CURRICULUM VITAE
Jeff Beeler, Ph.D.

WORK ADDRESS
Queen's College, CUNY
Dept. of Psychology
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CONTACT INFORMATION
Office: Razran 364
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EDUCATION

University of Chicago	Ph.D. in Neurobiology	Dec 2003
University of Illinois at Chicago	M.S.W., Mental Health Concentration	May 1992
Arizona State University	B.A. *cum laude*, Secondary Education	Dec 1987

ACADEMIC APPOINTMENTS

Queen's College, CUNY Department of Psychology	Associate Professor	2013- present
University of Chicago Department of Neurobiology	Research Associate (Associate Professor)	2012-2013
University of Chicago Department of Neurobiology	Research Associate (Assistant Professor)	2007-2012
University of Chicago Department of Neurobiology	Postdoctoral Fellow	2004-2007
University of Chicago School of Social Service Administration	Lecturer	1998-2007

RESEARCH INTERESTS
Information processing and plasticity in basal ganglia circuitry and its contribution to motivational plasticity, behavioral flexibility and neuropsychiatric disorders (PD, obesity, addiction, depression).

ACTIVE GRANTS
"Assessing aberrant motor learning in Parkinson's patients"
Principal Investigator: Jeff Beeler
Agency: NIH/NINDS
Type: R21
Direct Costs: $275,000
Period: 5/1/2014 to 4/30/2016

COMPLETED GRANTS
"Pharmacological targets facilitating non-drug reward and extinction of drug-seeking"
Principal Investigator: Jeff Beeler
Agency: NIH/NIDA 1RO1DA02587-01
Type: R01

Direct Costs: $250,000/year
Period: 9/19/2008 to 5/31/2013

"Genetic manipulation of phasic dopamine activity"
Principal Investigator: Jeff Beeler
Agency: NIDA
Type: F32
Direct Cost: $~50,000/year
Period: 11/1/2005 to 10/31/2007

TRAINING AND MENTORING

Jessica Koranda, graduate student in Neurobiology, serving as co-advisor and thesis committee member. Jessica is investigating nicotinic contributions to behavioral flexibility. Successfully defended July 2014.

Mari Murakami, supervised her senior honors thesis project "The role of taste, metabolic value and dopamine in feeding behavior." Mari graduated and is pursuing medical school.

Zhen Fang Huang Cao, supervised her senior honors thesis project "The nigrostriatal pathway as an effector for locomotor psychostimulation and sensitization to cocaine." Zhen is currently a graduate student in the Janelia/Cambridge neuroscience program.

SERVICE

Lead Associate Editor, Special Topic, *Dopamine and behavioral flexibility: the problem of modifying established behavior*, Frontiers in Decision Neuroscience, in progress.

Section Editor, NeuroReport, 2014 to present.

Academic Editor, *PLoS One*, 2011 to present.

Review Editorial Board, Frontiers in Decision Neuroscience, 2012 to present.

Ad hoc member, NIH Study Section, Biobehavioral Regulation, Learning and Ethology (BRLE), June 2013; Oct 2014

Grant Reviewer (outside expert), French National Research Agency, March 2013

University of Chicago, *Institutional Animal Care and Use Committee*, faculty member appointment, 2011 to 2013.

PAST HONORS AND AWARDS

2012	NIDA/NIAAA/APA (Divisions 28 & 50) Early Career Investigators Travel Award
2012	Travel Fellow, Winter Conference on Brain Research
2005-2007	Individual Postdoctoral Training Grant (NRSA), F32 DA020427-01 "Genetic manipulation of phasic dopamine activity" (NIDA)
1996-1998	Phoenix Fellowship, University of Chicago
1982-1987	National Merit/DuBois Scholarship

TEACHING EXPERIENCE

Psychopharmacology (graduate), Queens College, CUNY	Spring 2014
Human Motivation (undergrad), Queens College, CUNY	Fall 2013,14
Sole lecturer/developed course, *Biomedical Perspectives in Social Work* (20 lectures) School of Social Service Administration, University of Chicago.	2004-2007
Teaching Assistant. *Cognitive Neuroscience*, University of Chicago.	2003, 2004
Teaching Assistant. *Cellular Neurobiology*, University of Chicago.	2001
Sole lecturer/developed course, *Sexuality and Social Work Practice* (20 lectures) School of Social Service Administration, University of Chicago.	1998-2003
Co-instructor with Dr. Bert Cohler, *Psychiatric Illness and the Life Course,* Undergraduate course, University of Chicago.	1998

