

Hideaki Yano

Northeastern University
Department of Pharmaceutical Sciences
140 The Fenway Building, Room 262
Boston, MA 02115

Work phone: 617-373-7245
Mobile phone: 646-266-0765
Email: hideakiyano@northeastern.edu

Current Position

Tenure-Track Assistant Professor, Northeastern University, School of Pharmacy, Department of Pharmaceutical Sciences

Education

Columbia University, Ph.D. degree in pharmacology (2012), Thesis advisor: Dr. Jonathan A. Javitch
(Thesis: <http://academiccommons.columbia.edu/catalog/ac%3A148832>)
Washington University in St. Louis, B.A. degree in chemistry (2002)

Positions and Employment

2002-2004 Research Technician, Washington University Medical Center Chemical Genomics Lab
2004-2006 Senior Research Technician, Columbia University Neuropharmacology Lab
2006-2012 Graduate Student, Columbia University Dept. of Pharmacology (PI: Dr. Jonathan A. Javitch)
2012-2016 IRTA Postdoctoral Fellow, NIDA IRP (PI: Drs. Sergi Ferré and Antonello Bonci)
2016-2019 Research Fellow, NIDA IRP (PI: Drs. Lei Shi, Amy H. Newman, and Antonello Bonci)
2020- Tenure-Track Assistant Professor, Northeastern University, School of Pharmacy, Department of Pharmaceutical Sciences

Fellowships

2006-2008 NIH Training Program in Pharmacological Sciences (#2T32GM067182)
2009-2010 Clinical and Translational Science Award (CTSA) Fellowship (#T32 TL1 RR024158-04)
2014-2016 Japanese Society for the Promotion of Science (JSPS) Fellowship

Grant Support

2020-2022 NARSAD Young Investigator Award

Societal Memberships

2011-present Member, American Society for Pharmacology and Experimental Therapeutics (ASPET)
2011-present Member, Society for Neuroscience
2019-present Member, Biophysical Society

Seminars and Scientific Meetings

1. Dopamine 2020 in Montreal (Poster, May 2020, **Cancelled**)
2. Experimental Biology 2020 in San Diego (Poster, Apr. 2020, **Cancelled**)
3. Society for Neuroscience 2019 in Chicago (Poster, Oct. 2019)
4. Chemistry and Pharmacology of Drug Abuse Meeting (Poster, Aug. 2020)
5. Experimental Biology 2019 in Orlando (Poster, Apr. 2019)
6. Tohoku University Meeting for Future Medicine (Scholarship, Short talk, Poster, Chair, Mar. 2019)
7. Biophysical Society Annual Meeting (Poster, Mar. 2019)
8. Gordon Research Seminar and Conference Molecular Pharmacology (Short talk, Poster, Feb. 2019)
9. GPCR Workshop at Thomas Jefferson University (Poster, Jun. 2018)
10. NIDA Director's Report Meeting (Short talk, May 2018)
11. Baltimore Brain Series (Seminar, Mar. 2018)
12. Society for Neuroscience 2017 in Washington D.C. (Poster, Nov. 2017)
13. Gordon Research Seminar and Conference Catecholamine (Poster, Aug. 2017)
14. 33rd Camerino Symposium on Receptor Chemistry (Seminar, May 2016)
15. NIH Baltimore Fellows Symposium (Poster, Nov. 2014)
16. Society for Neuroscience 2014 in Washington D.C. (Poster, Nov. 2014)
17. National Institute on Drug Abuse Mini-Convention in Washington D.C. (Poster, Nov. 2014)
18. American Psychological Association Early Career Poster in Washington D.C. (Poster, Aug. 2014)
19. National Institute on Drug Abuse poster day in Baltimore (Poster, May 2014)
20. NIH Baltimore Fellows Symposium (Poster, Nov. 2013)

