

CURRICULUM VITAE

Emma Jane Rose Ph.D.

RESEARCH OVERVIEW

My primary research interest lies in delineating the mediating role of brain structure and function in the development and experience of substance use disorders and the moderating impact of trait (e.g. genetic risk, sex), state (e.g. acute drug effects) and situational (e.g. psychosocial, environmental) factors on pertinent neurodevelopmental patterns. Projects in my current portfolio apply a combination of functional and structural magnetic resonance imaging along with other techniques (e.g., genetics, epigenetics, and psychosocial and behavioral assessments) in explorations of (1) differential neurodevelopmental trajectories that are relevant to the risk of substance abuse in children and adolescents and (2) variable treatment response in adults with substance use disorders. Using a translational neuroscience approach, my research program also applies information regarding the neural bases of substance use risk and relapse to the development of more efficacious prevention and treatment strategies that are sensitive to differential responsivity and risk.

EDUCATION

Doctor of Philosophy

Department of Psychiatry, University of Edinburgh, Edinburgh, UK
Thesis title: Working Memory in Depression: a functional MRI study
(Supervisor: Prof. K. Ebmeier MD FRCPsych.)

January 2005

Master of Science: Research Methods in Psychology

Department of Psychology, University of Strathclyde, Glasgow, UK
Thesis: Cognitive Function in Major Depression
(Supervisor: Dr. P. Gooding PhD).

November 2000

Bachelor of Science (Honors; 2.1): Psychology

Department of Psychology, University of Glasgow, Glasgow, UK
Thesis: The effects of MDMA on circadian rhythm in the rat
(Supervisor: Dr. R. Dafters PhD).

July 1999

EMPLOYMENT

Assistant Research Professor & Associate Director for P-TRAN

Program for Translational Research on Adversity and Neurodevelopment (P-TRAN)
Bennett Pierce Prevention Research Center, The Pennsylvania State University, University Park, PA.

July 2015 to present

Assistant Professor of Psychiatry

Center for Translational Research on Adversity, Neurodevelopment and Substance abuse (C-TRANS)
Department of Psychiatry, University of Maryland School of Medicine, Baltimore, MD

March 2014 to June 2015

Neuroscientist (Staff Scientist)

Transdisciplinary Science and Translational Prevention Program
Molecular Epidemiology, Genomics, Environment and Health, RTI International, Baltimore, MD

Sept. 2012 to Feb. 2014

Research Fellow

Neuropsychiatric Genetics Group
Department of Psychiatry, Trinity College Dublin, Ireland

July 2009 to July 2012

Visiting Research Fellow
Guest Researcher

Neuroimaging Research Branch

National Institute on Drug Abuse – Intramural Research Program, National Institutes of Health, USA

