CURRICULUM VITAE

James Andrew Waltz, Ph.D.

Assistant Professor, Department of Psychiatry

 University of Maryland School of Medicine

**Date:** 7 November 2017

###### Contact Information

Business Address: University of Maryland School of Medicine

Department of Psychiatry

Maryland Psychiatric Research Center (MPRC)

P.O. Box 21247

Baltimore, MD 21228

Business Phone Number: (410) 402-6044

Business Fax: (410) 402-7198

E-mail: jwaltz@som.umaryland.edu

Languages: English (native), German (fluent)

##### Education

1990 – 1994 BA, Psychology (Cognitive Science), Yale University, New Haven, CT

1994 – 1995 MA, Psychology (Cognitive Neuroscience), University of California, Los Angeles, CA

1995 – 1999 PhD, Psychology (Cognitive Neuroscience), University of California, Los Angeles, CA

##### Post Graduate Education and Training

1999 – 2004 Postdoctoral Fellow, Neurophysiology Department,

 Max Planck Institute for Brain Research, Frankfurt a.M., Germany

2000 Course in experimental animal basics and animal experimental methods

Academy for Supplementary Education at the Universities of Heidelberg and Mannheim, Germany

2004 – 2006 Postdoctoral Fellow, Maryland Psychiatric Research Center (MPRC),

 Department of Psychiatry, University of Maryland School of Medicine (UMSOM),

 Baltimore, Maryland, USA

2007 UMSOM Graduate Program in the Life Sciences (GPLS),

 Course in Neuropharmacology: Basic to Clinical Approaches (GPLS 604)

Academic Appointments

2006 – 2016 Assistant Professor, University of Maryland School of Medicine

 Department of Psychiatry, Maryland Psychiatric Research Center

2016 – pres Associate Professor, University of Maryland School of Medicine

 Department of Psychiatry, Maryland Psychiatric Research Center

Professional Memberships

1995 – present Society for Neuroscience

1995 – present Cognitive Neuroscience Society

2008 American Psychological Society

2015 – present American College of Neuropsychopharmacology (Associate Member)

Honors and Awards

1990 – 1994 National Merit Scholarship

1990 – 1994 Academic Scholarship, McDermott, Inc.

1994 – 1995 University Fellowship, University of California

1995 Honorable Mention, National Science Foundation Graduate Research Fellowship

1996 Honorable Mention, Department of Defense Graduate Research Fellowship

1996 Honorable Mention, National Science Foundation Graduate Research Fellowship

1996 – 1997 Ursula Mandel Fellowship, University of California

1998 – 1999 National Research Service Award, National Institutes of Health

1998 – 1999 Predoctoral Fellowship, John Douglas French Foundation for Alzheimer's Research

1999 Joseph A. Gingerelli Award for the Distinguished Dissertation, Psychology Dept, UCLA

1999 Postdoctoral Fellowship, Alexander von Humboldt Foundation (declined)

1999 – 2000 Postdoctoral Fellowship, John Douglas French Foundation for Alzheimer's Research

1999 – 2003 Postdoctoral Fellowship, McDonnell-Pew Program in Cognitive Neuroscience

2003 – 2004 Postdoctoral Fellowship, Max Planck Institute for Brain Research

2004 – 2006 Postdoctoral Fellowship, UMSOM/MPRC

2009 H. McKee Jarboe Award for Outstanding Research in Psychiatry, UMSOM

2013 Young Investigator Mentor, International Congress on Schizophrenia Research

Administrative Service

Institutional Service

2007 – 2008 Member, UMSOM Institutional Review Board

2012 – 2014 Member, UMSOM Council

2013 Grant Reviewer and Study Section Member, UMB-UMCP Seed Grant Competition

2013 Grant Reviewer and Study Section Member, UMB-UMBC Seed Grant Competition

2014 – present Junior Faculty Representative, Executive Committee, MPRC

2015 – present Member, UMSOM Department of Psychiatry Data and Safety Monitoring Board

2016 – present Member, UMSOM Medical Scientist Training Program Advisory Committee

**National Service**

Journal Action Editor

2013 – present *Schizophrenia Bulletin, Frontiers in Schizophrenia*

Ad-hoc Journal Reviewer

2003, 2013 *Cerebral Cortex*

2005 *Journal of the International Neuropsychological Society*

2008 – present *Schizophrenia Bulletin; Psychopharmacology*

2009 – present *Biological Psychiatry; Schizophrenia Research; Human Brain Mapping*

2010 *Cognition*

2011 – present *JAMA Psychiatry; Public Library of Science – ONE; Neuropsychology*; *Physiology & Behavior*

2012 *Psychiatry Research: Neuroimaging; Journal of Clinical Psychiatry; Neuropsychologia*

2013 – present *Molecular Psychiatry; Neuropsychopharmacology; Frontiers in Human Neuroscience; Frontiers in Behavioral Neuroscience; Frontiers in Psychiatry; Journal of Psychiatry and Neuroscience; Cognitive, Affective, and Behavioral Neuroscience; Neuroscience and Biobehavioral Reviews; Progress in Neuro-Psychopharmacology & Biological Psychiatry; Psychiatry Research*

