

CURRICULUM VITAE  
**LINDA L. CARPENTER, M.D.**

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**EDUCATION**

Undergraduate: Univ. of Michigan, Ann Arbor, MI, B.A. (Psychology), 1986.  
Post-Bachelor: Univ. of Pittsburgh, Pittsburgh, PA (32 credits basic science, no degree), 1986-1989.  
Medical School: Univ. of Pennsylvania, Philadelphia, PA, M.D., 1993.

**POSTGRADUATE TRAINING**

Internship: Intern in Internal Medicine, Hospital of St. Raphael, (in affiliation with Yale Univ. School of Medicine), New Haven, CT, 1993-1994.  
Residency: Resident in Psychiatry, Yale University School of Medicine Clinical Neuroscience Research Program, New Haven, CT, 1994-1997.  
Chief Resident, Clinical Neuroscience Research Unit, Inpatient Division, Connecticut Mental Health Center, New Haven, CT 1995-1996.  
Fellowship: Post-doctoral Fellow in Psychiatry, Biological Sciences Training Program, NIMH/Yale University, New Haven CT 1995-1997.  
Associate Chief, Clinical Neuroscience Research Unit, Inpatient Division, Mental Health Center, New Haven, CT 1996-1997.

**UNDERGRADUATE HONORS AND AWARDS**

1984 Branstrom Prize (overall academic performance in liberal arts program) University of Michigan.  
1985 Martha Meunzer Memorial Scholarship (outstanding psychology research) University of Michigan.  
1984 Psi Chi National Honor Society in Psychology.  
1984 Phi Beta Kappa National Honor Society.  
1984 Golden Key National Honor Society.

- 1986 James B. Angell Scholar (Overall academic performance) University of Michigan.
- 1986 B.A., Highest Honors and Highest Distinction, University of Michigan.
- 1986 Mellon Fellowship for Psychiatry Research, Western Psychiatric Internship and Clinic, Pittsburgh PA. (David J. Kupfer, Research Mentor).

**POSTGRADUATE HONORS AND AWARDS**

- 1993 AMA Rock Sleyster Memorial Scholarship, University of Pennsylvania School of Medicine (potential for psychiatry research).
- 1993 Dr. Edward J. Sachar Prize for Outstanding Graduating Medical Student Entering Psychiatry.
- 1993-1994 Outstanding Intern, Hospital of Saint Raphael, New Haven.
- 1994, 1996 Eli Lilly Travel Award for Outstanding Psychiatry Resident (Travel Award for Emory University symposium).
- 1995, 1996 Janssen Pharmaceutical/Journal of Clinical Psychiatry Resident Advisory Board Travel Award (attendance at annual meeting)
- 1996 Wyeth-Ayerst /APA Resident Reporter Program Travel Award (attendance at annual meeting)
- 1997 The American College of Psychiatrists 1997 Laughlin Fellowship Recipient.
- 1997 APA/Lilly Psychiatric Research Fellowship Honorable Mention Award.
- 1997 Seymour J. Lustman Award for Outstanding Resident Research.
- 1998 APA/SmithKline Beecham Young Faculty Award.
- 1998 NMDA/Gerald L. Klerman Young Investigator Award.
- 1998 ACNP Travel Fellowship Award.
- 1999-2000 Outstanding Teaching Award in Medical School Education, Brown University School of Medicine.
- 2000-2001 Brown Medical School Dean's Teaching Excellence Award.
- 2002-2005 Pfizer/SWHR Research Scholar Award
- 2005, 2006, 2008, 2009, 2010, 2011, 2012 Citation, Best Doctors in America (Best Doctors, Inc.)
- 2006 Master of Arts *ad eundem*, Brown University
- 2006 NAMI 2006 Exemplary Psychiatrist of the Year Award
- 2007 Citation, Top Doctors for Women in Rhode Island 2007

2007	Distinguished Fellow, American Psychiatric Association
2009	Distinguished Alum Award 2009 Lakeview High School, Battle Creek, MI
2008 - 2009	Brown Medical School Psychiatry Department Research Mentor Award
2011, 2012	Citation, U.S. News & World Report Top Doctors (Castle Connolly Medical Ltd.)
2014	SOBP George N Thompson Founders Award
2017	Robert Westlake Award for Physician Excellence
2016-2017	Brown Alpert Medical School Faculty Mentoring Award

**PROFESSIONAL LICENSES AND BOARD CERTIFICATION**

Diplomate, National Board of Medical Examiners, 1994.

