Curriculum Vitae

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Academic Positions:

2018-present	Associated Faculty Neuroscience Graduate Group Biomedical Graduate Studies University of Pennsylvania. Philadelphia, Pennsylvania
2015-present	Research Assistant Professor of Behavioral Neuroscience in Psychiatry Department of Psychiatry, Neuropsychiatry University of Pennsylvania. Philadelphia, Pennsylvania
2014-Present	Associate Fellow at the Institute on Aging Department of Neurology University of Pennsylvania, Philadelphia, Pennsylvania
2013-2015	Research Associate Department of Psychiatry, Neuropsychiatry University of Pennsylvania. Philadelphia, Pennsylvania

Education & Training:

2010-2013	Post-doctoral Fellow Department of Psychiatry, Neuropsychiatry University of Pennsylvania. Philadelphia, Pennsylvania
2005-2010	Doctor of Philosophy (Ph.D.)- Behavioral Neuroscience Oregon Health & Science University (OHSU). Portland, Oregon
1997-2001	Bachelor of Science (B.S.)- Biological Psychology The College of William & Mary Williamsburg, Virginia

Current manuscripts in press and under review (Google Scholar h-index = 26):

*Moberg, P.J., Richman, M.J., **Roalf, D.R.,** Morse, C.L., Graefe, A.C., Brennan, L., Vickers, K.L., Tserin, W., Kamath, V., Turetsky, B.I., Gur, R.C., Gur, R.E. Neurocognitive functioning in patients with 22q11.2 deletion syndrome: A meta-analytic review. (under review).*

*Bezdicek, O., Cervenkova, M., Moore, T.M., Stepankova, H., Sulc, Zdenek, Wolk, D.A., Weintraub, D.A., Moberg, P.J., Jech R., Kopecek, M., **Roalf, D.R**. Determining a short form Montreal Cognitive Assessment (s-MoCA) Czech Version: validity in mild cognitive impairment Parkinson's disease and cross-cultural comparison. Assessment. (in press)*

*Nanga, R., DeBrosse, C., Kuman, D., **Roalf, D**., D'Aquilla, K., Borthakur, A., Hariharan, H., Reddy, D., Elliott, M., Epperson, C.N., Reddy, R. Reproducibility of 2D GluCEST in healthy human volunteers at 7.0T. Magnetic Resonance in Medicine (in press).*

*Bearden, C.E , Sun D, C.R.K., Lin, A., Forsyth J., Kushan L., Vajdi, A., Jalbrzikowski, M., Hansen, L., Villalon-Reina, J.E., Qu, X., Jonas, R.K., van Amelsvoort, T., Bakker, G., Kates, W.R., Antshel, K.M., Fremont, W., Campbell, L.E., McCabe, K.L., Daly, E., Gudbrandsen, M., Murphy, C.M., Murphy, D., Craig, M., Vorstman, J., Fiksinski, A., Koops, S., Ruparel, K., **Roalf**, **D.R.**, Gur. R.E, Schmitt, J.E., Simon, T.J.,Goodrich-Hunsaker, N.J., Durdle, C.A., Bassett, A.S., Chow, E.W.C., Butcher, N., Vila-Rodriguez, F., Doherty, J., Cunningham, A., van den Bree, M., Linden, D.E.J., Owen, M.J., McDonald-McGinn, D., Emanuel, B., van Erp, T.G.M, Turner, J.A., Thompson, P.M., . Large-scale mapping of cortical alterations in 22q11.2 deletion syndrome: convergence with idiopathic psychosis and effects of deletion size. Molecular Psychiatry (in press).*

*Vickers, K. L., Breslin, K., **Roalf, D. R**., Kamath, V., Xie, S. X., Moberg, P. J., Wolk, D. A., & Mechanic-Hamilton, D. Older Adult Normative Data for the Sniffin'Sticks Odor Identification Test. Archives of Clinical Neuropsychology (in press).*

***Roalf, D.R.,** Rupert, P., Mechanic-Hamilton, D., Brennan, L., Duda, J.E., Weintraub, D.A., Trojanowski, J.Q., Wolk, D.A., & Moberg, P.J. Quantitative assessment of finger taping in mild cognitive impairment, Alzheimer's disease and Parkinson's disease. Journal of Neurology (in press).*

*Pehlivanova, M. Wolf, D., Sotiras, A., Kaczkurkin, A., Moore, T., Ciric, R., Cook, P., Garcia de la Garza, A., Rosen., A., Ruparel, K., Sharma, A., Shinohara, R., **Roalf, D**., Gur, R., Davatzikos, C., Gur, R., Kable, J., & Satterthwaite, T. Diminished cortical thickness is associated with impulsive choice in adolescence. Journal of Neuroscience* 2018 Feb 12. *(in press).*

*Baum, G.L., **Roalf, D.R.**, Cook, P.A., Ciric, R., Rosen, A., Xia, C., Elliott, M.A., Ruparel, K., Verma, R., Tunc, B., Parker, D., Gur, R.C., Gur, R.E., Bassett, D.S. & Satterthwaite, T.D. The impact of in-scanner head motion on structural connectivity derived from diffusion tensor imaging. Neuroimage (in press).*

*Wang, K., Liang, R., Ma, Z., Cheung, E.F.C, **Roalf, D.R**., Gur, R.C., & Chan, R.C.K. Body image attitude among Chinese college students. PsyChi Journal. (in press)*

*Satterthwaite, T.D., Ciric, R., **Roalf, D.R**., Davatzikos, C. Bassett, D.S., & Wolf, D.H. Motion artifact in studies of functional connectivity: characteristics and mitigation strategies. Human Brain Mapping (in press).*

*Tamnes, C.K., **Roalf, D.R**., Goddings, A.L., Lebel, C. Diffusion MRI of white matter microstructure development in childhood and adolescence: Methods, challenges and progress. Developmental Cognitive Neuroscience (in press).*

*Tang, E., Giusti, C., Baum, G., Gu, S., Kahn, A.E**., Roalf, D**., Moore, T., Ruparel, K., Gur, R.C., Gur, R.E., Satterthwaite, T.D., & Bassett, D.S. Structural drivers of diverse neural dynamics and their evolution across development. Network Neuroscience (in press)*

*Kelly, S., Jahanshad, N., Agartz, I, Andreassen, O., Fatouros-Bergman, H., Brouwer, R., Cahn, W., Calhoun, V., Cannon, D., Gabriel Castrillon, J., Chiapponi, C., Corvin, A., Trung Doan, N., Ehrlich, S., Crespo-Facorro, B., Flyckt, L., Fukunaga, M., Glahn, D., Gollub, R., Gur, R., Tordesillas-Gutierrez, D., Hashimoto, R., Hatton, S., Hibar, D., Hickie, I., Horacek, H., Lopez Jaramillo, C., Jonsson, E., Kahn, R., Kubicki, M., Knochel, Ch., Oertel-Knochel, V., Kikinis, Z., Lange, C., Lagopoulos, J., Lyall, A., Magnotta, V., Mandl, R., McDonald, C., Melicher, T., Newell, D., Pasternak, O., Piras, F., Pearlson, G., Pol, H.H., **Roalf, D**., Roiz-Santianez, R., De Rossi, P., Rotenberg, D., Satterthwaite, T., Spalletta, G., Spaniel, Fl., Stablein, M., Tonnessen, S., Vanegas, A., Vargas, C., Voineskos, A., Westyle, L., White, T., Zhao, J., Thompson, P., Turner, J., & Donohoe, G. White matter differences in schizophrenia: Meta-analytic findings from ENIGMA-Schizophrenia DTI. Molecular Psychiatry. (in press).*

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*Kaczkurkin, A.N., Moore, T.M., Calkins, M.E., Ciric, R., Detre, J.A., Elliott, M.A., Foa, E.B., Garcia de La Garza, A., **Roalf, D.R**., Rosen, A., Ruparel, K., Shinohara, R.T., Xia, C.H., Wolf, D.H., Gur, R.E., Gur, R.C., Satterthwaite, T.D. Common and Dissociable Regional Cerebral Blood Flow Differences Associate with Dimensions of Psychopathology Across Categorical Diagnoses. Molecular Psychiatry (in press).*

*Turetsky, B.I., Moberg, P.J., Quarmley, M., Dress, E., Calkins, M.E., Ruparel, K., Prabhakaran, K., Gur, R.E., & **Roalf, D.R**. Structural Anomalies of the Peripheral Olfactory System in the Psychosis Prodrome. Schizophrenia Bulletin. (in press)*

*Vandekar, S.N., Shou, H., Satterthwaite, T.D., Shinohara, R.T., Merikangas, A.K., **Roalf, D.R.**, Ruparel, K., Gennatas, E.D., Elliott, M.A., Davatzikos, C., Gur, R.C., Gur, R.E., & Detre, J.A. Sex Differences in Brain Metabolism in Relation to Body Growth Through Adolescence. Journal of Cerebral Blood Flow and Metabolism. (in press)*

