

國立清華大學生命科學院
NATIONAL TSING HUA UNIVERSITY
College of Life Science

Special Seminar

Speaker: **Prof. Paul Fredrick
Lasko**

James McGill Professor and
Department Chair
Department of Biology McGill
University



Title: **Post-transcriptional gene regulation
in the *Drosophila* germ line**

Time: 3:30 p.m.~5:30 p.m., Friday, Dec. 10, 2010

Place: Room 112, Life Science Building I

Host: Prof. Ann-Shyn Chiang

Language: English

Contact: Dr. Tzu-en Hua (03-5742478)



BRAIN RESEARCH CENTER
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CURRICULUM VITAE

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Present position: James McGill Professor and Department Chair
Department of Biology
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Personal: Born 23 March 1959, New Brunswick, N. J., USA
U. S./Canadian dual citizenship.
Married to Carol Walker; two children, Daniel, 19,
Michael, 14.

Education:

1980-1986: Department of Biology
Massachusetts Institute of Technology
Cambridge, Massachusetts
Ph. D. in Biology, June 1986 (supervisor: M. L.
Pardue).

1977-1980: Harvard College
Cambridge, Massachusetts
A. B. in Biochemical Sciences, *magna cum laude*,
June 1980.

1990-1996

Assistant Professor
Department of Biology
McGill University
Montreal, Quebec, Canada

1986-1990

Postdoctoral Researcher (supervisor: M. Ashburner)
Department of Genetics
University of Cambridge
Cambridge, England

Awards, Fellowships and Scholarships:

- 2004: Award of Excellence, Genetics Society of Canada.
- 1998-2003: Investigator, Canadian Institutes for Health Research (salary award).
- 1998: Young Scientist Award, Genetics Society of Canada.
- 1992-1998: Research Scientist of the National Cancer Institute of Canada (salary award).
- 1989-1990: MRC (United Kingdom) Research Associateship
Department of Genetics, University of Cambridge
- 1986-1989: National Institutes of Health Postdoctoral Fellowship (NIGMS, Genetics).
- 1983-1986: National Institutes of Health Predoctoral Traineeship, Department of Biology, MIT.
- 1980-1983: National Science Foundation Graduate Fellowship.
- 1977-1980: National Merit Scholar.

Publications:

1. Lasko, P. (2010) Tudor domain. *Curr. Biol.*, in press ("Quick Guide" mini-review article).
2. Richter, J. D. and Lasko, P. Translational control in oocyte development. Invited review for *Germ Cells*, Cold Spring Harbor Laboratory Press, submitted for publication.
3. Kugler, J.-M., Woo, J.-S., Oh, B.-H., and Lasko, P. (2010) Competitive regulation of *Drosophila* Vasa *in vivo* through paralogous Cullin-RING E3 ligase specificity receptors. *Mol. Cell. Biol.* 30: 1769-1782.
4. Kugler, J.-M., Lem, C., and Lasko, P. (2010) Reduced *cul-5* activity causes aberrant follicular morphogenesis and germ cell loss in *Drosophila*. *PLoS ONE* 5(2): e9048.
5. Kirino, Y., Vourekas, A., Sayed, N., de Lima Alves, F., Thomson, T., Lasko, P., Rappsilber, J., Jongens, T. A., and Mourelatos, Z. (2010) Arginine methylation of Aubergine mediates Tudor binding and germ plasm localization. *RNA* 16: 70-78.
6. Hernández, G., Altmann, M., and Lasko, P. (2010) The origins and evolution of the mechanisms regulating translation initiation in eukaryotes. *Trends Biochem.* 35: 63-73.
7. Liu, N., Han, H., and Lasko, P. (2009) Vasa promotes *Drosophila* germ line stem cell differentiation by activating *mei-P26* translation through a direct interaction with a U-rich motif in its 3' UTR. *Genes Dev.* 23: 2742-2752.
8. Kilfoil, M., Lasko, P., and Abouheif, E. (2009) Stochastic variation: from single cells to superorganisms. *HFSP J.* 3: 379-385.
9. Lasko, P. (2009) Translational control during early development. *In Translational Control in Health and Disease.* (Hershey, J. W., ed.), vol. 90 of *Progress in Molecular Biology and Translational Science.* Burlington: Academic Press, p. 211-254.