PEER REVIEW ACTIVITIES --- JOURNALS

Journal of Neurophysiology, Physiology and Behavior, Journal of Physiology, International Journal of Neuropsychopharmacology, Life Sciences, Lab Animal, International Journal of Obesity, Journal of Neurochemistry, PLoS One, Human Mutation, Neuroscience Letters, Frontiers in Decision Neuroscience, Cognitive, Affective and Behavioral Neuroscience, Behavioral Brain Research, European Journal of Neuroscience, Human Mutation, International Journal of Developmental Neuroscience, Basal Ganglia, Behavioral Neuroscience, eLife

PROFESSIONAL AFFILIATIONS

Society for Neuroscience
American Psychological Association

PEER REVIEWED PUBLICATIONS (28)

Augustin, S., **Beeler, J.A.**, McGehee, D.S., and Zhuang, X. (2014). Cyclic AMP and afferent activity govern bidirectional synaptic plasticity in striatopallidal neurons. *J Neurosci, v34*, pp. 6692-6699.

Koranda, J.L., Cone, J.J., McGehee, D.S., Roitman, M.F., ****Beeler, J.A.** and Zhuang, X (2014). Nicotinic activation scales dynamic range of dopamine release in-vivo. *J Neurophysiology, v 111*, pp 103-111. **** co- senior author**

Beeler, J.A., Cools, R., Luciana, M., Ostlund, S.B., Petzinger, G. (2013). A kinder, gentler dopamine . . . highlighting dopamine's role in behavioral flexibility. Editorial introduction to Special Topic on Dopamine and behavioral flexibility, *Frontiers in Neuroscience, 8, 4*. DOI: 10.3389/fnins.2014.0004

Beeler, J.A., Jakowec, M., Petzinger, G. (2013). The enemy within: propagation of aberrant corticostriatal plasticity to cortical function in Parkinson's disease. Invited review, *Frontiers in Neurology, v4,* DOI=10.3389/fneur.2013.00134.

Petzinger, G, Fisher, B.E., Jacobson, S., **Beeler, J.A.**, Walsh, J.P. and Jakowec, M.W. (2013). Exercise-enhanced neuroplasticity targeting motor and cognitive circuitry in Parkinson's disease. *Lancet Neurology,* v12, pp. 716-726.

Beeler, J.A., McDaid, J, Frank, MJ, Alexander, E., Turkson, S., Bernandez, M.S., McGehee, D.S. and Zhuang, X. (2012). A role for dopamine-mediated learning in the pathophysiology and treatment of Parkinson's disease. *Cell Reports*, v2(6), p 1747. DOI: 10.1016/j.celrep.2012.11.014.

Beeler, J.A. (2012). Thorndike 2.0: Dopamine and the regulation of thrift. Invited Focused Review, Frontiers in Behavioral Neuroscience, *Front. Neurosci*. DOI: doi:10.3389/fnins.2012.00116.

Beeler, J.A., Frazier, C.R.M., Zhuang, X. (2012). Putting desire on a budget: dopamine and energy expenditure, reconciling reward and resources. *Frontiers in Integrative Neuroscience*, v. 6:49. DOI: 10.3389/fnint.2012.00049

Beeler, J.A., McCutcheon, J.E., Cao, Z.F.H., Murakam, M., Roitman, M.F., Zhuang, X. (2012). Taste uncoupled from nutrition fails to sustain reinforcing properties of food, *European Journal of Neuroscience,* epub ahead of print. DOI: 10.1111/j.1460-9568.2012.08167.x

Beeler, J.A., Frazier, C.R.M., Zhuang, X. (2012). Dopaminergic enhancement of local food seeking is under global homeostatic control. *European Journal of Neuroscience, v 35,* pp.146-159.

McCutcheon, J.E., ***Beeler, J.A**., Roitman, M.F. (2012). Sucrose-predictive cues evoke greater phasic dopamine release than saccharin-predictive cues. *Synapse, 66(4),* pp. 346-351. ***co- first author**

Beeler, J.A. (2011). Preservation of function in Parkinson's disease: what's learning got to do with it? *Brain Research, v 35(1),* pp 96-113.