***Roalf, D.R**., Gur, R.E., Keefe, J., Martin, I.K., Ruparel, K., Calkins, M.E., Bilker, W.B., Consortium on the Genetics of Schizophrenia, PAARTNERS Study Group, MGI Study Group, Nimgaokar, Almasy, L., Quillen, E. E., Go, R.C.P., Savage, R.M., Swerdlow, N., Braff, D. & Gur, R.C., Within individual variability of neurocognitive performance as an endophenotype in schizophrenia: evidence from three large family studies. (under review)*

*Schmitt, J.E. Xie, M., Ruparel, K., Cassidy, A., Souders, M.C., Jackson, C.T., Taylor, D.M., Satterthwaite, T.D., **Roalf, D.R.,** McDonald-McGinn, D.M., Gallagher, S., Zackai, E.H., Morrow, B., Gur, R.C., Emanual, B.S., & Gur, R.E. Genome Wide Analysis of Hippocampal Volume in the 22q11 Deletion Syndrome Identifies Loci Associated with Axonal Migration and Idiopathic Schizophrenia. (under review)*

*Cornblath, E.J., Tang, E., Baum G.L., Moore, T.M., **Roalf, D.R**., Gur, R.C., Gur, R.E., Pasqualetti, F., Satterthwaite, T.D., Bassett, D.S. Sex difference in network controllability as a predictor of executive function in youth. (under review).*

Publications (2003-present):

Turetsky, B.I., Moberg, P.J., **Roalf, D.R.**, Arnold, S.E., & Gur, R.E. Decrements in Volume of Anterior Ventromedial Temporal Lobe and Olfactory Dysfunction in Schizophrenia. Archives of General Psychiatry, 2003; 60, 1193-1200.

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Moberg, P.J., **Roalf, D.R.**, Balderston, C.C., Kanes, S.J., Gur, R.E., & Turetsky, B.I. Phenylthiocarbamide (PTC) perception in patients with schizophrenia and first-degree family members. American Journal of Psychiatry, 2005; 162 (4), 788-790.

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Roalf, D.R., Lowery, N. & Turetsky, B. I. Behavioral and Physiological Findings of Gender Differences in Global-Local Visual Processing. Brain & Cognition, 2006; 60(1), 32-42.

Moberg, P.J., Arnold, S.E., **Roalf, D.R.**, Balderston, C., Abbazia, J., Kohler, C.G., Gur, R.E., & Turetsky, B.I. Apolipoprotein E genotype and odor identification in schizophrenia. Journal of Neuropsychiatry and Clinical Neurosciences, 2006; 18, 231-233.

Roalf, D.R., Turetsky, B.I., Owzar, K., Balderston, C.C., Johnson, S.C., Brensinger, C.M., Gur, R.E., Siegel, S., Moberg, P.J. Unirhinal olfactory function in patients with schizophrenia and first-degree relatives. Journal of Neuropsychiatry and Clinical Neurosciences, 2006, 18, 389-396.

Moberg, P.J., Arnold, S.E., Doty, R.L., Gur, R.E., Balderston, C.C., **Roalf, D.R.**, Gur, R.C., Kohler, C.G., Kanes, S.J., Seigel, S.J., & Turetsky, B.I. Olfactory functioning in schizophrenia: Relationship to clinical, neuropsychological, and volumetric MRI measures. Journal of Clinical and Experimental Neuropsychology, 2006; 28, 1444-1461.

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Roalf, D.R., Mitchell, S.H., Harbaugh, W.T. & Janowsky, J.S. Risk, reward and economic decision-making in aging. The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 2012 May;67(3): 289-98. PMID: 21926401.

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Roalf, D.R., Gur, R.C., Ruparel, K., Gerraty, R.T., Elliott, M.A., Gallagher, R.S., Almasy, L., Pogue-Geile, M.F., Prasad, K., Wood, J., Nimgaonkar, V.L., & Gur, R.E. Neurobehavioral predictors of cognitive performance across a standardized neurocognitive battery. Neuropsychology, 2014. 28(2):161-76.

Cai, K., Singh, A., **Roalf, D.R**., Reddy Nanga, R.P., Haris, M., Hariharan, H., Gur, R.C., Reddy.R. Mapping glutamate in subcortical brain structures using high-resolution GluCEST MRI. NMR in Biomedicine, 2013; 26(10):1278-84.

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Brennan L., Devlin, K.M., Xie, S.X., Mechanic-Hamilton, D.,Tran, B., Hurtig H.H., Chen-Plotkin, A., Chahine L., Morley, J.F., Duda, J.E., **Roalf, D.R**., Dahodwala, N., Rick J. Trojanowski, J.Q., Moberg, P.J. & Weintraub, D.A. Neuropsychological subgroups in non-demented Parkinson's disease: A latent class analysis. The Journal of Parkinson's Disease, 2017; 7(2): 385-395.

Moore, T.M., Basner, M., Hermosillo, E., Kabadi, S., **Roalf, D.R**., McGuire, S., Edker, A.J., Ruparel, K., Port, A.M., Jackson, C.T., Dinges, D.R., & Gur, R.C. Validation of the Cognition Test Battery for Spaceflight in a Sample of Highly Educated Adults. Aerospace Medicine and Human Performance, 2017: 88(10): 937-946.

Roalf, D.R., Schmitt, J.E., Vandekar, S.N., Satterthwaite, T.D., Shinohara, R.T., Ruparel, K., Elliott, M.A., Prabhakaran, K., Souders, M.C., McDonald-McGinn, D.M., Zackai, E.H., Gur, R.C., Emanual, B.S, & Gur, R.E. White matter microstructural deficits in 22q11.2 deletion syndrome. Psychiatric Research: Neuroimage, 2017; 268:35-44.

*Tang, E., Giusti, C., Baum, G., Gu, S., Pollock, E., Kahn, A.E., **Roalf D**., Moore, T.M., Ruparel, K., Gur, R.C., Gur, R.E., Satterthwaite, T.D., & Bassett, D.S. Developmental increases in white matter network controllability support a growing diversity of brain dynamics. Nature Communications. 2017 Nov 1;8(1):1252.*

Kos, M.Z., Carless, M.A., Peralta, J., Curran, J.E., Quillen, E.E., Almedia, M., Blackburn, A., Blondell, L., **Roalf, D.R**., Pogue-Geile, M.F., Gur, R.C., Goring, H.H.H., Nimgaonkar, V., Gur. R.E., & Almasy, L. Exome sequences of multiplex, multigenerational families reveal schizophrenia risk loci with implications for neurocognitive performance. American Journal of Medical Genetics Part B: Neuropsychiatric Genetics. 2017 Dec;174(8):817-827.

Rosen, A.F.G., **Roalf, D.R**., Ruparel, K., Blake, J., Seelaus, K., Villa, P., Cook, P.A., Davatzikos, C., Elliott, M.A.,

Garcia de La Garza, A., Gennatas, E.D., Quarmley, M., Schmitt, J.E., Shinohara, R.T., Tisdall, M.D., Craddock, C., Gur, R.E., Gur, R.C. & Satterthwaite, T.D. Quantitative assessment of structural image quality. Neuroimage. 2017 Dec 24;169:407-418

Roalf, D.R., & Gur. R.C. Functional brain imaging in neuropsychology over the past 25 years. Neuropsychiatry. 2017 Nov;31(8):954-971.

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Kuo, S., Almasy, L., Gur, R.C., Prasad, K., **Roalf, D.R**., Gur, R.E., Nimgaonkar, V.L., & Pogue-Geile, M.F. Cognition and Functioning in Schizophrenia: A Genetic Basis for the Relationship. Journal of Abnormal Psychology. 2018; 127(2):216-227.

Invited Commentaries

Perlis, M.L., **Roalf, D.R**., Kloss, J.D., A commentary on the "Functioning of three attentional networks and vigilance in primary insomnia". Sleep Medicine. 2015 Dec; 16(12):1567-1568.

Roalf D.R. & Moberg P.J. Hearing the signs of age-related cognitive decline: commentary on "Hearing Aid Use is Associated with Better Mini-Mental State Exam Performance". American Journal of Geriatric Psychiatry. 2016; 24(9):703-705.

Roalf, D.R. Progress toward elucidating commonalities in mental illness using brain imaging and publically available data. JAMA Psychiatry. 2018 Mar 1;75(3):295-296.

Book/Encyclopedia Chapters

Janowsky, J.S. & **Roalf, D.R.** (2009). Hormones and Memory. In P. Hof & C. Mobbs (Eds.), *The Handbook of the Neuroscience of Aging (pp. 619-622).* San Diego, CA: Academic Press.