2014 *Neuroscience Research*

2015 *Frontiers in Decision Neuroscience; Behavioural Brain Research*; *Journal of Abnormal Psychology*

NIH Study Section Member

2015 – present Special Emphasis Panel: Interventions [ZMH1 ERB-D (02)]

Ad-hoc Grant Reviewer

2010 Netherlands Organisation for Scientific Research (NWO)

2011 National Science Foundation

2014 Polish National Science Centre

Teaching Service

University of California, Los Angeles, CA, USA

1995 Teaching Assistant, Psychology 120, Cognitive Psychology

1996 Teaching Assistant, Psychology 120, Cognitive Psychology

1997 Teaching Assistant, Psychology 42, Research Methods

1997 Teaching Associate, Psychology 116, Laboratory for Behavioral Neuroscience

1997 Teaching Associate, Psychology 85, Introduction to Cognitive Science

1998 Teaching Associate, Psychology 121, Laboratory for Cognitive Psychology

Johann-Wolfgang-Goethe University, Frankfurt a.M., Germany

2001 – 2002 Lecturer, Seminar in Cognitive Neuroscience, 2 hours/week, 15 students

2002 – 2003 Lecturer, Seminar in Cognitive Neuroscience, 2 hours/week, 15 students

University of Maryland School of Medicine, Baltimore, Maryland, USA

2007 Lecturer, Combined Accelerated Program in Psychiatry (CAPP),

 Medical Student Mini-Elective, 2 hours, 6 students

2009 Lecturer, CAPP Medical Student Psychiatry Mini-Elective, 2 hours, 6 students

2011 Lecturer, CAPP Medical Student Psychiatry Mini-Elective, 2 hours, 6 students

2012 Lecturer, CAPP Medical Student Psychiatry Mini-Elective, 2 hours, 6 students

2013 Lecturer, CAPP Medical Student Psychiatry Mini-Elective, 2 hours, 6 students

2013 Lecturer, GPLS 781, Translational Psychiatry, 2 hours, 12 students

2014 PGY2 Schizophrenia Course for Residents, 2 hours, 12 students

2014 MPRC T32 Schizophrenia Course for Fellows, 2 hours, 4 students

2014 Lecturer, GPLS 735, Behavioral Neuroscience, 4 hours, 12 students

2015 Lecturer, CAPP Medical Student Psychiatry Mini-Elective, 1 hour, 6 students

2015 PGY2 Schizophrenia Course for Residents, 1 hour, 12 students

2016 PGY2 Schizophrenia Course for Residents, 1 hour, 12 students

University of Maryland, Baltimore County, Catonsville, Maryland, USA

2015 Lecturer, PSYC 317, Cognitive Psychology, 1 hour, 65 students

Mentoring

Post-doctoral Research Fellows

2013 – 2015 Post-doctoral Research Fellow (Elliot C. Brown, PhD)

2016 Visiting Scholar/Post-doctoral Research Fellow (Zuzana Kasanova, PhD)

2016 – Post-doctoral Research Fellow (Dennis Hernaus, PhD)

Pre-doctoral Medical Students/Clinical Psychology Interns

2014 Post-baccalaureate Medical Student (Jessica R. Krueger, BS)

2016 – 2017 Clinical Psychology Intern (Michelle Eisenberg, MA)

**Grant Support**

**Active Grants**

4/1/2012 – 3/31/2017 Principal Investigator (40% effort, 40% salary support)

"Neurocomputational and fMRI Studies of Motivational Deficits in Schizophrenia"

NIH R01 MH094460-01A1

Annual Direct Costs: $400,286

Total Direct Costs: $2,001,428

(In a no-cost extension)

8/1/2013 – 7/31/2018 Co-Investigator (25% effort, 25% salary support; PI: J. Gold)

"Clinical and Computational Studies of Dopamine Function in Schizophrenia"

NIH 2 R01 MH080066-06A1

Annual Direct Costs: $500,000

Total Direct Costs: $2,500,000

7/1/2016 – 6/30/2017 Pilot Project PI (25% effort, no salary support; Grant PI: R. Schwarcz)

Project Title: “Effects of Acute Tryptophan Depletion on Reinforcement Learning in Schizophrenia”

Grant Title: “Kynurenic acid and cognitive abnormalities in schizophrenia”

NIH P50 MH103222

Total Project Direct Costs: $13,333

**Completed Grants**

7/1/2015 – 6/30/2016 Principal Investigator (10% effort, no salary support)

"Improving Prediction of Clinical Course in Mentally-ill Adolescents Through Neurobehavioral Biomarkers"

Betty Huse Research Award for Small Projects in Child and Adolescent Mental Health

Annual Direct Costs: $20,000

Total Direct Costs: $20,000

3/1/2010 – 2/29/2012 Principal Investigator (20% in Year 1, 40% in Year 2)

"Neuroimaging of Food Reinforcer Processing in Schizophrenia"

NIH R21 MH086739 (PI: J. Waltz)

Received funds for research assistant and operational costs

Annual Direct Costs: $206,250

Total Direct Costs: $412,500

7/15/2006 – 7/14/2011 Project PI (Contract PI: D. Kelly)