Cortright JJ, Lorrain DS, **Beeler JA**, Tang WJ, Vezina P. (2011). Previous exposure to delta9-tetrahydrocannibinol enhances locomotor responding to but not self-administration of amphetamine. *J Pharmacol Exp Ther, 337(3)*:724-33. Epub 2011 Mar 9.

Beeler, J.A., Daw, N., Frazier, C.R.M., Zhuang, X. (2010). Tonic dopamine modulates exploitation of reward learning, *Frontiers in Behavioral Neuroscience, 4(170)*.

Beeler, J.A., Cao, Z.F.H., Khierbek, M.A, Ding, Y., Koranda, J, Kang, U., Zhuang, X. (2010) Dopamine-dependent motor learning: insight into l-dopa's long-duration response. *Annals of Neurology, 67(5),* p. 639-47.

Kheirbek, M.A., **Beeler, J.A.**, Chi, W. and Zhuang, X. (2010) A molecular dissociation between cued and contextual learning. *Learning and Memory, 17(3),* 148-154.

Kheirbek, M.A., Britt, J.P., **Beeler, J.A.**, Ishikawa, Y., McGehee, D.S., Zhuang, X. (2009) Adenylyl cyclase type 5 is critical for corticostriatal plasticity and striatum-dependent learning. *Journal of Neuroscience*, *29(39),* p. 12115-24.

Beeler, J.A., Cao, Z.F., Kheirbek, M.A., & Zhuang, X. (2009). Loss of cocaine locomotor response in Pitx3-deficient mice lacking a nigrostriatal pathway. *Neuropsychopharmacology, 34(5),* p. 1149.

Kheirbek M.A., **Beeler J.A.**, Ishikawa Y. & Zhuang X. (2008) A cyclic AMP pathway underlying reward prediction in associative learning. *Journal of Neuroscience, 28(44),* p. 11401.

Frazier, C.R.M., Mason, P., Zhuang, X., & **Beeler, J.A.** (2008). Sucrose exposure in early life alters adult motivation and weight gain. *PloS One, 3(9),* p. e3221.

Beeler, J (2007). Should I stay or should I go: the neural substrates of being in the right place at the right time. (Invited Editorial Focus). *J Neurophys*, *97(3),* 1878-9.

Cagniard, B, **Beeler, JA**, Britt, J, McGehee, D, Marinelli, M and Zhuang, X (2006). Dopamine scales performance in the control of voluntary behavior. *Neuron*, 51, 1-7.

Beeler, JA, Prendergast, B, and Zhuang, X. (2006). Low amplitude entrainment of mice and the impact of circadian phase on behavior tests, *Physiology and Behavior, 87(5)*, 870-880.

Hong, J, **Beeler, J**, Zhukovskaya, NL, He, W, Tang, WJ and Rosner, MR (2005). Anthrax edma factor potency depends on mode of cell entry. *Biochem. Biophys. Res. Commun, 335*, 850-857.

Beeler, JA, Yan, SZ, Bykov, S, Murza, A, Asher, S, Tang, WJ (2004) A soluble C1b protein and its regulation of soluble type 7 adenylyl cyclase. *Biochemistry, 43,* 15463-15471.

Beeler, JA and Tang, WJ. (2004). Expression and purification of soluble adenylyl cyclase from *Escherichia coli. Methods in Molecular Biology, 237*, 39-53.

Yan SZ, **Beeler JA**, Chen Y, Shelton RK, Tang WJ (2001). The regulation of type 7 adenylyl cyclase by its C1b region and E. coli peptidyl prolyl isomerase, SlyD. *J Biol Chem, 276*, 8500-8506.

Kim JH, **Beeler JA**, Vezina P. (2000). Group II, but not group I, metabotropic glutamate receptors in the rat nucleus accumbens contribute to amphetamine-induced locomotion. *Neuropharmacology*, *29(10)*,1692-9.

MEETING ABSTRACTS/TALKS (40)

Beeler, J.A. (2014) A double-edged sword: targeting synaptic plasticity as a strategy for neuroprotection. Invited speaker. Behavioral and cognitive neurosciences colloquium, The Graduate Center, CUNY. (Feb 7).

Beeler, J.A. (2013) The evolution of organismal budgeting: dopamine, economic thrift and energy management. Invited speaker, Albert Einstein College of Medicine.

