

Pacific Biosciences Research Center
University of Hawai'i at Mānoa
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Education

Ph.D., Neuroscience; University of Wisconsin, Madison, WI Oct 2003
B.A., Biology; Reed College, Portland, OR May 1996

Professional experience

Assistant researcher, University of Hawai'i at Mānoa, HI, USA 2015 – present
• Directing a research group focused on pheromone biochemical synthesis and chemical diversity of Hawaiian *Drosophila*

Principal investigator, Temasek Life Sciences Laboratories, Singapore 2010 – 2015
• Directing a research group focused on the biochemical and neural mechanisms underlying insect pheromone synthesis and perception

Assistant professor, National University of Singapore 2010 – 2015

Visiting scientist, University of Münster, Germany 2009 - 2010
• Developed novel mass spectrometry-based methods for chemical imaging of pheromones from intact and awake, behaving insects

Post-doctoral fellow, Harvard Medical School, MA, USA 2004 - 2009
Advisor: Prof. Edward Kravitz
• Characterized biogenic amines, neuropeptides, and pheromones involved in *Drosophila* fighting and courtship behavior using mass spectrometry, genetic analysis, and behavioral quantification

Visiting researcher, University of Münster, Germany 2007 - 2008
• Developed methods for *Drosophila* pheromone and lipid analysis using mass spectrometry and thin-layer chromatography

Post-doctoral fellow, University of Wisconsin-Madison, WI, USA 2003 - 2004
Advisors: Prof. Antony Stretton and Prof. Lingjun Li
• Characterized neuropeptides in nematode tissue using chemical derivatization, laser-capture microdissection, and Fourier transform MS

Research assistant, University of Wisconsin-Madison, WI, USA 1999 – 2004
Advisor: Prof. Antony Stretton
• Identified and characterized novel neuropeptides involved in nematode locomotion using HPLC, MALDI-TOF MS, immunocytochemistry, and molecular biology

Publications

1. Vasudevan A, Kumar V, Chiang YN, **Yew JY**, Cheemadan S, and Vyas A. 2015. Alpha2u-globulins mediate manipulation of host attractiveness in *Toxoplasma gondii* – *Rattus norvegicus* association. ISME J. *In press*.
2. Niehoff AC, Kettling H, Pirkl A, Chiang YN, Dreisewerd K, **Yew JY**. 2014. Analysis of *Drosophila* lipids by MALDI-MS imaging. *Anal Chem* 86(22): 11086-11092.
3. He Y, Yam C, Pomraning K, Chin JSR, **Yew JY**, Freitag M, Oliferenko S. 2014. Increase in cellular triacylglycerol content and emergence of large ER-associated lipid droplets in the absence of CDP-DG synthase function. *Mol Biol Cell*. 25(25): 4083-4095.
4. Araujo DP, Tuan MJM, **Yew JY***, Meier R*. 2014. Analysing small insect glands with UV-LDI MS: high-resolution spatial analysis reveals the chemical composition and use of the osmeterium secretion in *Themira superba* (Sepsidae: Diptera). *J Evol Biol*. 27(8): 1744-1750.
5. Chin JSR, Ellis SR, Pham HT, Blanksby SJ, Mori K, Koh QL, Etges WJ, **Yew JY**. 2014. Sex-specific triacylglycerides are widely conserved in *Drosophila* and mediate mating behavior. *eLife* 3: e01751.
 - Featured in *The Scientist*, Editor's choice in biochemistry, July 2014.
6. Ng SH, Shankar S, Shikichi Y, Akasaka K, Mori K, and **Yew JY**. 2014. Pheromone evolution and sexual behavior in *Drosophila* are shaped by male sensory exploitation of other males. *Proc Natl Acad Sci*. 111(8): 3056-3061.
7. Gendron C, Kuo TH, Harvanek ZM, Chung BY, **Yew JY**, Dierick HA, and Pletcher SD. 2013. *Drosophila* lifespan and physiology are modulated by sexual perception and reward. *Science*. 343(6170): 544-548.
 - See also commentary in Perspectives: Promislow D and Kaerberlein M. 2014. Chemical Warfare in the Battle of the Sexes. *Science*. 343: 491-492.
8. Shikichi Y, Shankar S., **Yew JY**, and Mori K. 2013. Synthesis and Bioassay of the Eight Analogues of Male Pheromone CH503 (3-Acetoxy-11,19-octacosadien-1-ol) of the Fruit Fly *Drosophila melanogaster*. *Biosci Biotechnol Biochem* 77(9): 1931-1938.
9. Weng R, Chin J, **Yew JY**, Bushati N, and Cohen SM. 2013 *mir-124* controls male reproductive success in *Drosophila*. *eLife* 2: e00640.
10. Chin J, **Yew JY**. 2013. Sampling, chromatographic purification, and chemical analysis of pheromone molecules: Pheromones in the Fruit Fly. *Methods Mol Bio*. 1068: 15-27.
11. Fedina TY, Kuo TH, Dreisewerd K, Dierick HA, **Yew JY**, and Pletcher SD. 2012. Dietary effects on cuticular hydrocarbons and sexual attractiveness in *Drosophila*. *PLoS One* 7(12): e49799.
12. Shikichi Y, Akasaka K, Tamogami S, Shankar S, **Yew JY**, and Mori K. 2012. Pheromone synthesis. Part 250: determination of the stereostructure of CH503, a sex pheromone of male *Drosophila melanogaster*, as (3*R*,11*Z*,19*Z*)-3-acetoxy-11,19-octacosadien-1-ol by synthesis and chromatographic analysis of its eight isomers. *Tetrahedron* 68(19): 3750 - 3760.
13. Kuo TH, Fedina TY, Hansen I, Dreisewerd K, Dierick HA, **Yew JY**, and Pletcher SD. 2012. Insulin signaling mediates sexual attractiveness in *Drosophila*. *PLoS Genetics* 8(4): e1002684.
14. Kuo TH, **Yew JY**, Fedina TY, Dreisewerd D, Dierick HA, Pletcher SD. 2012. Aging modulates cuticular hydrocarbons and sexual attractiveness in *Drosophila*. *J Exp Biol*. 215: 814 – 821.
 - See also commentary in Inside JEB: Hager Y. 2012. Old flies lose sex appeal. *J Exp Biol*. 215: i – ii.