10. Maurizil, M., Cavaliere, V., Gamberi, C., Lasko, P., Gargiulo, G., and Taddei, C. (2009) Vasa protein is localized in the germ cells and in the oocyte associated pyriform follicle cells during early oogenesis in the lizard *Podarcis sicula*. *Dev. Genes Evol.* 219: 361-367.
11. Pare, J. M., Tahbaz, N., LaPointe, P., Lasko, P., and Hobman, T. C. (2009) Hsp90 regulates the function of Argonaute proteins and their recruitment to stress granules and P-bodies. *Mol. Biol. Cell* 20: 3273-3284.
12. Moore, J., Han, H., and Lasko, P. (2009) Bruno negatively regulates *germ cell-less* expression in a BRE-independent manner. *Mech. Dev.* 126: 503-516.
13. Moore, J. and Lasko, P. (2009) Breaking the A chain: regulating mRNAs in development through CCR4 deadenylase. *F1000 Biology Reports* 1: 20.
14. Kugler, J.-M. and Lasko, P. (2009) Localization, anchoring, and translational control of *oskar*, *gurken*, *bicoid*, and *nanos* mRNA during *Drosophila* oogenesis. *Fly*, 3: 15-28.
15. Solana, J., Lasko, P., and Romero, R. (2009) *Spoltud-1* is a chromatoid body component required for planarian long-term stem cell self-renewal. *Dev. Biol.*, 328: 410-421.
16. Kugler, J.-M., Chicoine, J., and Lasko, P. (2009) Bicaudal-C associates with a Trailer Hitch/Me31B complex and is required for efficient Gurken secretion. *Dev. Biol.* 328: 160-172.
17. Moore, J. and Lasko, P. (2009) Translational control in invertebrate development. In *Handbook of Cell Signaling* (ed. N. Sonenberg; Academic Press, New York), pp. 2323-2328.
18. Stein, D. and Lasko, P. (2008) The 30th Anniversary Crete Fly Meeting: from individual molecules to 12 genomes, and beyond. *Fly* 2: 326-333.

19. Dansereau, D. A., and Lasko, P. (2008) RanBPM regulates cell shape, arrangement and capacity of the female germline stem cell niche in *Drosophila melanogaster*. *J. Cell Biol.* 182: 963-977.
20. Thomson, T., Liu, N., Arkov, A., Lehmann, R., and Lasko, P. (2008) Isolation of new polar granule components in *Drosophila* reveals P body and ER associated proteins. *Mech. Dev.* 125: 865-873.
21. Hanyu-Nakamura, K., Sonobe, H., Tanigawa, A., Lasko, P., and Nakamura, A. (2008) *Drosophila* PGC protein inhibits p-TEFb recruitment to chromatin in primordial germ cells. *Nature* 451: 730-733.
22. Dansereau, D. A. and Lasko, P. (2008) The development of germline stem cells in *Drosophila*. In: Hou, S. X. and Singh, S. R. (eds.) *Methods in Molecular Biology*, volume 450, Germline Stem Cells. Totowa, NJ: Humana Press, p. 3- 26.
23. Chicoine, J., Benoit, P., Gamberi, C., Paliouras, M., Simonelig, M., and Lasko, P. (2007) Bicaudal-C recruits CCR4-NOT deadenylase to target mRNAs and regulates oogenesis, cytoskeletal organization, and its own expression. *Developmental Cell* 13: 691-704.
24. Levitin, A., Laforest, M. J., Tettweiler, G., Oberholzer, U., Marcil, A., Alarco, A.-M., Thomas, D. Y., Lasko, P., and Whiteway, M. (2007) *Drosophila melanogaster* Thor and response to *Candida albicans* infection. *Eukaryotic Cell* 6: 658-663.
25. Lasko, P. and Sonenberg, N. (2007) Coordinated transcriptional and translational control in metabolic homeostasis in flies. *Genes Dev.* 21: 235-237.
26. Tettweiler, G. and Lasko, P. (2007) Investigating translation initiation using *Drosophila* molecular genetics. *Meth. Enzymol.* 429: 227-242.
27. Levine, S. L., Sunday, S., Dörig, R. E., Suter, B., and Lasko, P. (2007) Genetic maps of the proximal half of chromosome arm 2L of *Drosophila melanogaster*. *Genome* 50: 137-141.

