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CURRENT POSITION

Harvard University
Postdoctoral Fellow.
Advisor: Yun Zhang

Cambridge, MA
2008 – present

Topic: Neural circuit dynamics mediating
sensorimotor behaviors in *C. elegans*

EDUCATION AND TRAINING

National University of Singapore
Temasek Life Sciences Laboratory
PhD, Life Sciences
Advisor: Suresh Jesuthasan

Singapore
2003 - 2007

Topic: Axon pathfinding during commissure
formation in the zebrafish forebrain

Bowdoin College
BA, *cum laude*, Biology

Brunswick, ME
1991 – 1995

JOURNAL ARTICLES

Published:

Chen, Z., M. Hendricks, A. Cornils, W. Maier, J. Alcedo and Y. Zhang Two insulin-like peptides antagonistically regulate aversive olfactory learning in *C. elegans*. *Neuron*. 77: 572-585 (2013). [\[link\]](#)

Hendricks, M., H. Ha, N. Maffey and Y. Zhang. Compartmentalized calcium dynamics in a *C. elegans* interneuron encode head movement. *Nature* 487: 99-103 (2012). **Faculty of 1000 Must Read.** [\[link\]](#)

Ha, H., M. Hendricks, Y. Shen, C.V. Gabel, C.M. Fang, Y. Qin, D. Colón-Ramos, K. Shen, A.D.T. Samuel, and Y. Zhang. Functional Organization of a Neural Network for Aversive Olfactory Learning in *Caenorhabditis elegans*. *Neuron* 68: 1173-1186 (2010). [\[link\]](#)

Hendricks, M. and S. Jesuthasan. PHR regulates growth cone pausing at intermediate targets through microtubule disassembly. *Journal of Neuroscience*. 29: 6593-6598 (2009). **Cover image. Noted “This Week in the Journal” article.** [\[link\]](#)

Hendricks, M., A.S. Mathuru, H. Wang, O. Silander, M.Z.L. Kee and S. Jesuthasan. Disruption of Esrom and Ryk reveals the roof plate boundary as an intermediate target for commissure formation. *Molecular and Cellular Neuroscience*. 37: 271-283 (2008). **Cover image.** [\[link\]](#)

Hendricks, M. and S. Jesuthasan. Electroporation-based methods for in vivo, whole mount and primary culture analysis of zebrafish brain development. *Neural Development*. 2: 6 (2007). [\[link\]](#)

Hendricks, M. and S. Jesuthasan. Asymmetric innervation of the habenula in zebrafish. *Journal of Comparative Neurology*. 502: 611-619 (2007). [\[link\]](#)

D’Souza, J., M. Hendricks, S. Le Guyader, S. Subburaju, B. Grunewald, K. Scholich and S. Jesuthasan. Formation of the retinotectal projection requires Esrom, an ortholog of PAM (Protein associated with Myc). *Development*. 132: 247-256 (2005). **Cover image. Noted paper in Science STKE and Faculty of 1000 Must Read.** [\[link\]](#)

Under review:

Luo, L.*, M. Hendricks*, M. Gershow, A. Polyakov, J. Greenwood, E. Soucy, Y. Zhang, and A. Samuel. Bidirectional navigation and experience-dependent plasticity in *C. elegans* salt chemotaxis.

* Equal contributions

BOOK CHAPTERS

Jesuthasan, S. and M. Hendricks. Visualizing and manipulating neurons in the zebrafish embryo. In: *Using Zebrafish to Study Neuroscience*. (T. Nicolson, ed.) pp. 15-21. Atlanta, GA: Society for Neuroscience (2006).

Hendricks, M. and S. Jesuthasan. Form and function in the zebrafish nervous system. In: *Fish genetics and development*. (Z Gong and V Korzh, eds.) Singapore: World Scientific (2004).

CONFERENCE ABSTRACTS

Upcoming: Hendricks, M., and Y. Zhang. “A circuit for self-monitoring and control in *C. elegans*” Annual Meeting of the Society for Neuroscience, Washington, DC, October 2012. Poster presentation.

Hendricks, M., L. Luo, Y. Zhang and A. Samuel. “Behavioral and circuit mechanisms for bidirectional salt chemotaxis.” EMBO Conference on *C. elegans* Neurobiology. Heidelberg, Germany, June 2012. **Oral presentation.**

Hendricks, M., H. Ha, N. Maffey and Y. Zhang. “Subcellular and network dynamics of a corollary discharge circuit in *C. elegans*.” Annual Meeting of the Society for Neuroscience, Washington, DC, November 2011. Poster presentation.

