CURRICULUM VITAE

Ed Luk

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EDUCATION

Johns Hopkins University
1998-2003 Ph.D. in Biochemistry and Molecular Biology, May 2004

University of Michigan, Ann Arbor
1995-1998 Bachelor of Science with High Distinction in Biochemistry, GPA 3.9/4.0, August 1998

POSITIONS

Stony Brook University
Department of Biochemistry and Cell Biology
2011-present Assistant Professor

National Cancer Institute
Laboratory of Biochemistry and Molecular Biology
2008-2011 Research Fellow
2003-2008 Postdoctoral Fellow

GRANTS AND SUPPORT

2013-present NIH R01 Research Project Grant (R01GM104111)
2005-2007 Leukemia and Lymphoma Society Postdoctoral Fellowship
1998 Gerard Summer Research Fellowship

HONORS & AWARDS

2012 National Academies Education Fellow in the Life Sciences
2007 Fellows Award for Research Excellence (FARE), NIH
1998 Highest Honors in Biochemistry
1998 The Merck Index Award
1998 Phi Kappa Phi, University of Michigan, Ann Arbor
1996-1998 College of Literature, Science and the Arts Scholarship
1996-1998 Class Honors, University of Michigan, Ann Arbor
1996 William J. Branstrom Freshman Prize, University of Michigan, Ann Arbor

TEACHING

2013 Spring *Course:* **Undergraduate Biochemistry II (BIO362)**
Twelve lectures on nucleic acids, chromosomes, DNA replication and repair, and molecular biology techniques

2012 Fall — *Course:* **Molecular Genetics (MCB 503)**
Four lectures on DNA replication and transcriptional regulation

2012 Fall — *Course:* **Graduate Biochemistry (MCB520)**
One lecture on chromatin dynamics and gene regulation

2012 Spring — Participant of the Summer Institute on Undergraduate Education in Biology

2011 Fall — *Course:* **Graduate Biochemistry (MCB520)**
One lecture on chromatin dynamics and gene regulation

MENTORING

2012-present — ***Christina Roman*** **(Advisor)**
HHMI Exceptional Research Opportunities Program Fellow (EXROP) 2013
URECA fellow 2012
MARC fellow 2012
Project title: The role of histone modifications on nucleosome eviction at gene promoters

2012-present — ***Michael Tramantano*** **(Advisor)**
NIH predoctoral training grant fellow
Recipient of the King/Miller Travel Award
Project title: Mechanism of nucleosome disassembly at yeast promoters

2013-present — ***Lu Sun*** **(Advisor)**
Project title: Histone dynamics of the yeast genome

2013-present — ***Karole D'Orazio*** **(Advisor)**
Project title: Structural determinants of H2A.Z in chromatin dynamics

2013-present — ***Won Kyun Koh*** **(Co-advisor)**
Project title: Structural analysis of chromatin remodeling complexes

2012-present — **Grace Tan (Pharmacology, Thesis Advisory Committee)**
2012-present — **Hui Shi (BSB, Thesis Advisory Committee)**
2012-present — **Junwei Shi (MCB, Thesis Advisory Committee)**
2012-present — **Evelyn Prugar (MCB, Thesis Advisory Committee)**
2012-present — **Liang Jin (MCB, Thesis Advisory Committee)**
2012-present — **Michael Higgins (MCB, Thesis Advisory Committee)**
2012-present — **Yueting Zheng (MGM, Thesis Advisory Committee)**
2011-present — **Alexis Santana (MGM, Thesis Advisory Committee)**

INVITED TALKS

Dec 2012 — Invited seminar. Stony Brook University, Department of Pharmacological Sciences, NY.
Host: Miguel Garcia-Diaz

Mar 2012 — Invited seminar. Hofstra University-North Shore/LIJ School of Medicine, Hempstead, NY.

Host: Joanne M. Willey

Feb 2012 Invited seminar. Cold Spring Harbor Laboratory, Laurel Hollow, NY. *Host: David L. Spector*

Mar 2011 Faculty search seminar. Division of Biological Sciences, University of California, San Diego, CA. *Host: James Kadonaga*

Feb 2011 Faculty search seminar. Friedrich Miescher Institute for Biomedical Research, Basal, Switzerland. *Host: Susan Gasser*

Feb 2011 Faculty search seminar. Penn Epigenetics Program, University of Pennsylvania, Philadelphia, PA. *Host: Shelley Berger*

Feb 2011 Faculty search seminar. Department of Molecular Biology and Biochemistry, Rutgers University, Piscataway, NJ. *Host: Vincenzo Pirrota*

Jan 2011 Faculty search seminar. Department of Biochemistry and Cell Biology, Stony Brook University, NY. *Host: Deborah Brown*

Dec 2010 Faculty search seminar. Wisconsin Institute for Discovery, University of Wisconsin-Madison, WI. *Host: John Denu*