Diplomate, American Board of Psychiatry and Neurology, 1999.

Licensed Physician/Surgeon, Connecticut Medical Examining Board, State of Connecticut, 1995-1997.

Licensed Medical Doctor, Board of Medical Licensure and Discipline, State of Rhode Island and Providence Plantations, 1997 -present.

**ACADEMIC APPOINTMENTS**

Assistant Professor, Research Scholar Track, Brown Department of Psychiatry and Human Behavior, Providence, RI, 1998-2004.

Associate Professor, Research Scholar Track, Brown Department of Psychiatry and Human Behavior, Providence, RI, 2005-2012.

Professor, Research Scholar Track, Brown Department of Psychiatry and Human Behavior, Warren Alpert Medical School at Brown University, Providence, RI, 2012-present.

**HOSPITAL AND UNIVERSITY APPOINTMENTS**

Chief, Mood Disorders Program, Butler Hospital, Providence, RI, 1997-present.

Attending Psychiatrist, Butler Hospital, Providence, RI, 1997-present.

Attending Psychiatrist, Kent County Memorial Hospital, Providence, RI, 1997-present.

Director, Butler Hospital TMS Clinic 2006-present

Director, Butler Neuromodulation Research Facility, 2015 - present

Guest Principal Investigator (Research), Rhode Island Hospital, Providence 2009-2014.

Butler Hospital Medical Executive Committee 2010-2013

Chair, Butler Hospital Pharmacy & Therapeutics Committee, 2009- 2013

Officer, Butler Hospital Staff Association, 2009 – 2012

Faculty Trainer, PhD Graduate Program, Brown Department of Molecular Pharmacology, Physiology, and Biotechnology 2010 – 2016.

Chair, Butler Hospital Institutional Review Board, 2012 – present

Brown Dept Psychiatry and Human Behavior Full Academic Faculty Appointments, Reappointments and Promotions Committee, 2014 – present

Carney/Brown Institute for Brain Science, Executive Committee, 2017 - present

### **HOSPITAL COMMITTEES**

Butler Hospital: Clinical Leadership, 1997-2005; Physician's Subcommittee, Improvement of Organizational Performance, 1997-2004; 7-Day Hospital Operations Performance Improvement Team, 1998-1999. Pharmacy and Therapeutics Committee, 2004-2013. Physicians' Compensation Committee, 2007 -2009.

### **OTHER APPOINTMENTS**

Peer Reviewer - *American Journal of Psychiatry*; *Archives of General Psychiatry*; *Acta Psychiatrica Scandinavica*; *Biological Psychiatry*, *Brain Stimulation*, *Brain, Behavior, and Immunity*; *Canadian Medical Association Journal*; *CNS Spectrums*; *Depression and Anxiety*; *European Neuropsychopharmacology*; *International Journal of Psychopharmacology*; *Journal of Affective Disorders*; *Journal of Clinical Psychiatry*; *Journal of Psychiatric Research*; *Journal of Psychosomatic Research*; *Neuropsychopharmacology*; *Nordic Journal of Psychiatry*; *Psychoneuroendocrinology*; *Primary Psychiatry*; *World Journal of Biological Psychiatry*;

NIMH Scientific Review Group Member (committee ZMH1 – NRB-Q-06) 2002

NIMH Scientific Review Group Member (committee ZMH1 – ERB-S-06) 2006, 2007

NIMH Scientific Review Group Member (committee BBBP-J 50) 2008

NIMH Scientific Review Group Member (Special Emphasis Panel NPAS), 2012

NIMH Scientific Review Group Member (Special Emphasis Panel ITVA), 2012

NIMH Scientific Review Group Member (Special Emphasis Panel ZMH1 ERB-D), 2014, 2015

