

Xiangdong William Yang, M.D., Ph.D.

EDUCATION

- **No Degree.** Biochemistry Major, Dept. Biology, 1985-1987. **Peking University, Beijing, China.**
- **M.S./B.S.,** Molecular Biophysics & Biochemistry, 1991, **Yale University, New Haven, CT (M.S. Advisor: Joan A. Steitz).**
- **Doctor of Philosophy (Ph.D.),** 1998, **Rockefeller University (MSTP Program; Advisor: Nathaniel Heintz), New York, NY.**
- **Doctor of Medicine (M.D.),** 2000, **Weill Medical College of Cornell University (MSTP Program), New York, New York.**
- **Medicine Internship,** 2000-2001, **New York-Presbyterian Hospital/Cornell Medical Center, New York, New York.**
- **Postdoctoral Fellowship,** 1998-1999; 2001-2002. Laboratory of Molecular Biology (**Advisor: Nathaniel Heintz**), **Rockefeller University, New York, New York.**

PROFESSIONAL LICENSE

New York State Medicine (Physician) License

PROFESSIONAL EXPERIENCE

- 2002-2008 Assistant Professor, Department of Psychiatry & Biobehavioral Sciences
Center for Neurobehavioral Genetics, Semel Institute for Neuroscience & Human Behavior
Brain Research Institute
David Geffen School of Medicine
University of California at Los Angeles
- 2008-2011 Associate Professor (Tenured), Department of Psychiatry & Biobehavioral Sciences
Center for Neurobehavioral Genetics, Semel Institute for Neuroscience & Human Behavior
Brain Research Institute
David Geffen School of Medicine
University of California at Los Angeles
- 2011-present Full Professor (Tenured)
Department of Psychiatry & Biobehavioral Sciences
Center for Neurobehavioral Genetics, Semel Institute for Neuroscience & Human Behavior
Brain Research Institute
David Geffen School of Medicine
University of California at Los Angeles

PROFESSIONAL ACTIVITIES

Committee Service

- 2003-2004 Director, Gonda Vivarium Faculty Users' Committee
- 2003-2011 UCLA Chancellor's Campus Vivarium Faculty Advisory Committee
- 2003-2010 Curriculum Committee, Neuroscience Inter-departmental Graduate Program
- 2013-2016 Co-director, Transgenic & Genome Editing Core, UCLA
- 2004-present Member, UCLA MSTP Admission Committee

2014-present Member, Faculty Advisory Committee to the UCLA Accelerator

Community Service

2008-2011 Chartered Member, **NIH Chronic Neurodegeneration Study Section (CDIN-D)**
2008 Program Committee Member, **2009 Gordon Conference on CAG Triplet Repeat Disorders**
2005-2007 *Ad hoc* reviewer, **NIH Chronic Neurodegeneration Study Section (CDIN-D)**
2005-2009 Scientific Advisory Board Member, **Hereditary Disease Foundation**
2011-present Scientific Advisory Board Member, **Hereditary Disease Foundation**
2011 *Ad hoc* reviewer, **NIH Cellular and Molecular Biology of Neurodegeneration Study Section (CMND)**
2013 *Ad hoc* reviewer, **NIH Chronic Dysfunction and Integrative Neurodegeneration (CDIN) Study Section.**
2011-2014 Clinical Consulting Board Member, **NIH Nanomedicine Center**
2015-2021 Chartered Member, **NIH Cellular and Molecular Biology of Neurodegeneration Study Section (CMND)**
2003-present Peer reviewer for journals including: *Science, Cell, Neuron, Nature Neuroscience, Nature Medicine, Nature Chemical Biology, Nature Communications, Science Translational Medicine, Cell Stem Cell, Cell Reports, PNAS, Journal of Neuroscience, Gene & Development, Trends in Neuroscience, PLOS Biology, PLOS Genetics, eLife, Neurology, Molecular Neurodegeneration, Journal of Clinical Investigation, Neurobiology of Disease, Human Molecular Genetics, Genome Research, etc.*

Professional Associations and Scholarly Societies

2005-present American Association for Advancement of Science
2002-present Society for Neuroscience
2005-present Chinese Biological Investigators Society

