CAMERON S. CARTER, M.D.

CURRICULUM VITAE

Birth Place: Perth, Western Australia
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EDUCATION and TRAINING

UNDERGRADUATE:

1973-79 University of Western Australia School of Medicine, MBBS (MD, Medicine).

1975 National Health and Medical Research Council Fellow. Twelve months research in the Department of Anatomy and Human Biology, University of Western Australia Bachelor of Medical Science (honors). Functional Neuroanatomy.

1972 Matriculated to University of Western Australia with Commonwealth Scholarship.

POSTGRADUATE:

1988-89 Clinical Research Fellow in Psychiatry, U.C. Davis Medical Center, Sacramento, California.

1985-89 Psychiatry Resident University of California at Davis Medical Center and the Veterans Administration Medical Center at Martinez, California.

1982 Resident Medical Officer, Flinders Medical Center, Adelaide, South Australia.

1981-82 Intern, Flinders Medical Center, Adelaide, South Australia.

APPOINTMENTS and POSITIONS

ACADEMIC:

2011-present Director, Center for Neuroscience, University of California, Davis

2009-2011 Interim Director, Center for Neuroscience, University of California at Davis

2006-present Chair, Graduate Group in Clinical and Translational Research, University of California, Davis

2006-present Director, Schizophrenia Research and Education Program, University of California, Davis

2006-present Endowed Chair in Schizophrenia Research, Department of Psychiatry & Behavioral Sciences, University of California, Davis

2004-present	Director EDAPT (Early Diagnosis and Preventive Treatment) Clinic, U.C. Davis Medical Center
2003-present	Professor of Psychiatry and Psychology, University of California Davis
2003-present	Director, UC Davis Imaging Research Center, University of California Davis
2003-2010	Adjunct Professor of Psychiatry, University of Pittsburgh
2003	Associate Professor of Psychiatry, Psychology, Neuroscience and Radiology, University of Pittsburgh
2001-2003	Director, Cognitive and Affective Neuroimaging, UPMC MR Research Center, and Cognitive and Affective Neuroscience Program, Department of Psychiatry, University of Pittsburgh
1999-2003	Associate Professor of Psychiatry, Psychology and Neuroscience, University of Pittsburgh
1998-2003	Associate Professor of Psychiatry and Psychology, University of Pittsburgh
1998-2003	Co-Director Clinical Cognitive Neurosciences Laboratory, University of Pittsburgh
1997-2003	Associate Director, Clinical Services Core, Conte Center for Neuroscience and Mental Disorders, Department of Psychiatry, University of Pittsburgh. Director, Ambulatory Services, STEP (First Episode Psychosis) Clinic, WPIC
1995-1996	Associate Director, Office of Medical Student Education, Department of Psychiatry, University Pittsburgh, Western Psychiatric Institute and Clinic.
1993-1999	Assistant Professor of Psychiatry, University of Pittsburgh, Western Psychiatric Institute and Clinic, Pittsburgh, PA Attending Psychiatrist, Schizophrenia Treatment and Research Center, Western Psychiatric Institute and Clinic, Pittsburgh, PA
1991-1993	Director, Medical Student Education, Department of Psychiatry, University of California at Davis.
1989-1991	Assistant Director of Residency Training, Department of Psychiatry, University of California at Davis.
1989-1993	Assistant Professor of Psychiatry, University of California, Davis.

NON-ACADEMIC

1987-1989	Psychiatrist, Crisis Unit, Contra Costa County Division of Mental Health and Substance Abuse, Merrithew Memorial Hospital, Martinez, California.
1984-1985	General Practice, Tacoma, Washington.
1982-1984	General Practice, Elizabeth, South Australia.

CERTIFICATION and LICENSURE

SPECIALTY CERTIFICATION:

Certified in Psychiatry by the American Board of Psychiatry and Neurology, June 1992, ABPN# 35765

MEDICAL or OTHER PROFESSIONAL LICENSURE:

California License A43389

MEMBERSHIPS in PROFESSIONAL and SCIENTIFIC SOCIETIES

American Psychiatric Association, 1989-present
Society for Biological Psychiatry, 1995-present
Society for Cognitive Neuroscience 1993-present
Society for Neuroscience 1999-present
Organization for Human Brain Mapping 2001-present
American College of Neuropsychopharmacology Member 2003-present, Fellow 2010-present