21. Society for Neuroscience 2013 in San Diego (Poster, Nov. 2013)
22. National Institute on Drug Abuse poster day in Baltimore (Poster, May 2013)
23. G protein coupled receptor Colloquium in Boston (Poster, Apr. 2013)
24. Experimental Biology 2013 in Boston (Poster, Apr. 2013)
25. NIH Baltimore Fellows Symposium (Poster, Nov. 2012)
26. International Catecholamine Symposium in Monterey (Short talk, Poster, Sep. 2012)
27. Department of Psychiatry work in progress at Columbia University (Seminar, Mar. 2012)
28. Society for Neuroscience 2011 in Washington D.C. (Poster, Nov. 2011)
29. Department of Pharmacology retreat at Columbia University (Session chair, Poster, Nov. 2011)
30. National Graduate Student Research Conference at NIH (Poster, Oct. 2011)
31. Experimental Biology 2011 in Washington D.C. (Poster, Apr. 2011)
32. Department of Psychiatry retreat at Columbia University (Poster, Jun. 2010)
33. GPCR Workshop at Thomas Jefferson University (Poster, Jun. 2010)
34. CTSA National Pre-Doctoral Meeting at Washington University in St. Louis (Scholarship, Short talk, May. 2010)
35. Keystone Meeting for GPCR research at Breckenridge resort (Scholarship, Poster, Apr. 2010)
36. Department of Psychiatry work in progress at Columbia University (Seminar, Mar. 2010)
37. Clinical and translational science award (CTSA) Annual research day at Columbia University (Poster, Dec. 2009)

Research Mentoring

1. **Phuong Tran** – NIDA Postbac student (2019)
2. **Pramisha Adhikari, Ph.D.** – NIDA Biologist (2018-2019)
3. **Leanne Liu** – NIDA Postbac student (2018-2019)
4. **Sophia Guan** – River Hill High School, Maryland (2018)
5. **Sett Naing** – NIDA Postbac student (2017-2018)
6. **Marta Sanchez-Soto** – University of Barcelona Ph.D. student (2013-2016)
7. **Andres Ciudad Roberts** – University of Barcelona Ph.D. student (2014)
8. **Adam Sierakowiak** – Karolinska Institute Ph.D. student (2013-2014)
9. **Prashant Donthamsetti** – Columbia University Ph.D. student (2009-2012)

Publications

<http://www.ncbi.nlm.nih.gov/sites/myncbi/hidden/1/bibliography/48123581/public/?sort=date&direction=ascending>

1. **Yano H***, Adhikari P, Naing S, Hoffman AF, Baumann MH, Lupica CR, Shi L*, Positive allosteric modulation of the 5-HT_{1A} receptor by indole-based synthetic cannabinoids abused by humans, ***co-corresponding** ACS Chem Neurosci. 2020, Apr. 30. Epub
2. Sanchez-Soto M, Verma RK, Willette BKA, Gonye EC, Moore AM, Moritz AE, Boateng CA, **Yano H**, Free RB, Shi L, Sibley DR, A structural basis for how ligand binding site changes can allosterically regulate GPCR signaling and engender functional selectivity. Sci Signal. 2020, Feb 4;13(617)
3. Lane JR, Abramyan AM, Adhikari P, Keen AC, Lee KH, Sanchez J, Verma RK, Lim HD, **Yano H**, Javitch JA, Shi L, Distinct inactive conformations of the dopamine D₂ and D₃ receptors correspond to different extents of inverse agonism. Elife. 2020 Jan 27;9
4. Köfalvi A, Moreno E, Cordero A, Cai NS, Fernández-Dueñas V, Ferreira SG, Guixà-González R, Sánchez-Soto M, **Yano H**, Casadó-Anguera V, Cunha RA, Sebastião AM, Ciruela F, Pardo L, Casadó V, Ferré S, Control of glutamate release by complexes of adenosine and cannabinoid receptors. BMC Biol. 2020 Jan 23;18(1):9
5. Abramyan AM*, **Yano H***, Xu M*, Liu L, Naing S, Fant AD, Shi L, The Glu102 mutation disrupts higher-order oligomerization of the sigma 1 receptor. ***equally contributed**. Comput Struct Biotechnol J. 2020, Jan. 7.
6. **Yano H***, Liu L, Naing S, Shi L*, The effects of terminal tagging on homomeric interactions of the sigma 1 receptor, ***co-corresponding**, Front. Neurosci. 2019, Dec. 19. 13, 1356
7. Slack RD, Abramyan AM, Tang H, Meena S, Davis BA, Bonifazi A, Giancola JB, Deschamps JR, Naing S, **Yano H**, Singh SK, Newman AH, Shi L, A Novel Bromine-Containing Paroxetine Analogue Provides Mechanistic Clues for Binding Ambiguity at the Central Primary Binding Site of the Serotonin Transporter. ACS Chem Neurosci. 2019, Aug. 19. 10 (9), 3946-3952
8. Francis TC, **Yano H**, Demarest TG, Shen H, Bonci A, High-frequency activation of nucleus accumbens D₁-MSNs drives excitatory potentiation on D₂-MSNs. Neuron. 2019, Aug. 7. 103 (3), 432-444. e3
9. Sánchez-Soto M, **Yano H**, Cai NS, Casadó-Anguera V, Moreno E, Casadó V, Ferré S, Revisiting the functional role of dopamine D₄ receptor gene polymorphisms: Heteromerization-dependent gain of function of the D_{4.7} receptor variant. Mol Neurobiol. 2019, July 1. 56 (7), 4778-4785