Editorial Service

2005-present Editorial Board Member, **Molecular Neurodegeneration**
2005-present Faculty Member, Neurogenetics Section, **Faculty of 1000**
2012-present Editorial Member, **Journal of Huntington's Disease**

HONORS AND SPECIAL AWARDS

- *Summa cum laude*; Distinction in the Major, Yale University (1991).
- Stein-Oppenheimer Award, David Geffen School of Medicine at UCLA (2002)
- Michael J. Fox Foundation for Parkinson's Research: Rapid Response Innovation Award (2008)
- McKnight Neuroscience of Brain Disorders Award (2009)
- Interviewed on NBC Nightly News for the Discovery of Molecular Switch for HD (May 10, 2010)
- The Carol Moss Spivak Scholar in Neuroscience from UCLA Brain Research Institute (2011-2016)
- Center for Excellence in Education Outstanding Alumni in STEM and Business (2013)
- The Most Influential Huntington's Disease Research Paper of 2014, Huntington's Disease Study Group/HD Insights (2014)
- BRAIN Initiative Award from NIH: Tools for Cells and Circuits (2014)
- Leslie Gehry Brenner Prize for Innovation in Science, Hereditary Disease Foundation (2014)
- The Most Influential Huntington's Disease Research Paper of 2015, Huntington's Disease Study Group/HD Insights (2015)

- Elected Member, American Society for Clinical Investigation (2017)

BIBLIOGRAPHY

1. Veldman, M., **Yang, X.W.** Molecular Insights into Synaptic Miscommunications in Huntington's Disease. *Current Opinion in Neurobiology (In Press)*
2. Yau, R.G., Doerner, K., Castellanos, E.R., Haakonsen, D., Werner, A., Wang, N., **Yang, X.W.**, Matsumoto, M.L., Vishva M. Dixit, V.M., Rape, M. Assembly and Function of Heterotypic Ubiquitin Chains in Cell Cycle and Protein Quality Control. *Cell (Epub ahead of print)*
3. Veldman, M.B., **Yang, X.W.** Huntington's Disease: Nuclear Gatekeepers Under Attack. *Neuron* 94: 1-4
4. Lu, X.H., **Yang, X.W.** Genetically-directed Sparse Neuronal Labeling in BAC Transgenic Mice through Mononucleotide Repeat Frameshift. *Sci Rep.* 7:43915 (2017).
5. Southwell, A.L., Skotte, N.H., Villanueva, E.B., Østergaard, M.E., Gu, X., Kordasiewicz, H.B., Kay, C., Cheung, D., Xie, Y., Walzl, S., Dal Cengio, L., Findlay-Black, H., Doty, C.N., Petoukhov, E., Iworima, D., Slama, R., Ooi, J., Pouladi, M.A., **Yang, X.W.**, Swayze, E.E., Seth, P.P., Hayden, M.R. A novel humanized mouse model of Huntington disease for preclinical development of therapeutics targeting mutant huntingtin alleles. *Hum Mol Genet.* 26: 1115-1132 (2017)
6. **Yang, X.W.** Life and death rest on a bivalent chromatin state. *Nature Neuroscience* 19: 1271-1273 (2016).
7. Xu, J., Bernstein, A.M., Wong, A., Lu, X.H., Khoja, S., **Yang, X.W.**, Davies, D.L., Micevych, P., Sofroniew, M.V., Khakh, B.S. P2X4 Receptor Reporter Mice: Sparse Brain Expression and Feeding-Related Presynaptic Facilitation in the Arcuate Nucleus. *J Neurosci.* 36: 8902-8920 (2016).
8. Kratter, I.H., Zahed, H., Lau, A., Tsvetkov, A.S., Daub, A.C., Weiberth, K.F., Gu, X., Saudou, F., Humbert, S., **Yang, X.W.**, Osmand, A., Steffan, J.S., Masliah, E., Finkbeiner, S. Serine 421 regulates mutant huntingtin toxicity and clearance in mice. *J Clin Invest.* 126: 3585-3597 (2016).
9. Horvath, S., Langfelder, P., Kwak, S., Aaronson, J., Rosinski, J., Vogt, T.F., Eszes, M., Faull, R.L., Curtis, M.A., Waldvogel, H.J., Choi, O.W., Tung, S., Vinters, H.V., Coppola, G., **Yang, X.W.** Huntington's disease accelerates epigenetic aging of human brain and disrupts DNA methylation levels. *Aging* 8:1485-1512 (2016).
10. Hintiryan, H., Foster, N.N., Bowman, I., Bay, M., Song, M.Y., Gou, L., Yamashita, S., Bienkowski, M.S., Zingg, B., Zhu, M., **Yang, X.W.**, Shih, J.C., Toga, A.W., Dong, H.W. The mouse cortico-striatal projectome. *Nature Neuroscience* 19: 1100-1114 (2016).
11. Chandra, A., Sharma, A., Calingasan, N.Y., White, J.M., Shurubor, Y., **Yang, X.W.**, Beal, M.F., Johri, A. Enhanced mitochondrial biogenesis ameliorates disease phenotype in a full-length mouse model of Huntington's disease. *Hum Mol Genet.* pii: ddw095 (2016).
12. Langfelder, P., Cantle, J.P., Chatzopoulou, D., Wang, N., Gao, F., Al-Ramahi, I., Lu, X.H., Ramos, E.M., El-Zein, K., Zhao, Y., Deverasetty, S., Tebbe, A., Schaab, C., Lavery, D.J., Howland, D., Kwak, S., Botas, J., Aaronson, J.S., Rosinski, J., Coppola, G., Horvath, S*, **Yang, X.W.** * Integrated genomics and