Contract Title: Residential Research Support Services

Project Title: Neuroimaging of Reward-based Learning in Schizophrenia

Contract No. HHSN271200599091C/ADB Contract No. N0 1DA-5-9909

Received funds for research assistant and operational costs

Annual Direct Costs (Project): $291,806/4 years

Total Direct Costs (Project): $291,806/4 years

Total Costs (Grant): $13,074,663/7 years

7/15/2006 – 7/14/2011 Project PI (75%; PI: A. Shuldiner)

Program Title: UM SOM Multidisciplinary Clinical Research Career Development Program

Project Title: Neuroimaging of Reward-based Learning in Schizophrenia

NIH 5 K12 RR023250-02

Received funds for research assistant and operational costs

Annual Direct Costs (Project): $425,166/5 years

Total Direct Costs (Project): $425,166/5 years

Total Costs (Grant $13,285,225/5 years

**Publications**

## Articles in Peer-reviewed Journals

1. **Waltz, J.A.**, Knowlton, B.J., Holyoak, K.J., Boone, K.B., Mishkin, F.S., de Menezes Santos, M., Thomas, C.R., and Miller, B.L. (1999). A system for relational reasoning in human prefrontal cortex. *Psychological Science, 10,* 119-125
2. **Waltz, J.A.**, Lau, A., Grewal, S., and Holyoak, K.J. (2000). The role of working memory in analogical reasoning. *Memory & Cognition, 28,* 1205-1212.
3. Linden, D.E.J., Bittner, R.A., Muckli, L., **Waltz, J.A.**, Kriegeskorte, N., Goebel, R., Singer, W., and Munk, M.H.J. (2003). Cortical capacity constraints for visual working memory: Dissociation of fMRI load effects in a fronto-parietal network. *NeuroImage*, *20*, 1518-1530.
4. **Waltz, J.A**., Knowlton, B.J., Holyoak, K.J., Boone, K.B., Back, C., McPherson, S., Masterman, D., Chow, T., Cummings, J.L., and Miller, B.L. (2004). Relational integration and executive function in Alzheimer’s disease. *Neuropsychology 18,* 296-305*.*
5. **Waltz, J.A.**, Frank, M.J., Robinson, B.M., and Gold, J.M. (2007). Selective reinforcement learning deficits in schizophrenia support predictions from computational models of striato-cortical dysfunction. *Biological Psychiatry 62,* 756-764.
6. **Waltz, J.A.**, and Gold, J.M. (2007). Probabilistic reversal learning impairments in schizophrenia: further evidence of orbitofrontal dysfunction. *Schizophrenia Research 93,* 296-303.
7. Lu, H., Zuo, Y., Gu, H., **Waltz, J.A.**, Zhan, W., Scholl, C.A., Rea, W., Yang, Y., and Stein, E.A. (2007). Synchronized Delta Oscillations Correlate with the Resting-state fMRI Signal. *Proc. Natl. Academy Sciences, 104,* 18265-18269.
8. Gold, J.M., **Waltz, J.A.**, Prentice, K.J., Morris, S.E., Heerey, E.A. (2008). Reward Processing in Schizophrenia: A Deficit in the Representation of Value. *Schizophrenia Bulletin 34*, 835-847.
9. **Waltz, J.A.**, Schweitzer, J.B., Gold, J.M., Kurup, P.K., Ross, T.J., Salmeron, B.J., Rose, E.J., McClure, S.M., Stein, E.A. (2009). Patients with Schizophrenia have a Reduced Neural Response to Both Unpredictable and Predictable Primary Reinforcers. *Neuropsychopharmacology, 34,* 1567-77.
10. Gold, J.M., Hahn, B., Strauss, G.P., **Waltz, J.A.** (2009). Turning it upside down: areas of preserved cognitive function in schizophrenia. *Neuropsychology Review, 19,* 294-311.
11. Haenschel, C., Bittner, R., **Waltz, J.A.,** Haertling, F., Wibral, M., Singer, W., Linden, D.E.J., and Rodriguez, E. (2009). Cortical oscillatory activity is critical for working memory as revealed by deficits in early onset schizophrenia. *Journal of Neuroscience, 29,* 9481-89.
12. Pipa, G., Städtler, E.S., Rodriguez, E.F., **Waltz, J.A.,** Muckli, L.F., Singer, W., Goebel, R., Munk, M.H. (2009). Performance- and stimulus-dependent oscillations in monkey prefrontal cortex during short-term memory. *Frontiers in Integrative Neuroscience, 3,* 25. Epub 2009 Oct.
13. **Waltz, J.A.**, Schweitzer, J.B., Ross, T.J., Kurup, P.K., Salmeron, B.J., Rose, E.J., Gold, J.M., Stein, E.A. (2010). Abnormal responses to monetary outcomes in cortex, but not in the basal ganglia, in schizophrenia. *Neuropsychopharmacology, 35,* 2427-39. Epub 2010 Aug 18. PMID: 20720534; PMCID: PMC2955756.
