

JENNIFER KATHERINE FORSYTH, PH.D.

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EDUCATION

University of California, Los Angeles, Los Angeles, CA Sept 2016 - present
Postdoctoral Research Fellow, Specialized Training in Neurobehavioral Genetics and Psychosis
Faculty Advisors: Carrie Bearden, Ph.D., Giovanni Coppola, Ph.D.

Western Psychiatric Institute and Clinic, University of Pittsburgh, Pittsburgh, PA 2015 - 2016
Clinical Psychology Internship

University of California, Los Angeles, Los Angeles, CA 2010 - 2016
Ph.D. in Clinical Psychology, Minor in Neuroscience

- Dissertation: *Divergent Effects of Augmenting NMDA Receptor Signaling on Plasticity and Working Memory in Healthy Adults versus Schizophrenia: Importance of Mechanisms Underlying Distinct Cognitive Functions*

M.A. in Psychology, December 2011
Faculty Advisors: Robert Asarnow, Ph.D., Tyrone Cannon, Ph.D.

Queen's University, Kingston, Canada 2004 - 2008
B.A. with Distinction in Psychology, Minor in Global Development Studies
Faculty Advisor: Richard Beninger, Ph.D.

HONORS AND AWARDS

2017 Association for Psychological Science Rising Star Award
2017 Stephen R. Mallory Schizophrenia Research Award, UCLA
2017 International Congress on Schizophrenia Research Young Investigator Travel Award
2016 National Institutes of Health (NIH) T32 Fellowship Award
2016 Schizophrenia International Research Society Top Poster Award (finalist selection)
2016 Michael J. Goldstein Distinguished Dissertation Award Honorable Mention, UCLA
2015 Society of Biological Psychiatry Travel Fellowship Award
2014 American Psychological Association Dissertation Research Award
2014 Society for a Science of Clinical Psychology Dissertation Grant Award
2013 Graduate Summer Research Mentorship Award, UCLA
2013 Society of Biological Psychiatry Top Poster Award (finalist selection)
2012 Semel Predoctoral Fellowship, UCLA
2012 Dr. Ursula Mandel Scholarship, UCLA
2012 UCLA Affiliates Scholarship, UCLA
2010 - 2013 National Science Foundation Graduate Research Fellowship Award
2010 Chancellor's Award, UCLA
2010 Distinguished University Fellowship, UCLA
2008 Ontario Graduate Scholarship (*declined*)
2008 Canadian Psychological Association Certificate of Academic Excellence
2008 W.R. Thompson Prize for best undergraduate psychology thesis, Queen's University
2007 & 2008 Natural Sciences & Engineering Research Council of Canada Undergraduate Student Research Award
2006 Gordon and Myrtle Adams Scholarship, Queen's University

2005 & 2007 Dean's Special Award, Queen's University
2004 – 2008 Dean's Honor List with Distinction, Queen's University (*top 3 percentile for degree*)

RESEARCH FUNDING

- Stephen R. Mallory Fund Research Award** 03/15/17
University of California, Los Angeles
Elucidating Biological Pathways Associated with Psychosis and Psychosis-Related Phenotypes in 22q11.2 Deletion Syndrome
Role: Principal Investigator
- Dissertation Research Award** 11/05/14
American Psychological Association (APA)
Effects of D-cycloserine on Deficits in Neuroplasticity and Learning in Patients with Schizophrenia
Role: Principal Investigator
- Dissertation Grant Award** 12/16/14
Society for a Science of Clinical Psychology (SSCP)
Effects of D-cycloserine on Deficits in Neuroplasticity and Learning in Patients with Schizophrenia
Role: Principal Investigator
- Graduate Research Fellowship Award** 09/01/10 – 08/31/13
National Science Foundation (NSF)
Elucidating the Role of Neural Synchrony in Motion Perception and Attention in Humans
Role: Principal Investigator
-