Beeler, J.A., Turkson, S. and Zhuang, X. (2013). Reduced dopamine D2 receptor activity promotes obesity through energetic thrift not increased consumption. Abstract/poster, *Society for Neuroscience Annual Meeting*, San Diego, CA.

Koranda, J.L., **Beeler, J.A.**, and Zhuang, X. (2013). Reduced Parkinson's risk in smokers: chronic nicotine may confer neuroprotection by decreasing aberrant corticostriatal plasticity. Abstract/poster, *Society for Neuroscience Annual Meeting*, San Diego, CA.

Faust, R.P., Zhuang, X. and **Beeler, J.A.** (2013). A home-cage paradigm for studying behavioral inhibition in the mouse. Abstract/poster, *Society for Neuroscience Annual Meeting*, San Diego, CA.

Beeler, J.A. (2013). The enemy within: aberrant learning and cortical decompensation. Invited participant in collaborative research retreat, Neuroplasticity and repair in neurodegenerative disorders. May 9-12, Lake Arrowhead, Los Angeles, CA.

Beeler, J.A. (2013). Invited speaker, Adapting to economies of reward: dopamine in health and disease. Queens College, CUNY, New York, NY.

Chi, W., Frazier, C., Xu, L., **Beeler, J.A.**, Zhuang, X. (2013). Increased dopamine induces lethal foraging in *Drosophila*. Abstract/poster, Drosophila Genetics Research Conference, Washington, D.C.

Beeler, J.A. (2012). Session moderator, basal ganglia plasticity and addiction. Conference, *Plasticity in the basal ganglia: dopamine and beyond*, Beijing, China.

Beeler, J.A. (2012). Invited speaker, When plasticity goes bad: aberrant learning and Parkinson's disease. Conference, *Plasticity in the basal ganglia: dopamine and beyond*, Beijing, China.

Beeler, J.A., Frank, MJ, Alexander, E., and Zhuang, X. (2012). The relationship between dopamine-mediated learning and performance: A2A antagonism selectively targets aberrant learning induced by dopamine blockade. Nanosymposium, *Society for Neuroscience Annual Meeting*, New Orleans, LA.

McDaid, J., **Beeler, J.A.**, Zhuang, X. and McGehee, D.S. (2012). D2 receptor inhibition in the dorsolateral striatum facilitates A2A receptor mediated plasticity and aberrant motor learning. Nanosymposium, *Society for Neuroscience Annual Meeting*, New Orleans, LA.

Augustin, S.M., **Beeler, J.A.**, McGehee, D.S. and Zhuang, X. (2012). Cyclic AMP levels in medium spiny neurons in the indirect pathway play a central role in the directionality of corticostriatal plasticity. Nanosymposium, *Society for Neuroscience Annual Meeting*, New Orleans, LA.

Koranda, J., **Beeler, J.A.**, Cone, J.J., Roitman, M.F. and Zhuang, X. (2012). In-vivo characterization of nAChR modulation of DA release in the dorsolateral striatum. Nanosymposium, *Society for Neuroscience Annual Meeting*, New Orleans, LA.

Beeler, J.A. (2012). Aberrant corticostriatal plasticity as therapeutic target in PD. Invited participant, USC Neurology group retreat, Lake Arrowhead (Los Angeles), CA.

Beeler, J.A. and Zhuang, X. (2012). Putting desire on a budget: dopamine and energy economics. Poster, American Psychological Association Annual Convention, Orlando, FL.

Beeler, J.A. (2012). Presentation to Rush movement disorder group. Aberrant learning in PD patients: update and pilot study. *Rush Medical Center,* Chicago, IL.

Beeler, J.A. (2012). Invited speaker, Aberrant Learning and Parkinson's Disease. *Barrow Neurological Institute*, Phoenix, AZ.

Beeler, J.A. (2012). Presentation to Northwestern movement disorder group. Aberrant learning in PD patients: update and pilot study. *Northwestern University,* Chicago, IL.

Beeler, J.A. (2012). Dopamine and energy economics: Putting desire on a budget. *Loyola University*. Chicago, IL.

Beeler, J.A. (2012). Invited participant in panel on action selection, behavioral choice and dopamine (Paul Phillips, chair). *Winter Brain*. Snowbird, UT.

Murakami, M., Cao, Z.F.H., McCutecheon, J.E., Roitman, M.F., Zhuang, X., **Beeler, J.A.** (2011). The relative contribution of taste and nutritional value to reinforcement. *Society for Neuroscience Annual Meeting,* Washington, D.C.