- proteomics define huntingtin CAG length-dependent networks in mice. *Nature Neuroscience* 19: 623-633 (2016). (* co-corresponding authors).
13. Veldman, M.B., Rios-Galdamez, Y., Lu, X.H., Gu, X., Qin, W., Li, S., **Yang, X.W.**, Lin, S. The N17 domain mitigates nuclear toxicity in a novel zebrafish Huntington's disease model. *Mol Neurodegener.* 10:67 (2015).
 14. Park, C.S., **Yang, X.W.** Probing the stress and depression circuits with a disease gene. *Elife* 15: 4 (2015).
 15. Estrada-Sanchez, A., Burroughs, C., Cavaliere, S., Barton, S., Chen, S., **Yang, X.W.**, Rebec, G. Cortical Efferents Lacking Mutant huntingtin Improve Striatal Neuronal Activity and Behavior in a Conditional Mouse Model of Huntington's Disease. *J. Neuroscience* 35: 4440-4451 (2015).
 16. Gu, X., Cantele, J.P., Greiner, E. C.Y. Lee, C.Y.D., Barth, A.M., Gao, F., Park, C.S., Zhang, Z., Sandoval, S., Zhang, R., Diamond, M., Mody, I., Coppola, G., **Yang, X.W.** N17 Modifies Mutant Huntingtin Nuclear Pathogenesis and Severity of Disease in HD BAC Transgenic Mice. *Neuron* 85: 726-741 (2015).
 17. Peñagarikano, O., Lázaro, M.T., Lu, X.H., Gordon, A., Dong, H., Lam, H.A., Peles, E., Maidment, N.T. Murphy, N.P., **Yang, X.W.**, Golshani, P., Geschwind, D.H. Exogenous and evoked oxytocin restores social behavior in the Cntnap2 mouse model of autism. *Science Translational Medicine* 7:271ra8 (2015).
 18. Lu, X.H., Mattis, V.B., Wang, N., Al-Ramahi, I., van den Berg, N., Fratantoni, S.A., Waldvogel, H., Greiner, E., Osmand, A., Elzein, K., Xiao, J., Dijkstra, S., de Pril, R., Vinters, H., Faull, R., Signer, E., Kwak, S., Marugan, J.J., Botas, J., Fischer, D.F., Svendsen, C.N., Munoz-Sanjuan, I., **Yang, X.W.** Targeting ATM ameliorates mutant Huntingtin toxicities in cell and animal models of Huntington's disease. *Science Translational Medicine* 6: 268ra178 (2014).
 19. **Yang, X.W.**, Yamamoto, A. CLEARance wars: PolyQ strikes back. *Nature Neuroscience* 17:1140-1142 (2014).
 20. Wang, N., Gray, M., Lu, X.H., Cantele, J.P., Holley, S.M., Greiner, E., Gu, X., Shirasaki, D., Cepeda, C., Li, Y., Dong, H.W., Levine, M.S., **Yang, X.W.** Neuronal targets of mutant huntingtin genetic reduction to ameliorate Huntington's disease pathogenesis in mice. *Nature Medicine* 20: 536-541 (2014).
 21. Hausteil, M.D., Kracun, S., Lu, X.H., Shih, T., Jackson-Weaver, O., Tong, X., Xu, J., **Yang, X.W.**, O'Dell, T.J., Marvin, J.S., Ellisman, M.H., Bushong, E.A., Looger, L.L., Khakh, B.S. Conditions and constraints for astrocyte calcium signaling in the hippocampal mossy fiber pathway. *Neuron* 82: 413-429 (2013).
 22. Cui, Y., Ostlund, S.B., James, A., Park, C.S., Ge, W., Roberts, K.W., Mittal, N., Murphy, N.P., Cepeda, C., Kieffer, B.L., Levine, M.S., Jentsch, J.D., Walwyn, W.M., Sun, Y.E., Evans, C.J., Maidment, N.T., **Yang, X.W.** Targeted expression of μ -opioid receptors in a subset of striatal direct-pathway neurons restores opiate reward. *Nature Neuroscience* 17:254-261 (2014).
 23. Wang, N., Lu, X.H., Sandoval, S.V., **Yang, X. W.** An Independent Study of the Preclinical Efficacy of C2-8 in the R6/2 Transgenic Mouse Model of Huntington's Disease. *J. Huntington's Dis.* 2: 443-451 (2013).
 24. Daggett, A., **Yang, X. W.** Huntington's Disease: Easing the NMDAR Traffic Jam. *Nature Medicine* 19: 971-973 (2013)