Software

Garcia de la Garza A, Vandekar S, **Roalf DR**, Ruparel K, Gur RC, Gur RE, Satterthwaite TD, Shinohara RT. voxel: Mass-Univarite Voxelwise Analysis of Medical Imaging Data. R package version 132. 2017.

Lectures/Invited Talks (2004-Present)

"*Behavioral and Physiological Measures in Global-Local Visual Processing."* (with S.C. Johnson) University of Pennsylvania, Department of Psychiatry, Neuropsychiatry, Clinical Neuropsychology Meeting. May 28, 2004.

"Habituation to Emotional Stimuli: The Effects of Aging." Oregon Health & Science University Student Research Forum. May 11, 2007.

"Emotional changes in aging: The role of the prefrontal cortex and Amygdala." Winter Conference on the Neurobiology of Learning and Memory. Park City, UT. January 5, 2008. (Invited Symposium presenter)

"*The neural basis of the hemodynamic response*." OHSU Functional Neuroimaging Journal Club (FuNC). Portland, OR. August, 13, 2009.

"Social equity influences economic decisions in healthy older adults" Oregon Health & Science University Student Research Forum. Portland, OR. May 13, 2010.

"*It's not fair! Behavioral and neural evidence that equity influences social economic decisions in healthy older adults*" Dissertation Public Seminar. Portland, OR. June 23, 2010.

"Age-related changes in social-decision making." Neuropsychiatry Brown Bag Seminar. University of Pennsylvania. December 10, 2010.

"Activation and connectivity in the family: A neuroimaging study of multiplex multigenerational families with schizophrenia." DFTG International Research Training Group Winter School 2011, Philadelphia, PA. October 13, 2011.

"Macromolecular NMR Spectroscopy: a primer and preliminary data." Center for Neuroimaging in Psychiatry. Philadelphia, PA October, 18, 2012.

"Neural underpinnings of social economic decision-making in older adults." The 66th Annual Scientific Meeting of the Gerontological Society of America. November 21, 2012 (Invited Talk).

"MGI: An investigation of multiplex multigenerational families with schizophrenia." University of Pennsylvania Schizophrenia Research Center. Philadelphia, PA. December, 7 2012.

"All in the Family: A neurocognitive and neuroimaging investigation of multiplex multigenerational families with schizophrenia." Vanderbilt University Psychiatry Grand Rounds, Nashville, TN. February, 21, 2013. (Invited Talk).

"All in the Family: A neurocognitive and neuroimaging investigation of multiplex multigenerational families with schizophrenia." Olin Neuropsychiatric Center Seminar, Hartford, CT, May 7, 2013. (Invited Talk).

"Neurocognitive Variability in Health and Disease". Neuropsychiatry & Neuroscience Seminar University of Pennsylvania. March 21, 2014

"Peaks and valleys: A neurobiological perspective on cognitive performance variability in psychosis". University of Pennsylvania Neuropsychiatry & Neuroimaging Seminar, Philadelphia, PA. September 18, 2014 (Invited Talk).

"Within-individual Variability of Cognitive Performance in Health and Disease." Veteran's Affairs Clinical Psychology Seminar. Philadelphia Veteran's Affairs Medical Center. January 16 , 2015. (Invited Talk)

"Peaks and valleys: A neurobiological perspective on cognitive performance variability in health and disease." Philadelphia Neuropsychology Society, Philadelphia, PA. January, 28 2015 (Invited Talk).

"Using GluCEST to investigate developmental neuropathology in youth at risk for psychosis." PENN-CEST Symposium, Philadelphia, PA, October 27, 2015.

"The impact of quality assurance on diffusion tensor imaging." University of Pennsylvania Neuropsychiatry Brain Imaging Seminar. Philadelphia PA. February 11, 2016.

"Defining and Validating a Short Form Montreal Cognitive Assessment (s-MoCA) for use in Neurodegenerative Disease." 68th Annual Meeting of the American Academy of Neurology. Vancouver, BC Canada. April 16, 2016. (Platform Presentation).

"The Philadelphia Neurodevelopmental Cohort: Using Neuroimaging to Improve Our Perspective on Brain Development and Psychopathology". Department of Radiology Summer Series at the University of Washington, Seattle, WA. August 16, 2016.

"Using Diffusion Tensor Imaging to Monitor White Matter Disruption in Youth At Clinical High Risk for Psychosis". University of Pennsylvania, Department of Psychiatry, Neuropsychiatry Seminar. November 18, 2016.

"Microstructural White Matter Abnormalities in Youth with Psychosis Spectrum Symptoms: A longitudinal perspective". American College of Neuropsychopharamcology. Hollywood, FL. December 5, 2016.

"Glutamate Imaging (GluCEST) Reveals Lower Brain GluCEST Contrast in Patients on the Psychosis Spectrum". International Congress on Schizophrenia. San Diego, CA. March 26, 2017.

"The Philadelphia Neurodevelopmental Cohort: Using Neuroimaging to Improve Our Perspective on

Brain Development and Psychopathology". University of Southern California LONI Center Seminar Series. Los Angeles, CA. March 28, 2017. (Invited Lecture)

"Using Diffusion Tensor Imaging to Monitor White Matter Disruption in Youth At Clinical High Risk for Psychosis". Azuza Pacific University Research Seminar Series. Azuza, CA. March 30, 2017.

"Scents and 'non-scents': How the sense of smell may help in the detection of early Alzheimer's disease". Azuza Pacific Brain Awareness Keynote Address, Azuza, CA. March 30, 2017.

"Glutamate Imaging (GluCEST) Reveals Lower Brain GluCEST Contrast in Patients on the Psychosis Spectrum". Children's Hospital of Philadelphia: CHOP Talk Seminar. Philadelphia, PA. April 4, 2017.

Abstracts / Poster Presentations: (2002-Present)

Turetsky, B.I, Moberg, P.J., **Roalf, D.R.**, Doty, R.L., & Gur, R.E. (2002). Structural and Functional Abnormalities of the Olfactory System in Patients with Schizophrenia. American College of Neuropsychopharmacology 41st Annual Meeting. December 8-12, San Juan, Puerto Rico.

Moberg, P.J., Balderston, K., **Roalf, D.R.**, Turetsky, B.I. Doty, R.L., Duda, J.E., & Stern, M.B. Meta analysis of olfactory dysfunction in Alzheimer's, Parkinson's and Huntington's diseases. 31st International Neuropsychological Society. 2003; 9(2), 166.

Moberg, P.J., Turetsky, B.I, Johnson, S., **Roalf, D.R.**, Balderston, K., Arnold, S.E., Doty, R.L., & Gur R.E. (2003). Unirhinal Olfactory Performance in Schizophrenia: Laterality and Relationship to Clinical Measures. International Congress on Schizophrenia Research Biennial Meeting. March, Colorado Springs, CO.

Turetsky, B.I., Owzar, K.O., **Roalf, D.R.**, Gur, R.E. Doty, R.L., & Moberg, P.J. (2003). Physiological Responses to Pleasant and Unpleasant Odors in Patients with Schizophrenia. American College of Neuropsychopharmacology 42nd Annual Meeting. December 7-11, San Juan, Puerto Rico.

Roalf, D.R., Turetsky, B.I., Doty, R.I., Gur, R.E., & Moberg, P.J. (2004). Unirhinal impairment of odor hedonics in men with schizophrenia. 32nd Annual International Neuropsychological Society Meeting. February 2004; Baltimore, MD.

Dennison, A., Robinson, K. **Roalf, D.R.**, Moberg, P. Falling risk factors in Parkinson's disease. American Journal of Physical Medicine & Rehabilitation. 2004; 83 (3), 229.

Roalf, D.R., Turetsky, B.I. Balderston, C.C., Gur, R.E., & Moberg, P.J. Diminished posterior nasal volumes in male patients with schizophrenia. Association for Chemoreception Sciences, 26th Annual Meeting. April 24, 2004.

Balderston, C.C., Turetsky, B.I., **Roalf, D.R.**, Gur, R.E., & Moberg, P.J. Unilateral olfactory deficits in patients with schizophrenia: relationship to clinical symptomatology. Biological Psychiatry. 2004; 55 (supplement), 26S.

Roalf, D.R., Turetsky, B.I. Balderston, C.C., Gur, R.E., & Moberg, P.J. Reduced Phenylthiocarbamide (PTC) perception in patients with schizophrenia and first-degree family members. Biological Psychiatry. 2004; 55 (supplement), 78S.

Owzar, K., Moberg, P.J., **Roalf, D.R.**, Gur, R.E. & Turetsky, B.I. Physiologic responses to pleasant and unpleasant odors in patients with schizophrenia. Biological Psychiatry. 2004; 55 (supplement), 128S.