28. Cho, P., Gamberi, C., Cho-Park, Y. A., Cho-Park, I. B., Lasko, P., and Sonenberg, N. (2006) Cap-dependent translational inhibition establishes two opposing morphogen gradients in the *Drosophila* embryo. *Curr. Biol.* 16: 2035-2041.
29. Tettweiler, G. and Lasko, P. (2006) A new model for translational regulation of specific mRNAs. *Trends Biochem. Sci.* 31: 607-610.
30. Xing, Y., Gosden, R., Lasko, P., and Clarke, H. (2006) Murine homologues of the *Drosophila gustavus* gene are expressed in ovarian granulosa cells. *Reproduction* 131: 905-915.
31. Linder, P. and Lasko, P. (2006) Bent out of shape: RNA unwinding by the DEAD-box helicase Vasa. *Cell* 125: 219-221.
32. Gamberi, C., Johnstone, O., and Lasko, P. (2006) *Drosophila* RNA binding proteins. *Int. Rev. Cytol.* 248: 43-139.

Book Reviews, Meeting Reports:

Lasko, P. (2007) The Genetics Society of Canada takes a flight with *Drosophila* to celebrate its 50th year. *Fly* 1: in press.

Lasko, P. (1994) Sex cells through the phyla. Review of *Ciba Foundation Symposium: Germline Development* (J. Marsh and J. Goode, eds.) *BioEssays* 16: 939-940.

Lasko, P. (1994) Review of *Evolutionary Conservation of Developmental Mechanisms* (A. Spradling, ed.) *Quart. Rev. Biol.* 69: 401-402.

Lasko, P. F. (1990) Molecules, communication and responses in development. Review of *The Molecular Basis of Positional Signalling*. *BioEssays* 12: 307-308.

Major Invited Presentations:

Lasko, P. (2009) Invited platform presentation, EMBO/FASEB Summer Research Conference on "Intracellular RNA Localization and Localized Translation", Saxton River, VT, July 12-17, 2009.

Lasko, P. (2008) Platform presentation at the EMBO International Workshop on the Molecular and Developmental Biology of *Drosophila*, Kolymbari, Crete, June 23-29, 2008.

Lasko, P. (2008) Platform presentation at "Germ Cell Symposium in honor of Tony Mahowald, Marquette University, Milwaukee, WI, June 21, 2008.

Lasko, P. (2007) Invited platform presentation, EMBO/FASEB Summer Research Conference on "Intracellular RNA Localization and Localized Translation", Il Ciocco, Italy, July 1-6, 2007.

Lasko, P. (2006) Invited platform presentation at the Cold Spring Harbor meeting on Translational Control, Cold Spring Harbor, NY, September 7-10, 2006.

Lasko, P. (2006) Platform presentation at the EMBO International Workshop on the Molecular and Developmental Biology of *Drosophila*, Kolymbari, Crete, June 18-23, 2006.

