/2016-7/30/2018
Molecular genetic analysis of cancer hotspot mutations in core miRNA machinery
Role: PI (co-PI, Dr. Danwei Huangfu)

Susan and Peter Solomon Divisional Genomics Program 1/1/2017-12/31-2017
Genomic analysis of Slicer-dependent miRNA pathways in blood and leukemia

NYSTEM N11G-083 3/1/2013-8/31/2016
Control of neural stem cell identity by the zinc finger protein Ars2
Role: PI

Functional Genomics Initiative, MSKCC 1/1/2015-12/13/15
Analysis of Dicer1 hotspot mutations in cancer
Role: PI

Burroughs Wellcome Fund, Career Award 12/01/04-08/30/15
Genomewide analysis of Drosophila microRNA function
Role: PI

NIH-NHGRI U01 HG004261 4/1/07-3/31/12
Annotation of the small RNA/microRNA component of the Drosophila genome
Role: PI

NIH-NHGRI U01 HG004261 ARRA supplement 9/1/09-08/30/11

NIH-NHGRI RC2 HG005639 9/1/09-08/30/12
A Data Analysis Center for integration of fly and worm modENCODE datasets

STARR Cancer Consortium I3-A139 9/1/09-8/30/11
Elucidation of microRNA control of cell signaling and apoptosis pathways
Role: PI

V Foundation for Cancer Research, V Scholar Grant 12/1/06-11/30/08
Genetic identification of cancer-relevant miRNA activities and novel miRNA pathway components

Sidney Kimmel Foundation for Cancer Research 7/1/07-5/30/09
Functional analysis of microRNA activity in Drosophila cancer models

Leukemia and Lymphoma Society, Special Fellowship 07/01/04-06/30/07
Genomewide analyses of microRNA function in Drosophila