10. Bonifazi A⁺, **Yano H⁺**, Guerrero AM, Kumar V, Hoffman AF, Lupica CR, Shi L, Newman AH, Novel and potent dopamine D2 receptor Go-protein biased agonists. ***equally contributed**. ACS Pharm. & Transl. Sci. 2019 Feb 8; 2(1): 52–65. (cover, editors' choice)
11. **Yano H⁺**, Cai NS, Javitch JA, Ferré S, Luciferase complementation based-detection of G protein coupled receptor activity, ***corresponding**, Biotechniques. 2018 Jul;65(1):9-14.
12. Del Bello F, Bonifazi A, Giorgioni G, Cifani C, Micioni Di Bonaventura MV, Petrelli R, Piergentili A, Fontana S, Mammoli V, **Yano H**, Matucci R, Vistoli G, Quaglia W, 1-[3-(4-Butylpiperidin-1-yl)propyl]-1,2,3,4-tetrahydroquinolin-2-one (77-LH-28-1) as a Model for the Rational Design of a Novel Class of Brain Penetrant Ligands with High Affinity and Selectivity for Dopamine D4 Receptor. J Med Chem. 2018, Apr 26.
13. Sánchez-Soto M, Casadó-Anguera V, **Yano H**, Bender BJ, Cai NS, Moreno E, Canela EI, Cortés A, Meiler J, Casadó V, Ferré S, α 2A- and α 2C-Adrenoceptors as potential targets for dopamine and dopamine receptor ligands. Mol Neurobiol. 2018 Mar 18.
14. **Yano H⁺**, Cai NS, Xu M, Verma RK, Rea W, Hoffman AF, Shi L, Javitch JA, Bonci A, Ferré S, Gs- versus Golf-dependent functional selectivity mediated by the dopamine D1 receptor. ***corresponding**. Nat Commun. 2018 Feb 5;9(1):486. (featured on NIDA website)
15. **Yano H⁺**, Bonifazi A, Xu M, Guthrie D, Schneck, SN, Abramyan A, Fant A, Hong WC, Newman AH, Shi L^{*}, Pharmacological profiling of sigma 1 receptor ligands by novel receptor homomerization assays. ***corresponding**, Neuropharmacology. 2018 Jan 31;133:264-275.
16. **Yano H⁺**, Provasi D, Cai NS, Filizola M, Ferré S, Javitch JA^{*}, Development of novel biosensors to study receptor-mediated activation of the G-protein α subunits Gs and Golf. ***corresponding**. J Biol Chem. 2017 VOL. 292, NO. 49, pp. 19989–19998
17. **Yano H⁺**, Sanchez-Soto M, Ferré S, Bioluminescence Resonance Energy Transfer assay to characterize Gi-like G protein subtype-dependent functional selectivity. ***corresponding**. Curr Protoc Neurosci. 2017 VOL. 81, NO. 5, pp. 33.1-33.13
18. Hong WC, **Yano H**, Hiranita T, Chin FT, McCurdy CR, Su TP, Amara SG, Katz JL, The sigma-1 receptor modulates dopamine transporter conformation and cocaine binding and may thereby potentiate cocaine self-administration in rats. J Biol Chem. 2017 VOL. 292, NO. 27, pp. 11250–11261.
19. Bonifazi A⁺, **Yano H⁺**, Ellenberger MP, Muller L, Kumar V, Zou MF, Cai NS, Guerrero AM, Woods AS, Shi L, Newman AH, Novel Bivalent Ligands Based on the Sumanriole Pharmacophore Reveal Dopamine D2 Receptor (D2R) Biased Agonism. ***equally contributed**. J Med Chem. 2017, Mar 16.
20. Gaskill PJ, Miller DR, Gamble-George J, **Yano H**, Khoshbouei H, HIV, Tat and dopamine transmission. Neurobiol Dis. 2017 Sep 106:51-73
21. Michino M, Boateng CA, Donthamsetti P, **Yano H**, Bakare OM, Bonifazi A, Ellenberger MP, Keck TM, Kumar V, Zhu C, Verma R, Deschamps JR, Javitch JA, Newman AH, and Shi L, Towards understanding the structural basis of partial agonism at the dopamine D3 receptor. J Med Chem. 2017 Jan 26;60(2):580-593.
22. Cao J, Slack RD, Bakare OM, Burzynski C, Rais R, Slusher BS, Kopajtic T, Bonifazi A, Ellenberger MP, **Yano H**, He Y, Bi GH, Xi ZX, Loland C J, and Newman AH, Novel and High Affinity 2-[(Diphenylmethyl)sulfinyl]acetamide (Modafinil) Analogues as Atypical Dopamine Transporter Inhibitors. J Med Chem. 2016, 59, 10676-10691
23. Sánchez-Soto M, Bonifazi, Cai NS, Ellenberger MP, Newman AH, Ferré S, **Yano H⁺**, Evidence for non-canonical neurotransmitter activation: Norepinephrine as a dopamine D2-like receptor agonist. ***corresponding**. Mol Pharmacol. 2016 VOL. 89, NO. 4, pp.457-466
24. Frederick AL⁺, **Yano H⁺**, Trifilieff P⁺, Vishwasrao HD, Biezonski D, Mészáros J, Urizar E, Sibley DR, Kellendonk C, Sonntag KC, Graham DL, Colbran RJ, Stanwood GD⁺, Javitch JA⁺, Evidence against dopamine D1/D2 receptor heteromers. ***equally contributed**. Mol Psychiatry. 2015 VOL. 20, NO. 11, pp. 1373-85.
25. Malinauskaite L, Quick M, Reinhard L, Lyons JA, **Yano H**, Javitch JA, Nissen P, A mechanism for intracellular release of Na⁺ by neurotransmitter/sodium symporters. Nat Struct Mol Biol. 2014 VOL. 21, NO. 11, pp. 1006-1012.
26. Bonifazi A, **Yano H**, Del Bello F, Farande A, Quaglia W, Petrelli R, Matucci R, Nesi M, Vistoli G, Ferré S, Piergentili A, Synthesis and biological evaluation of a novel series of heterobivalent muscarinic ligands based on xanomeline and 1-[3-(4-butylpiperidin-1-yl)propyl]-1,2,3,4-tetrahydroquinolin-2-one (77-LH-28-1). J Med Chem. 2014 VOL. 57, NO. 21, pp. 9065-9077.
27. Guitart X, Navarro G, Moreno E, **Yano H**, Cai NS, Sánchez-Soto M, Kumar-Barodia S, Naidu YT, Mallol J, Cortés A, Lluís C, Canela EI, Casadó V, McCormick PJ, Ferré S, Functional selectivity of allosteric interactions within G protein-coupled receptor oligomers: the dopamine D1-D3 receptor heterotetramer. Mol Pharmacol. 2014 VOL. 86, NO. 4, pp. 417-429.
28. Gaskill PJ, **Yano H**, Kalpana GV, Javitch JA, Berman JW, Dopamine receptor activation increases HIV entry into primary human macrophages. PLoS ONE. 2014 VOL. 9, NO. 9, e108232.