15. **Yew JY**, Soltwisch J, Pirkl A, Dreisewerd K. 2011. Direct laser desorption ionization of endogenous and exogenous compounds from insect cuticles: practical and methodological aspects. *J Amer Soc Mass Spec.* 22: 1273 – 1284.
16. **Yew JY**, Dreisewerd K, de Oliveira CC, Etges WJ. 2011. Male-specific transfer and fine scale spatial differences of newly identified cuticular hydrocarbons and triacylglycerides in a *Drosophila* species pair. *PLoS One.* 6(2): e16898.
17. de la Paz Fernández M, Chan YB, **Yew JY**, Billeter JC, Dreisewerd K, Levine J, Kravitz EA. 2010. Pheromonal and Behavioral Cues Trigger Male-to-Female Aggression in *Drosophila*. *PLoS Biology.* 8(11): e1000541.
18. Mori K, Shikichi Y, Shankar S, **Yew JY**. 2010. Pheromone synthesis. Part 244: Synthesis of the racemate and enantiomers of (11Z, 19Z)-CH503 (3-acetoxy-11,19-octacosadien-1-ol), a new sex pheromone of male *Drosophila melanogaster* to show its (S)-isomer and racemate as bioactive. *Tetrahedron* 66(35): 7161-7168.
19. Pirkl A, Dreisewerd K, **Yew JY**, König S. 2009. Field-based ion generation from microscale emitters on natural and artificial objects for atmospheric pressure mass spectrometry. *Anal Bioanal Chem.* 397(8): 3311-6.
20. **Yew JY**, Dreisewerd K, H, Luftmann H, Müthing J, Pohlentz G, Kravitz EA. 2009. A new male sex-pheromone and novel cuticular cues for chemical communication in *Drosophila*. *Curr Biol.* 19 (15): 1245 – 1254.
21. *See also commentary in Current Biology Dispatch*: Levine JD and Millar JG. 2009. Chemical signaling: laser on the fly reveals a new male-specific pheromones. *Curr Biol.* 19 (15): R653-655.
22. **Yew JY**, Wang Y, Barteneva N, Dikler S, Kutz-Naber K, Li L, Kravitz EA. 2009. Analysis of neuropeptide expression and localization in adult *Drosophila melanogaster* central nervous system by affinity cell-capture mass spectrometry. *J Proteome Res.* 8 (3): 1271-1284.
23. **Yew JY**, Cody RB, Kravitz EA. 2008. Cuticular hydrocarbon analysis of an awake behaving fly using Direct Analysis in Real Time time-of-flight mass spectrometry. *Proc Natl Acad Sci* 105 (20): 7135-7140.
24. **Yew JY**, Davis R, Dikler S, Nanda J, Reinders B, Stretton AO. 2007. Peptide products of the *afp-6* gene of the nematode *Ascaris suum* have different biological actions. *J Comp Neurol* 502(5):872-882.
25. **Yew JY**, Kutz KK, Dikler S, Messinger L, Li L, Stretton AO. 2005. Mass spectrometric map of neuropeptide expression in *Ascaris suum*. *J Comp Neurol* 488(4):396-413.
26. **Yew JY**, Dikler S, Stretton AO. 2003. De novo sequencing of novel neuropeptides directly from *Ascaris suum* tissue using matrix-assisted laser desorption/ionization time-of-flight/time-of-flight. *Rapid Commun Mass Spectrom* 17(24):2693-2698.
27. Hedrick AV, Perez D, Lichti N, **Yew J**. 2002. Temperature preferences of male field crickets (*Gryllus integer*) alter their mating calls. *J Comp Physiol A Neuroethol Sens Neural Behav Physiol* 188(10):799-805.
28. Gold BG, **Yew JY**, Zeleny-Pooley M. 1998. The immunosuppressant FK506 increases GAP-43 mRNA levels in axotomized sensory neurons. *Neurosci Lett* 241(1):25-28.