Mishkin, A.D., Moberg, P.J., **Roalf, D.R.**, & Turetsky, B.I. Anterior ventromedial temporal lobe volume decrements in family members of patients with schizophrenia. Biological Psychiatry. 2004; 55 (supplement), 126S.

Turetsky, B.I., Owzar, K., **Roalf, D.R.** & Moberg, P.J. Olfactory receptor neurondysfunction in schizophrenia. Biological Psychiatry. 2004; 55 (supplement), 200S.

Moberg, P.J., **Roalf, D.R.**, Gur, R.E., & Turetsky, B.I. Reduced nasal volumes as stigmata of aberrant neurodevelopment in schizophrenia. Biological Psychiatry. 2004; 55 (supplement), 225S.

Roalf, D.R., Moberg, P.J. Aggarwal, N., Weintraub, D. Duda, J.E., & Stern, M.B. Relationships between clinical UPDRS ratings and light-diode finger and foot tapping. University of Pennsylvania Institute on Aging, Annual Retreat on Aging. May 25, 2004, Philadelphia, PA.

Moberg, P.J., Arnold, Steven, E., **Roalf, D.R.**, Balderston, C.C, Abbazia, J., Kohler, C.G., Gur, R.E., & Turetksy, B.I. Apolipoprotein E Genotype and Odor Identification in Schizophrenia. International Neuropsychological Society, Thirty-Third Annual Meeting. February 3, 2005, St. Louis, MO.

Roalf, D.R., Turetsky, B.I., Balderston, C.C, Doty, R.L, Gur, R.E & Moberg, P.J. Family Ties: Odor Identification Impairments in Patients with Schizophrenia, & First-Degree Family Members. International Neuropsychological Society, Thirty-Third Annual Meeting. February 3, 2005; St. Louis, MO.

Moberg, P.J., Kohler, C.G., Barrett, F.S. BA, **Roalf, D.R.**, Brensinger, C., Gur, R.E., Turetsky, B.I. Odor Identification and Facial Emotion Recognition in Patients with Schizophrenia. International Congress on Schizophrenia. April 4, 2005.

Turetsky, B.I, Owzar, K. **Roalf, D.R.**, Gur, R.E., Moberg, P.J. Olfactory Dysfunction in Schizophrenia

Begins at the Nose. International Congress on Schizophrenia Research. April 4, 2005.

Neff, J.K., Owzar, K., **Roalf, D.R.**, Ashwini, S., Sperling, M., Korczykowski, M, Baltuch, G., French, J.A., Mirza, N., Moberg, P.J., Turetsky, B.I., Kratskin, I., & Doty, R.L. The Influence of Pharmaco-Resistant Temporal Lobe Epilepsy Resection on Olfaction. Association for Chemoreception Sciences, 27th Annual Meeting. April 2005.

Turetsky, B.I, Owzar, K., **Roalf, D.R.**, Johnson, S.C., & Moberg, P.J. Olfactory Sensory Impairments in Schizophrenia. Society for Research in Psychopathology Annual Meeting. October 28, 2005; Miami, FL.

Kanes, S.J., Turetsky, B.I., **Roalf, D.R.**, Levy, M.E., Xu, L., Balderston, C.C., Siegel, S.J., Moberg, P.J. Non-taster PTC Haplotype is Associated with Schizophrenia. Society for Neuroscience 2005 Annual Meeting. November 14, 2005; Washington, D.C.

Rick, J.H., Balderston, C.C., Duda, J.E., **Roalf, D.R.** Weintraub, D. Kleiner-Fisman, G., Doty, R.L., Stern, M.B. & Moberg, P.J. Longitudinal progression of odor identification deficits in Parkinson's Disease. University of Pennsylvania Biomedical Post-Doctoral Research Symposium. October 21, 2005; Philadelphia, PA.

Rao, H, Dinges, D.F. Censits, D. DuRousseau, D., **Roalf, D.R.**, Wang, Z., Aguirre G.K., Detre, J.A., & Wang, J. Simultaneous EEG and ASL perfusion fMRI during resting and mental calculation: a preliminary study. International Society for Magnetic Resonance in Medicine. May 9, 2006; Seattle, WA

Duda, J. E., Moberg, P. J., Balderston, C., Roalf, D. R., Doty, R. L., & Stern, M. B. P1-006 Meta-analysis of olfactory dysfunction in Alzheimer's, Parkinson's and Huntington's diseases. *Neurobiology of Aging*, *25*, S95-S95.

Krause, M.A., **Roalf, D.R.** & Janowsky, J.S. Metamemory and functional neuroimaging of episodic memory encoding in older men. Association for Psychological Science-19th Annual Meeting. May 19, 2007; Washington D.C.

Pruis, T., **Roalf, D.R.**& Janowsky, J.S. Estrogen modifies emotion induced brain activity in older women. Society for Neuroscience Annual Meeting. November 7, 2007; San Diego, CA.

Roalf, D.R., Pruis, T. & Janowsky, J.S. Habituation to emotional stimuli: the effects of aging. Society for Neuroscience Annual Meeting. November 7, 2007; San Diego, CA.

Roalf, D.R. Young, L.A, Leonard, K.A., Krause, M.A. & Janowsky J.S. Diffusion Tensor Imaging of Normal

Appearing White Matter in Prostate Cancer: Preliminary Evaluation of the Effects of Androgen Deprivation Therapy. OHSU Student Research Forum. May 9, 2008; Portland, OR

Roalf, D.R., Berlow, Y.A., Lebow, M.R., Young, L.A., Salat, D.H., & Janowksy, J.S. The effect of androgen deprivation on prefrontal white matter. 15th Annual Meeting of the Organization for Human Brain Mapping. June 19, 2009; San Francisco.

Roalf, D.R., Lebow, M.R., Mitchell, S.H., Harbaugh, W.T. & Janowsky, J.S. Social Decision-Making in the Elderly. 2009 Annual Meeting of the Society for Neuroeconomics. September 25, 2009. Evanston, IL.

Roalf, D.R., Lebow, M.R., Mitchell, S.H. & Janowsky, J.S. Differences in economic and social decision-making between young and elderly adults. Society for Neuroscience Annual Meeting. October 18, 2009. Chicago, IL.

Young L.A., Lebow, M.R, **Roalf, D.R.**, Beer, T.M., & Janowsky, J.S. Prefrontal activity does not reflect androgen deprivation induced memory impairment. Society for Neuroscience Annual Meeting. October 20, 2009. Chicago, IL.

Roalf, D.R. Mitchell, S.H. & Janowsky, J.S. Behavioral and neural evidence that equity guides social economic decision-making in older adults. Society for Neuroscience Annual Meeting November 17, 2010. San Diego, CA.

Moberg, P.J., Hit Lar Seng, N.S., Manning, K.J., Walker, J.B., **Roalf, D.R**., Rick, J., Arnold, S.E. & Doty, R.L. Olfactory dysfunction in neurodegenerative diseases: a meta analytic investigation of Alzheimer's, Parkinson's and Huntington's disease. International Neurospychological Society Annual Meeting. February 3, 2011. Boston, MA.

Roalf D.R, Gur, R.C., Richard, J., Gallagher, R.S., Griffin, M.D., Ruparel, K., Prasad, K., Wood, J., Almasy, L., Pogue-Geile, M., Nimgaonkar, V. L., Gur, R.E. Stability of neurocognitive performance in patients with schizophrenia and their relatives on a cognitive neuroscience-based computerized battery. University of Pennsylvania Biomedical Postdoctoral Symposium, October 12, 2011.

Roalf D.R., Loughead, J.L., Gur, R.C., Richard, J., Gallagher, R.S., Griffin, M.D., Ruparel, K., Prasad, K., Wood, J., Almasy, L., Pogue-Geile, M., Nimgaonkar, V. L., Gur, R.E. Preliminary evidence of a neurobehavioral index of cognitive performance in schizophrenia. Society for Neuroscience Annual Meeting. November 2011, Washington, D.C..

*Prakash Reddy Nanga, R., ***Roalf, D.R.,** *Cai, K., Elliott, M. Hariharan, H., Loughead, J.L., Paptani, H., Reddy, R., & Gur, R.C. (*equal contribution). Magnetic resonance spectroscopy (MRS) of the

deep brain structures at 7.0T. International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting, May, 2012, Melbourne, Australia. *Equal contribution

McKeever, J., Kamath, V., **Roalf, D.R**., Turetsky, B.I., Gur, R.E., Gur, R.C., & Moberg, P.J. Influence of cognitive factors on olfactory processing in schizophrenia. Society for Biological Psychiatry 67th Annual Meeting. May, 3 2012, Philadelphia, PA.