HONORS

Dean's Award for Excellence in Community Engagement, 2008
NARSAD Distinguished Investigator Award, 2007
Dean's Excellence in Mentoring Award, UC Davis School of Medicine, 2006
Elected to the American College of Neuropsychopharmacology, 2003
NARSAD Klerman Award for Outstanding Clinical Research Achievement, 2001
NIMH Independent Scientist Career Award (K02), 2001-2006
Burroughs Wellcome Fund Clinical Scientist Award in Translational Research, 2001-2006
Honorable Mention, Klerman Award for Outstanding Clinical Research by a NARSAD Young Investigator, 1998
NARSAD Young Investigator Award, 1997
NIMH Mentored Scientist Development Award for Clinicians (K08), 1996-2001
NARSAD Young Investigator Award, 1994
NIMH NCDEU Young Investigator Travel Award, 1993
Northern California Psychiatric Association Resident Recognition Award for Clinical Excellence in Psychiatry, 1989
Friendly Societies Prize for Medicine, 1973
Convocation Prize for Medicine, 1973

NATIONAL and INTERNATIONAL COMMITTEES

Scientific Advisory Committee, Organization for Human Brain Mapping Annual Meeting, 2001-present.
Editorial Board, Biological Psychiatry 2000-2006
Editorial Board Neuropsychopharmacology 2003-present
Editorial Board, Schizophrenia Bulletin 2005-9
Editorial Board, Psychiatry Research: Neuroimaging 2005-present
Charter Member IRG IFCN 7 Learning and Memory LAM), 2002-2005
Ad Hoc Reviewer, VA Merit Program and National Science Foundation, 2000-present.
Ad Hoc Member IRG BDCN6, 2001
Chair ZMH1-NRB-Q 06, SEP Translational Research Center Awards, 2003-2006
Charter Member, NPAS Study Section, 2008-2011
Member, ZMH1 ERB-S (03), Special Emphasis Panel, Conte Centers for Schizophrenia, National Institutes of Mental Health, 2004-2006
Organizer, New Advances Conference, MATRICS, NIMH, 2004
Member, Neuropharmacology Committee, MATRICS, NIMH, 2004
Advocacy Group Committee, American College of Neuropsychopharmacology, 2004-present, Chair 2010-11
Member, Ad Hoc Committee, Board of Scientific Counselors, Director's Office, National Institutes of Mental Health, 2005, 2006
Member, Scientific Council, National Alliance for Research on Schizophrenia and Depression (NARSAD), 2005-Present
Deputy Editor, Biological Psychiatry, 2006-present

PUBLICATIONS

REFEREED ARTICLES:

1. Fassbender C, Scangos K, Lesh TA, **Carter CS** (2013). RT Distributional Analysis of Cognitive Control-Related Brain Activity in First Episode Schizophrenia. *Cognitive, Affective & Behavioral Neuroscience.* (In Press).
2. Fisher M, Loewy R, **Carter CS,** Lee A, Ragland JD, Niendam TA, Schlosser D, Pham L, Miskovich T, Vinogradov S (2013). Neuroplasticity-based auditory training via laptop computer improves cognition in young individuals with recent onset schizophrenia. *Schizophrenia Bulletin.* (In Press).
3. Lesh TA, Westphal AJ, Niendam TA, Yoon JH Minzenberg MJ, Ragland JD, Solomon M, **Carter CS** (2013). Proactive and reactive cognitive control and dorsolateral prefrontal cortex dysfunction in first episode schizophrenia. *Neuroimage: Clinical 2:590-599.*
4. Swaab T, Boudewyn M, Long D, Luck S, Kring A, Ragland JD, Ranganath C, Lesh TA, Niendam TA, Solomon M, Mangun GR, **Carter CS** (2013). Spared and Impaired Spoken Discourse Processing in Schizophrenia: Effects of Local and Global Language Context. *Journal of Neuroscience.* (In Press).
5. Niendam TA, Lesh TA, Yoon J, Westphal AJ, Hutchison N, Ragland JD, Solomon M, Minzenberg M, **Carter CS** (2013). Impaired context processing as a potential marker of psychosis risk state. *Psychiatry Research.* (Epub ahead of print).
6. **Carter C.S.,** Bullmore, E.T., Harrison, P. in press. Is there a Flame in the Brain in Psychosis? *Biological Psychiatry*
7. Minzenberg MJ, Gomes GC, Yoon JH, Swaab TY, **Carter CS** (2013). Disrupted action monitoring in recent-onset psychosis patients with schizophrenia and bipolar disorder. *Psychiatry Research: Neuroimaging.* (In Press).
8. Moore H, Geyer, MA, **Carter, CS**, Barch DM (2013). Harnessing cognitive neuroscience to develop new treatments for improving cognition in schizophrenia: CNTRICS selected cognitive paradigms for animal models. *Neuroscience & Biobehavioral Reviews.* (Epub ahead of print).
9. Sheffield JM, Gold JM, Strauss ME, **Carter CS**, Macdonald AW 3rd, Ragland JD, Silverstein SM, Barch DM (2013). Common and specific cognitive deficits in schizophrenia: relationships to function. *Cognitive, Affective & Behavioral Neuroscience.* (Epub ahead of print).
10. **Tryon** MS, **Carter CS**, Decant R, Laugero KD (2013). Chronic stress exposure may affect the brain's response to high calorie food cues and predispose to obesogenic eating habits. *Physiology & Behavior 120:233-42.*
11. Salo R, Fassbender C, losif AM, Ursu S, Leamon MH, **Carter CS** (2013). Predictors of methamphetamine psychosis: History of ADHD-relevant childhood behaviors and drug exposure. *Psychiatry Research.* (Epub ahead of print).
12. Solomon M, Yoon JH, Niendam TA, Ragland JD, Lesh TA, Fairbrother W, **Carter CS** (2013). The development of the neural substrates of cognitive control in adolescents with autism spectrum disorders. *Biological Psychiatry.* (In Press).
13. Ravizza SM, Solomon M, Ivry RB, **Carter CS** (2013). Restricted and repetitive behaviors in autism spectrum disorders: The relationship of attention and motor deficits. *Development and Psychopathology 25(3):773-84.*
14. Strauss ME, McLouth CJ, Barch DM, **Carter CS**, Gold JM, Luck SJ, Macdonald AW 3rd, Ragland JD, Ranganath C, Keane BP, Silverstein SM (2013). Temporal Stability and Moderating Effects of Age and Sex on CNTRaCS Task Performance. *Schizophrenia Bulletin* (Epub ahead of print).
15. Paz-Alonso PM, Ghetti S, Ramsay I, Solomon M, Yoon J, **Carter CS**, Ragland JD (2013). Semantic processes leading to true and false memory formation in schizophrenia. *Schizophrenia Research 147(2-3):320-5.*
16. Fulford D, Niendam TA, Floyd EG, **Carter CS**, Mathalon DH, Vinogradov S, Stuart BK, Loewy, RL (2013). Symptom dimensions and functional impairment in early psychosis: more to the story than just negative symptoms. *Schizophrenia Research 147(1):125-31.*
17. Richard AE, **Carter CS**, Cohen JD, Choy RY (2013). Persistence, diagnostic specificity and genetic liability for context-processing deficits in schizophrenia. *Schizophrenia Research 147(1):75-80.*
18. Owoso A, **Carter CS**, Gold JM, Macdonald AW, Ragland JD, Silverstein SM, Strauss ME, Barch DM (2013). Cognition in schizophrenia and schizo-affective disorder: impairments that are more similar than different. *Psychological Medicine 25:1-11.*
19. Miller M, Bales KL, Taylor SL, Yoon J, Hostetler CM, **Carter CS,** Solomon M (2013). Oxytocin and Vasopressin in children and adolescents with autism spectrum disorders: sex differences and associations with symptoms. *Autism Research 6(2):91-102.*
20. Yoon JH, Minzenberg MJ, Raouf S, D'Esposito, **Carter CS** (2013). Impaired prefrontal-Basal Ganglia functional connectivity and substantial nigra hyperactivity in schizophrenia. *Biological Psychiatry 74(2):122-9.*
21. McFarlane WR, Cook WL, Downing D, Ruff A, Lynch S, Adelsheim S, Calkins R, **Carter CS**, Cornblatt B, and Milner K (2012). Early Detection, Intervention, and Prevention of Psychosis Program: Rationale, Design, and Sample Description. *Adolescent Psychiatry 2(2) 112-124.*
22. McFarlane WR, Cornblatt B, **Carter CS** (2012). Early Intervention in Psychosis: Rationale, Results and Implications for Treatment of Adolescents at Risk. *Adolescent Psychiatry 2:2 Pp: 125-139.*
23. Pakyurak M, Yarnal R, **Carter CS** (2012). Treatment of Psychosis in Children and Adolescents- A Review. *Journal of Pediatrics.* (In Press).