Research grants and professional honors

- Singapore National Research Foundation Research Fellowship 2010
~US\$2,500,000 over 5 years
- Alexander von Humboldt Foundation Experienced Researcher Fellowship 2009
- Human Frontier Science Program Short Term Fellowship 2007
- National Institutes of Health Ruth L Kirchstein NRSA Individual Fellowship 2004-2007
- Reed College Commendation for Academic Excellence 1996
- California Institute of Technology Summer Undergraduate Research Fellowship 1994

- California Institute of Technology Robert H. Millikan scholarship 1992

Invited and selected talks

- 8th Asia-Pacific Conference on Chemical Ecology, Garden Grove, USA (plenary speaker) 2015
- Asian Young Researchers Conference on Computational and Omics Biology, Hsinchu, Taiwan (keynote speaker) 2015
- University of Warwick Medical School, Coventry, UK 2014
- Imperial College of London, MRC Clinical Sciences Centre, London, UK 2014
- International Mass Spectrometry Conference, Geneva, CH (keynote speaker) 2014
- International Society of Chemical Ecology, Champaign-Urbana, USA (keynote speaker) 2014
- University of Wisconsin, Department of Psychology, Madison, USA 2013
- Swiss Federal Institute of Technology (ETH) Zürich, CH 2013
- Max Planck Institute for Developmental Biology, Tübingen, DE 2012
- 3rd Asian & Oceanic Mass Spectrometry Conference, Kyoto, JP 2012
- Singapore Centre on Environmental Life Sciences Engineering, SG 2012
- 28th Annual Meeting, International Society of Chemical Ecology, Vilnius, LT 2012
- Neuroscience Research Partnership, AStar-Duke-NUS, SG 2012
- 4th International Singapore Lipid Symposium, SG 2012
- International Symposium on Mass Spectrometry in Life Sciences, Bangalore, IN 2011
- 59th American Society for Mass Spectrometry Conference, Denver, USA 2011
- National Center for Biological Sciences, Bangalore, IN 2011
- Department of Biological Science, National University of Singapore, SG 2010
- 26th Annual Meeting, International Society of Chemical Ecology, Tours, FR 2010
- Max Planck Institute for Chemical Ecology, Jena, DE 2009
- 42nd German Society for Mass Spectrometry Meeting, Konstanz, DE (keynote speaker) 2009
- Lipidomics and Lipids in Mass Spectrometry Conference, St Petersburg, USA 2009
- Department of Biochemistry, Boston University Medical School, Boston, USA 2008
- 56th American Society for Mass Spectrometry Conference, Denver, USA 2008
- Flyfest colloquium, Brandeis University, Waltham, USA 2008
- Okinawa Institute of Science and Technology, JP 2008
- Neurobiology of *Drosophila* Conference, Cold Spring Harbor Laboratory, NY, USA 2007
- Institute of Medical Physics and Biophysics, University of Münster, DE 2007

Ph.D. students supervised

- Jacqueline Chin Mar 2010 – June 2015
- Shruti Shankar Mar 2010 – June 2015
- Diego Pitta (co-supervisor with Dr. Rudolf Meier, NUS) Jan 2012 – present
- Lei Zhou (co-supervisor with Dr. Rudolf Meier, NUS) Jan 2012 – Dec 2014

Teaching experience

- Lecturer, Nanyang Technological University, Singapore 2011-2013
Current Topics in Clinical Applications of –Omics
- Lecturer, National University of Singapore, Singapore 2011, 2012
Animal Behavior course
- Lecturer, Center for Advanced Academic Studies in Dubrovnik, Croatia 2010

- 4th Mass Spectrometry in Biotechnology and Medicine Summer School
- Commercial faculty, Cold Spring Harbor Laboratories, NY, USA Summer
Neurobiology of *Drosophila* 2005 – 2008
 - Instructor, Johns Hopkins University Center for Talented Youth, MD, USA Summer
Introduction to Neuroscience 1996, 1997, 1999, 2000

Editorial board and reviewer

- Review editor, *Frontiers in Chemical Ecology* 2014
- *Journal of Experimental Biology PloSOne, Analytical Chemistry, F1000Research, Proceedings of the Royal Society B: Biological Sciences, Peptides*

Conference organizer

- 10th Temasek Life Sciences Symposium – Chemical Communication, Singapore 2012