Podell, J.E., **Roalf, D.R**., Gur, R.C., Ruparel, K., Gallagher, R.S., Prasad, K., Wood, J., Pogue-Geile, M.F., Almasy, L., Nimgaonkar, V.L., & Gur, R.E. A volumetric neuroimaging study of subcortical brain structures in multiplex, multigenerational schizophrenia families. Society for Biological Psychiatry 67th Annual Meeting. May, 5 2012, Philadelphia, PA.

Roalf, D.R., Kamath, V., Ruparel, K., Loughead, J., Elliott, M., Calkins, M.E., Gur, R.E., Moberg, P.J., & Turetsky, B.I. Disrupted olfactory bulb microstructure in schizophrenia and individuals at-risk for psychosis. Society for Biological Psychiatry 67th Annual Meeting. May, 5 2012, Philadelphia, PA.

Roalf, D.R., Ruparel, K., Gur, R.E., Bilker, W.B., Gallagher, R.S., Elliott, M.A. Prasad, K., Wood, J., Pogue-Geile, M., Almasy, L., Nimgaonkar, V. L., Gur, R.C. Neuroimaing predictors of cognitive performance across a standardized neurocognitive battery. Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA. April 14, 2013.

Turetsky, B.I., **Roalf, D.R**., Kamath, V., Ruparel, K., Elliott, A., Calkins, M.E., Gur, R.E., &Moberg, P.J. Olfactory imaging markers of heightened neurodevelopmental risk for schizophrenia. 14th Annual International Congress on Schizophrenia Research. Orlando, FL. April 22, 2013.

Roalf D.R., Vandekar, S., Gur, R.C., Ruparel, K., Satterthwaite, T.D., Elliott, M.A., Gallagher, R.S., Prasad, K., Wood, J., Pogue-Geile, M., Almasy, L., Nimgaonkar, V. L., Gur, R.E. Volumetric and shape abnormalities of subcortex in multiplex, multigenerational families with schizophrenia. Human Brain Mapping, Seattle, WA. June 2013.

Satterthwaite, T.D., Wolf, D.H., Ruparel, K. Erus, G., Elliott, M.A., Gennatas, S., Hopson, R., Jackson, C., Parbakaran, K., **Roalf, D.R**., Smith, A., Calkins, M.E., Bilker, W.B., Loughead, J.L., Verma, R., Hakonarson, H., Davatzikos, C., Gur, R.C., Gur, R.E. Functional maturation of the executive system in adolescence. Human Brain Mapping, Seattle, WA. June 2013.

Ruparel, K., **Roalf, D.R**., Bilker, W.B., Hopson, R., Vandekar, S., Satterthwaite, T.D., Gur, R.E., Gur, R.C., Predicting behavior from fMRI measures using regularized regression. Human Brain Mapping, Seattle, WA. June 2013.

Kos, M.Z., Peralta, J., Carless, M.A., Almeida, M., Gur, R.C., Pogue-Geile, M.F., **Roalf, D**., Nimgaonkar, V., Gur, R.E., Almasy, L. Exome sequence of multiplex, multigenerational families reveal

schizophrenia risk loci involved in fatty acid oxidation. American Society of Human Genetics. Boston, MA, October 2013.

Verma, G., **Roalf, D.R**., Gur, R.C., Gur, R.E., Poptani, H. 2D L-COSY at 7T detects glutamate, gluatmin, glutathione and GABA in patients with schizophrenia. ISMRM Annual Meeting. Milan, Italy May 2014.

Roalf, D.R., Gur, R.C., Vandekar, S., Ruparel, K., Satterthwaite, T.D., Elliott, M.A, Gallagher, R.S., Wood, J., Prasad, K., Pogue-Geile, M., Almasy, L., Nimgaonkar, V., Gur, R.E. Analysis of heritability for multimodal brain imaging in relation to cognitive performance. Society for Biological Psychiatry 68th Annual Meeting. New York City, NY. May, 10 2014.

Bilker, W.B., Brensinger, C.M., **Roalf, D.R.**, Ruparel, K., & Gur, R.C. An extension of the CORANOVA method for correlated correlations. International Biometric Society 27th Annual Conference. Florence, Italy. July 2014.

Roalf, D.R., Elliott, M.A., Quarmley, M., Vandekar, S.N., Satterthwaite, T.D., Ruparel, K., Prabhakaran, K., Jackson, C.T., Verma, R., Hakonarson, H., Gur, R.C., & Gur, R.E. Improved quality assurance Neuroscience Annual Meeting. Washington D.C., November, 2014.

Roalf, D.R., Quarmley, M., Ruparel, K., Moberg, P.J., & Turetsky, B.I. Neurobiological markers within the olfactory system are associated with heightened clinical risk for schizophrenia. 53rd Annual Meeting of the American College of Neuropsychopharamcology. Phoenix, AZ. December 2014.

Gur, R.E., Yi, J., Schmidt, J.E., **Roalf, D.R**., McDonald-Mcginn, D., Zackai, E., Calkins, M.E., Ruparel, K., Cassidy, A., Port, A., Sounders, M., Gur, R.C. & Emanuel, B. Aberrant brain development and psychosis in 22q11.2 Deletion Syndrome. 15th International Congress on Schizophrenia Research. Colorado Springs, CO, March 2015.

Roalf, D.R. Multimodal brain imaging in relation to cognitive performance in a multiplex multigenerational family study of schizophrenia. 15th International Congress on Schizophrenia Research. Colorado Springs, CO, March 2015. (Poster Symposium).

Quarmley, M., Kabadi, S.L., Mechanic-Hamilton, D., Savitt, A.P., Karlawish, J.H., Wolk, D.A., Weintraub, D., Moberg, P.J., Arnold, S.E., **Roalf, D.R**. (May 2015). A Wrinkle in Reaction Time: Cognitive Variability in Neurological Disorders. 2015 Sylvan M. Cohen Annual Retreat on Aging, Philadelphia, PA

Satterthwaite, T.D., Shanmugan, S., Wolf, D.H., Calkins, M.E., Moore, T.M., Hopson, R., Ruparel, K., **Roalf, D.R**., Jackson, C., Gennatas, E.D., Leibenluft, E., Pine, D.S., Gur, R.C., & Gur, R.E. Common

and dissociable mechanisms of executive system dysfunction across psychiatric disorders in youth. Society for Biological Psychiatry 70th Annual Meeting. May, 16 2015, Toronto, Canada.

Gur, R.E., Yi, J, Schmitt, J.E., **Roalf, D.R**., McDonald-McGinn, D., Calkins, M.E., Zackai, E., Ruparel, K., Cassidy, A., Port A., Sounder, M., Gur, R.C., & Emanuel, B. Patterns of brain dysfunction in psychosis risk youth with and without 22qDS. Society for Biological Psychiatry 70th Annual Meeting. May, 15 2015, Toronto, Canada.

Prakash Reddy Nanga, R., **Roalf, D.R**., Hariharan, H., Elliott, M.A., Prabhakaran, K., Quarmley, M., Moberg, P.J., Reddy, R., & Turetsky, B.I. GluCEST in the olfactory cortex as a marker of heightened clinical risk for schizophrenia. ISMRM Annual Meeting. June, 2 2015. Toronto, Ontario, Canada.

Vandekar, S., Shinohara, T., Raznahan, A., **Roalf, D**., Ross, M., Deleo, N., Ruparel, K., Verma, R., Wolf, D., Gur, R., Gur, R., & Satterthwaite, T. Topologically dissociable patterns of development of the human cerebral cortex. Human Brain Mapping Annual Meeting. June 15, 2015. Honolulu, HI.

Vandekar, S., Shinohara, R., **Roalf, D**., Raznahan, A., Ruparel, K., Wolf, D., Gur, R., Gur, R., & Satterthwaite, T. Localized topological coupling evolves during adolescent development. Human Brain Mapping Annual Meeting. June 15, 2015. Honolulu, HI.

Kelly, S., Jahanshad, N., Agartz, I, Andreassen, O., Fatouros-Bergman, H., Brouwer, R., Cahn, W., Calhoun, V., Cannon, D., Gabriel Castrillon, J., Chiapponi, C., Corvin, A., Trung Doan, N., Ehrlich, S., Cresp-Facorro, B., Flyckt, L., Fukunaga, M., Glahn, D., Gollub, R., Gur, R., Tordesillas-Gutierrez, D., Hashimoto, R., Hatton, S., Hibar, D., Hickie, I., Horacek, H., Lopez Jaramillo, C., Jonsson, E., Kahn, R., Kubicki, M., Knochel, Ch., Oertel-Knochel, V., Kikinis, Z., Lange, C., Lagopoulos, J., Lyall, A., Magnotta, V., Mandl, R., McDonald, C., Melicher, T., Newell, D., Pasternak, O., Piras, F., Pearlson, G., Pol, H.H., **Roalf, D**., Roiz-Santianez, R., De Rossi, P., Rotenberg, D., Satterthwaite, T., Spalletta, G., Spaniel, Fl., Stablein, M., Tonnessen, S., Vanegas, A., Vargas, C., Voineskos, A., Westyle, L., White, T., Zhao, J., Thompson, P., Turner, J., & Donohoe, G. White matter differences in schizophrenia: Meta-analytic findings from ENIGMA-Schizophrenia DTI. Human Brain Mapping Annual Meeting. June 15, 2015. Honolulu, HI.