May 2004 - June 2009

July 2009 to date

PUBLICATIONS

PEER REVIEWED PUBLICATIONS

1. The ENIGMA Consortium (2016). Novel genetic loci associated with hippocampal volume. *Nature Communications* (accepted manuscript; 10/18/2016).
2. The ENIGMA Consortium (2016). Novel genetic loci underlying human intracranial volume identified through genome-wide association. *Nature Neuroscience* (accepted manuscript).
3. **Rose, E.J.**, Ross, T.J., Salmeron, B., Waltz, J., Schweitzer, J., and Stein, E.A. (2016). Dissociable effects of cocaine-dependence on reward processes: the role of acute cocaine and craving. *Neuropsychopharmacology* (in press).
4. Fishbein, D.H., **Rose, E.J.**, Darcey, V., Belcher, A., and Van Meter, J. (2016). Neurodevelopmental Precursors and Consequences of Substance Use during Adolescence: Promises and Pitfalls of Longitudinal Neuroimaging Strategies. *Frontiers in Human Neuroscience*, 296, doi: 10.3389/fnhum.2016.00296
5. The ENIGMA Consortium (2016). Genetic influences on schizophrenia and subcortical brain volumes: large-scale proof of concept. *Nature Neuroscience*, 19, 420-431.
6. The ENIGMA Consortium (2015). Common genetic variants influence human subcortical brain structures. *Nature*. 520(7546): 224-229.
7. **Rose, E.J.**, Morris, D.W., Fahey, C., Cannon, D., et al. (2014). The miR-137 schizophrenia susceptibility variant rs1625579 does not predict variability in brain volume. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics* 165B(6): 467-71
8. Mothersill, O., Morris, D.W., Kelly, S., **Rose, E.J.**, et al (2014). Altered medial prefrontal activity during dynamic face processing in schizophrenia spectrum patients. *Schizophrenia Research* 157(1-3): 225-30
9. Kelly, S., Morris, D.W., Mothersill, O., **Rose, E.J.**, Fahey, C., et al. (2014). Genome-wide schizophrenia variant at MIR137 does not impact white matter microstructure in healthy participants. *Neuroscience Letters* 574:6-10
10. **Rose, E.J.**, Salmeron, B., Ross, T.J., Schweitzer, J., Waltz, J., McClure, S. and Stein, E.A (2014). Temporal difference error prediction signal dysregulation in cocaine-dependence. *Neuropsychopharmacology*, 39(7), 1732-1742.
11. The ENIGMA Consortium (2014). Large scale collaborative analyses of neuroimaging and genetic data. *Brain Imaging and Behavior*, 8(2), 153-182.
12. Mothersill, O., Morris, D.W., Kelly, S., **Rose, E.J.**, Fahey, C., et al (2014). Effects of MIR137 on fronto-amygdala functional connectivity. *NeuroImage*, 90, 189-195.
13. **Rose, E.J.**, Hargreaves, A., Greene, C., Jacobsen, S.J., Morris, D.W., et al. (2014). Effects of a genome wide supported schizophrenia risk variant at CNM2 on brain structure and attributional style. *British Journal of Psychiatry*, 204(2), 115-121.
14. **Rose, E.J.**, Morris, D.W., Hargreaves, A., Fahey, C., et al. (2013). Neural effects of the CSMD1 genome-wide associated schizophrenia risk variant rs10504253. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 162B(6), 530-537.
15. Donohoe, G., Walters, J., Hargreaves, A., **Rose E.J.**, Morris, D.W., Fahey, C., Bellini, S., Cummins, E., Giegling, I., Hartmann, A.M., Möller, H.J., Muglia, P., Owen, M.J., Gill, M., O'Donovan, M.C., Tropea, D., Rujescu, D., and Corvin, A. (2013). Neuropsychological Effects of the CSMD1 Genome-Wide Associated Schizophrenia Risk Variant rs10503253. *Genes, Brain and Behavior*, 12(2), 203-209.
16. Donohoe, G., Duignan, A., Hargreaves, A., Morris, D.W., **Rose, E.**, Robertson, D., Cummings, E., Moore, S., Gill, M., and Corvin, A. (2012). Social cognition in bipolar disorder versus schizophrenia: comparability in mental state decoding deficits. *Bipolar Disorders*, 14(7), 734-738.
17. **Rose, E.J.**, Ross, T.J., Salmeron, B., Lee, M., Shakleya, D.M., Huestis, M. and Stein, E.A. (2013). Acute nicotine differentially impacts anticipatory valence- and magnitude-related striatal activity. *Biological Psychiatry*, 73(3), 280-288.