NIMH Scientific Review Group Member (Special Emphasis Panel ZMH1 ERB-B), 2015

NIMH Scientific Review Group Member (Special Emphasis Panel ZMH1 ERB-S), 2016

NIMH Scientific Review Group Member (Special Emphasis Panel ZMH1 ERB-D), 2017

Member, Scientific Advisory Board, National Depressive & Manic-Depressive Association 1997-2001.  
Editorial Advisory Board, *The Brown University Psychopharmacology Update*, 2002–present.  
Editorial Advisory Board, *Acta Psychiatrica Scandinavica* 2006-2012.  
APA Component Corresponding Committee on Research on Psychiatric Treatments, 2003-2006.  
Co-Chair, Membership Committee, Society of Biological Psychiatry (SOBP) 2007 – 2011.  
Co-Chair/Chair, Society of Biological Psychiatry (SOBP) Education/Training Task Force, 2009 – 2012.  
Invited Member, National Network of Depression Centers (NNDC) rTMS Task Force, 2009 – present.  
Co-Chair, ACNP Membership Advisory Task Force, 2010 – 2011; Chair, 2012 – 2014.  
Intervention Selection Committee, NIMH-sponsored Contract (MGH/Fava, PI) “New, Rapidly-Acting Treatments for Treatment-Resistant Depression (RAPID)” 2011 -2014.  
Society of Biological Psychiatry (SOBP) Council (Elected, Member at Large), 2012 - 2014  
Clinical Expert Panel Member, New England Comparative Effectiveness Public Advisory Council, Non-Pharmacologic Interventions for Treatment-Resistant Depression, 2011  
Expert Panel Member, Patient-Reported Outcome (PRO) Consortium Depression Working Group, Critical Path Institute (C-Path) 2011 – 2015  
Society of Biological Psychiatry Program (SOBP) Committee, 2012 –2013  
Chair, Society of Biological Psychiatry (SOBP) Travel Award Committee, 2014 – 2016  
SOBP Women’s Leadership Group Committee, 2016 – present)  
APA Council on Research, 2013 – present  
APA Council on Research Components Member: Diagnostic Markers and Treatments Workgroup (2014-2016), Task Force on Novel Biomarkers and Treatments (2017- present); Committee on Research Training (2016 – present)  
ACNP Education Committee, 2014 – 2016  
Clinical TMS Society (CTMSS) Board of Directors, 2016 – present  
Faculty/Presenter, CTMSS National rTMS Training Course (“PULSES”) 2016 - present

#### **MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS AND SOCIETIES**

American Psychiatric Association (APA), 1989 - present; Distinguished Fellow (2007 )

Connecticut Psychiatric Society, 1993-1997.

Society for Neuroscience, 1997-2000.

Rhode Island Psychiatric Society (RIPS), 1997–present.

Depression and Bipolar Support Alliance (DBSA; formerly National Manic and Manic-Depressive Association) 1998-present.

NAMI 1998-present.

American Psychopathological Association (APPA), 1999–2002.

Society of Biological Psychiatry (SOBP), Member, 2002–present.

Anxiety Disorders Association of America (ADAA), Member 2003, 2014-2017

American College of Neuropsychopharmacology (ACNP), Associate Member, 2004 -2009; Member 2009 – 2015; Fellow 2016-present

International Society of Psychoneuroendocrinology, Member 2005-2016

Rhode Island Medical Women’s Association (RIMWA) 2006 –2007

International Society for ECT and Neuromodulation (ISEN), Member 2009 – 2017.

Clinical TMS Society (CTMS), Member, 2016 – present.