Dec 2010 Faculty search seminar. Department of Biochemistry, Vanderbilt University Medical Center, Nashville, TN. *Host: David Cortez*

Dec 2010 Faculty search seminar, Stadtman Investigator Search Symposium. National Institutes of Health Bethesda, MD. *Host: Rodney Levine*

Dec 2009 Invited talk. Center of Excellence in Chromosome Biology Retreat. Bethesda, MD

May 2006 Invited talk. Center of Excellence in Chromosome Biology Retreat. Washington, DC

Apr 2006 Invited talk. Keystone Symposia on Regulation of Eukaryotic Transcription: From Chromatin to mRNA (E3). Taos, NM

Feb 2001 Invited talk. Gordon Research Conference Graduate Seminar: Bioinorganic Chemistry. Ventura, CA

PUBLICATIONS

Research Articles:

Ranjan, A., Mizuguchi, G., FitzGerald, P.C., Wei, D., Huang, Y., **Luk, E.**, Woodcock C.L., and Wu, C. Hierarchical cooperation of DNA- and acetyl histone-binding components target SWR1 chromatin remodeling complex to budding yeast promoters. *Cell.* (in press)

Luk, E., Ranjan, A., FitzGerald, P.C., Mizuguchi, G., Huang, Y., Wei, D., and Wu, C. (2010) Stepwise histone replacement by SWR1 requires dual activation with histone H2A.Z and canonical nucleosome.

Cell. 143, 725-736.

Wu, W.H., Wu, C.H., Ladurner, A., Mizuguchi, G., Wei, D., Xiao, H., **Luk, E.**, Ranjan, A., and Wu, C. (2009) N-terminus of Swr1 binds to histone H2AZ and provides a platform for subunit assembly in the chromatin remodeling complex. *J Biol Chem.* 284, 6200-6207.

Zhou, Z., Feng, H., Hansen, F.D., Kato, H., **Luk, E.**, Freedberg, D.I., Kay, L.E., Wu, C., Bai, Y. (2008) NMR structure and function of chaperone Chz1 complexed with histones H2A.Z-H2B. *Nat Struct Mol Biol.* 15, 868-869

Luk, E., Vu, N.D., Patteson, K., Mizuguchi, G., Wu, W.H., Ranjan, A., Backus, J., Sen, S., Lewis, M., Bai, Y. and Wu, C. (2007) Chz1, a chaperone for histone H2AZ. *Mol Cell*. 25, 357-368. *Featured article.*

Wu, W.H., Alami, S., **Luk, E.**, Wu, C.H., Sen, S., Mizuguchi, G., Wei, D. and Wu, C. (2005) Swc2 is a widely conserved H2AZ-binding module essential for ATP-dependent histone exchange. *Nat Struct Mol Biol*. 12, 1064-1071.

Luk, E., Yang, M., Jensen, L.T., Bourbonnais, Y. and Culotta, V.C. (2005) Manganese activation of superoxide dismutase 2 in the mitochondria of *Saccharomyces cerevisiae. J Biol Chem.* 280, 22715-22720.

Luk, E., Carroll, M., Baker, M., and Culotta, V.C. (2003) Manganese activation of superoxide dismutase 2 in *Saccharomyces cerevisiae* requires *MTM1*, a novel member of the mitochondrial carrier family. *Proc Natl Acad Sci U S A.* 100, 10353-10357.

> *Commentary*: Archibald, F. (2003) Oxygen toxicity and the health and survival of eukaryote cells: A new piece is added to the puzzle. *Proc Natl Acad Sci U S A*. 100, 10141-10143.

Luk, E. and Culotta, V.C. (2001) Manganese superoxide dismutase in *Saccharomyces cerevisiae* acquires its metal co-factor through a pathway involving the Nramp metal transporter, Smf2p. *J Biol Chem.* 276, 47556-47562.

Review Articles and Book Chapters

Mizuguchi, G., Wu W.H., Alami, A., **Luk, E.** (2012) Biochemical assay for Histone H2A.Z replacement by the yeast SWR1 chromatin remodeling complex. *Methods in Enzymology*. 512, 275-291.

Luk, E., Jensen, L. and Culotta, V.C. (2003) The many highways for intracellular trafficking of metals. *J Biol Inorg Chem.* **8**, 803-809.

Field, L.S., **Luk, E.** and Culotta, V.C. (2002) Copper chaperones: personal escorts for metal ions. *J Bioenerg Biomembr*. **34**, 373-379.

Luk, E., Jensen, L. and Culotta, V.C. (2004) The role of yeast Nramp metal transporters in manganese and iron homeostasis. In *The Nramp Family*, Cellier, M. and Gros, P., ed (Landes Bioscience), 124-134.

Culotta, V.C., and **Luk, E.** (2004) Chaperones for metalloproteins. *In Encyclopedia of Biological Chemistry*, Lennarz, W.J. and Lane, M.D., ed (Elsevier Inc.), 383-386.