18. **Rose, E.J.** and Donohoe, G. (2013). Brain vs. behavior: an effect size comparison of neuroimaging and cognitive studies of genetic risk for schizophrenia. *Schizophrenia Bulletin*, 39 (3), 518-526.
19. Mothersill, O.*, Kelly, S.*, **Rose, E.J.**, and Donohoe, G (2012). The effects of psychosis risk variants on brain connectivity: A review. *Frontiers in Psychiatry* 3:18 (*equal author contribution).
20. The CHARGE Consortium (2012). Common variants at 12q14 and 12q24 are associated with hippocampal volume. *Nature Genetics* 44(5): 545-551.
21. The ENIGMA Consortium (2012). Common genetic polymorphisms contribute to the variation in human hippocampal and intracranial volume. *Nature Genetics* 44(4): 552-561.
22. **Rose, E.J.**, Greene, C., Kelly, S., Jacobsen, S.J., Morris, D.W., Robertson, I.H., O'Doherty, J., Newell, F.N., McGrath, J., Bokde, A., Garavan, H, Frodl, T., Gill, M., Corvin, A., and Donohoe, G. (2012). The NOS1 variant rs6490121 is associated with prefrontal function and grey matter density in healthy individuals. *NeuroImage* 60(1): 614-622.
23. **Rose, E.J.**, Morris, D.W., Fahey, C., Robertson, I.H., Greene, C., O'Doherty, J., Newell, F.N., Garavan, H., McGrath, J., Bokde, A., Gill, M., Corvin, A., and Donohoe, G. (2012). The effects of the neurogranin schizophrenia risk variant rs12807809 on brain structure and function. *Twin Research and Human Genetics* 15(3): 296-303. (ENIGMA special issue)
24. **Rose, E.J.**, Ross, T.J., Salmeron, B., Shakleya, D.M., Huestis, M., Lee, M., and Stein, E.A. (2012). Chronic exposure to nicotine is associated with reduced reward-related activity in the striatum but not the midbrain. *Biological Psychiatry* 71(3): 206-213.
25. Hargreaves, A., Morris, D.W., **Rose, E.**, Fahey, C., Tropea, D., Gill, M., Corvin, A., and Donohoe, G. (2012). ZNF804A and social cognition in patients with schizophrenia and healthy controls. *Molecular Psychiatry* 17: 118-119.
26. Samson, A.C., Meisenzahl, E., Scheuerecker, J., **Rose, E.**, Schoepf, V., Wiesmann, M., and Frodl, T. (2011) Brain activation predicts treatment improvement in patients with major depressive disorder. *Journal of Psychiatric Research* 45(9): 1214-1222.
27. Donohoe, G.,* **Rose, E.J.**,* Frodl, T., Morris, D.W., Spoletini, I., Cherubini, A., Adriano, F., Caltagirone, C., Bossu, P., Gill, M., Corvin, A.P., and Spalletta, G. (2011). ZNF804A risk allele is associated with relatively intact grey matter volume in patients with schizophrenia. *NeuroImage* 54(3): 2131-2137. (*equal author contribution).
28. Donohoe, G., Walters, J., Morris, D.W., Da Costa, A., **Rose, E.**, et al., (2011). A neuropsychological investigation of the genome-wide associated schizophrenia risk variant NRG1 rs12807809. *Schizophrenia Research* 125(2-3): 304-306.
29. **Rose, E.J.**, Ross, T.J., Kurup, P.K., and Stein, E.A. (2010). Nicotine modulation of information processing is not limited to input (attention) but extends to output (intention). *Psychopharmacology* 209(4): 291-302
30. Waltz, J.A., Schweitzer, J.B., Ross, T.J., Kurup, P.K., Salmeron, B., **Rose, E.J.**, Gold, J.M., and Stein, E.A (2010). Abnormal responses to monetary outcome in the cortex, but not in the basal ganglia, in schizophrenia. *Neuropsychopharmacology* 35(12): 2427-2439.
31. Waltz, J.A., Schweitzer, J.B., Gold, J.M, Kurup, P.K., Ross, T.J., Salmeron, B., **Rose, E.J.**, McClure, S.M., and Stein, E.A (2009). Patients with schizophrenia show a reduced BOLD response to both unpredictable and predictable primary reinforcers. *Neuropsychopharmacology* 34: 1567-1577.
32. **Rose, E.J.** and Ebmeier, K.P. (2006). Pattern of impaired working memory during major depression. *Journal of Affective Disorders* 90 (2-3): 149-161.
33. **Rose, E.J.**, Simonotto, E., and Ebmeier, K.P. (2006). Limbic over activity in depression during preserved performance on the n-back task. *NeuroImage* 29: 203-215
34. **Rose, E.J.**, Simonotto, E., Spencer, E., and Ebmeier, K.P. (2006). The effects of escitalopram on working memory and brain activity in healthy adults during performance of the n-back task. *Psychopharmacology* 185 (3): 339-347.
35. Ebmeier, K., **Rose, E.**, and Steele, D. (2006). Cognitive Impairment and fMRI in major depression. *Neurotoxicity Research* 10(2): 87-93.
36. Marshall, I., Simonotto, E., Deary, I.J., MacLulich, A., Ebmeier, K.P., **Rose, E.J.**, Wardlaw, J.M., Goddard, N., Chappell, F.M. (2004). Repeatability of motor and working memory tasks in healthy older volunteers: assessment of functional MR imaging. *Radiology* 233 (3): 868-877.

BOOK CHAPTERS

- **Rose, E.J.** & Fishbein, D.H. (under construction). Neurobiology and Long-term Effects of Early Abuse and Neglect. In Laskey, A. & Sirotiak, A. (eds.) "*Child Abuse: Medical Diagnosis and Management*" American Academy of Pediatrics.
- Ebmeier, K.P., **Rose, E.J.**, Steele, J.D. (2006) Cognitive Impairment in Major Depression (the fMRI perspective). In Palomo, T., Archer, T., Beninger, R. J. (eds.) "*Implications of Comorbidity for Etiology and Treatment of Neuropsychiatric Disorders*", Editorial CYM, Madrid, Spain.