29. Pizzo AB, Karam CS, Zhang Y, **Yano H**, Freyberg RJ, Karam DS, Freyberg Z, Yamamoto A, McCabe BD, Javitch JA, The membrane raft protein Flotillin-1 is essential in dopamine neurons for amphetamine-induced behavior in *Drosophila*. *Mol Psychiatry*. 2013 VOL. 18, NO. 7, pp. 824-833.
30. Urizar E⁺, **Yano H**⁺, Kolster R, Galés C, Lambert N, Javitch JA, CODA-RET reveals functional selectivity as a result of GPCR heteromerization. ***equally contributed**. *Nat Chem Biol*. 2011 VOL. 7, NO. 9, pp. 624-630.
31. Sohy D, **Yano H**, de Nadai P, Urizar E, Guillabert A, Javitch JA, Parmentier M and Springael JY, Hetero-oligomerization of CCR2, CCR5, and CXCR4 and the protean effects of "selective" antagonists. *J Biol Chem*. 2009 VOL. 284, NO. 45, pp. 31270-31279.
32. Quick M, **Yano H**, Goldberg NR, Duan L, Beuming T, Shi L, Weinstein H, Javitch JA, State-dependent Conformations of the Translocation Pathway in the Tyrosine Transporter Tyt1, a Novel Neurotransmitter:Sodium Symporter from *Fusobacterium nucleatum*. *J Biol Chem*. 2006 VOL. 281, NO. 36, pp. 26444–26454.
33. Suehiro K, Takuma S, Shimizu J, Hozumi T, **Yano H**, Cardinale C, DiTullio MR, Wang J, Smith CR, Burkhoff D, Homma S., Assessment of Left Ventricular Systolic Function Using Contrast Two-Dimensional Echocardiography With a High-Frequency Transducer in the Awake Murine Model of Myocardial Infarction. *Jpn Circ J*. 2001 Nov; 65 (11): 979-83.
34. Takuma S, Suehiro K, Cardinale C, Hozumi T, **Yano H**, Shimizu J, Mullis-Jansson S, Sciacca R, Wang J, Burkhoff D, Di Tullio MR, Homma S., Anesthetic inhibition in ischemic and nonischemic murine heart: comparison with conscious echocardiographic approach. *Am J Physiol Heart Circ Physiol*. 2001 May; 280 (5): H2364-70.
35. Suehiro K, Takuma S, Cardinale C, Hozumi T, Shimizu J, **Yano H**, Di Tullio MR, Wang J, Smith CR, Burkhoff D, Homma S., Assessment of segmental wall motion abnormalities using contrast two-dimensional echocardiography in awake mice. *Am J Physiol Heart Circ Physiol*. 2001 Apr; 280 (4): H1729-35.