25. Lee, C.Y., Cantle, J.P., **Yang, X.W.** Genetic manipulations of mutant huntingtin in mice: new insights into Huntington's disease pathogenesis. *FEBS J.* 280:4382-4394 (2013).
26. Yue, Z., **Yang, X.W.** A dangerous duet: LRRK2 and a-synuclein jam at CMA. *Nature Neuroscience* 16: 375-377 (2013).
27. Southwell, A.L., Warby, S.C., Carroll, J.B., Doty, C.N., Skotte, N.H., Zhang, W., Villanueva, E.B., Kovalik, V., Xie, Y., Pouladi, M.A., Collins, J.A., **Yang, X.W.**, Franciosi, S., Hayden, M.R. A fully humanized transgenic mouse model of Huntington disease. *Hum Mol Genet.* 22:18-34 (2013).
28. Yu-Taeger, L., Petrasch-Parwez, E., Osmand, A., Redensek, A., Metzger, S., Clemens, L., Park, L., Howland, D., Calaminus, C., Gu, X., Pichler, B., **Yang, X.W.**, Riess, O., and Nguyen, H.P. A novel BACHD transgenic rat exhibits characteristic neuropathological features of Huntington disease. *J Neuroscience* 32, 15426-15438 (2012).
29. Cantle, J.P., Lu, X.H., Gu, X.F., **Yang, X.W.** Cellular and molecular mechanisms implicated in pathogenesis of selective neurodegeneration in Huntington's Disease. *Frontiers in Biology* 7, 459-476.
30. Shirasaki, D.I., Greiner, E.R., Al-Ramahi, I., Gray, M., Boontheung, P., Botas, J., Coppola, G., Horvath, S., Loo, J.A.*, **Yang, X.W.*** Network organization of the Huntingtin proteomic interactome in mammalian brain. *Neuron* 75, 41-57 (2012) (* co-corresponding authors).
31. Lu, X., **Yang, X.W.** "Huntingtin Holiday": Progress towards an antisense therapy for Huntington's disease. *Neuron* 74:964-966 (2012).
32. Gafni, J., Papanikolaou, T., DeGiacomo, F., Holcomb, J., Chen, S., Menalled, L., Kudwa, A., Fitzpatrick, J., Miller, S., Ramboz, S., Tuunanen, P., Lehtimaki, K., **Yang, X.W.**, Kwak, S., Park, L., Howland, D., Park, H., and Ellerby, L. Caspase-6 Activity in a BACHD mouse modulates steady-state levels of mutant huntingtin protein but is not necessary for production of a 586 amino acid proteolytic fragment. *J Neuroscience* 32, 7454-7465 (2012).
33. Jiang, M., Wang, J., Fu, J., Du, L., Jeong, H., West, T., Xiang, L., Peng, Q., Hou, Z., Cai, H., Seredenina, T., Arbez, N., Zhu, S., Sommers, K., Qian, J., Zhang, J., Mori, S., **Yang, X.W.**, Tamashiro, K.L., Aja, S., Moran, T.H., Luthi-Carter, R., Martin, B., Maudsley, S., Mattson, M.P., Cichewicz, R.H., Ross, C.A., Holtzman, D.M., Krainc, D., Duan, W. Neuroprotective role of Sirt1 in mammalian models of Huntington's disease through activation of multiple Sirt1 targets. *Nature Medicine* 18, 153-158 (2011).
34. Miller, J., Arrasate, M., Brooks, E., Libeu, C.P., Legleiter, J., Hatters, D., Curtis, J., Cheung, K., Krishnan, P., Mitra, S., Widjaja, K., Shaby, B.A., Lotz, G.P., Newhouse, Y., Mitchell, E.J., Osmand, A., Gray, M., Thulasiramin, V., Saudou, F., Segal, M., **Yang, X.W.**, Masliah, E., Thompson, L.M., Muchowski, P.J., Weisgraber, K.H., Finkbeiner, S. Identifying polyglutamine protein species in situ that best predict neurodegeneration. *Nature Chemical Biology* 7, 925-934 (2011).
35. Greiner, E.R., **Yang, X.W.** Huntington's disease: Flipping a switch on huntingtin. *Nature Chemical Biology* 7, 412-414 (2011).
36. Wilburn, B., Rudnicki, D.D., Zhao, J., Weitz, T.M., Cheng, Y., Gu, X., Greiner, E., Park, C.S., Wang, N., Sopher, B.L., La Spada, A., Osmand, A., Margolis, R.L., Sun, Y.E., **Yang, X.W.** A novel antisense CAG repeat transcript at *JPH3* locus mediating expanded polyglutamine protein toxicity in Huntington's Disease-Like 2 (HDL2) Mice. *Neuron* 70, 427-440 (2011).

