

PROMOTION RECOMMENDATION  
THE UNIVERSITY OF MICHIGAN  
MEDICAL SCHOOL  
DEPARTMENT OF CELL AND DEVELOPMENTAL BIOLOGY

Bing Ye, Ph.D., associate professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School, is recommended for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School [also being promoted to research professor, Life Sciences Institute].

Academic Degrees:

Ph.D.	2001	Johns Hopkins University
M.S.	1995	Shanghai Institute of Physiology, Chinese Academy of Sciences, Shanghai, China
B.S.	1992	Nanjing University, Nanjing, China

Professional Record:

2015-present	Associate Professor of Cell and Developmental Biology, University of Michigan
2015-present	Research Associate Professor, Life Sciences Institute, University of Michigan
2008-2015	Assistant Professor of Cell and Developmental Biology, University of Michigan
2008-2015	Research Assistant Professor, Life Sciences Institute, University of Michigan

Summary of Evaluation:

Teaching: Dr. Ye has participated in didactic teaching at both the graduate and undergraduate levels, as a course instructor for Developmental Genetics, since 2011, and course instructor for Neural Development from 2013-2017. These are core curriculum modules offered by the cross-unit Neuroscience Graduate Program. He was a guest instructor for Brain Development, Plasticity and Circuits from 2014-2020, which is attended by 150-200 undergraduates. Dr. Ye has successfully trained post-doctoral fellows, graduate students, rotation students, undergraduate students, one MS student, two NIH PREP scholars, and high school students. His graduate and post-doctoral students have published in outstanding journals and received competitive awards. He has been the director of the Perrigo Undergraduate Summer Fellowship Program at the Life Sciences Institute since 2017, and played a key role in teaching six to seven fellows every summer. Dr. Ye also participated in the Aspirnaut Summer Research Program that provides research opportunities to high school and undergraduate students in underserved regions.

Research: Dr. Ye is a leader in the field of neural development. Since he started his independent research program at the University of Michigan, he has made several high-impact discoveries. His research has helped to improve the understanding of human diseases, particularly Down syndrome. His research, combining the strength of *Drosophila* and mouse models, has identified a gene, Dscam, that plays key a role in neuro-developmental defects in Down syndrome. Dr. Ye has a strong record of funding support for his research. His lab is currently supported by three R01 grants from the National Institutes of Health, including one involving international collaborations.

He is well recognized nationally and internationally. He has delivered seminars and conference talks in United Kingdom, Germany, Spain, France, Japan, China, as well as many locations in the United States. Dr. Ye has received numerous prestigious faculty awards, including the Pew Scholar Award, the Klingenstein Fellowship Award in the Neurosciences, and was named a Kavli Fellow. He is a very active member of the research community, and has a large number of collaborators in many departments, including chemistry, neurology, psychiatry, physiology, human genetics, pharmacology, and MCDB. He is a leader in the FastForward Protein Folding Diseases Initiative of the Medical School.

#### Recent and Significant Publications:

Kim JH, Singh M, Pan G, Lopez A, Zito N, Bosse B, Ye B: Frameshift mutations of *YPEL3* alter the sensory circuit function in *Drosophila*. *Disease Models & Mechanisms* 13(6): dmm042390. doi: 10.1242/dmm.042390, 2020.

Veling MW, Li Y, Veling MT, Michki N, Liu H, Litts C, Ye B #, †, Cai D #: Identification of neuronal lineages in the *Drosophila* peripheral nervous system with a “digital” multi-spectral lineage tracing system. *Cell Reports* 29: 3303–3312, 2019.

Kaneko T, Macara AM, Li R, Hu Y, Iwasaki K, Dunning Z, Firestone E, Horvatic S, Guntur A, Shafer OT, Yang C-H, Zhou J, Ye B: Serotonergic modulation enables pathway-specific plasticity in a developing sensory circuit in *Drosophila*. *Neuron* 95: 623-638, 2017.

Sterne GR, Kim JH, Ye B: Dysregulated Dscam levels act through Abelson tyrosine kinase to enlarge presynaptic arbors. *eLife* 4: <http://dx.doi.org/10.7554/eLife.05196>, 2015.

Wang X, Zhang MW, Kim JH, Macara AM, Sterne G, Yang T, Ye B: The Krüppel-like factor Dar1 determines multipolar neuron morphology. *Journal of Neuroscience* 35(42): 14251-9, 2015.

Service: The service that Dr. Ye provides to the department, the school, the Life Sciences Institute, the university, and the greater scientific community is significant. He is currently the research associate dean of the Life Sciences Institute and did an outstanding job in guiding the institute through the ramp down and ramp up phases of the response to the COVID-19 pandemic. He has been the director of the Perrigo Undergraduate Summer Fellowship Program since 2017, and a co-director of the Protein Folding Diseases Initiative since 2013. He served on the Biological Sciences Scholars Program Selection Committee for three years. In the past five years, he served on five faculty search committees, including for a departmental chair and for the director of Michigan Neuroscience Institute. He served as a co-director of the Cell and Developmental Biology graduate program, an admission committee member of the CDB and neuroscience graduate programs, and a member of many other departmental and institute committees. He is on the editorial board of *PLoS Biology*, and regularly serves on study sections of the NIH. He also reviewed grant applications for funding agencies in Belgium, India, and United Kingdom.