Rupert, P. **Roalf, D.R**., Quarmley, M., Hariharan, H., Prakash Reddy, P., Elliott, M.A., Reddy, R., Moberg, P.J., Gur, R.E., & Turetsky, B.I. Cortical GluCEST in Schizophrenia and Youth at Clinical High Risk for Psychosis. Inaugural PENN-CEST Symposium. October, 2015. Philadelphia, PA.

Quarmley, M., Roalf, D.R., Kabadi, S.L., Wolk, D.A., Arnold, S.E., Mechanic-Hamilton, D., & Moberg, P.J. On the scent: using olfaction clues to screen for dementia. University of Pennsylvania Institute for Aging Symposium. October, 2015. Philadelphia, PA.

Roalf, D.R., Quarmley, M., Reddy Nanga, R.P., Rupert, P., Hariharan, H., Ruparel, K., Blake, J., Elliott, M.A., Reddy, R., & Turetsky, B.I. In vivo mapping of cortical glutamate in early youth. Society for Neuroscience Annual Meeting. October 2015, Chicago, IL.

Roalf, D.R., Rupert, P., Quarmley, M., Hariharan, H., Prakash Reddy, P., Elliott, M.A., Reddy, R., Moberg, P.J., Gur, R.E., & Turetsky, B.I. In vivo mapping of cortical glutamate in youth at clinical high risk for psychosis: a Glutamate Chemical Exchange Saturation Transfer study. 54th Annual Meeting of the American College of Neuropsychopharamcology. December, 2015. Hollywood, FL.

Basner, M., Dinges, D.F., Nasrini, McGuire, S., Hermosillo, E., Ecker, A.J., Johannes, B. , Gerlach, D.A., Stahn, A., Gunga, H.C., Mollicone, D.J., Mott, C.G., Melzer, T., Taylor, B., Whitton, L., **Roalf, D**., Elliott, M., Parbhakaran, K., Bilker, W., & Gur, R.C. Neurostructural, cognitive and physiologic changes during a 1-year Antarctic winter-over mission. 2016 N.A.S.A. Human Research Program Investigators Workshop. February 2016. Houston, TX.

Tang, E., Giusti, C., Baum, G., Gu, S., Kahn, A., **Roalf, D**., Gur, R.C., Gur, R.E., Satterthwaite, T., Bassett, D. White matter connectivity: controllability and dynamics. Control and Obseravability of Network Dynamics. April 2016. Columbus, OH.

Roalf, D.R., Reddy Nanga, R.P., Rupert, P., Hariharan, H., Quarmley, M., Calkins, M.E., Dress, E., Prabhakaran, K., Elliott, M.A., Moberg, P.J., Gur, R.C., Gur, R.E., Reddy, R., & Turetsky, B.I. In vivo mapping of cortical glutamate in youth at clinical high risk for psychosis: a Glutamate Chemical Exchange Saturation Transfer study. University of Pennsylvania, Department of Medicine Celebration of Research. May 3, 2016.

Prabhakaran, K., Elliott, M.A., **Roalf, D**., Ruparel, K., Vandekar, S., Hopson, R., Gennatas, E.D., Gur, R.E, & Gur, R.C. Iron deposition in the globus pallidus of healthy youth. 24th ISMRM Annual Meeting. May 12, 2016.

Nanga, R., **Roalf, D.R**., Rupert, P., Quarmley, M., Hariharan, H., Elliott, M.A., Gur, R.E., Moberg, P.J., Reddy, R., & Turetsky, B.I. Cortical GluCEST in Schizophrenia and Youth at Clinical High Risk for Psychosis. 24th ISMRM Annual Meeting. May 11, 2016.

Baum, G., **Roalf, D.**, Kahn, A., Medaglia, J., Ciric, R., Ruparel, K., Gur, R.C., Gur, R.E., Bassett, D., Satterthwaite, T.S. Confounds in charting the development of the structural connectome. Human Brain Mapping Annual Meeting. June 2016. Geneva, Switzerland.

Kaczkurkin, A., Moore, T., Ruparel, K., Calkins, M., Shinohara, R., Elliott, M., Hopson, R., **Roalf D**., Vandekar, S., Gennatas, E., Wolf, D., Scott, J., Pine, D., Leibenluft, E., Detre, J., Foa, E., Gur, R.E., Gur, R.C., & Satterthwaite, T. Elevated amygdala perfusion mediates developmental sex

differences in trait anxiety. Human Brain Mapping Annual Meeting. June 2016. Geneva, Switzerland.

Kelly, S., Jahanshad, N., Hilbar, D.P., Agartz, I., Allozo, C., Andreassen, O., Arango, C., Bouix, S., Bousman, C., Brouwer, R., Bruggerman, J., Calhoun, V., Cannon, D., Carr, V., Castrillon, G., Catts, S., Chiapponi, C., Cresp-Facorro, B., Cropley, V.L., De Rossi, P., Dickie, E., Doan, N.T., Ehrlich, S., Fatouros-Bergman, H., Flyckt, L., Fouche, J.P., Fukunaga, M., Glahn, D., Gollub, R., Gur, R., Hashimoto, R., Hatton, S., Henskens, F., Hickie, I., Horacek, J., Howells, F., Pol, H.H., Seidman, L.J., Jablensky, A., Jansen, P., Janssen, J.,Jonsson, E., Kikinis, Z., Kirra, L., Klauser, P., Knochel, C., Kochunov, P., Kubicki, M., Kwon, J.S., Lagopoulos, J., Langen, C., Lawrie, S., Lenroot, R., Lopezjaramillo, C., Lyall, A., Magnotta, V., Mandi, R., McCarley, R.W., McCarthy-Jones, S., McDonald, C., Melicher, T., Mesholam-Gately, R.I., Michie, P., Mowry, B., Newell, D., Oertel_Knochel, V., Oestreich, L., Pantelis, C., Pasternak, O., Pearlson, G., Perreira, A., Piras, F., **Roalf, D**., Roiz, R., Rotenburg, D., Satterthwaite, T., Savadjiev, P., Schall, U., Scott, R., Seal, M., Shannon-Weickert, C., Shenton, M.E., Spalletta, G., Spaniel, F., Stablein, M., Stein, D., Sundrum, S., Tordeisillas, D., van Haren, N., Vanegas, A., Vargas, C.D., Velakoulis, D., Voineskos, A., Weickert, T., Westyle, L., White, T., Whitford, T., Wojcik, J., Yun, J.Y., Zalesky, A., Zhao, J., van Erp, T., Turner, J., Thompson, P.M., Donohoe, G. White matter microstructural differences in 1,398 schizophrenia patients and 1,633 healthy controls from 14 countries: meta-analytic findings from the ENIGMA Schizophrenia DTI working group. OHBM meeting. June 2016. Geneva, Switzerland.

Garcia de la Garza, A., **Roalf, D.R**., Ruparel, K., Satterthwaite, T.D., Bilker, W.B., Gur, R.C., & Gur, R.E. A quantitative comparison of linear and non-linear models to detect white matter differences in psychosis spectrum. Thomas R. Ten Have Symposium on Statistics in Mental Health. June 2nd, 2016. Philadelphia, PA.

Baum, G.L., Ciric, R., **Roalf, D.R**., Moore, T.M., Kahn, A., Betzel, R., Quarmley, M., Cook, P., Ruparel, K., Gur, R.C., Gur, R.E., Bassett, D.S., & Satterthwaite, T.D. Modular evolution of structural brain networks in adolescence supports executive function. Society for Neuroscience Annual Meeting 2016. San Diego, CA.

Tang, E., Giusti, C., Baum, G., Gu, S., **Roalf, D**., Gur, R.C., Gur, R.E., Satterthwaite, T.D., & Bassett, D. White matter connectivity supports increasing diversity of neural dynamics across normative neurodevelopment. Society for Neuroscience Annual Meeting 2016. San Diego, CA.

Roalf, D.R., Moore, T.M., Wolk, D.A., Arnold, S.A., Mechanic-Hamilton, D., Rick, J., Kabadi, S., Ruparel, K., Chen-Plotkin, A.S., Chahine, L.M., Dahodwala, N.A., Duda, J.E., Weintraub, D.A., & Moberg, P.J. Defining and validating a short form Montreal Cognitive Assessment (s-MoCA) for use in neurodegenerative disease. The Annual Marian S. Ware Research Retreat presented by the Center for Neurodegenerative Disease Research. University of Pennsylvania, Philadelphia PA.