PEER-REVIEWED PUBLICATIONS

- Cao, H., McEwen, S. C., **Forsyth, J. K.**, Gee, D. G., Bearden, C. E., Addington, J., Goodyear, B., Cadenhead, K. S., Mirzakhani, H., Cornblatt, B. A., Carrion, R. E., Mathalon, D. H., McGlashan, T. H., Perkins, D. O., Belger, A., Seidman, L. J., Thermenos, H., Tsuang, M. T., van Erp, T. G. M., Walker, E. F., Hamann, S., Anticevic, A., Woods, S. W., Cannon, T. D. (*in press*). Toward leveraging human connectomic data in large consortia: Generalizability of fMRI-based brain graphs across sites, sessions, and paradigms. *Cerebral Cortex*.
- Cannon, T. D., Cao, H., Mathalon, D. H., **Forsyth, J.**, NAPLS Consortium. (2017). Multisite reliability of fMRI measures of brain activation during working memory processing: Clarification and implications for statistical power. *Neuroimage*, 163, 456-458.
- Forsyth, J. K.**, Lewis, D. A. (2017). Mapping the Consequences of Impaired Synaptic Plasticity in Schizophrenia through Development: An Integrative Model for Diverse Clinical Features. *Trends in Cognitive Sciences*, 21(10), 760-778.
- Schreiner, M.*, **Forsyth, J. K.***, Karlsgodt, K. H., Anderson, A. E., Hirsh, N., Kushan, L., Uddin, L. Q., Mattiaccio, L., Coman, I. L., Kates, W. R., Bearden, C. E. (2017). Intrinsic Connectivity Network-Based Classification and Detection of Psychotic Symptoms in Adolescents and Young Adults with 22q11.2 Deletions. *Cerebral Cortex*, 27(6), 3294-3306. (*co-first author).
- Forsyth, J. K.**, Bachman, P., Mathalon, D. M., Roach, B. J., Ye, E., Asarnow, R. F. (2017). Effects of Augmenting N-Methyl-D-Aspartate Receptor Signaling on Working Memory and Experience-Dependent Plasticity in Schizophrenia: An Exploratory Study Using Acute D-Cycloserine. *Schizophrenia Bulletin*, 43(5), 1123-1133.

Forsyth, J. K., Bachman, P., Mathalon, D. M., Roach, B. J., Asarnow, R. F. (2015). Augmenting NMDA Receptor Signaling Boosts Experience-Dependent Plasticity in the Adult Human Brain. *Proceedings of the National Academy of Sciences*, 112(50), 15331-15336.

Gee, D. G., McEwen, S. C., **Forsyth, J. K.**, Haut, K. M., Bearden, C. E., Addington, J., Goodyear, B., Cadenhead, K. S., Mirzakhani, H., Cornblatt, B. A., Olvet, D., McGlashan, T. H., Perkins, D. O., Belger, A., Seidman, L. J., Thermenos, H., Tsuang, M. T., Walker, E. F., Hamann, S., Woods, S. W., Constable, T., Cannon, T. D. (2015). Reliability of an fMRI paradigm for emotional processing in a multi-site longitudinal study. *Human Brain Mapping*, 36(7), 2558-2579.

Forsyth, J. K., McEwen, S., Gee, D. G., Bearden, C. E., Addington, J., Goodyear, B., Cadenhead, K. S., Mirzakhani, H., Cornblatt, B. A., Olvet, D., Mathalon, D., McGlashan, T. H., Perkins, D. O., Belger, A., Seidman, L. J., Thermenos, H., Tsuang, M. T., van Erp, T. G. M., Walker, E. F., Hamann, S., Woods, S. W., Qiu, M., Cannon, T. D. (2014). Reliability of functional magnetic resonance imaging activation during working memory in a multi-site study: Analysis from the North American Prodrome Longitudinal Study. *Neuroimage*, 97, 41-52.

Bolbecker, A. R., Kent, J. S., Klaunig, M. J., **Forsyth, J. K.**, Westfall, D. R., Howell, J. M., O'Donnell, B. F., Hetrick, W. P. (2014). Impaired cerebellar-dependent associative learning in first-degree relatives of individuals with schizophrenia. *Schizophrenia Bulletin*, 40(5), 1001-1010.

Asarnow, R. F., **Forsyth, J. K.** (2013). The genetics of childhood-onset schizophrenia. *Child and Adolescent Psychiatric Clinics of North America*, 22(4), 675-687.

Forsyth, J. K., Ellman, L. M., Tanskanen, A., Mustonen, U., Huttunen, M., Suvisaari, J., Cannon, T. D. (2013). Genetic risk for schizophrenia, obstetric complications, and adolescent school outcome: Evidence for gene-environment interaction. *Schizophrenia Bulletin*, 39(5), 1067-1076.