PRESENTATIONS (first/presenting author only; ≠ oral presentation)

1. **Rose, E.J.**, Darcey, V., Van Meter, J., and Fishbein, D.H. *Interactions between DAT1 and substance use onset time (earlier vs. later) on thalamic volume in substance use naïve youth*. Organization for Human Brain Mapping, Vancouver, Canada, June 24-29, 2017.
2. **Rose, E.J.** & Fishbein, D.H. *The Program for Translational Research on Adversity and Neurodevelopment*. Inaugural P-TRAN Symposium: Foundations for Biobehavioral Health, University Park, PA, May 18, 2017.
3. **Rose, E.J.** & Noll, J.G. *The Translational Center for Child Maltreatment Studies (TCCMS)*. Inaugural P-TRAN Symposium: Foundations for Biobehavioral Health, University Park, PA, May 18, 2017.
4. **Rose, E.J.** & Fishbein, D.H. *Translational neuroscience approaches to substance abuse prevention*. 3rd Annual Penn State Addictions Symposium, Hershey, PA, April 4, 2017.
5. †**Rose, E.J.** *Translational Neuroscience Approaches to Understanding and Preventing Youth Substance Abuse Risk* (invited oral presentation). Child Study Center, Penn State University, Developmental ProSeminar Series 2016. December 7, 2016.
6. †**Rose, E.J.** *The Program for Translational Research on Adversity and Neurodevelopment (P-TRAN)* (invited oral presentation). Hershey Addictions Group Seminar. September 27, 2016.
7. **Rose, E.J.** & Fishbein, D.H. *The Program for Translational Research on Adversity and Neurodevelopment (P-TRAN)*. Penn State Research Day 2016, University Park, PA, October 5 & 6, 2016
8. **Rose, E.J.**, Darcey, V., Van Meter, J., and Fishbein, D.H. *Subcortical volumes in alcohol naïve youth are associated with DAT1, OPRM1 and later alcohol use* (poster presentation). Organization for Human Brain Mapping, Geneva, Switzerland, June 2016.
9. **Rose, E.J.**, Darcey, V., Van Meter, J., and Fishbein, D.H. *Cortical and subcortical structural variability in youth is related to hereditary risk for substance use and predicts later alcohol use* (poster presentation). 6th Annual Aspen Brain Forum: The Addicted Brain and New Treatment Frontiers. The New York Academy of Sciences, New York, NY. May 18-20, 2016
10. †Fishbein, D.H. & **Rose, E.J.** *Neurobiological Underpinnings of Adolescent Drug Abuse and Implications for Prevention* (invited oral presentation). 6th Annual Aspen Brain Forum: The Addicted Brain and New Treatment Frontiers. The New York Academy of Sciences, New York, NY. May 18-20, 2016.
11. **Rose, E.J.**, Darcey, V., Van Meter, J., and Fishbein, D.H. *Cortical and Subcortical Structural Variability in Drug and Alcohol Naïve Adolescents Predicts Subsequent Alcohol Use* (poster presentation). Penn State Hershey Medical Center – 2nd Annual Addictions Symposium. Hershey, PA. April 2016
12. †**Rose, E.J.** *Translational Neuroscience Perspectives on Substance Abuse Risk, Prevention and Treatment* (invited oral presentation). Bennett Pierce Prevention Research Center Spring 2016 Seminar Series at The Pennsylvania State University. State College, PA. January 20, 2016.
13. **Rose, E.J.**, Darcey, V., Van Meter, J., and Fishbein, D.H. *Cortical and Subcortical Structural Variability in Drug and Alcohol Naïve Adolescents Predicts Subsequent Alcohol Use* (poster presentation). Society for Neuroscience, Chicago, IL. October 2015
14. **Rose, E.J.**, Darcey, V., Van Meter, J. & Fishbein, D.H. *Family history of substance misuse predicts variability in brain structure in drug naïve children* (poster presentation). Organization for Human Brain Mapping, Honolulu, HI, USA. June 2015
15. †**Rose, E.J.** *Translational Neuroscience Perspectives on Substance Abuse Prevention and Treatment* (oral presentation). Bennett Pierce Prevention Research Center Spring 2015 Seminar Series at The Pennsylvania State University. State College, PA. February 25, 2015.
16. **Rose, E.J.** & Fishbein, D.H. *Leveling the playing field: Using an integrative, translational model of neurodevelopment to optimize substance abuse intervention and reduce disparities* (poster presentation). Society for Neuroscience, Washington, DC, USA. October 2014.