24. Boudewyn MA, **Carter CS**, Swaab TY (2012). Cognitive control and discourse comprehension in schizophrenia. *Schizophrenia Research Treatment.* (Epub 2012 Apr 8).
25. Krug MK, **Carter CS** (2012). Proactive and reactive control during emotion interference and its relationship to trait anxiety. *Brain Research 1481:13-36.*
26. Minzenberg MJ, Yoon JH, Soosman SK, **Carter CS** (2012). Excessive Contralateral Motor Overflow in Schizophrenia Measured by fMRI. *Psychiatry Research: Neuroimaging 202(1):38-45.*
27. Yoon JH, Nguyen DV, McVay LM, Deramo P, Minzenberg MJ, Ragland JD, Niendam T, Solomon M, **Carter CS** (2012). Automated classification of fMRI during cognitive control identifies more severely disorganized subjects with schizophrenia. *Schizophrenia Research 135(1-3):28-33.*
28. Niendam TA, Laird AR, Ray KL, Dean YM, Glahn DC, **Carter CS** (2012). Meta-analytic evidence for a superordinate cognitive control network subserving diverse executive functions. *Cognitive Affective Behavior in Neuroscience 12(2):241-68.*
29. Keane BP, Silverstein SM, Barch DM, **Carter CS,** Gold JM, Kovacs I, MacDonald AW 3rd, Ragland JD, Strauss ME (2012). The spatial range of contour integration deficits in schizophrenia. *Experimental Brain Research 220(3-4);251-9.*
30. **Carter CS** (2012) Neuroeconomics: sharpened tools of value for clinical cognitive and affective neuroscience. *Biological Psychiatry 72(2):82-3.*
31. Minzenberg MJ, **Carter CS** (2012). Developing treatments for impaired cognition in schizophrenia. *Trends in Cognitive Science 16:35-42.*
32. Millan MJ, Agid Y, Brune M, Bullmore ET, **Carter CS**, Clayton NS, Connor R, Davis S, Deakin B, Derubeis RJ, Dubois B, Geyer MA, Goodwin GM, Gorwood P, Jay TM, Joels M. Mansuy IM, Meyer-Lindenberg A, Murphy D, Rolls E, Saletu B, Spedding M, Sweeney J, Whittington M, Young LJ. (2012) Cognitive dysfunction in psychiatric disorders: characteristics, causes and the quest for improved therapy. *Nature Reviews/Drug Discovery 11:141-168.*
33. Barch D M, **Carter CS**, Dakin SC, Gold J, Luck SJ, MacDonald A 3rd, Ragland JD, Silverstein S, Strauss ME (2012). The clinical translation of a measure of gain control: the contrast-contrast effect. *Schizophrenia Bulletin 38:135-143.*
34. Gold JM, Barch DM, **Carter CS**, Dakin S, Luck SJ, MacDonald AW 3rd, Ragland JD, Ranganath C, Kovacs I, Silverstein SM, Strauss M (2012). Clinical, functional, and intertask correlations of measures developed by the Cognitive Neuroscience Test Reliability and Clinical Applications for Schizophrenia Consortium. *Schizophrenia Bulletin 38:144-152.*