14. **Waltz, J.A.**, Frank, M.J., Wiecki, T.V., Gold, J.M. (2011). Altered probabilistic learning and response biases in schizophrenia: Behavioral evidence and neurocomputational modeling. *Neuropsychology, 25,* 86-97. PMID: 21090899.
15. Strauss, G.P., Robinson, B.M., **Waltz, J.A.**, Frank, M.J., Kasanova, Z., Herbener, E.S., Gold, J.M. (2011). Patients with schizophrenia demonstrate inconsistent preference judgments for affective and non-affective stimuli. *Schizophrenia Bulletin, 37,* 1295-1304. Epub 2010 May 19. PMID: 20484522.
16. Kasanova, Z., **Waltz, J.A.**, Strauss, G.P., Frank, M.J., Gold, J.M. (2011). Optimizing vs. Matching: Response Strategy in a Probabilistic Learning Task is associated with Negative Symptoms of Schizophrenia. *Schizophrenia Research, 127,* 215-222. Epub 2011 Jan 15. PMID: 21239143.
17. Strauss, G.P.\*, Frank, M.F.\*, **Waltz, J.A.**, Kasanova, Z., Herbener, E.S., Gold, J.M. (2011). Deficits in Positive Reinforcement Learning and Uncertainty-Driven Exploration are Associated with Distinct Aspects of Negative Symptoms in Schizophrenia. *Biological Psychiatry, 69,* 424-431. Epub 2010 Dec 17. PMID: 21168124 (\*authors contributed equally to this work).
18. Boggs, D.L., Kelly, D.L., McMahon, R.P., Gold, J.M., Gorelick, D.A., Linthicum, J., Conley, R.R., Liu, F., **Waltz, J.**, Huestis, M.A., Buchanan, R.W. (2011). Rimonabant for neurocognition in schizophrenia: a 16-week double blind randomized placebo controlled trial. *Schizophrenia Research, 134,* 207-210. Epub 2011 Dec 3. PMID: 22137462.
19. Gold, J.M. **Waltz, J.A.,** Matveeva, T.M., Kasanova, Z., Strauss, G.P., Herbener, E.S., Collins, A.G.E., Frank, M.J. (2012). Negative symptoms in schizophrenia result from a failure to represent the expected value of rewards: Behavioral and computational modeling evidence. *Archives of General Psychiatry, 69,* 129-138. PMID: 22310503.
20. Strauss, G.P., Lee, B.G., **Waltz, J.A.**, Robinson, B.M., Brown, J.K., Gold, J.M. (2012). Cognition-emotion interactions are modulated by working memory capacity in individuals with schizophrenia. *Schizophrenia Research, 141,* 257-261. Epub 2012 Sep 8. PMID: 22968207.
21. Simpson, E.H., **Waltz, J.A.**, Kellendonk, C., Balsam, P.D. (2012). Schizophrenia in Translation: Dissecting Motivation in Schizophrenia and Rodents. *Schizophrenia Bulletin, 38,* 1111-1117. Epub 2012 Sep 26. PMID: 23015686.
22. **Waltz, J.A.**, Kasanova, Z., Ross, T.J., Salmeron, B.J., McMahon, R.P., Gold, J.M., Stein, E.A. (2013). The roles of reward, default, and executive control networks in set-shifting impairments in schizophrenia. *PLoS-ONE, 8,* e57257. Epub 2013 Feb 27. PMID: 23468948. PMCID: PMC3584128.
23. Gold, J.M., Strauss, G.P., **Waltz, J.A.**, Robinson, B.M., Brown, J.K., Frank, M.J. (2013). Negative Symptoms of Schizophrenia Are Associated with Abnormal Effort-Cost Computations. *Biological Psychiatry, 74,* 130-136. Epub 2013 Feb 7. PMID: 23394903.
24. Brown, J.K., **Waltz, J.A.**, Strauss, G.P., McMahon, R.P., Frank, M.J., Gold, J.M. (2013). Hypothetical decision making in schizophrenia: The role of expected value computation and "irrational" biases. *Psychiatry Research, 202,* 142-149. Epub 2013 May 9. PMID: 23664664.
25. Strauss, G.P., **Waltz, J.A.,** Gold, J.M. (2014). A review of reward processing and motivational impairment in schizophrenia. *Schizophrenia Bulletin, 40,* S107-16. Epub 2013 Dec 27. PMID: 24375459. PMCID: PMC3934394.
26. Doll, B.B., **Waltz, J.A.,** Cockburn, J., Brown, J.K., Frank, M.J., Gold, J.M. (2014). Reduced susceptibility to confirmation bias in schizophrenia. *Cognitive, Affective, and Behavioral Neuroscience, 14,* 715-728. Epub 2014 Jan 31. PMID: 24481852.
27. Rose, E.J., Salmeron, B.J., Ross, T.J., **Waltz, J.,** Schweitzer, J.B., McClure, S.M., Stein, E.A. (2014). Temporal Difference Error Prediction Signal Dysregulation in Cocaine Dependence. *Neuropsychopharmacology, 39,* 1732-1742. Epub 2014 Jan 29. PMID: 24569319.