## **PUBLICATIONS**

### **ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS**

1. **Carpenter LL**, Kupfer DJ, Frank E. Is diurnal variation a meaningful symptom in unipolar depression? *J Affect Disord.* 1986;11(3):255-264.
2. Jacob M, Frank E, Kupfer DJ, **Carpenter LL**. Recurrent depression: an assessment of family burden and family attitudes. *J Clin Psychiatry.* 1987;48(10):395-400.
3. Jacob M, Frank E, Kupfer DJ, Cornes C, **Carpenter LL**. A psychoeducational workshop for depressed patients, family, and friends: description and evaluation. *Hosp Community Psychiatry.* 1987;38(9):968-972.
4. Frank E, **Carpenter LL**, Kupfer DJ. Sex differences in recurrent depression: are there any that are significant? *Am J Psychiatry.* 1988;145(1):41-45.
5. Kupfer DJ, **Carpenter LL**, Frank E. Possible role of antidepressants in precipitating mania and hypomania in recurrent depression. *Am J Psychiatry.* 1988;145(7):804-808.
6. Kupfer DJ, **Carpenter LL**, Frank E. Is bipolar II a unique disorder? *Compr Psychiatry.* 1988;29(3):228-236.

7. Kupfer DJ, Frank E, **Carpenter LL**, Neiswanger K. Family history in recurrent depression. *J Affect Disord.* 1989;17(2):113-119.
8. Bulik CM, **Carpenter LL**, Kupfer DJ, Frank E. Features associated with suicide attempts in recurrent major depression. *J Affect Disord.* 1990;18(1):29-37.
9. Prien RF, **Carpenter LL**, Kupfer DJ. The definition and operational criteria for treatment outcome of major depressive disorder. A review of the current research literature. *Arch Gen Psychiatry.* 1991;48(9):796-800.
10. Thase ME, **Carpenter L**, Kupfer DJ, Frank E. Clinical significance of reversed vegetative subtypes of recurrent major depression. *Psychopharmacol Bull.* 1991;27(1):17-22.
11. **Carpenter LL**, McDougle CJ, Epperson CN, Price LH. A risk-benefit assessment of drugs used in the management of obsessive-compulsive disorder. *Drug Saf.* 1996;15(2):116-134.
12. Platis IE, **Carpenter LL**, Vojvoda D, Bowers MB, Jr., Mazure CM. Possible acceleration of alcoholic cirrhosis in a patient with bulimia. *Int J Eat Disord.* 1996;20(4):439-442.
13. **Carpenter LL**, Anderson GM, Pelton GH, Gudin JA, Kirwin PD, Price LH, Heninger GR, McDougle CJ. Tryptophan depletion during continuous CSF sampling in healthy human subjects. *Neuropsychopharmacology.* 1998;19(1):26-35.
14. Malison RT, McCance E, **Carpenter LL**, Baldwin RM, Seibyl JP, Price LH, Kosten TR, Innis RB. [123I]beta-CIT SPECT imaging of dopamine transporter availability after mazindol administration in human cocaine addicts. *Psychopharmacology (Berl).* 1998;137(4):321-325.
15. Malison RT, Price LH, Berman R, van Dyck CH, Pelton GH, **Carpenter L**, Sanacora G, Owens MJ, Nemeroff CB, Rajeevan N, Baldwin RM, Seibyl JP, Innis RB, Charney DS. Reduced brain serotonin transporter availability in major depression as measured by [123I]-2 beta-carbomethoxy-3 beta-(4-iodophenyl)tropane and single photon emission computed tomography. *Biol Psychiatry.* 1998;44(11):1090-1098.
16. **Carpenter LL**, Jovic Z, Hall JM, Rasmussen SA, Price LH. Mirtazapine augmentation in the treatment of refractory depression. *J Clin Psychiatry.* 1999;60(1):45-49.
17. **Carpenter LL**, Leon Z, Yasmin S, Price LH. Clinical experience with mirtazapine in the treatment of panic disorder. *Ann Clin Psychiatry.* 1999;11(2):81-86.
18. Longhurst JG, **Carpenter LL**, Epperson CN, Price LH, McDougle CJ. Effects of catecholamine depletion with AMPT (alpha-methyl-para-tyrosine) in obsessive-compulsive disorder. *Biol Psychiatry.* 1999;46(4):573-576.
19. Malison RT, Anand A, Pelton GH, Kirwin P, **Carpenter L**, McDougle CJ, Heninger GR, Price LH. Limited efficacy of ketoconazole in treatment-refractory major depression. *J Clin Psychopharmacol.* 1999;19(5):466-470.
20. **Carpenter LL**, Price LH. Psychotic depression: what is it and how should we treat it? *Harv Rev Psychiatry.* 2000;8(1):40-42.
21. Gagne GG, Jr., Furman MJ, **Carpenter LL**, Price LH. Efficacy of continuation ECT and antidepressant drugs compared to long-term antidepressants alone in depressed patients. *Am J Psychiatry.* 2000;157(12):1960-1965.