Dr. Ye organized several high-profile symposia in the university, including the LSI Symposia Development and Diseases of the Nervous System in 2012, and Broadening the Life Sciences in 2020, as a co-chair and the Symposium Single-Cell Analysis in 2018 as a committee member. On the national and international front, Dr. Ye also organized scientific conferences or chaired several

conference sessions. He served as member on the Pew Scholars Program 30th Reunion Planning Committee and as a session chair of the 2020 Cold Spring Harbor meeting Molecular Mechanisms of Neuronal Connectivity.

External Reviewers:

Reviewer A: “Dr. Ye has 37 publications. I know about a dozen quite well, and they are deep, insightful, rigorous explorations of the mechanisms of dendrite/axon differences and dendrite morphology...Dr. Ye is also recognized for scholarly achievement by being named a Klingenstein Fellow (2010), aa [sic] Kavli Fellow (2012), a Pew Scholar (2010), and a recipient of the Anurandha Rao Memorial Award (Neuron, 2006)...In conclusion, I am convinced that Dr. Ye is deserving of promotion both at LSI and at the Medical School. I expect you are also proud to have Dr. Ye as a faculty member, and I hope his promotion proceeds smoothly.”

Reviewer B: “Bing’s focus seems to be on understanding how the morphogenesis of PNS neurons like C4dA neurons is regulated, and how proper morphogenesis and development ultimately determine how the circuit functions. This is a terrific area that needs deep exploration. He has developed great tools to ask these questions (e.g. highlighted in the 5-HT Neuron paper) that can go from form to function beautifully. In many respects he is unusual in his interests, so it is hard to compare him to his contemporaries. But overall I would judge him to be among the top people working on *Drosophila* dendrites.”

Reviewer C: “He is a respected scientist in the field of neuronal development, sensory circuits, and *Drosophila* neurobiology, and has been regarded as a leading scientist with such a nice personality and dedication in his fields of research. He has been invited to numerous conferences and seminars and has been serving his disciplines as an editor of top-level journals such as PLoS Biology, ad-hoc reviewers for manuscripts and study sections, and organizers and chairs of many international and domestic conferences. He certainly meets the criteria of researchers in my institution who are at the stage of applying for tenure professor positions in life science departments in my institution, KAIST, which ranks at ~40-50th among world research universities.”

Reviewer D: “It is my view that Bing’s work on the molecular and cellular mechanism underlying the regulation of neuronal morphology, connectivity and function will continue to result in major contributions to neuroscience...I think that Bing has done an outstanding job of expanding upon the initial directions suggested by his foundational postdoctoral work into new areas that have allowed him to establish a vibrant and independent research program. I believe that these excellent studies provide a solid foundation for significant future work.”

Reviewer E: “...I have very high regard of Dr. Ye. Since I wrote a tenure letter for him in 2014, I am not repeating what I said in that letter and only focus on new work here...One new direction is to use fly or mammalian models to study cellular mechanisms of neurological disorders...The other direction is to link development with plasticity and function of neural circuits...Dr. Ye’s work is characterized by high quality and clarity. Dr. Ye has attracted ample students and postdocs, as well as ample NIH support for his work. He is a good citizen in academia. There is no question in my mind that he should be promoted to full professor.”

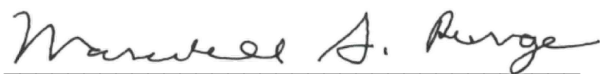
Reviewer F: “Over the years, as an independent investigator, Bing has established himself as one of the important leaders in clarifying the mechanisms through which dendrites and axons have differential morphological and functional characteristics. The importance of his work is immense as it focuses on one of the most fundamental issues in neurobiology. In addition, a key hallmark of Bing’s approach is his ability to translate basic insights gleaned from work in *Drosophila* to issues important for human health and disease...If Bing were at my current institution...or my former institution...where I was a faculty member for 25 years, I am confident that he would be promoted to full Professor with great enthusiasm.”

Reviewer G: “Dr. Ye is a talented scientist who has made seminal contributions to the field of neurodevelopment. I would rate him among the best in the field of neurodevelopment at his career stage...An impressive thread in Dr. Ye’s research is the elegant bridging of basic science and disease studies. His group previously discovered that the expression levels of the Down syndrome cell adhesion molecule (DSCAM) determines the size of axonal terminals (Kim, et al., *Neuron*, 2013)...Dr. Ye has consistently contributed new techniques and approaches to the field of neurodevelopment.”

Reviewer H: “I think Bing is an incredibly talented independent investigator that has made several important contributions to the field of neuronal morphogenesis and axon-dendrite patterning. He has acquired a prominent stature in the field for the quality and originality of his work and has received recognition for his scientific contributions both nationally and internationally. Bing has an impressive publication track-record and recently published several high-impact papers in prominent journals such as *Cell*, *Neuron*, *PLoS Biology*, *Current Biology*, *Journal of Neuroscience*, and many others. His work has provided key novel insights into the cellular and molecular mechanisms patterning connectivity in the developing brain...I can clearly testify that Bing has become an authoritative opinion leader in the field of Developmental Neuroscience.”

Summary of Recommendation:

Dr. Ye leads a highly innovative and impactful research program with direct relevance to human neurological developmental disorders. His expertise is broadly recognized by colleagues here and at other premier institutions. I am pleased to recommend Bing Ye, Ph.D. for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School.



Marschall S. Runge, M.D., Ph.D.  
Executive Vice President of Medical Affairs  
Dean, Medical School

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