Invited Seminars:

- April 2010: Department of Biochemistry, University of Sherbrooke.
January 2010: Lady Davis Institute, Jewish General Hospital, Montreal.
November 2009: CNRS, University Pierre and Marie Curie, Oceanographic Observatory, Villefranche-sur-Mer, France.
October 2009: Centre for Neuroscience Research, MUHC, Montreal.
June 2009: RIKEN Institute for Developmental Biology, Kobe, Japan.
February 2009: Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto.
February 2009: Department of Cell Biology and Anatomy, University of Miami School of Medicine, Miami, FL.
October 2008: Department of Biochemistry, Hebrew University, Jerusalem, Israel.

October 2008: Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel.

October 2008: Academy of Science, Bologna, Italy.

June 2008: Department of Medical Genetics, University of Toronto.

March 2008: Institute for Human Genetics, CNRS, Montpellier, France.

February 2008: Max Planck Institute for Cell Biology and Genetics, Dresden, Germany.

December 2007: Department of Biology, University of Windsor, Ontario.

October 2007: Department of Biology, Concordia University, Montreal.

October 2007: Department of Biology, University of Virginia, Charlottesville.

September 2007: Department of Molecular and Cellular Biology and Biochemistry, Brown University, Providence, RI.

July 2007: Department of Experimental and Evolutionary Biology, University of Bologna, Italy.

June 2007: CIC bioGUNE, Derio, Bizkaia, Spain.

June 2007: Department of Biochemistry, McGill University.

January 2007: Institut de recherche de l'immunologie et cardiologie (IRIC), Université de Montréal.

November 2006: National Centre for Biological Sciences, Bangalore, India.

November 2006: Department of Biology, Tata Institute for Fundamental Research, Mumbai, India.

November 2006: Department of Genetics, Case Western Reserve University, Cleveland, OH.

October 2006: Institute of Cellular and Molecular Biology, University of Texas, Austin.

May 2006: Department of Genetics, Rutgers University, Piscataway, NJ.

March 2006: Department of Microbiology, University of Geneva, Switzerland.

February 2006: Department of Biology, Memorial University of Newfoundland, St. John's.

Other Contributions (Internal to McGill--recent):

2009: Member, Provost's Advisory Committee for the Dean of Science.

2009-present: Member, Principal's Task Force on Diversity, Excellence, and Community Engagement.

2008-present: University Senator.

2007-present: Member, Class Scheduling Advisory Workgroup.

2007-2010: Member, Committee to advise the Vice-Principal (Research) on renewal of individual Canada Research Chairs in biomedical areas.

2006: Member, Principal's Advisory Committee for the Dean of Medicine and Vice-Principal, Health Affairs.

Other Contributions (External to McGill):

2011: Co-organizer with Ilan Davis, Claudia Bagni, and Kelsey Martin of the FASEB/EMBO conference on RNA localization and translational control, to be held in Italy.

2010: Co-organizer with Jacques Drouin and Richard Roy of the 5th Canadian Developmental Biology Conference in Mont-Tremblant, Quebec.

2007-2010: Chair, Council of Scientists, Human Frontiers of Science Program Organization. This is a prestigious organization based in Strasbourg, France that funds international collaborations that take interdisciplinary approaches to problems in life sciences. More information is available on www.hfsp.org.

2007-2010: President, Genetics Society of Canada.

2008-present: Editorial Board, *Journal of Cellular Communications and Signaling*

2006-present: Editorial Board, *The HFSP Journal*.

2006-present: Editorial Board, *Fly*.

2006-2007: Vice-President, Genetics Society of Canada.

2006: Co-organizer with Jacques Drouin, Howard Lipshitz, and Jacques Michaud of the 3rd Canadian Developmental Biology Conference in Mont-Tremblant, Quebec, which attracted approximately 260 participants.

2005-2007: Member, Council of Scientists, Human Frontiers of Science Program Organization.

Grant Reviews:

Chair, Model Systems Review Panel, National Cancer Institute of Canada, 2009-present.

Member, Model Systems Review Panel, National Cancer Institute of Canada, 2006-2008.

Invitee, DEV1 Initial Review Group, Center for Scientific Review, NIH, 2009.

Panel Evaluator, European Research Council, 2007-present.