Hendricks, M., H. Ha, N. Maffey and Y. Zhang. “Multiplex sensorimotor encoding in RIA interneurons.” 18th International *C. elegans* Meeting, Los Angeles, CA, June 2011. **Plenary session oral presentation.**

Luo, L., M. Hendricks, Y. Zhang and A. Samuel. “How worms move and up and down salt gradients.” 19th International *C. elegans* Meeting, Los Angeles, CA, June 2011. Poster presentation.

Hendricks, M. and S. Jesuthasan. “Esrom is required for pathfinding at an intermediate target and regulates signaling and microtubule dynamics.” Annual Meeting of the Society for Neuroscience, San Diego, CA, November 2007. Poster presentation.

Hendricks, M. and S. Jesuthasan. “Esrom: A Signaling and Cytoskeletal Integrator Required at Growth Cone Intermediate Targets.” UK - Asia Pacific Developmental Biology Network Joint Meeting: Development and the Emergence of Function in the Nervous System. Kobe, Japan, February 2007. Poster presentation.

Hendricks, M. and S. Jesuthasan. “Commissure formation in the dorsal diencephalon.” 16th Biennial Meeting of the International Society for Developmental Neuroscience. Banff, AB, August 2006. Poster presentation.

Hendricks, M. and S. Jesuthasan. “Axon guidance in the dorsal diencephalon.” 7th Biennial Meeting of the Asian Pacific Society for Neurochemistry. Singapore, July 2006. Poster presentation.

Hendricks, M. and S. Jesuthasan. “Axon guidance at the dorsal midline of the diencephalon.” 4th European Zebrafish Development and Genetics Meeting. Dresden, Germany, July 2005. Poster presentation.

Hendricks, M., J. D’Souza, S. Le Guyader and S. Jesuthasan. “The E3 ligase Esrom is a signaling hub during axon guidance.” 3rd TLL Symposium: Perspectives in Cell Signaling. Singapore, January 2005. Oral Presentation.

Hendricks, M., J. D'Souza, S. Le Guyader and S. Jesuthasan. "Esrom regulates targeting, mapping and fasciculation of retinal axons." Gordon Research Conference: Cellular and Molecular Neurobiology. Hong Kong, China, June 2004. Poster presentation.

SERVICE AND TEACHING

Genes & Behavior - OEB 145. (Fall 2012) Leading weekly section on review of lecture materials, discussion of primary research literature. Designed in-class assignments and teaching materials, provided assessments of presentations and written work.

Academic Editor, *PLoS ONE*. Evaluate submissions, assign peer reviewers, communicate with authors, and coordinate the revision, review and publication of research articles.

Peer Reviewer. *PLoS ONE, FEBS Letters, BMC Neuroscience.*

Undergraduate/rotation student mentoring. Supervised several undergraduate and rotation student research projects at Harvard University and the National University of Singapore. Three students have been authors on research papers.

Guest lecturer. NUS University Scholars Program "Biosemiotics" course, taught by Don Favareau. Gave lectures on the nature of biological information in the context of evolution and developmental signaling.

East End House Middle School Mentor Program. 2009 - 2010. Volunteer mentor for at-risk students in Cambridge Public Schools.

IMAGES AND ARTWORK

Image contributor. Schoonover, Carl. *Portraits of the Mind: Visualizing the Brain from Antiquity to the 21st Century*. New York: Abrams. 2010.

Image contributor. Breedlove, S.M., N.V. Watson and Mark R. Rosenzweig. *Biological Psychology, Sixth Edition*. Sunderland, MA: Sinauer. 2010.

Second Place, Nikon Small World photomicrograph contest, 2007.

Featured image in *Popular Science* magazine, October, 2007.

Four images in Paisajes Neuronales [Neuronal Landscapes: A Book in Honor of Santiago Ramon y Cajal]. Barcelona: Fundacion "la Caixa" (2006). NeuroArt Exhibition, April 2006, Barcelona. Sponsored by the International Brain Research Organization and curated by Javier de Felipe and Henry Markram.

AWARDS

Certificate of Distinction in Teaching – Harvard University 2012.

International Brain Research Organization Travel Grant. July-December 2007.

Asia Pacific Developmental Biology Network Travel Award. February 2007.

Gold Medal: Tokuji Ikenaka Poster Prize, Asian Pacific Society for Neurochemistry Annual Meeting, July 2006.

National Science Foundation Graduate Research Fellowship Honorable Mention, 2004.

AFFILIATIONS

Society for Neuroscience

Genetics Society of America