Accomplishment

1. Travel grant for Tohoku University Meeting for Future Medicine (Mar. 2019)
2. Selected for a talk at Gordon Research Seminar Molecular Pharmacology (Feb. 2019)
3. NIH Stadtman Tenure-Track Investigator Search – Top 25% Selection, Molecular Pharmacology (Feb. 2019)
4. Journal article (Novel and potent dopamine D2 receptor...) selected for a cover and editors' choice (Feb. 2019)
5. Selected for a talk at Baltimore Brain Series (Mar. 2018)
6. Journal article (Gs- versus Golf-dependent functional selectivity...) featured on NIDA website (Feb. 2018)
7. Scientists Teaching Science, 9-week online course, NIH Office of Intramural Training and Education (Jun. 2016)
8. Selected for a talk at 33rd Camerino Symposium on Receptor Chemistry (May 2016)
9. Selected for early career investigators poster session at NIDA Mini-Convention (Nov. 2014)
10. Best poster for NIA-NIDA poster day (May. 2014)
11. Translational science training program award at NIH (Apr. 2014)
12. Young scientist travel award for Experimental Biology 2013 (Apr. 2013)
13. IUBMB travel fellowship for International Catecholamine Symposium (Sep. 2012)
14. Kavli travel grant for Society for Neuroscience 2011 (Nov. 2011)
15. Travel grant for National Graduate Student Research Conference at NIH (Oct. 2011)
16. Best abstract (runner-up) for Experimental Biology 2011 ASPET division (Apr. 2011)
17. Graduate student travel grant for Experimental Biology 2011 (Apr. 2011)
18. Brian Hoffman Service Award for Ph.D student at Columbia Univ. Pharmacology Dept. (May. 2010)
19. Travel grant for CTSA national pre-doctoral meeting (May. 2010)
20. Scholarship for Keystone meeting (Apr. 2010)