28. Collins, A.G., Brown, J.K., Gold, J.M., **Waltz, J.A.**, Frank, M.J. (2014). Working memory contributions to reinforcement learning impairments in schizophrenia. *J Neurosci, 34,* 13747-13756. PMID: 25297101. PMCID: PMC4188972.
29. Gold, J.M., Kool, W., Botvinick, M.M., Hubzin, L., August, S., **Waltz, J.A.** (2015). Cognitive effort avoidance and detection in people with schizophrenia. *Cogn Affect Behav Neurosci, 15,* 145-154. PMID: 24957405. PMCID: PMC4276545.
30. Buchanan, R.W., Weiner, E., Kelly, D.L., Gold, J.M., Keller, W.R., **Waltz, J.A.**, McMahon, R.P., Gorelick, D.A. (2015). Rasagiline in the Treatment of the Persistent Negative Symptoms of Schizophrenia. *Schizophrenia Bulletin, 41,* 900-8. Epub 2014 Nov 2. PMID: 25368372.
31. **Waltz, J.A.**, Brown, J.K., Gold, J.M., Ross, T.J., Salmeron, B.J., Stein, E.A. (2015). Probing the dynamic updating of value in schizophrenia using a Sensory-specific Satiety Paradigm. *Schizophrenia Bulletin*. Epub 2015 April 1. PMID: 25834028.
32. Brown, E.C., Hack, S.M., Gold, J.M., Carpenter, W.T., Fischer, B.A., Prentice, K.P., **Waltz, J.A.** (2015). Integrating information about the frequency and magnitudes of outcomes in schizophrenia: An account of patient performance on the Iowa Gambling Task. *Journal of Psychiatric Research, 66-67,* 16-23. Epub 2015 Apr 28. PMID: 25959618.
33. **Waltz, J.A.**, Demro, C., Schiffman, J., Thompson, E., Kline, E., Reeves, G., Xu, Z., Gold, J.M. (2015). Reinforcement learning performance and risk for psychosis in youth. *Journal of Nervous and Mental Disease, 203,* 919-926. PMID: 26588080.
34. Gold, J.M., **Waltz, J.A.**, Frank, M.J. (2015). Effort cost computation in schizophrenia: A commentary on the recent literature. *Biological Psychiatry, 78,* 747-53. Epub 2015 May 11. PMID: 26049208.
35. Albrecht, M.A., **Waltz, J.A.,** Cavanagh, J.F., Frank, M.J., Gold, J.M. (2016). Reduction of Pavlovian Bias in Schizophrenia: Enhanced Effects in Clozapine-Administered Patients. *PLoS One, 11,* e0152781. eCollection 2016. PMID: 27044008.
36. Reddy, L.F., **Waltz, J.A.,** Green, M.F., Wynn, J.K., Horan, W.P. (2016). Probabilistic reversal learning in schizophrenia: Stability of deficits and potential causal mechanisms. *Schizophrenia Bulletin, 42,* 942-951*.* Epub 2016 Feb 16. PMID: 26884546.
37. Chang, W.C.\*, **Waltz, J.A.\***, Gold, J.M., Chan, T.C., Chen, E.Y. (2016). Mild reinforcement learning deficits in patients with first-episode psychosis. *Schizophrenia Bulletin, 42,* 1476-1485*.* Epub 2016 May 13. PMID: 27179125.
38. Culbreth, A.J., Westbrook, A., Xu, Z., Barch, D.M., **Waltz, J.A.** (2016). Intact ventral striatal prediction error signaling in medicated schizophrenia patients. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 1,* 474-483. PMID: 28239676.
39. Albrecht, M.A., **Waltz, J.A.**, Frank, M.J., Gold, J.M. (2016). Probability and magnitude evaluation in schizophrenia. *Schizophrenia Research: Cognition, 5,* 41-46. eCollection 2016 Sep. PMID: 28740816.
40. **Waltz, J.A.** (2017). The neural underpinnings of cognitive flexibility and their disruption in psychotic illness. *Neuroscience, 345,* 203-217. Epub 2016 Jun 7. PMID: 27282085.
41. Collins, A.G.E., Albrecht, M.A., **Waltz, J.A.**, Gold, J.M., Frank, M.J. (2017). Interactions between working memory, reinforcement learning and effort in value-based choice: a new paradigm and selective deficits in schizophrenia. *Biological Psychiatry, 82,* 431-439. Epub 2017 May 31. PMID: 28651789.
42. Demro, C., Rowland, L., Wijtenburg, A., **Waltz, J.**, Gold, J., Kline, E., Thompson, E., Reeves, G., Hong, E., Schiffman, J. (2017). Glutamatergic metabolites among adolescents at risk for psychosis. *Psychiatry Research, 257,* 179-185. Epub 2017 Jul 24. PMID: 28772136.
43. **Waltz, J.A.**, Xu, Z., Brown, E.C., Ruiz, R.R., Frank, M.J., and Gold, J.M. (In Press). Motivational Deficits in Schizophrenia Are Associated With Reduced Differentiation Between Gain and Loss-Avoidance Feedback in the Striatum. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*. Epub 2017 Aug 11.