37. **Yang, X.W.** and Lu, X.H. Molecular and Cellular Basis of OCD-like Behaviors: Emerging View from Mouse Models. *Current Opinion in Neurology* 24, 114-118 (2011).
38. Tao, J., Wu, H., Lin, Q., Wei, W., Lu, X.H., Cattle, J.P., Ao, Y., Olsen, R.W., **Yang, X.W.**, Mody, I., Sofroniew, M.V., Sun, Y.E. Deletion of astroglial dicer causes non-cell-autonomous neuronal dysfunction and degeneration. *J Neuroscience* 31, 8306-8319 (2011).
39. André, V.M., Cepeda, C., Fisher, Y.E., Huynh, M., Bardakjian, N., Singh, S., **Yang, X.W.**, Levine, M.S. Differential electrophysiological changes in striatal output neurons in Huntington's disease. *J Neuroscience* 31, 1170-1182 (2011).
40. **Yang, X.W.** and Gray, M. Mouse model of Huntington's Disease for validating preclinical candidates. pp 165-196. In "New Therapeutic Development in Huntington's Disease" (Edited by Don Lo and Robert Hughes). CRC Press. Boca Raton, Florida (2010).
41. Graham, R.K., Deng, Y., Carroll, J., Vaid, K., Cowan, C., Pouladi, M.A., Metzler, M., Bissada, N., Wang, L., Faull, R.L., Gray, M., **Yang, X.W.**, Raymond, L.A., Hayden, M.R. Cleavage at the 586 amino acid caspase-6 site in mutant huntingtin influences caspase-6 activation *in vivo*. *J Neuroscience* 30,15019-15029 (2010).
42. André, V.M., Cepeda, C., Cummings, D.M., Jocoy, E.L., Fisher, Y.E., **Yang, X.W.**, Levine, M.S. Dopamine modulation of excitatory currents in the striatum is dictated by the expression of D1 and D2 receptors and modified by endocannabinoids. *Eur J Neurosci*. 31, 14-28 (2010).
43. Pouladi, M.A., Xie, Y., Skotte, N.H., Ehrnhoefer, D.E., Graham, R.K., Kim, J.E., Bissada, N., **Yang, X.W.**, Paganetti, P., Friedlander, R.M., Leavitt, B.R., Hayden, M.R. Full-length huntingtin levels modulate body weight by influencing insulin-like growth factor 1 expression. *Hum Mol Genet*. 19, 1528-1538 (2010).
44. Gu, X., Greiner, E.R., Mishra, R., Kodali, R., Osmand, A., Finkbeiner, S., Steffan, J.S., Thompson, L.M., Wetzel, R., and **Yang, X.W.** Serines 13 and 16 are critical determinants of full-length human mutant huntingtin induced disease pathogenesis in HD mice. *Neuron* 64:828-840 (2009).
45. **Yang, X.W.** BAC use in the study of the CNS. In: Squire LR (ed.). *Encyclopedia of Neuroscience*, Volume 2, pp. 13-20. Oxford: Academic Press (2009)
46. Lu, X.H., Fleming, S.M., Meurers, B., Ackerson, C.A., Mortazavi, F., Lo, V., Hernandez, D., Sulzer, Z., Jackson, G.R., Maidment, N.T., Chesselet, M.F., **Yang, X.W.** BAC mice with a truncated mutant Parkin exhibit age-dependent hypokinetic motor deficits, dopaminergic neuron degeneration, and accumulation of proteinase K-resistant alpha Synuclein. *J. Neuroscience* 29, 1962-1976 (2009).
47. Menalled, L., El-Khodori, B.F., Patry, M., Suarez-Farinas, M., Orenstein, S., Zahasky, B., Ragland, N., Leahy, C., **Yang, X.W.**, McDonald, M., Morton, J., Bates, J., Signer, E., Tobin, A., Leeds, J., Park, L., Howland, D., and Brunner, D. Systematic behavioral evaluation of Huntington's disease transgenic and knock-in mouse models. *Neurobiology of Disease* 35, 319-336 (2009).
48. Hutnick, L.K., Golshani, P., Namihira, M., Xue, Z., Matynia, A., **Yang, X.W.**, Silva, A.J., Schweizer, F.E., Fan, G. DNA hypomethylation restricted to the murine forebrain induces cortical degeneration and impairs postnatal neuronal maturation. *Hum Mol Genet*. 18, 2875-2888 (2009).
49. Spampanato, J., Gu, X., **Yang, X.W.***, Mody, I.* Progressive synaptic pathology of motor cortical neurons