17. †Rose, E.J. *Translational neuroscience approaches to understanding and preventing high-risk behaviors* (invited oral presentation). University of Maryland Summer Diversity Conference, University of Maryland College Park, MD, USA. August 2014
18. Rose, E.J., Salmeron, B., Waltz, J., Schweitzer, J., Stein, E.A., Ross, T.J. *Acute cocaine impacts brain responses to the anticipation of monetary losses in cocaine dependence* (poster presentation). Organization for Human Brain Mapping, Seattle, WA, USA. June 2013.
19. †Rose, E.J. *Delineating the neurobiology of reward processing in drug dependence* (invited oral presentation). RTI International: Fellows Seminar Series. Raleigh, NC, USA. January 2013
20. Rose, E.J., Ross, T.J., Salmeron, B., Waltz, J., Schweitzer, J., McClure, S., Stein, E.A. *Cocaine-dependence is associated with altered sensitivity to errors in temporal prediction* (poster presentation). Society for Neuroscience, New Orleans, LA, USA. October 2012
21. Rose, E.J., Hargreaves, A., Morris, D.W., Fahey, C., Gill, M., Corvin, A., and Donohoe, G. *The novel psychosis risk variant rs7914558 at CNM2 is associated with variability in social cognitive function and gray matter volume* (poster presentation). Cognitive Neuroscience Society, Chicago, IL, USA. March 2012.
22. Rose, E.J., Greene, C., Morris, D.W., Fahey, C., Robertson, I., Garavan, H., Gill, M., Corvin, A.P., and Donohoe, G. *The NOS1 polymorphism rs6490121 is associated with variation in prefrontal function and gray matter density in healthy individuals* (poster presentation). Organization for Human Brain Mapping, Quebec, Canada, June 2011.
23. Rose, E.J., Mothersill, O., Greene, C., Kelly, S., Morris, D.W., Fahey, C., Robertson, I., Garavan, H., Gill, M., Corvin, A.P., and Donohoe, G. *The putative NOS1 schizophrenia risk variant rs6490121 is associated with prefrontal function and gray matter density in healthy individuals* (poster presentation). Wiring the Brain, Ireland, April 2011.
24. Rose, E.J., Donohoe, G., Frodl, T., Morris, D.W., Spoletini, I., Cherubini, A., Adriano, F., Caltagirone, C., Bossu, P., Gill, M., Corvin, A.P., and Spalletta, G. *ZNF804A risk allele is associated with relatively intact hippocampal grey matter volume in schizophrenia* (poster presentation). Organization for Human Brain Mapping, Barcelona, Spain, June 2010
25. Rose, E.J., Ross, T.J., Salmeron, B., Waltz, J., Lee, M., Schweitzer, J., and Stein, E.A. *The striatal response to positive prediction errors is significantly reduced in dependent smokers* (poster presentation). Organization for Human Brain Mapping, Barcelona, Spain, June 2010
26. †Rose, E.J., Ross, T.J., and Stein, E.A. *Nicotine does not differentially affect the valence-dependent striatal response to rewarding and punishing monetary outcomes* (poster and oral presentation). Organization for Human Brain Mapping, San Francisco, CA. June 2009
27. Rose, E.J., Myers, C.S., Heishman, S.J., Ross, T.J., Herning, R., Salmeron, B., and Stein, E.A. *Nicotine abstinence condition differentially affects the response of the caudate, during the performance of a measure of interval timing* (poster presentation). American College of Neuropsychopharmacology, Scottsdale, AZ. December 2008.
28. Rose, E.J., Ross, T.J., and Stein, E.A. *Acute nicotine alters striatal response to the anticipation of monetary gain* (poster presentation). American College of Neuropsychopharmacology, Boca Raton, FL. December 2007.
29. †Rose, E.J., Ross, T.J., Kurup, P.K., Salmeron, B.J., and Stein, E.A. *The effect of acute cocaine on the brain response to monetary losses and gains* (oral and poster presentation. Selected for presentation at the "Hot Topics" session). American College of Neuropsychopharmacology, Hollywood, FL. December 2006 (Neuropsychopharmacology, Vol. 31, Issue S1, pS201).
30. †Rose, E.J., Ross, T.J., Salmeron, B.J., Kurup, P.K., and Stein, E.A. *Brain regions mediating the response to the anticipation of loss and reward in an adaptation of the monetary incentive delay task* (poster presentation & press conference; selected for publication in the press book). Society for Neuroscience, Atlanta, GA. October 2006.
31. Rose, E.J., Ross, T.J., Kurup, P.K., and Stein, E.A. *The effects of acute nicotine on brain function associated with selective attention and intention/response readiness* (poster presentation): American Psychological Association. Substance Abuse: Research and Clinical Practice, New Orleans, LA. August 2006.
32. Rose, E.J., Ross, T.J., Kurup, P.K., and Stein, E.A. *The effects of acute nicotine on brain function associated with selective attention and intention/response readiness* (poster presentation). Organization for Human Brain Mapping, Florence, Italy. June 2006.