Rass, O., **Forsyth, J. K.**, Krishnan, G., Hetrick, W. P., Klaunig, M., Breier, A., O'Donnell, B. F., Brenner, C. A. (2012). Auditory steady state response in schizophrenia, first-degree relatives, and schizotypal personality disorder. *Schizophrenia Research*, 136, 143-149.

Rass, O., **Forsyth, J. K.**, Bolbecker, A. R., Hetrick, W. P., Breier, A., Lysaker, P., O'Donnell, B. F. (2012). Computer-assisted cognitive remediation for schizophrenia: A randomized single-blind study. *Schizophrenia Research*, 139, 92-98.

Kent, J. S., Hong, S. L., Bolbecker, A. R., Klaunig, M. J., **Forsyth, J. K.**, O'Donnell, B. F., Hetrick, W. P. (2012). Motor deficits in schizophrenia quantified by nonlinear analysis of postural sway. *PLoS ONE* 7(8), e41808.

Forsyth, J. K., Bolbecker, A. R., Mehta, C. S., Klaunig, M. J., Steinmetz, J. E., O'Donnell, B. F., Hetrick, W. P. (2012). Cerebellar-dependent eyeblink conditioning deficits in schizophrenia spectrum disorders. *Schizophrenia Bulletin*, 38(4), 751-759.

Ahn, W-Y., Rass, O., Fridberg, D. J., Bishara, A. J., **Forsyth, J. K.**, Breier, A., Busemeyer, J. R., Hetrick, W. P., Bolbecker, A. R., O'Donnell, B. F. (2011). Temporal discounting of rewards in patients with bipolar disorder and schizophrenia. *Journal of Abnormal Psychology*, 120(4), 911-921.

Bolbecker, A. R., Steinmetz, A. B., Mehta, C. S., **Forsyth, J. K.**, Klaunig, M. J., Lazar, E. K., Steinmetz, J. E., O'Donnell, B. F., Hetrick, W. P. (2011). Exploration of cerebellar-dependent associative learning in schizophrenia: Effects of varying and shifting interstimulus interval on eyeblink conditioning. *Behavioral Neuroscience*, 125(5), 687-698.

Bolbecker, A. R., Hong, S. L., Kent, J. S., **Forsyth, J. K.**, Klaunig, M. J., Lazar, E. K., O'Donnell, B. F., Hetrick, W. P. (2011). Paced finger-tapping abnormalities in bipolar disorder indicate timing dysfunction. *Bipolar Disorders*, 13(1), 99-110.

Beninger, R. J., **Forsyth, J. K.**, Van Adel, M., Reynolds, J. N., Boegmam, R. J., Jhamandas, K. (2009). Subchronic MK-801 behavioral deficits in rats: Partial reversal by the novel nitrate GT 1061. *Pharmacology, Biochemistry and Behavior*, 91(4), 495-502.

Beninger, R. J., Tuerke, K. J., **Forsyth, J. K.**, Giles, A.C., Xue, L., Boegman, R. J., Jhamandas, K. (2009) Neonatal ventral hippocampal lesions in male and female rats: Effects on water maze, locomotor activity, plus-maze and prefrontal cortical GABA and glutamate release in adulthood. *Behavioural Brain Research*, 202(2), 198-209.

BOOK CHAPTERS

Asarnow, R. F., **Forsyth, J. K.** (2017). Childhood-Onset Schizophrenia. In T.P. Beauchaine, & Hinshaw, S.P. (Eds.), *Child and Adolescent Psychopathology, 3rd Edition* (pp. 783-817). Hoboken, NJ: John Wiley & Sons.

SELECTED CONFERENCE PRESENTATIONS

Forsyth, J. K., Nachun, D., Gandal, M., Won, H., Geschwind, G., Coppola, G., Bearden, C. E. (2017, December). *Mapping the 22q11.2 Locus and Risk for Psychosis and Autism: An Integrative Functional Genomics Approach*. Poster presented at the American College of Neuropsychopharmacology annual conference, Palm Springs, CA.