in a BAC transgenic mouse model of Huntington's disease. *Neuroscience* 157, 606-620 (2008) (* co-corresponding authors).

50. Gray, M., Shirasaki D., Cepeda, C., Andre, V.M., Wilburn, B., Lu, X.H., Tao, J., Yamazaki, Y., Li, S.H., Sun, Y.E., Li, X.J., Levine, M.S., **Yang, X.W.** Full length human mutant Huntingtin with a stable polyglutamine repeat can elicit progressive and selective neuropathogenesis in BACHD mice. *J. Neuroscience* 28, 6182-6195 (2008).
51. Lobo, M.K., Yeh, C., **Yang, X.W.** Pivotal role of early B-cell factor 1 in development of striatonigral medium spiny neurons in the matrix compartment. *J Neurosci Res.* 86, 2134-2146 (2008).
52. **Yang, X.W.** and Lu, X.H. The BAC transgenic approach to study Parkinson's disease in mice. pp 247-268. In "Parkinson's Disease: Pathogenic and therapeutic insights from toxin and genetic models" (Edited by Richard Nass and Serge Przedorski). Elsevier: San Diego (2008).
53. Lobo, M.K., Cui, Y., Ostlund, S.B., Balleine, B.W.*, **Yang, X.W.*** Genetic control of instrumental conditioning by striatopallidal neuron-specific S1P receptor Gpr6. *Nature Neuroscience* 10, 1395-1397. (2007) (* co-corresponding authors)
54. Gu, X., Andre, V.M., Cepeda, C., Li, S.H., Li, X.J., Levine, M.S., **Yang, X.W.** Pathological cell-cell interactions are necessary for striatal pathogenesis in a conditional mouse model of Huntington's disease. *Molecular Neurodegeneration* 2, 8 (2007).
55. Lobo, M.K., Karsten, S.L, Gray, M., Geschwind, D.H., **Yang, X.W.** FACS-array profiling of striatal projection neuron subtypes in juvenile and adult mouse brains. *Nature Neuroscience* 9, 443-452 (2006).
56. Yang, Z., Jiang, H., Chachainasakul, T., Gong, S., **Yang, X.W.**, Heintz, N., Lin, S. Modified Bacterial Artificial Chromosomes for zebrafish transgenesis. *Methods* 39, 183-188 (2006).
57. Gu, X., Li, C., Wei, W., Lo, V., Gong, S., Li, S., Iwasato, T., Itohara, S., Li, X., Mody, I., Heintz, N., **Yang, X.W.** Pathological cell-cell interactions elicited by a neuropathogenic form of mutant Huntingtin critically contribute to cortical pathogenesis in vivo. *Neuron* 46:433-444 (2005).
58. **Yang, X.W.**, Gong, S. An overview on generation of BAC transgenic mice for neuroscience research. *Current Protocols in Neuroscience*, Unit 5.20 (2005).
59. Gong, S., **Yang, X.W.** Modification of Bacterial Artificial Chromosomes (BACs) and preparation of intact BAC DNA for generation of transgenic mice. *Current Protocols in Neuroscience*, Unit 5.21. (2005).