35. Henderson D, Poppe AB, Barch DM, **Carter CS**, Gold JM, Ragland JD, Silverstein SM, Strauss ME, MacDonald AW 3rd (2012). Optimization of a goal maintenance task for use in clinical applications. *Schizophrenia Bulletin 38:104-113.*
36. Ragland JD, Ranganath C, Barch DM, , Gold JM, Haley B, MacDonald AW 3rd, Silverstein SM, Strauss ME, Yonelinas AP, **Carter CS** (2012). Relational and item-specific encoding (RISE): Task development and psychometric characteristics. *Schizophrenia Bulletin 38:114-124.*
37. Silverstein SM, Keane BP, Barch DM, **Carter CS**, Gold JM, Kovacs I, Macdonald A 3rd, Ragland JD, Strauss ME (2012). Optimization and validation of a visual integration test for schizophrenia research. *Schizophrenia Bulletin 38:125-134.*
38. Ragland JD, Blumenfeld RS, Ramsay IS, Yonelinas A, Yoon J, Solomon M, **Carter CS**, Ranganath C (2012). Neural correlates of relational and item-specific encoding during working and long-term memory in schizophrenia. *NeuroImage 59:1712-1726.*
39. **Carter CS**, Minzenberg M, West R, MacDonald A 3rd (2012). CNTRICS imaging biomarker selections: Executive control paradigms. *Schizophrenia Bulletin 38:34-42.*
40. Solomon M, Frank MJ, Smith A, Ly S, **Carter CS** (2011). Transitive inference in adults with autism spectrum disorders. *Cognitive Affective Behavioral Neuroscience 11(3):437-439.*
41. **Carter CS**, Barch DM; CNTRICS Executive Committee (2012). Imaging biomarkers for treatment development for impaired cognition: report of the sixth CNTRICS meeting: Biomarkers recommended for further development. *Schizophrenia Bulletin 38:26-33.*
42. Solomon M, Smith AC, Frank MJ, Ly S, **Carter CS** (2011). Probabilistic reinforcement learning in adults with Autism Spectrum Disorders. *Autism Research4:109-120.*
43. Solomon M, Olsen E, Niendam T, Ragland JD, Yoon J, Minzenberg M, **Carter CS** (2011). From lumping to splitting and back again: Atypical social and language development in individuals with clinical-high-risk for psychosis, first episode schizophrenia, and autism spectrum disorders. *Schizophrenia Research 13:146-151.*
44. Solomon M, Miller M, Taylor SL, Hinshaw SP, **Carter CS** (2012). Autism symptoms and internalizing psychopathology in girls and boys with autism spectrum. In press. *Journal of Autism and Developmental Disorders 42:48-59.*
45. **Carter CS**, Barch DM, Bullmore J, Buchanan RW, Butler P, Cohen JD, Geyer M, Gollub R, Green MF, Jaeger J, Krystal JH, Moore H, Nuechterlein K, Robbins T, Silverstein S, Smith EE, Strauss M, Wykes T (2011). Cognitive Neuroscience Treatment Research to Improve Cognition in Schizophrenia II: Developing imaging biomarkers to enhance treatment development for schizophrenia and related disorders. *Biological Psychiatry 70:7-12.*

46. Fornito A, Yoon J, Zalesky A, Bullmore ET, **Carter CS** (2011). General and specific functional connectivity disturbances in first-episode schizophrenia during cognitive control performance. *Biological Psychiatry 70:64-72.*