33. **Rose, E.J.**, Simonotto, E., Spencer, E.P., and Ebmeier, K.P. *The effects of subacute administration of escitalopram (cipralex) on working memory and brain function in healthy adults* (poster presentation). Organization for Human Brain Mapping, Florence, Italy. June 2006.
34. **Rose, E.J.** and Ebmeier, K.P. *Working Memory in Depression* (invited oral presentation). Annual Meeting of the Scottish Neuropsychological Society, Glasgow, UK. December 2003.
35. **Rose, E.J.**, Simonotto, E., and Ebmeier, K.P. *Working Memory in Depression: An fMRI study* (poster presentation). Organization for Human Brain Mapping, New York, NY. June 2003.
36. **Rose, E.J.**, Simonotto, E., and Ebmeier, K.P. *Working Memory in Depression: An fMRI study* (poster presentation). Federation of European Neurosciences, Paris, France. July 2002.
37. **Rose, E.J.** and Ebmeier, K.P. *Working Memory in Depression* (poster presentation). British Psychological Society, Blackpool, UK. March 2002.

RESEARCH SUPPORT

(1) Primary and secondary reward processing in healthy children

PSU Social, Life and Engineering Sciences Imaging Center (SLEIC) Award 06/01/2016

Role: Principal Investigator.

In this pilot project we are considering the extent to which neural substrates of different types of reinforcers (money and food) correspond in healthy children (8-10 years). Data obtained in this project will serve as preliminary data for a study of the impact of food insecurity on reward neurobiology in children.

(2) Penn States Translational Center for Child Maltreatment Studies

NIH/NICHD: P50HD551411 (PI: Noll) 09/01/2016 – 08/31/2021

Role: Co-Investigator (Project 1: The Biological Embedding of Child Maltreatment and Subsequent Health Outcomes; %FTE: 0.13)

This prospective longitudinal project will consider the biological embedding of child maltreatment in multiple systems (neuroendocrine, autonomic, immunologic, epigenetic and cellular) and how this embedding impacts child health outcomes (brain, behavior, psychology and physical health).

(3) Brain Mechanisms of Overeating in Children

NIH/NIDDK: 1R01DK110060-01A1 (PI: Keller) (Notice of Award: 12/27/2016)

Role: Co-Investigator (%FTE: 0.10)

This study seeks to determine how children's brains respond to food portion size and will ascertain how these responses relate to objective measures of overeating and appetitive traits to understand risk factors that promote overeating.

(4) Mechanisms Underlying the Relationship between Sleep Problems and Drug Use in Adolescents

NIH/NIDA: 1R01DA034618-01A1 (PI: Fishbein) 9/30/13–9/29/18

Role: Co-Investigator (%FTE: 0.13)

This longitudinal R01 study is designed to elucidate mechanisms underlying the relationship between sleep problems and propensity to drug/alcohol use in adolescents

(5) Developmental fMRI Study of Alcohol Use in Adolescence

NIH/NIAAA: 5R01AA019983-03 (PI: Fishbein) 9/20/11–6/30/16 (currently in no cost extension)

Role: Co-Investigator (%FTE: 0.46)

This fMRI study has comprehensively assessed and followed a relatively large cohort of adolescents over a five-year period in an attempt to identify neurodevelopmental precursors of alcohol use initiation and escalation, and subsequent neurocognitive consequences of alcohol use and heavy drinking

(6) Transdisciplinary Approach to Understand Variability in Preventive Intervention Outcomes

NIH/NIDA: 1R01DA025047-01A2 (MPI: Fishbein and Greenberg) 4/1/10–3/31/15.

Role: Co-Investigator (%FTE: 0.16)

This study was one of the first in-depth intervention trials to incorporate recent findings from neuroscience into developmental psychology and prevention science to better understand why many children do not respond favorably to universal school-based preventive interventions.

Grants Currently Under Review:

(1) Characterizing Food Insecurity in Rural Poor Communities.

Penn State University, Social Science Research Institute (SSRI) – Level II

Role: PI

This pilot study aims to collect preliminary data regarding: (a) the appropriateness of standard/epidemiological food insecurity measures for assessing food security in relatively smaller cohorts from rural communities in Central PA; and (b) neurocognitive variability in children (8-10 years old) in food insecure families.

Current Status: Revise and resubmit.