Rupert, P., **Roalf, D.R**., Brennan, L., Robinson, K., Duda, J., Weintraub, D.A., Trojanowsky, J.Q., Wolk, D.A., & Moberg, P.J. Finger tapping patterns in Alzheimer's disease, Parkinson's disease and mild cognitive impairment. The Annual Marian S. Ware Research Retreat presented by the Center for Neurodegenerative Disease Research. University of Pennsylvania, Philadelphia PA.

Vandekar, S.N., Rosen, A., Ciric, R., Satterthwaite, T.D., **Roalf, D.R**., Ruparel, K., Gur, R.C., Gur, R.E., & Shinohara, R. T. Fast and Robust Family-wise Error Controls for Neuroimaging. Eastern North American Region of the International Biometric Society. Austin, TX.

Prasad KM, Khan A, Bender R, Gertler J, Tollefson S, Wood JA, **Roalf D**, Gur RC, Gur RE, Almasy L, Pogue-Geile MF, Nimgaonkar VL. Widespread heritable brain circuitry associated with critical cognitive domains among non-psychotic relatives in multiplex schizophrenia families. American College of Neuropsychopharamcology. December, 2016. Hollywood, FL.

Roalf D.R, de la Garza, A.G., Calkins M.E., Moore T.M., Quarmley M., Ruparel K., Rupert, P., Elliott, M.A, Satterthwaite, T.D., Gur, R.C. & Gur, R.E. Microstructural White Matter Abnormalities in Youth with Psychosis Spectrum Symptoms: A longitudinal perspective. American College of Neuropsychopharamcology. December, 2016. Hollywood, FL.

Reddy Nanga, R.P., Roalf, D., D'Aquilla, K., DeBrosse, C., Bagga, P., Wilson, N., Kumar, D., Borthakur, A., Elliott, M., Reddy, D., Hariharan, H., Epperson, N., & Reddy, R. Reproducbility and age dependence of GluCEST contrast in healthy adults. ISMRM 2017.

*Scott, J.C., Jones, J.D., Moore, T.M., **Roalf, D.R**., Calkins, M.E., Wolf, D.H., Satterthwaite, T.D., Ruparel, K. Jackson, C.T., Gur, R.E., Gur, R.C. Cannabis Use and Neurocognitive Functioning in the Psychosis Spectrum. Society of Biological Psychiatry Annual Meeting, May 2017.*

*Villalon-Rein, J., Ching, C., Qu, X, Jahanshad, N, Kushan, L, Jalbrzikowski, M., van Amelsvoort, T., Bakker, G., Campbell, L.E., McCabe, K.L., Simon, T.J., Goodrich-Hunsaker, N.J., Ruparel, K., **Roalf, D**., Gur, R., Schmitt, J.E., Kates, W.R., Kikinis, Z., Shenton, M., Thompson, P.M., & Bearden, C.E. Diffusion MRI in 22q11.2 Deletion Syndrome: ENIGMA working group meta-analysis findings. 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Jeju Island, Korea. July 2017.*

*Gaum, G., Ciric, R., Xia, C., **Roalf, D.R**., Betzel, R.F., Moore, T.M., Shinohara, R.T., Cook, P.A., Elliott, M.A., Ruaprel, K., Davatzikos, C., Gur, R.E., Gur, R.C., Bassett, D.S., Satterthwaite, T.D. Mapping network-level coupling of structural and functional connectivity during adolescence. Flux: The Society for Developmental Cognitive Neuroscience 5th Annual Congress. Portland, OR. September, 2017.*

*Reddy Nanga, R.P., **Roalf, D.,** D'Aquilla, K., DeBrosse, C., Bagga, P., Wilson, N., Kumar, D., Borthakur, A., Elliott, M., Reddy, D., Hariharan, H., Epperson, N., & Reddy, R. Reproducibility and age-dependence change in GluCEST contrast in Grey and White matter area of healthy human adults at 7.0T. The World Molecular Imaging Congress Annual Meeting. Philadelphia, PA.*

*Murphy, A.C., Ciric, R., Baum, G.L., **Roalf, D.R**., Satterthwaite, T.D., & Bassett, D.S. The role of network architecture and control in working memory. Conference on Cognitive Computational Neuroscience. September, 2017. New York, NY.*

Ongoing Research Support

K01 MH102609

Roalf (PI) 07/01/2014-06/30/2018

Neurocognitive Variability in Schizophrenia and Youth At-Risk for Psychosis.

Role: Principal Investigator

Direct Costs: $157,000 annual

R21 MH106799

Bassettt & Satterthwaite (PIs) 04/01/16–3/31/18

Evolution of the Linked Architecture of Network Control and Executive Function in Adolescence

This proposal investigates how executive function develops in adolescence using novel methods from network control theory.

Role: *Investigator*.

Direct Costs: $150,000 annual

NARSAD Young Investigator Award

Roalf (PI) 01/01/17-12/31/18

The role of glutathione on glutamate hypofunction in psychosis and youth at risk for psychosis

Role: Principal Investigator

Direct costs: $35,000 annual

University Research Foundation (Penn) 08/01/17-07/31/18

Roalf (PI)

Using GluCEST to monitor glutamte during antipsychotic use in psychosis

Role: Principal Investigator

Direct costs: $49,607

R01 MH112847

Shinohara & Satterthwaite (Co-PIs) 05/10/2017-03/31/2018

Inter-modal Coupling Image Analytics

Role: Investigator

Direct Costs: $280,596 annual

Pending Research Support

NIMH R01
Monitoring glutamate function in prodromal psychosis.
Role: Principal Investigator
Direct Costs: $450,000 annual

NIA R01
Probing Aβ and tau in the olfactory system to monitor and predict Alzheimer's disease.
Role: Principal Investigator
Direct Costs: $405,000 annual

Completed Research Support

University of Pennsylvania Institute for Aging and Alzheimer's Disease Core Center Pilot Grant
Roalf (PI) 07/01/2014-06/30/2015
Within-individual Variability as a Biomarker of Incipient Dementia in Mild Cognitive Impairment
Role: Principal Investigator

R01 NIH/MH099156-01
Turetsky (PI) 12/01/2012-11/30/2016
Olfactory Neuroimaging Markers of Heightened Developmental Risk for Schizophrenia

This study will apply multiple neuroimaging methods to examine measures of the neuronal integrity of the olfactory system in youths who are at risk for developing schizophrenia, in order to determine whether these measures can serve as neurobiological markers in predicting schizophrenia risk status. The objective is highly significant - reliable identification of youths who are at risk for developing schizophrenia can promote early intervention and reduce both the public health costs and disability associated with this illness.
Role: Research Associate

Institute for Translational Medicine and Therapeutics' (ITMAT) Transdisciplinary Award Program (TAPITMAT)
Poptani & Gur (Co-PIs) 04/01/2012-03/31/2013
Role: Post-doctoral fellow

T32 NIH/MH019112
Gur (PI) 08/01/2010-07/31/2013
Schizophrenia: A Neuropsychiatric Perspective

This training program is focused on: 1) Cognitive and Affective Neuroscience, 2) Genetics, 3) Cellular/Molecular, and 4) Developmental aspects of schizophrenia. Through this grant I receive

training in biostatistics and research methods, ethics, and basic neuroscience with an emphasis neuroimaging data analysis in schizophrenia.
Role: Post-doctoral Fellow

R01 NIH/MH042191

Gur (PI) 08/01/2010-07/31/2012
A Neurobehavioral Family Study of Schizophrenia

This is a Multiplex Multigenerational Investigation (MGI) of three collaborative RO1s that combine genetic and neurobiologic paradigms to advance the understanding of pathogenesis and detection of genes that modulate susceptibility to schizophrenia. I have taken a leadership role in the organization and analysis of neurobehavioral and neuroimaging endophenotypes in the study of multiplex multigenerational (MM) families with schizophrenia and community controls. Neurobehavioral, functional and structural data for 175 community controls and 100 MM family members have been analyzed.
Role: Post-doctoral Fellow

R01 NIH/MH063381

Moberg (PI) 08/01/2010-07/31/2012
Olfactory Function in Schizophrenia: A Lifespan Analysis

This project represents the only systematic effort to examine the underpinnings of chemosensory impairments in schizophrenia from a life-span perspective. My role includes the image analysis of structural MRI and diffusion weighted scans with a specific emphasis on the olfactory bulb.
Role: Post-doctoral Fellow

NIA P30AG008017

Janowsky (PI) 02/01/2009-01/31/2010
Oregon Aging and Alzheimer's Disease Center Pilot Program: Economic decision-making in Mild Cognitive Impairment