\* These authors contributed equally.

## Book Chapters

1. **Waltz, J.A.** (2003). Working memory. In M.J. Aminoff and R.B. Daroff (Eds.), *Encyclopedia for Neurological Sciences*. San Diego, CA: Academic Press.
2. **Waltz, J.A.** (2005). Impairments of Memory and Reasoning in Patients with Neuropsychiatric Illness: Disruptions of Dynamic Cognitive Binding? In R. W. Engle, G. Sedek, U. von Hecker, D. N. McIntosh (Eds.), *Cognitive Limitations in Aging and Psychopathology: Attention, Working Memory, and Executive Functions*. New York, NY: Cambridge University Press.
3. **Waltz, J.A.**, and Gold, J.M. (2015). Motivational Deficits in Schizophrenia and the Representation of Expected Value. In E.H. Simpson and P.D. Balsam (Eds.). *Current Topics in Behavioral Neuroscience*. Berlin: Springer Verlag.
4. Albrecht, M.A., **Waltz, J.A.**, Frank, M.J., Gold, J.M. (In Press). Modeling Negative Symptoms in Schizophrenia. In A. Anticevic and J.D. Murray (Eds.). *Computational Psychiatry: Mathematical Modeling of Mental Illness*. San Diego, CA: Academic Press.

## Other Brief Communications

1. **Waltz, J.A.**, Knowlton, B.J., and Holyoak, K.J. (1998). Relational reasoning, the central executive, and prefrontal cortex. *Behavioural and Brain Sciences, 21,* 846-847.