22. Vythilingam M, Anderson GM, Owens MJ, Halaszynski TM, Bremner JD, **Carpenter LL**, Heninger GR, Nemeroff CB, Charney DS. Cerebrospinal fluid corticotropin-releasing hormone in healthy humans: effects of yohimbine and naloxone. *J Clin Endocrinol Metab.* 2000;85(11):4138-4145.
23. Yasmin S, **Carpenter LL**, Leon Z, Siniscalchi JM, Price LH. Adjunctive gabapentin in treatment-resistant depression: a retrospective chart review. *J Affect Disord.* 2001;63(1-3):243-247.
24. **Carpenter LL**, Heninger GR, McDougle CJ, Tyrka AR, Epperson CN, Price LH. Cerebrospinal fluid interleukin-6 in obsessive-compulsive disorder and trichotillomania. *Psychiatry Res.* 2002;112(3):257-262.
25. **Carpenter LL**, Leon Z, Yasmin S, Price LH. Do obese depressed patients respond to topiramate? A retrospective chart review. *J Affect Disord.* 2002;69(1-3):251-255.
26. **Carpenter LL**, Yasmin S, Price LH. A double-blind, placebo-controlled study of antidepressant augmentation with mirtazapine. *Biol Psychiatry.* 2002;51(2):183-188.
27. Cubells JF, Price LH, Meyers BS, Anderson GM, Zabetian CP, Alexopoulos GS, Nelson JC, Sanacora G, Kirwin P, **Carpenter L**, Malison RT, Gelernter J. Genotype-controlled analysis of plasma dopamine beta-hydroxylase activity in psychotic unipolar major depression. *Biol Psychiatry.* 2002;51(5):358-364.
28. **Carpenter LL**, Anderson GM, Siniscalchi JM, Chappell PB, Price LH. Acute changes in cerebrospinal fluid 5-HIAA following oral paroxetine challenge in healthy humans. *Neuropsychopharmacology.* 2003;28(2):339-347.
29. **Carpenter LL**, Friehs GM, Price LH. Cervical vagus nerve stimulation for treatment-resistant depression. *Neurosurg Clin N Am.* 2003;14(2):275-282.
30. Greenberg BD, Price LH, Rauch SL, Friehs G, Noren G, Malone D, **Carpenter LL**, Rezai AR, Rasmussen SA. Neurosurgery for intractable obsessive-compulsive disorder and depression: critical issues. *Neurosurg Clin N Am.* 2003;14(2):199-212.
31. Marek GJ, **Carpenter LL**, McDougle CJ, Price LH. Synergistic action of 5-HT<sub>2A</sub> antagonists and selective serotonin reuptake inhibitors in neuropsychiatric disorders. *Neuropsychopharmacology.* 2003;28(2):402-412.
32. Mello AF, Mello MF, **Carpenter LL**, Price LH. Update on stress and depression: the role of the hypothalamic-pituitary-adrenal (HPA) axis. *Rev Bras Psiquiatr.* 2003;25(4):231-238.
33. **Carpenter LL**, Heninger GR, Malison RT, Tyrka AR, Price LH. Cerebrospinal fluid interleukin (IL)-6 in unipolar major depression. *J Affect Disord.* 2004;79(1-3):285-289.
34. **Carpenter LL**, Moreno FA, Kling MA, Anderson GM, Regenold WT, Labiner DM, Price LH. Effect of vagus nerve stimulation on cerebrospinal fluid monoamine metabolites, norepinephrine, and gamma-aminobutyric acid concentrations in depressed patients. *Biol Psychiatry.* 2004;56(6):418-426.
35. **Carpenter LL**, Schechter JM, Siniscalchi J, Leon Z, Price LH. A case series describing orlistat use in patients on psychotropic medications. *Med Health R I.* 2004;87(12):375-377.
36. **Carpenter LL**, Tyrka AR, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Cerebrospinal fluid corticotropin-releasing factor and perceived early-life stress in depressed patients and healthy control subjects. *Neuropsychopharmacology.* 2004;29(4):777-784.