Investigation of the brain basis of decision making in the elderly as compared to those with Mild Cognitive Impairment (MCI). My role included behavioral and neuroimaging (fMRI) data collection and analysis.
Role: Graduate Student

DOD PC073093

Janowsky (PI) 06/01/2006-07/01/2010
Markers and time course of neurodegenerative risk with androgen deprivation therapy

This project investigated the role of testosterone in the brain basis of memory. Behavioral, fMRI, DTI and qT1 collected from healthy older men and those men receiving androgen deprivation therapy (ADT) show that the loss of testosterone may provide an initial hit on the brain that accelerates age-related memory impairments. My role included behavioral and neuroimaging (fMRI & DTI) data collection and analysis.
Role: Graduate Student

T32-AG023477

Janowsky (PI) 06/01/2006-06/30/2008
Neuroscience of Aging

This was an extensive training program that encompassed the neurobiology of aging, endocrine aging, cognitive aging, age-related diseases of the nervous system, public health and care-giver issues. The perspectives gained through this program enabled me to do research on the neuroscience of aging with a translational understanding: the basic-science that contributes to clinical cures for aging and age-related disorders, and the clinical research that informs the basic scientists on the characteristics of disease so that novel treatment methods are sought.
Role: Graduate Student

Research Experience

11/2001-08/2005 **Research Coordinator**
Mentors: Bruce Turetsky, M.D. & Paul Moberg, Ph.D.

Department of Neuropsychiatry at the University of Pennsylvania
Neurophysiology and Brain Imaging Laboratory & Schizophrenia Research Center

As a research coordinator I performed clinical and basic research with healthy volunteer and patient populations, including schizophrenia, bipolar disorder, epilepsy, and Parkinson's disease. The primary focus of my work was to examine olfactory function via behavioral and sensory testing, cortical and peripheral evoked potentials (ERPs), and imaging techniques, including structural and functional MRIs. I have technical expertise operating scientific equipment including olfactometers, stimulus delivery and ERP recording systems, acoustic rhinometer/pharyngometers, and computerized neuropsychological test batteries. I became proficient in a wide range of analytic scientific software, including Compumedics/Neuroscan evoked potential SCAN and STIM systems, imaging software NRIA, MEDx and SPM2, statistical software packages including STATISTICA and SPSS and both Macintosh and Windows operating systems.

08/2005-12/2005 **Graduate Research Rotation 1**
Mentor: Barry Oken, M.D., Neurology; Behavioral Neuroscience, OHSU
Project: Electrophysiological Measures Associated with Vigilance

This research rotation incorporated both electrophysiological and behavioral testing of human subjects' ability to sustain attention to a continuous performance task.

12/2005-03/2006 Graduate Research Rotation 2
Mentor: Jeri Janowsky, Ph.D., Behavioral Neuroscience, OHSU
Project: Habituation of Emotional Stimuli

The goal was to assess brain activity associated with age-related changes in emotion. We found that prefrontal brain activity in older adults, as assessed with fMRI, habituates to negative emotional stimuli.

04/2006-06/2006 Graduate Research Rotation 3
Mentor: Suzanne Mitchell, Ph.D., Behavioral Neuroscience, OHSU
Project: Mental Representation of Optimal Risk Taking

This project entailed assessing risk taking in normal individuals using behavioral measure to assess impulsivity. Specifically, we were interested in what different populations of people consider to be the most optimal amount of risk.

06/2006-07/2010 Dissertation
Title: It's not fair! Behavioral and neural evidence that equity influences social economic decisions in healthy older adults.
Mentors: Jeri Janowsky, Ph.D & Suzanne Mitchell, Ph.D

The overall goal of this research proposal is to understand whether older individuals are more susceptible to non-optimal decision-making as compared to the young. My recent work and work by others, suggests that aging alters the neural control of emotion such that less amygdala activity and greater prefrontal activity underlie, at least in part, the behavioral emotional changes. Many of the same regions engaged in the brain circuit underlying emotion are critical to decision-making, including the amygdala, insula and ventromedial prefrontal cortex. However, it is unclear how age-related changes in emotion affect decision-making.

07/2010-10/2014: Post-doctoral Research Project
Neurobehavioral family study of schizophrenia
Mentor: Raquel E. Gur, M.D./Ph.D.
Project: Administer a novel computerized neurocognitive battery (CNB) to obtain behavioral endophenotypes related to brain function and elucidate genetic mechanisms producing the neurocognitive endophenotype.

Fellowships:
2001 State of Virginia Governor's Fellowship

2006-2008 NIH T32 Neuroscience of Aging Pre-doctoral Training Fellowship (PI: Janowsky)
2007 University of Michigan fMRI Training Course Fellow
2007 N.L. Tartar Research Fellowship (OHSU)
2008 University of Pittsburgh/Carnegie Mellon Multimodal Neuroimaging Workshop (MNTP) Fellow
2009 University of Michigan Decision Neuroscience Training Workshop Fellow
2010-present NIH T32 Neuropsychiatry Research Training Program (PI: Gur)

Neuroimaging Training

2007 University of Michigan fMRI Training Course
2008 University of Pittsburgh/Carnegie Mellon Multimodal Neuroimaging Training Program
2009 University of Michigan Decision Neuroscience Training Workshop Fellow
2009 University of Oxford's FMRIB FSL Course
2012 Harvard University, Martinos Center for Biomedical Imaging: Freesurfer Course

Mentorship

Kaitlin Leonard (2006-2008)-The Apprenticeships in Science and Engineering (ASE) Program at Oregon Health & Science University
Jamie Podell (2012)- Clinical Neuroscience Training Program at the University of Pennsylvania
Tessa Allen (2012)- Prince George High School International Baccalaureate Program
Elena Wu-Yan (2013-2014)-Brain Behavioral Laboratory Summer Research Fellow
Emmanuel Woodson (2013)-Lincoln University Summer Research Scholar
Danielle Flanders (2014)- University of Michigan
Oluwakemi Adesina (2014)- Conte C-SURE Fellow-Franklin & Marshall
Alexis Galantino (Summer 2015 & 2016) –Conte C-SURE Fellow-Tufts University
Margo Gawronska (2015)- Hanover College via The Philadelphia Center
Wangchen Tsering (2016)- Earlham College via The Philadelphia Center
Wei Hei (2016)- Depauw University via The Philadelphia Center
Tommaso Girelli (2016)- Hanover College via The Philadelphia Center
Jennifer Hill (2017)-St. Joseph's University (Master's Student)
Carolina Marshall (2017)-Hope College

Honors and Awards:

The following awards were used for research or training activities:
2008 OHSU Student Research Forum Best Poster
2009 Recipient of the OHSU School of Medicine Alliance Award
2009 Recipient of OHSU Ginger Ashworth Foundation Award
2009 Portland, OR University Club Nominee-Portland Chapter
2010 OHSU Student Research Forum Best Oral Presentation ($200)
2013 Human Brain Mapping Trainee Travel Award ($700)
2017 International Congress on Schizophrenia Research (ICOSR) Travel Award

Current & Past Scientific Memberships
Society for Neuroscience (SfN)
Human Brain Mapping (HBM)
Cognitive Neuroscience Society (CNS)
Society for Neuroeconomics
International Neuropsychological Society (INS)
American Psychological Association (APA)
The Gerontological Society of America (GSA)

Editorial Positions
Associate Editor- The Journal of Alzheimer's Disease (2017-2018)

Ad-hoc Reviewer
American Journal of Geriatric Psychiatry
American Journal of Neuroradiology
Alzheimer's Association
Alzheimer's & Dementia
JAMA Psychiatry
Biological Psychiatry
Brain Imaging and Behavior
Brain Research
Brain & Cognition
Cerebral Cortex
Comparative Psychiatry
Cortex
International Journal of Geriatric Psychiatry
Journal of Alzheimer's Disease
Journal of Applied Gerontology
Journal of Geriatric Psychiatry and Neurology
Journal of Neuroscience
Journal of Osteopathic Medicine
National Science Foundation
Neuroimage
Neuroimage Clinical
Neuropsychology
Neuropsychopharmacology
Physiology & Behavior
PLoS One
Psychiatry Research Neuroimaging
Schizophrenia Bulletin
Schizophrenia Research

Scientific Reports
The Journal of Gerontology: Series B Psychological Sciences

Other Activities

2006	Junior Student Curriculum Committee Representative (Behavioral Neuroscience)
2006	Brain Awareness Guest Lecturer- West Linn High School, West Linn, OR
2006-08	Student Director for the New Student Orientation (Behavioral Neuroscience)
2007-08	Neuroscience of Aging Journal Club Coordinator
2008-09	Behavioral Neuroscience Student/Faculty Representative
2009-10	Student Organizer- Functional Neuroimaging Journal Club (FuNC)
2009	Student Organizer- New Student Applicant Weekend 2009