60. Gong, S., **Yang, X.W.**, Li, C., Heintz, N. Highly efficient modifications of Bacterial Artificial Chromosomes (BACs) using novel shuttle vectors containing the R6Kg origin of replication. *Genome Research* 12, 1992-1998 (2002).
61. Misulovin, Z., **Yang, X.W.**, Yu, W., Heintz, N., Merfre, E. A rapid method for targeted modification and screening of recombinant Bacterial Artificial Chromosome. *J. Immuno. Methods* 257, 99-105 (2001).
62. **Yang, X.W.**, Wynder, C., Doughty, M.L., Heintz, N. BAC mediated gene-dosage analysis reveals a role for *Zip1*(Ru49/Zfp38) in progenitor cell proliferation in cerebellum and skin. *Nature Genetics* 22, 327-335 (1999).
63. **Yang, X.W.**, Model, P., Heintz, N. Homologous recombination based modification in *E.Coli* and germline

transmission in transgenic mice of an 131kb Bacterial Artificial Chromosome (BAC). *Nature Biotechnology* 15, 859-865 (1997).

64. **Yang, X.W.**, Zhong, R., Heintz, N. Granule cell specification in the developing mouse brain as defined by expression of the zinc finger transcription factor Ru49. *Development* 122: 555-566 (1996).
65. Baserga, S.J., Gilmore-Hebert, M., **Yang, X.W.** Distinct molecular signals for nuclear import of the nucleolar snRNA, U3. *Genes & Development* 6, 1120-1130 (1992).
66. Baserga, S.J., **Yang, X.W.**, Steitz, J.A. An intact box C sequence in the U3 snRNA is required for binding of fibrillarin, the protein common to the major family of nucleolar snRNPs. *EMBO J.*10, 2645-2651 (1991).
67. Baserga, S.J.,**Yang, X.W.**, Steitz, J.A. Three pseudogenes for human U13 snRNA belong to class III. *Gene* 107, 347-348 (1991).

PATENTS

1. Heintz N, Model P, and **Yang XW**. Methods of performing homologous recombination based modification of nucleic acids in recombination deficient cells and use of the modified nucleic acid products thereof. US Pat. No. 6,143,566
2. Heintz N, Jiang W, and **Yang XW**. Methods of performing gene trapping in bacterial and bacteriophage-derived artificial chromosomes and use thereof. US Pat. No.6,485,912
3. Heintz N, Jiang W, and **Yang XW**. Methods of performing gene trapping in bacterial and Bacteriophage-derived Artificial Chromosomes and use thereof. US Pat. No. 6,130,090.
4. Heintz N, Model P, **Yang XW**, and Gong SC. Methods of performing homologous recombination based modification of nucleic acids in recombination deficient cells and use of the modified nucleic acid products thereof. US Pat. No. 6,821,759.