Forsyth, J. K., Nachun, D., Sun, D., Kushan, L., Jalbrzikowski, M., Coppola, G., Bearden, C. E. (2017, May). *Transcriptome Profiling of Peripheral Blood Suggests Dysregulation in Multiple Pathways Relates to Psychosis and Psychosis-Related Phenotypes in 22q11.2 Deletion Syndrome*. Poster presented at the Society for Biological Psychiatry annual conference, San Diego, CA.

Forsyth, J. K., Bachman, P., Asarnow, R. F. (2017, March). *Augmenting NMDA Receptor Signaling Enhances Working Memory and Alters Gamma Oscillations in Patients with Schizophrenia*. Talk presented at the International Congress on Schizophrenia Research biannual conference, San Diego, CA.

Forsyth, J. K., Bachman, P., Mathalon, D. M., Roach, B. J., Ye, E., Asarnow, R. F. (2016, April). *Augmenting NMDA Receptor Signaling in Schizophrenia Enhances Neural Responsivity and Working Memory without Affecting Experience-Dependent Plasticity*. Poster presented at the Schizophrenia International Research Society annual conference, Florence, Italy.

Forsyth, J. K., Bachman, P., Mathalon, D. M., Asarnow, R. F. (2015, May). *Enhancing NMDA Receptor Transmission Using D-cycloserine Enhances Synaptic Plasticity and Learning in Healthy Volunteers*. Poster presented at the Society of Biological Psychiatry annual conference, Toronto, ON.

Asarnow, R. F., **Forsyth, J.**, Waltzman, D., Cohen, J., Knowlton, B. (2015, March). *Cognitive Skill Learning in Schizophrenia*. Poster presented at the International Congress on Schizophrenia Research biannual conference, Colorado Springs, CO.

Forsyth, J. K., Bachman, P., Mathalon, D. M., Asarnow, R. F. (2014, December). *Enhancing NMDA Receptor Transmission Using D-cycloserine Enhances Synaptic Plasticity and Implicit Learning in Healthy Volunteers*. Poster presented at the American College of Neuropsychopharmacology annual conference, Phoenix, AZ.

Brown, L. A., Fried, R., **Forsyth, J.**, McFarr, L., Dexter, M., Dour, H. J., (2014, September). *Non-linear changes in suicidality and self-harm in Dialectical Behavior Therapy: A preliminary analysis*. Talk presented at the Strategic Planning Meeting for DBT annual meeting, Seattle, WA.

Fried, R., Gaona, L., Jones, E., Dalton, E., Thompson, S.M., Davies, C., Dexter, M., Brown, L., **Forsyth, J.**, McFarr, L., Henriquez, S., & Farias, A. (2014, June). *An In-Depth Look at Telephone Skills Coaching and Therapy Interfering Behaviors in Dialectical Behavior Therapy: A Case Study from a Community Mental Health Clinic*. Poster presented at the 8th International Congress of Cognitive Psychotherapy, Hong Kong.

Forsyth, J. K., McEwen, S., Gee, D. G., Addington, J., Bearden, C. E., Cadenhead, K. S., Cornblatt, B. A., Mathalon, D. H., McGlashan, T. H., Perkins, D. O., Seidman, L. J., Tsuang, M. T., Walker, E. F., Woods, S. W., Cannon, T. D. (2013, May). *Abnormalities of neural activation during working memory predict conversion to psychosis in clinical high-risk youth: A preliminary analysis from the North American Prodrome Longitudinal Study*. Poster presented at the Biological Psychiatry annual conference, San Francisco, CA.

Brown, L. A., **Forsyth, J. K.**, McFarr, L., Dexter, M., Dour, H. (2013, November). *Changes in suicidality, self-harm, and affect in Dialectical Behavior Therapy: A preliminary analysis of self-report diary cards*. Poster presented at the Association for Behavioral and Cognitive Therapies annual conference, Nashville, TN.

Bolbecker, A. R., Howell, J., Kent, J., Klaunig, M., **Forsyth, J.**, Westfall, D., Breier, A., O'Donnell, B. F., Hetrick, W. (2012, September). *Cerebellar-dependent eyeblink conditioning deficits in first-degree relatives of individuals with schizophrenia*. Poster presented at the Society for Research in Psychopathology annual conference, Ann Arbor, MI.