37. Tyrka AR, **Carpenter LL**, McDougle CJ, Kirwin PD, Owens MJ, Nemeroff CB, Strong DR, Price LH. Increased cerebrospinal fluid corticotropin-releasing factor concentrations during tryptophan depletion in healthy adults. *Biol Psychiatry*. 2004;56(7):531-534.
38. **Carpenter LL**, Milosavljevic N, Schechter JM, Tyrka AR, Price LH. Augmentation with open-label atomoxetine for partial or nonresponse to antidepressants. *J Clin Psychiatry*. 2005;66(10):1234-1238.
39. **Carpenter LL**, Schechter JM, Underwood JA, Tyrka AR, Price LH. Service expectations and clinical characteristics of patients receiving psychiatric emergency services. *Psychiatr Serv*. 2005;56(6):743-745.
40. Garriock HA, Allen JJ, Delgado P, Nahaz Z, Kling MA, **Carpenter L**, Burke M, Burke W, Schwartz T, Marangell LB, Husain M, Erickson RP, Moreno FA. Lack of association of TPH2 exon XI polymorphisms with major depression and treatment resistance. *Mol Psychiatry*. 2005;10(11):976-977.
41. George MS, Rush AJ, Marangell LB, Sackeim HA, Brannan SK, Davis SM, Howland R, Kling MA, Moreno F, Rittberg B, Dunner D, Schwartz T, **Carpenter L**, Burke M, Ninan P, Goodnick P. A one-year comparison of vagus nerve stimulation with treatment as usual for treatment-resistant depression. *Biol Psychiatry*. 2005;58(5):364-373.
42. Rush AJ, Sackeim HA, Marangell LB, George MS, Brannan SK, Davis SM, Lavori P, Howland R, Kling MA, Rittberg B, **Carpenter L**, Ninan P, Moreno F, Schwartz T, Conway C, Burke M, Barry JJ. Effects of 12 months of vagus nerve stimulation in treatment-resistant depression: a naturalistic study. *Biol Psychiatry*. 2005;58(5):355-363.
43. **Carpenter LL**. Neurostimulation in resistant depression. *J Psychopharmacol*. 2006;20(3 Suppl):35-40.
44. **Carpenter LL**, Friehs GM, Tyrka AR, Rasmussen S, Price LH, Greenberg BD. Vagus nerve stimulation and deep brain stimulation for treatment resistant depression. *Med Health R I*. 2006;89(4):137, 140-131.
45. **Carpenter LL**, Schechter JM, Tyrka AR, Mello AF, Mello MF, Haggarty R, Price LH. Open-label tiagabine monotherapy for major depressive disorder with anxiety. *J Clin Psychiatry*. 2006;67(1):66-71.
46. DeBattista C, Belanoff J, Glass S, Khan A, Horne RL, Blasey C, **Carpenter LL**, Alva G. Mifepristone versus placebo in the treatment of psychosis in patients with psychotic major depression. *Biol Psychiatry*. 2006;60(12):1343-1349.
47. Friehs GM, Ojakangas C, **Carpenter LL**, Greenberg B, Chou KL. Surgical aspects of deep brain stimulation. *Med Health R I*. 2006;89(4):134-136.
48. Garriock HA, Delgado P, Kling MA, **Carpenter LL**, Burke M, Burke WJ, Schwartz T, Marangell LB, Husain M, Erickson RP, Moreno FA. Number of risk genotypes is a risk factor for major depressive disorder: a case control study. *Behav Brain Funct*. 2006;2:24.
49. Geraciotti TD, Jr., **Carpenter LL**, Owens MJ, Baker DG, Ekhtor NN, Horn PS, Strawn JR, Sanacora G, Kinkead B, Price LH, Nemeroff CB. Elevated cerebrospinal fluid substance p concentrations in posttraumatic stress disorder and major depression. *Am J Psychiatry*. 2006;163(4):637-643.