Beeler, J.A., Frazier C.R.M., Zhuang, X. (2011). Dopaminergic enhancement of local food seeking is under global homeostatic control. *Society for Neuroscience Annual Meeting,* Washington, D.C.

Koranda, J., **Beeler, J.A.**, Alexander, E., Cao, Z.F.H., Zhuang, X. (2011). Differential contribution of dopamine D1- and D2- signaling in the striatum to motor learning and relearning. *Society for Neuroscience Annual Meeting,* Washington, D.C.

Kheirbek, M.A., Chi, W., Ding, Y., Won, L., **Beeler, J.A**., Kang, U.J., Zhuang, X. (2011). Genetic mouse models of dopamine-independent motor control. *Society for Neuroscience Annual Meeting,* Washington, D.C.

Frazier, C.R.M., **Beeler, J.A.**, and Zhuang, X. (2011). Hyperdopaminergic activity protects against obesity in leptin deficient mice. *Society for Neuroscience Annual Meeting,* Washington, D.C.

McCutcheon, J.E., **Beeler, J.A.**, Roitman, M.F. (2011) Phasic dopamine is selectively evoked in nucleus accumbens core for a caloric vs. a non-caloric reward. *Society for Neuroscience Annual Meeting,* Washington, D.C.

Beeler, J.A. (2011). Presentation to University of Chicago neurology research group. Two sides of a coin: integrating dopamine's role in performance and learning. Chicago, IL.

Beeler, J.A. (2011). Presentation to Rush University neurology research group. Two sides of a coin: integrating dopamine's role in performance and learning. Chicago, IL.

Beeler, J.A. (2011). Presentation to Northwestern neurology research group. Preservation of function in Parkinson's: a role for learning and corticostriatal plasticity. Chicago, IL.

Beeler, J.A. (2009). Invited speaker. To do or not to do: The role of aberrant learning in action selection and Parkinson's disease. Purdue Calumet, IN.

Beeler, J.A., Cao, Z.F.H., Khierbek, M.A., Ding, Y., Koranda, J., Kang, U., Zhuang, X. (2009). The role of dopamine in motor learning and unlearning and its implication in L-Dopa's long-duration response in Parkinson's disease. *Society for Neuroscience Annual Meeting*, Chicago, IL.

Beeler, J.A., Daw, N., Frazier, C.R.M., Zhuang, X. (2009). Decision-making in hyperdopaminergic mice is less influenced by recent reward in a novel, home-cage free operant choice task. *Society for Neuroscience Annual Meeting*, Chicago, IL.

Kheirbek, M.A., **Beeler, J.A.**, Chi, W., and Zhuang, X. (2009). A molecular dissociation between cued and contextual learning. *Society for Neuroscience Annual Meeting*, Chicago, IL.

Britt, J.P., Kierbek, M.A., **Beeler, J.A.**, Ishikawa, Y., Zhuang, X. and McGehee, D.S. (2008) Cyclic AMP contributes to dopaminergic regulation of corticostriatal plasticity. *Society for Neuroscience Annual Meeting*, Washington, D.C.

Sprow, G.M., Mahler, S.V., Berridge, K.C., **Beeler, J.A.** and Zhuang, X. (2008) Hyperdopaminergic mice exhibit enhanced 'wanting' but normal modulation of 'liking'. *Society for Neuroscience Annual Meeting*, Washington,

Beeler, J.A. (2008). Invited speaker. The role of dopamine in motor learning and performance optimization. *International Symposium on Drug Addiction: Mechanisms and Therapeutic Approaches*, Kunming, China.

Beeler J.A., Cao Z.F.H., Kheirbek M.A. & Zhuang X. (2007). Dissociation of reinforcement and locomotor effects of cocaine in pitx3 deficient mice, *Gordon Conference on Catecholamines,* Oxford, UK.

Kheirbek M., Frazier C., **Beeler J.** & Zhuang X. (2006) Adenylyl cyclase type V mediates dopamine dependent corticostriatal neuroplasticity. *Society for Neuroscience Annual Meeting*, Atlanta, GA.

Cagniard, B, **Beeler, JA**, Britt, J, McGehee, D, Marinelli, M and Zhuang, X (2005). Dopamine scales performance in the control of voluntary behavior. *Society for Neuroscience Annual Meeting*, Atlanta, GA.