Forsyth, J. K., Mehta, C. S., Bolbecker, A. R., Merrill, C. C., O'Donnell, B. F., Hetrick, W. P. (2010, May). *Cerebellar timing dysfunction in schizotypal personality disorder: Eyeblink conditioning as a potential biomarker for schizophrenia*. Poster presented at the Biological Psychiatry annual conference, New Orleans, LA.

Ahn, W. Y., Rass, O., Fridberg, D. J., Bishara, A. J., **Forsyth, J. K.**, Breier, A., Busemeyer, J. R., Hetrick, W. P., O'Donnell, B. F. (2010, May). *Temporal Discounting of Rewards in Patients with Bipolar Disorder and Schizophrenia*. Poster presented at the Biological Psychiatry annual conference, New Orleans, LA.

Bolbecker, A. R., Kent, J. J., Hong, L. S., **Forsyth, J. K.**, Shekhar, A. S., Breier, A., O'Donnell, B. F., Hetrick, W. P. (2010, May). *Abnormal temporal synchronization in bipolar disorder as measured by a paced finger tapping task*. Poster presented at the Biological Psychiatry annual conference, New Orleans, LA.

Rass, O., **Forsyth, J.**, Merrill, C., Hetrick, W. P., Bolbecker, A., Lysaker, P. H., Breier, A., Shekhar, A., O'Donnell, B. F. (2010, October). *Function, cognitive, and neural response to cognitive training intervention in schizophrenia patients*. Poster presented at the Society for Research in Psychopathology annual conference, Seattle, WA.

Rass, O., **Forsyth, J.**, Merrill, C., Hetrick, W. P., Bolbecker, A., Lysaker, P. H., Breier, A., Shekhar, A., O'Donnell, B. F. (2010, June). *Cognitive training intervention in schizophrenia. Preliminary effects on function, cognition, and electrophysiology*. Poster presented at the Cognitive Remediation in Psychiatry annual conference, New York City, NY.

Forsyth, J. K., Mehta, C. S., Bolbecker, A. R., Merrill, C. C., O'Donnell, B. F., Hetrick, W. P. (2009, September). *Eye-blink conditioning in schizophrenia and schizophrenia spectrum disorders: Evidence for dysfunction in cerebellar timing processes*. Poster presented at the Society for Research in Psychopathology annual conference, Minneapolis, MN.

Kent, J., Hong L. S., **Forsyth J. K.**, Bolbecker, A. R., O'Donnell, B. F., Hetrick, W. P. (2009, September). *Neuropsychological correlates of postural sway in schizophrenia*. Poster presented at the Society for Research in Psychopathology annual conference, Minneapolis, MN,

Forsyth, J. K., Reynolds, J., Beninger, R. J. (2008, June). *Effects of combined isolation rearing and MK-801 on behavioural measures in rats*. Poster presented at the Canadian Society for Brain, Behaviour, and Cognitive Science annual conference, London, ON.

TEACHING EXPERIENCE

Research Supervisor <u>Course:</u> Research Apprenticeship in Psychology (Psych 196A) <i>UCLA Department of Psychology</i>	2013 - 2015
Teaching Assistant <u>Course:</u> Developmental Psychopathology and Intervention (Psych 270/271C) <i>UCLA Department of Psychology</i>	Spring 2015
Teaching Assistant <u>Course:</u> Advanced Psychological Assessment (Psych 277A) <i>UCLA Department of Psychology</i>	Winter 2014
Guest Lecturer: "Biological Methods" <u>Course:</u> Research in Developmental Psychopathology (Psych 125B) <i>UCLA Department of Psychology</i>	Winter 2014
Guest Lecturer: "Schizophrenia and its Prodromal State" <u>Course:</u> Fieldwork in Psychology (Psych 194A) <i>UCLA Department of Psychology</i>	Fall 2013
Guest Lecturer: "Biological Methods" <u>Course:</u> Research in Developmental Psychopathology (Psych 125B) <i>UCLA Department of Psychology</i>	Winter 2013
Guest Lecturer: "Schizophrenia and its Prodromal State" <u>Course:</u> Fieldwork in Psychology (Psych 194A) <i>UCLA Department of Psychology</i>	Winter 2012

AD HOC REVIEWER

Neuroimage
Brain Behavior and Imaging
Psychiatry Research
Psychological Medicine
Scientific Reports