47. Mayda AB, Westphal A, **Carter CS**, Decarli C (2011). Late life cognitive control deficits are accentuated by white matter disease burden. *Brain 134:1673-1683.*
48. Walsh BJ, Buonocore MH, **Carter CS,** Mangun GR. (2011) Integrating conflict detection and attentional control mechanisms. In press, *J Cognitive Neuroscience, 23:2211-2221.*
49. Minzenberg MJ, Yoon JH, **Carter CS**. (2011) Modafinil modulation of the default mode network. In press. *Psychopharmacology* 215:23-31.
50. Lesh TA, Niendam T, Minzenberg M, **Carter CS** (2011). Cognitive Control Deficits in Schizophrenia: Mechanisms and Meaning. *Neuropsychopharmacology 36:316-38.*
51. Forster SE, **Carter CS**, Cohen JD, Cho RY (2011). Parametric manipulation of the conflict signal and control-state adaptation. *Journal of Cognitive Neuroscience 23:923-35.*
52. Ursu S, Kring AM, Gard M. Minzenberg MJ, Yoon JH, Ragland JD, Solomon M, **Carter CS** (2011). Prefrontal cortical deficits and impaired cognition-emotion interactions in schizophrenia. *American Journal of Psychiatry 168:276-285.*
53. Minzenberg MJ, Firl A, Yoon J, Gomes G, Rienking C, **Carter CS** (2010**)**. Gamma oscillatory power is impaired during cognitive control independent of medication status in first episode schizophrenia. *Neuropsychopharmacology 35:2590-9.*
54. Hannula DE, Ranganath C, Ramsay IS, Solomon M, Yoon J, Niendam TA, **Carter CS,** Ragland JD 2010. Use of Eye Movement Monitoring to Examine Item and Relational Memory in Schizophrenia. *Biological Psychiatry 68:610-6.*
55. Krug MK and **Carter CS** (2010). Adding fear to conflict: a general purpose cognitive control network is modulated by trait anxiety. *Cognitive Affective and Behavioral Neuroscience 10:357-71.*
56. Ravizza S, Maua KC, Long D, **Carter CS**. (2010) The impact of context processing deficits on task switching in schizophrenia. *Schizophrenia Research* 116:274-9..
57. Yoon JHY, Maddock RJ, Rokem A, Minzenberg M, Ragland JD and **Carter CS.** (2010) GABA concentration is reduced in visual cortex in schizophrenia and correlates with orientation specific surround suppression. *Journal of Neuroscience.* 2010 Mar 10;30(10):3777-81.
58. Stoddard J, Niendam T, Hendren R, **Carter CS**, Simon TJ (2010). Attenuated positive symptoms of psychosis in adolescents with chromosome 22q11.2 deletion syndrome. *Schizophrenia Research 118:118-21.*
59. Van Veen V, Krug M, Schooler J, **Carter CS**. (2009) Neural activity predicts attitude change in cognitive dissonance. *Nature Neuroscience*. 2009 Nov;12(11):1469-74.
60. Wendelken C, Ditterich J, Bunge SA, **Carter CS** (2009). Stimulus and response conflict processing during perceptual decision-making. *Cognitive, Affective, & Behavioral Neuroscience.* 9(4) 434-747.
61. Cho RY, Orr JM, Cohen JD **Carter CS** (2009) Generalized signaling for cognitive control. Evidence from post-conflict and post-error performance adjustments. *J Exp Psychol Hum Percept Perform*. 35(4):1161-77.
62. Yoon JH, Rokem AS, Silver MA, Minzenberg MJ, Ursu S, Ragland JD, **Carter CS** (2009). Diminished orientation-specific surround suppression of visual processing in schizophrenia. *Schizophrenia Bulletin.* 35(6):1078-84
63. Solomon M, Ozonoff SJ, Ursu S, Ravizza S, Cummings N, Ly S, **Carter CS** (2009). The neural substrates of cognitive control deficits in autism spectrum disorders. *Neuropsychologia* . 47(12):2515-26
64. Minzenberg MJ, Laird AR, Thelen S, **Carter CS**, Glahn DC (2009). Meta-analysis of 41 functional neuroimaging studies of executive function reveals dysfunction in a general-purpose cognitive control system in schizophrenia. *Archives of General Psychiatry* Aug;66(8):811-22..
65. Minzenberg MM and **Carter CS.** The Neuroschemistry of Rule Use (2009). Biological Psychiatry 15(66): 306.
66. Corbett BA, Carmean V, Ravizza S, Wendelken C, Henry ML, **Carter C**, Rivera SM (2009). A functional and structural study of emotion and face processing in children with autism. *Psychiatry Research: Neuroimaging* 173(3) 196-205.
67. Ursu S, **Carter CS** (2009). An initial investigation of the orbitofrontal cortex hyperactivity in obsessive-compulsive disorder: exaggerated representations of anticipated aversive events? *Neuropsychologia.* Aug;47(10):2145-8.
68. Freedman R, Lewis DA, Michels R, Pine DS, Schultz SK, Tamminga CA, Andreasen NC, Brady KT, Brent DA, Brzustowicz L, **Carter CS**, Eisenberg L, Goldman H, JavittDC, Leibenluft E, Liberman JA, Milrod B, Oquendo MA, Rosenbaum JF, Rush AJ, Siever LJ, Suppes P, Weissman MM, Roy MD, Scully JH Jr, Yager J (2009). Conflict of interest – an issue for every psychiatric. *American Journal of Psychiatry 166(3):274.*
69. **Carter CS**, Krug MK (2009). The functional neuroanatomy of dread: Functional magnetic resonance imaging insights into generalized anxiety disorder and its treatment. *American Journal of Psychiatry 166(3):263-265.*
70. Bhangoo RK, **Carter CS (2009)**. Very early interventions in psychotic disorders. *Psychiatric Clinics of North America 32(1):81-94.*

71. **Carter CS** (2009). The ups and downs of emotion regulation. *Biological Psychiatry 65(5):359-360.*
72. Ursu S, Clark KA, Aizenstein HJ, Stenger VA, **Carter CS** (2009). Conflict-related activity in the caudal anterior cingulated cortex in the absence of awareness. *Biological Psychology 80(3):279-286.*
73. Barch DM, Carter CS, Arnsten A, Buchanan RW, Cohen JD, Geyer M, Green MF, Krystal JH, Nuechterlein K, Robbins T, Silverstein S, Smith EE, Strauss M, Wykes T, Heinssen R (2009). Selecting paradigms from cognitive neuroscience for

translation to use in clinical trials: Proceedings of the Third CNTRICS Meeting. *Schizophrenia Bulletin 35(1):109-114.*