(2) Neurobiological Mediation of the Good Behavior Game Effects on Peer Clustering and Behavior

NIH/NIDA 1 R01 DA042284-01A1

Role: Co-Investigator (%FTE: 0.20)

In this application we propose to explore heterogeneity in the biobehavioral and social-contextual pathways of children with problem behaviors and how these characteristics may explain variability in response to the Good Behavior Game (GBG), a universal school-based prevention program with strong evidence of effectiveness and durability of effects on aggressive and off-task behavior – key risk factors for later substance abuse.

Current Status: Awaiting funding decision

TEACHING

University of Edinburgh:

Psychology 1: *General Psychology (Tutor)* 2001 – 2003
Intro to Research Methods in Psychology (Demonstrator) 2001 – 2003

Psychology 2: *Research Methods and Statistics (Tutor and Demonstrator)* 2001 – 2003

Psychology 3: *Special Interest Tutorials (Tutor)* 2003

Medicine 1: *Health Psychology (Tutor)* 2001 – 2003

Medicine 2: *Medical Ethics (Tutor)* 2001 – 2003

MSc. Neuroscience: *Invited lecture on fMRI studies of depression (Lecturer)* 2003

National Institute on Drug Abuse – Neuroimaging Research Branch

Cognitive Neuroscience (course organizer & lecturer) 2006 – 2007

Statistics (course organizer & lecturer) 2007 – 2008

Trinity College Dublin

Medicine 1: *Human Development (Lecturer)* 2010/11 & 2011/12
Topics: Developmental Milestones; Developmental Psychopathology; Neurodevelopmental disorders.

Medicine 2: *Neuroscience (Lecturer)* 2010/11 & 2011/12
Topics: Cognitive neuroscience of attention and perception

Neuropsychiatric Genetics Group, Data Analysis Seminar Series (Lecturer) 2009

Research Student Supervision 2010 – 2012
Co-supervisor for O. Mothersill (PhD candidate, 2014) & S. Kelly (MSc. 2010 & PhD candidate, 2014), E. Hayes (undergraduate, 2010), K. Maher (undergraduate, 2010).

The Pennsylvania State University 2016

HDFS.597 – Guest Lecture (“*Mechanisms of Treatment Effects for Substance Use Disorders*”)

PROFESSIONAL SERVICE

Peer review:

- *Ad hoc* peer review of articles for:

- | | | |
|---|--|--|
| ❖ <i>Addiction Biology</i> | ❖ <i>Genes Brain and Behavior</i> | ❖ <i>Progress in Neuropsychopharmacology</i> |
| ❖ <i>American Journal of Addictions</i> | ❖ <i>JAMA – Psychiatry</i> | ❖ <i>Psychiatry Research – Neuroimaging</i> |
| ❖ <i>American Journal of Medical Genetics – Part B: Neuropsychiatric Genetics</i> | ❖ <i>NeuroImage – Clinical Neuropsychology</i> | ❖ <i>Psychological Medicine</i> |
| ❖ <i>Behavioral Brain Research</i> | ❖ <i>Neuropsychopharmacology</i> | ❖ <i>Psychopharmacology</i> |
| ❖ <i>Biological Psychiatry</i> | ❖ <i>Neuroscience Letters</i> | ❖ <i>Schizophrenia Research</i> |
| ❖ <i>Brain Imaging and Behavior</i> | ❖ <i>Nicotine and Tobacco Research</i> | |
| ❖ <i>Drug and Alcohol Dependence</i> | ❖ <i>Pharmacology, Biochemistry & Behavior</i> | |

- Abstract reviewer for the annual meeting of the Organization for Human Brain Mapping (2010-2013, 2015-2017)

Grant Review

- The Netherland Organization for Scientific Research: Innovational Research Incentive Scheme Vidi - December 2015
- USDA Childhood Obesity Prevention Program, The Pennsylvania State University – December 2015
- Social Sciences Research Institute (SSRI), The Pennsylvania State University – April 2016

Board Member: The *National Prevention Science Coalition* (<http://www.npscoalition.org/>) – June 2013 to January 2017.