## First-author Abstracts/Proceedings

1. **Waltz, J.A.**, Holyoak, K.J., and Halford, G.S. (1996). The Role of Working Memory in Schema Induction. *Proceedings of the Cognitive Science Society, 18,* 863.
2. **Waltz, J.A.**, Knowlton, B.J., Holyoak, K.J., Boone, K.B., and Miller, B.L. (1997). Relational Reasoning in Fronto-temporal Dementia. *Society for Neuroscience Abstracts, 23,* 258.
3. **Waltz, J.A.**, Knowlton, B.J., Holyoak, K.J., Boone, K.B., and Miller, B.L. (1998). A Double Dissociation between Declarative Memory and Relational Reasoning. *Journal of Cognitive Neuroscience, 10,* S48.
4. **Waltz, J.A.**, Knowlton, B.J., Holyoak, K.J., Masterman, D., Tom, T., Boone, K.B., and Miller, B.L. (1998). Performance of Patients with Dementia of Alzheimer's Type on Relational Reasoning Tasks Sensitive to Prefrontal Cortical Damage. *Society for Neuroscience Abstracts, 24,* 258.
5. **Waltz, J.A.**, Knowlton, B.J., Holyoak, K.J., Boone, K.B., Masterman, D., Chow, T., Reback, E., Barclay, T., Carr, L., O'Connor, S., Mishkin, F.S., and Miller, B.L. (1999). Performance on the N-back task dissociates DAT patients with prefrontal cortical impairment from those without. *Journal of Cognitive Neuroscience, 11,* S34.
6. **Waltz, J.A.**, Linden, D.E.J., Prvulovic, D., Singer, W., and Munk, M.H.J. Joint time-frequency analysis of EEG activity in humans performing a delayed discrimination task: The effect of short-term memory load (2001). *Journal of Cognitive Neuroscience, 13,* S88.
7. **Waltz J.**, Linden D., Bittner R., Muckli L., Singer W., Goebel R., and Munk, M. (2002). Correspondence between EEG Gamma Band Activity and fMRI Bold Activity in Humans Performing Visual Short Term Memory Tasks. *3rd Forum of the Federation of European Neuoscience Societies, Book of Abstracts*.
8. **Waltz, J.A.**, Linden, D.E.J., Bittner, R., Muckli, L., Goebel, R., Singer, W., and Munk, M.H.J. (2002). Working memory load-dependent changes in the power of evoked and induced oscillations in the EEG. *Society for Neuroscience Abstracts, 28*.
9. **Waltz, J.A.**, Rodriguez, E.F., Fries, P., Staedtler, E.S., Muckli, L.F., Goebel, R., Pipa, G., Singer, W., Munk, M.H.J. (2003). Enhanced spike-field coherence in macaque prefrontal cortex associated with better performance on delayed-response task. *Society for Neuroscience Abstracts, 29*.
10. **Waltz, J.A.**, Haenschel, C., Bittner, R. A., Haertling, F., Rotarska-Jagiela, A., Maurer, K., Singer, W., Linden, D. E. (2005). Reduced P100 amplitude in schizophrenics is associated with abnormal evoked and induced gamma-band activity and intertrial phase-locking values. *Schizophrenia Bulletin 31,* S466.
11. **Waltz, J.A.**, Frank, M.J., Robinson, B.M., Gold, J.M. (2006). Impairments in Probabilistic Learning in Schizophrenia: The Role of Reinforcement. *Biological Psychiatry 59,* 113S.
12. **Waltz, J.A.**, Frank, M.J., Gold, J.M. (2007). Patients with schizophrenia show impaired reward-driven learning, despite an increased rate of responding, in a novel Go-NoGo learning task. *Schizophrenia Bulletin 33,* S548.
13. **Waltz, J.A.**, Schweitzer, J.B., Gold, J.M., Kurup, P.K., Ross, T.J., Salmeron, B.J., Rose, E.J., Warren, K.R.B., McClure, S.M., Stein, E.A. (2007). Brain Responses to Temporal Difference Errors in a Passive Learning Task in Patients with Schizophrenia. *NeuroImage 36,* S66.
14. **Waltz, J.A.**, Schweitzer, J.B., Gold, J.M., Kurup, P.K., Ross, T.J., Salmeron, B.J., Rose, E.J., Warren, K.R.B., McClure, S.M., Stein, E.A. (2007). Functional MRI correlates of abnormal prediction error signalling in schizophrenia. *Society for Neuroscience Abstracts, 33*.
15. **Waltz, J.A.**, Wonodi, I., Elliot, A., Lin, P., Hong, L.E., Gold, J.M., Thaker, G. Genetic Influences on Reinforcement Learning Performance in Schizophrenia (2008). Brain Responses to Temporal Difference Errors in a Passive Learning Task in Patients with Schizophrenia. *Biological Psychiatry 63,* 267S.
16. **Waltz, J.A.**, Schweitzer, J.B., Gold, J.M., Rose, E.J., Kurup, P.K., Salmeron, B.J., Ross, T.J., Stein, E.A. (2008). Neural responses to monetary outcomes in patients with schizophrenia. *Society for Neuroscience Abstracts, 34*.
17. **Waltz, J.A.**, Schweitzer, J.B., Gold, J.M., Rose, E.J., Kurup, P.K., Salmeron, B.J., Ross, T.J., McClure, S.M., Stein, E.A. (2009). Neural correlates of the subjective experience of reward in schizophrenia. *Schizophrenia Bulletin, 35,* S548.
18. **Waltz, J.A.**, Gold, J.M., Kasanova, Z., Ross, T.J., Salmeron, B.J., Kurup, P.K., Stein, E.A. (2009). Neural correlates of probabilistic reversal learning performance in schizophrenia. *Neuropsychopharmacology, 34*.
19. **Waltz, J.A.**, Kasanova, Z., Ross, T.J., Salmeron, B.J., Kurup, P.K., Gold, J.M., Stein, E.A. (2010). Abnormal neural responses associated with feedback-driven switching in schizophrenia. *Society for Neuroscience Abstracts, 36*.
20. **Waltz, J.A.**, Kasanova, Z., Frank, M.J., Ross, T.J., Salmeron, B.J., Kurup, P.K., Gold, J.M., Stein, E.A. (2010). Neural correlates of model-based reinforcement learning parameters in healthy volunteers and patients with schizophrenia. *Neuropsychopharmacology, 35*.
21. **Waltz, J.A.**, Frank, M.J., Kasanova, Z., Strauss, G.P., Gold, J.M. (2011). Selective deficits in reward-driven probabilistic learning in schizophrenia point to dopamine D1 receptor dysfunction. *Schizophrenia Bulletin, 37,* S232.
22. **Waltz, J.A.**, Kasanova, Z., Ross, T.J., Salmeron, B.J., Gold, J.M., Stein, E.A. (2011). Investigating the Neural Substrates of Negative Symptoms: Results from fMRI Studies of Outcome Processing in Schizophrenia. *Schizophrenia Bulletin, 37,* S232.
23. **Waltz, J.A.**, Brown, J.K., Frank, M.J., Strauss, G.P., Gold, J.M. (2012). Erratic Decision Making in Schizophrenia: The Roles of Normative Biases and Expected Value Computation. *Biological Psychiatry, 67,* S89.
24. **Waltz, J.A.**, Brown, J.K., Ross, T.J., Salmeron, B.J., Gold, J.M., Stein, E.A. (2012). Sensory-specific satiety in schizophrenia. *Neuropsychopharmacology, 37*.
25. **Waltz, J.A.**, Brown, J.K., Ross, T.J., Salmeron, B.J., Gold, J.M., Stein, E.A. (2013). Reward-related neural responses as predictors of psychotic symptoms in chronic schizophrenia patients. *Schizophrenia Bulletin, 39*.
26. **Waltz, J.A.**, Kasanova, Z., Xu, Z., Ross, T.J., Salmeron, B.J., Gold, J.M., Stein, E.A. (2014). Do Schizophrenia Patients Show Aberrant Salience Signaling in Observational Environments? *Neuropsychopharmacology, 39*.
27. **Waltz, J.A.**, Brown, J.K., Gold, J.M., Ross, T.J., Salmeron, B.J., Stein, E.A. (2015). Motivational Deficits in Schizophrenia and the Representation of Value: Implications for Functional Outcome. *Schizophrenia Bulletin, 41*.
28. **Waltz, J.A.**, Xu, Z., Ruiz, R.R., Brown, E.C., Buchanan, R.W., Gold, J.M. (2015). Reduced rostrolateral prefrontal cortex activity associated with exploration in schizophrenia. *Neuropsychopharmacology, 40*.
29. **Waltz, J.A.**, Xu, Z., Brown, E.C., Ruiz, R.R., Gold, J.M. (2016). Uncertainty, Learning, and Motivation in Schizophrenia. *Biological Psychiatry, 71*.
30. **Waltz, J.A.**, Xu, Z., Ruiz, R.R., Brown, E.C., Gold, J.M. (2016). Neural responses to feedback in schizophrenia patients predict behavioral inhibition scores. *Neuropsychopharmacology, 41*.
31. **Waltz, J.A.**, Xu, Z., Brown, E.C., Ruiz, R.R., Gold, J.M. (2017). Schizophrenia Patients Show Enhanced Responses to Loss-Avoidance in Frontostriatal Circuits. *Schizophrenia Bulletin, 43*.