74. Aizenstein, H. J., Butters, M. A., Wu, M., Mazurkewicz, L. M., Stenger, V. A., Gianaros, P. J., Becker, J.T., Reynolds, C.F. III, **Carter C.S.** (2009). Altered functioning of the executive control circuit in late-life depression: episodic and persistent phenomena. *American Journal of Geriatric Psychiatry 17(1):30-42.*
75. Barch DM, Braver TS, **Carter CS**, Poldrack RA, Robbins TW (2009). CNTRICS Final Task Selection: Executive Control. *Schizophrenia Bulletin 35(1):115-135.*
76. **Carter CS**, Barch DM, Gur R, Gur R, Pinkham A, Ochsner K (2009). CNTRICS final task selection: Social cognitive and affective neuroscience-based measures. *Schizophrenia Bulletin 35(1):153-162.*
77. Anderson JR, **Carter CS**, Fincham JM, Qin Y, Ravizza SM, Rosenberg-Lee M (2008). Using fMRI to test models of complex cognition. *Cognitive Science.*32:1323-1348
78. van Veen V, Krug MK, **Carter CS** (2008). The neural and computational basis of controlled speed-accuracy tradeoff during task performance. *Journal of Cognitive Neuroscience 20(11):1952-1965.*
79. Minzenberg MJ, Watrous AJ, Yoon JH, Ursu S, **Carter CS** (2008). Modafinil shifts human locus coeruleus to low-tonic, high phasic activity during functional MRI. *Science 322(4908):1700-1702.*
80. Lewis DA, Cho RY, **Carter CS**, Eklund K, Forster S, Kelly MA, Montrose D (2008). Subunit-selective modulation of GABA type A receptor neurotransmission and cognition in schizophrenia. *American Journal of Psychiatry 165(12):1585-1593.*
81. Ravizza SM, Anderson JR, **Carter CS** (2008). Errors in mathematical processing: The relationship of accuracy to neural regions associated with retrieval or representation of the problem state. *Brain Research 1238:118-1126.*
82. Yoon JH, Tamir D, Minzenberg MJ, Ragland JD, Ursu S, **Carter CS** (2008). Multivariant pattern analysis of functional magnetic resonance imaging data reveals deficits in distributed representations in schizophrenia. *Biological Psychiatry 64(12):1035-1041.*
83. **Carter CS**, Heckers S, Nichols T, Pine D, Strothers S (2008): Optimizing the design and analysis of clinical fMRI research studies. *Biological Psychiatry 64(10):842-849.*
84. Solomon M, Ozonoff S, **Carter C**, and Caplan R (2008). Formal thought disorder and the autism spectrum: relationship with symptoms, executive control, and anxiety. *Journal of Autism Development and Disorders, 38(8):1474-1484.*
85. Becker TM, Kerns KG, Macdonald AW 3rd, and **Carter CS** (2008). Prefrontal dysfunction in first-degree relatives of schizophrenia patients during a Stroop task. *Neuropsychopharmacology 33(11):2619-2625.*
86. Ursu S, Clark KA, Stenger VA, **Carter CS** (2008). Distinguishing expected negative outcomes from preparatory control in the human orbitofrontal cortex. *Brain Research 1227:110-119.*
87. Ravizza SM, **Carter CS** (2008). Shifting set about task switching: Behavioral and neural evidence for distinct forms of cognitive flexibility. *Neuropsychologia 46(12):2924-2935.*
88. **Carter CS**, Barch DM, Buchanan RW, Bullmore E, Krystal JH, Cohen J, Geyer M, Green M, Nuechterlein KH, Robbins T, Silverstein S, Smith EE, Strauss M, Wykes T, Heinssen R (2008). Identifying cognitive mechanisms targeted for treatment development in schizophrenia: an overview of the first meeting of the Cognitive Neuroscience Treatment Research to Improve Cognition in Schizophrenia Initiative. *Biological Psychiatry64(1):4-10.* .
89. Barch DM, **Carter CS**; the CNTRICS Executive Committee (2008): Measurement issues in the use of cognitive neuroscience tasks in drug development for impaired cognition in schizophrenia: A report of the second consensus building conference of the CNTRICS initiative. *Schizophrenia Bulletin 34(4):613-618.*
90. Yoon JH, Minzenberg MJ, Ursu S, Walters R, Wendelken C, Ragland JD, **Carter CS** (2008): Association of dorsolateral prefrontal cortex dysfunction with disrupted coordinated brain activity in schizophrenia: relationship with impaired cognition, behavioral disorganization, and global function. *American Journal of Psychiatry165(8):1006-1014.*
91. Minzenberg M and **Carter CS** (2008): Modafinil: A review of neurochemical effects and effects on cognition. *Neuropsychopharmacology33(7):1477-502.*
92. Krystal JH, **Carter CS**, Geschwind D, Manji HK, March JS, et al (2008). It is time to take a stand for medical research and against terrorism targeting medical research. *Biological Psychiatry 63(8):725-727.*
93. Salo R, Nordahl TE, Leamon MH, Natsuaki T, Moore CD, Waters C, **Carter CS** (2008). Preliminary evidence of behavioral predictors of recurrent drug-induced psychosis in methamphetamine abuse. *Psychiatry Research 157(1-3):273-277.*
94. Solomon M, Ozonoff SJ, Cummings N, **Carter CS** (2008). Cognitive control in autism spectrum disorders. *International Journal of Developmental Neuroscience 26(2):239-247.*
95. Wendelken C, Nakhabenko D, Donohue SE, **Carter CS**, Bunge SA. (2008). Brain is to thought as stomach is to ??. *Journal of Cognitive Neuroscience 20(4):682-683.*
96. Wendelken C, Bunge SA, **Carter CS** (2008). Maintaining structured information: An investigation into functions of parietal and lateral prefrontal cortices. *Neuropsychologia 46(2):665-678.*
97. Wagner A, Aizenstein H, Venkatraman VK, Fudge J, May JC, Mazurkewicz L, Frank GK, Bailer UF, Fischer L, Nguyen V, **Carter** C, Putanm K, Kaye WH (2007). Altered reward processing in women recovered from anorexia nervosa. *American*