Working Group Member: The University of Maryland School of Medicine Brain Sciences Research Consortium Unit (BSRCU; <http://medschool.umaryland.edu/BSRCU/>) - March 2014 – June 2015

Science Communication:

- ***Science Spinning*** (Dublin City FM; May 2012)
Radio interview regarding the first ENIGMA Consortium meta-analysis.
- ***Apertures and Anxieties*** (Royal Hibernian Academy, Dublin; 2011)
Collaborative art installations ("*Apertures and Anxieties*") exploring the relationship between medicine and art. I worked with one of the artists on a piece exploring the relationship between brain structure and function and how we think, feel and behave.
- ***Towards Women in Science and Engineering (TWiST)*** (Science Gallery, Dublin; 2010)
TWiST is a European initiative aiming to raise awareness of the wide-ranging roles played by women in science, engineering and technology. For the TWiST installation at The Science Gallery I designed an interactive laboratory exhibit considering reward sensitivity, impulsiveness and drug abuse risk in men and women and how these processes are influenced by our genetic makeup.
- ***BBC/National Geographic*** (2010).
Aspects of my postdoctoral investigations of the impact of acute cocaine on reward processing in dependent adults were included in a documentary exploring the neurobiology of cocaine addiction, which was part of a documentary series examining modern drug abuse ("*Drugged: High on....*") commissioned by the BBC.
- **Society for Neuroscience: Press Conference** (Atlanta, GA; 2006)
At the annual Society for Neuroscience (2006) I was invited to give a summary talk detailing my work on the neurobiology of reward processing to members of the press.

AWARDS

- NIDA – Intramural Research Program: Postdoctoral Research Fellowship (2004-2009)
- NIDA – Young Scientist Award (APA Conference 2006)
- Organization for Human Brain Mapping: Student Travel Award (OHBM Conference 2006)
- Organization for Human Brain Mapping: Student Travel Award (OHBM Conference 2003).
- Scottish International Education Trust: Student Travel Award (2003).
- Medical Research Council (MRC) of Great Britain Postgraduate Fellowship (October 2000 – October 2003)

PROFESSIONAL SOCIETY MEMBERSHIPS

- Organization for Human Brain Mapping. 2003 – present
- Society for Neuroscience 2008 – present
- Cognitive Neuroscience Society 2007 – 2013
- American Psychological Association 2008 – 2010
- Society for Social Neuroscience 2010 – 2011
- British Psychological Society 1999 – 2006

RESEARCH TRAINING

<i>Postgraduate Transferrable Skills Training Courses, University of Edinburgh, UK</i>	2000 – 2004
▪ Communication of Science to Non-specialists	
▪ Writing Reports for Publications	
▪ Making Research Grant Applications	
▪ Thesis Writing Skills	
▪ Laboratory Demonstrating	
<i>Scottish Universities Post-Graduate Psychology Research Training Seminars</i>	2000 – 2002
▪ Skills Necessary to Post-Graduate Research	
▪ Clinical Neuropsychology and Neuropsychological Assessment	
<i>Research Graduate Schools Programme, Oxford University, Oxford, UK</i>	2002
<i>Analysis of Functional NeuroImages (AFNI) Boot Camp, NIMH, USA</i>	2004
<i>NIH Principals of Clinical Pharmacology, NIH, USA</i>	2004 - 2005
<i>NIH Ethics of Human Participant Research, NIH, USA</i>	2004 - 2010
<i>MRI Safety Annual Training, NIDA/NIH</i>	2004 - 2014
<i>Addiction Severity Index (ASI)</i>	2005
<i>Structured Interview for the Diagnosis of DSM-IV Personality Disorders (SIDP)</i>	2005
<i>Health Insurance Portability and Accountability Act (HIPAA) Annual Training</i>	2007 - 2016
<i>Collaborative Institutional Training Initiative (CITI) Annual Training</i>	2007 - 2016
<i>MRI Physics, NIDA/NIH</i>	2007
<i>Neurobiology of Addiction, NIDA/NIH</i>	2008 - 2009
<i>Supervising Postgraduate Research Students, Trinity College Dublin, Ireland</i>	2009
<i>Diffusion and Structural MRI (OHBM)</i>	2010
<i>Imaging Genetics (OHBM)</i>	2010

NON-ACADEMIC EMPLOYMENT HISTORY

- CASA Baltimore** March 2006 – March 2007
Voluntary Court Appointed Special Advocate for Children in Need of Assistance
- Court appointed advocate for children placed in care due to abuse or neglect.
- Share Housing** January 2000 – August 2001
Support Worker
- Support worker with adults with physical and learning disabilities in a residential setting.
- Glasgow Association for Mental Health** November 1998 – October 2000
Volunteer Befriender
- Provided one-on-one, community-based, social support for individuals living with psychiatric illness
- Scottish Power (plc) (Metering Business)** May 1999 – September 1999
Data Services Analyst
- Responsibility for the set-up and integration of new data system for business customers
 - Collection, collation, and presentation of metering data for over 300 business customers on a monthly basis.