## Major Invited Speeches

1. Waltz, J.A. Time Course of EEG Gamma Band Power in Humans and Macaques Performing Short-term Memory Tasks. Presented in Symposium "Visual Perception," 5th Annual Meeting of the German Cognitive Neuroscience Society, Leipzig, Germany, September 2001.
2. Waltz, J.A. Studies of Working Memory and Reasoning in Patients with Schizophrenia and Dementia. Presented at symposium, "Cognitive Processes in Psychological States Potentially Impairing Adaptive Functioning," Kazimierz Dolny, Poland September 2002.
3. Waltz, J.A. Working Memory Load-Dependent Changes in the Power of Evoked and Induced Oscillations in the EEG. presented at the Annual Institute Symposium of the Max Planck Institute for Brain Research, Frankfurt a.M., Germany, December 2002.
4. Waltz, J.A. Representations of Symbols in Nonhuman Primates. Presented in Lecture Series "Cognitive Neurophysiology," Johann-Wolfgang-Goethe University, Frankfurt a.M., Germany, May 2003.
5. Waltz, J.A. Short-term Memory and Oscillatory Neuronal Activity in Macaque Prefrontal Cortex. Seminar presented in Laboratory for Neuropsychology, NIH, Bethesda, MD, November 2003.
6. Waltz, J.A. Electrophysiological Studies of Short-term Memory in Humans and Nonhuman Primates. Seminar presented in Clinical Brain Disorders Branch, NIH, Bethesda, MD, March 2004.
7. Waltz, J.A. Deficits in Reward Processing and Reinforcement Learning In Schizophrenia. Presented in Center for Cognitive Medicine, Department of Psychiatry, University of Illinois, Chicago, June 2007
8. Waltz, J.A. Neural Substrates of Reinforcement Learning and Their Relevance to Schizophrenic Psychopathology. Presented in Neuroscience Division, Frankfurt Institute for Advanced Studies, Frankfurt a.M., Germany. August 2007.
9. Waltz, J.A. Neuroimaging of Reward Processing in Schizophrenia. Presented in the Columbia University Department of Psychiatry/New York State Psychiatric Institute, New York, NY. Feb. 2011.
10. Waltz, J.A. Selective deficits in reward-driven probabilistic learning in schizophrenia point to dopamine D1 receptor dysfunction. Participant in oral symposium, " Probabilistic feedback learning in schizophrenia: Mechanisms, etiology, and treatment", at 13th International Congress on Schizophrenia Research, April 2011, Colorado Springs, CO.
11. Waltz, J.A. Investigating the neural substrates of negative symptoms: Results from fMRI studies of outcome processing in schizophrenia. Participant in poster symposium, " Reward, Learning, and Motivational Drive in Schizophrenia: The Role of Prefrontal-Striatal Interactions", at 13th International Congress on Schizophrenia Research, April 2011, Colorado Springs, CO.
12. Waltz, J.A. Functional MRI correlates of positive and negative symptoms in schizophrenia. Participant in study group, "NIMH Research Domain Criteria Project: How will the criteria work for studies of diagnosis and new drug development?" at 51st Annual Meeting of the American College of Neuropsychopharmacology, December 2012, Hollywood, FL.
13. Waltz, J.A. Motivational Deficits and the Physiology of Reward Processing. Colloquium given to the Department of Psychology, University of Maryland, Baltimore County, January 2013.
14. Waltz, J.A. Do’s and don’ts of being an independent researcher. Participant in symposium, "Transitioning to Independence", sponsored by Research Career Development Program, University of Maryland School of Medicine, July 2013, Baltimore, MD.
15. Waltz, J.A. Reinforcement learning deficits in schizophrenia: Contributions from multiple neural networks. Participant in oral symposium, "Imaging Studies for Schizophrenia", at the 1st meeting of the Molecular Psychiatry Association, November 2013, San Francisco, CA.
16. Waltz, J.A. Motivational Deficits and the Physiology of Reward Processing. Colloquium given to the VISN 5 Mental Illness Research, Education, and Clinical Center (MIRECC), May 2014, Baltimore, MD.
17. Waltz, J.A. Neural Responses to Salient Events and their Relevance for the Psychopathology of Schizophrenia. Grand Rounds Colloquium given to the Department of Psychiatry, University of Maryland School of Medicine, September 2014, Baltimore, MD.
18. Waltz, J.A. Motivational Deficits in Schizophrenia and the Representation of Value: Implications for Functional Outcome. Participant in oral symposium, "Social cognition, negative symptoms and functioning in schizophrenia: linking lower and higher level neural mechanisms", at 15th International Congress on Schizophrenia Research, March 2015, Colorado Springs, CO.
19. Waltz, J.A. Origins of Motivational Deficits in Psychotic Illness. Participant in oral symposium, "Emotional Neuroscience", at the 15th Charité Conference on Psychiatric Research, August 2016, Berlin, Germany.
20. Waltz, J.A. Computational Neuroimaging Approaches to Studying Motivation Deficits in Psychiatric Illness. Colloquium given to the Department of Psychiatry, University of Alabama, Birmingham, October 2017.