Journal of Psychiatry 164(12):1842-1849.

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Research Funding

5R01MH059883-11 (Carter) NIMH 6/1/13-6/1/18
Pathophysiology of Cognitive Disability in Schizophrenia: Using fMRI and two cognitive tasks evaluating unique aspects of cognitive control and approach motivation we will test the hypothesis that during a first episode of psychosis both schizophrenia that bipolar disorder patients will show cognitive control deficits that in schizophrenia will remain as stable trait deficits during the fisrt year of illness but that in Bipolar disorder will show substantial improvement with clinical remission. In contrast Bipolar Disorder patients will show an enhanced sensitivity to repeated rewards that will be stable across clinical states, while schizophrenia patients will show intact or reduced responses to incentives across the course of the first year of illness.

5RO1MH084826-05 (Carter) NIMH 10/12/2013-10/1/2018
Cognitive Neuroscience Task Reliability and Clinical Application Consortium
Behavioral tasks measuring the RDoC constructs of reward sensitivity and working memory capacity will be validated, optimized, and characterized psychometrically. Optimized measures and their psychometric characteristics will then be publically available for use in treatment development studies.

5R21MH099327-02 (Carter, Swaab Co-PI's) 2/1/2013-2/1/2015
Cognitive Control and Language Impairments in Schizophrenia

We will use ERP's to test the hypothesis that the inability to integrate discourse level context leads to comprehension deficits that in turn are related to social and functional disability in schizophrenia.

1R01DA021847 (Salo) 7/01/09-4/30/13
Neural and Cognitive Correlates of Methamphetamine Use in Schizophrenia
The goal of this project is to use brain imaging and behavioral measures to examine the effect of co-morbid methamphetamine abuse on brain function and behavior in schizophrenia patients.

R01MH084895 (Ragland) NIMH 4/1/10-3/30/14
Schizophrenia is characterized by severe memory deficits that compromise daily psycho-social function and limit long-term outcome. This research proposes to use behavioral, fMRI, and eye movement experiments to test a novel theory about a neurocognitive

mechanism that can explain memory strengths and weaknesses in the disorder and, thereby, identify target mechanisms for development of new pro-cognitive agents.