50. Tyrka AR, **Carpenter LL**, Carvalho JP, Price LH. Biomarkers in the human stress system: do they signal risk for depression? *Med Health R I*. 2006;89(5):180-182.
51. Tyrka AR, Mello AF, Mello MF, Gagne GG, Grover KE, Anderson GM, Price LH, **Carpenter LL**. Temperament and hypothalamic-pituitary-adrenal axis function in healthy adults. *Psychoneuroendocrinology*. 2006;31(9):1036-1045.
52. Tyrka AR, Price LH, Mello MF, Mello AF, **Carpenter LL**. Psychotic major depression: a benefit-risk assessment of treatment options. *Drug Saf*. 2006;29(6):491-508.
53. Wier LM, Tavares SB, Tyrka AR, Price LH, **Carpenter LL**. Levetiracetam-induced depression in a healthy adult. *J Clin Psychiatry*. 2006;67(7):1159-1160.
54. Grover KE, **Carpenter LL**, Price LH, Gagne GG, Mello AF, Mello MF, Tyrka AR. The relationship between childhood abuse and adult personality disorder symptoms. *J Pers Disord*. 2007;21(4):442-447.
55. Mello AF, Juruena MF, Pariante CM, Tyrka AR, Price LH, **Carpenter LL**, Del Porto JA. [Depression and stress: is there an endophenotype?]. *Rev Bras Psiquiatr*. 2007;29 Suppl 1:S13-18.
56. Park MC, Goldman MA, **Carpenter LL**, Price LH, Friehs GM. Vagus nerve stimulation for depression: rationale, anatomical and physiological basis of efficacy and future prospects. *Acta Neurochir Suppl*. 2007;97(Pt 2):407-416.
58. Tyrka AR, Wier LM, Anderson GM, Wilkinson CW, Price LH, **Carpenter LL**. Temperament and response to the Trier Social Stress Test. *Acta Psychiatr Scand*. 2007;115(5):395-402.
59. Abrantes AM, Strong DR, Lejuez CW, Kahler CW, **Carpenter LL**, Price LH, Niaura R, Brown RA. The role of negative affect in risk for early lapse among low distress tolerance smokers. *Addict Behav*. 2008;33(11):1394-1401.
60. **Carpenter LL**, Bayat L, Moreno F, Kling MA, Price LH, Tyrka AR, Kinkead B, Owens MJ, Nemeroff CB. Decreased cerebrospinal fluid concentrations of substance P in treatment-resistant depression and lack of alteration after acute adjunct vagus nerve stimulation therapy. *Psychiatry Res*. 2008;157(1-3):123-129.
61. Greenberg BD, Askland KD, **Carpenter LL**. The evolution of deep brain stimulation for neuropsychiatric disorders. *Front Biosci*. 2008;13:4638-4648.
62. Kelly MM, Tyrka AR, Anderson GM, Price LH, **Carpenter LL**. Sex differences in emotional and physiological responses to the Trier Social Stress Test. *J Behav Ther Exp Psychiatry*. 2008;39(1):87-98.
63. Kelly MM, Tyrka AR, Price LH, **Carpenter LL**. Sex differences in the use of coping strategies: predictors of anxiety and depressive symptoms. *Depress Anxiety*. 2008;25(10):839-846.
64. Philip NS, **Carpenter LL**, Tyrka AR, Price LH. Augmentation of antidepressants with atypical antipsychotics: a review of the current literature. *J Psychiatr Pract*. 2008;14(1):34-44.
65. Philip NS, Mello K, **Carpenter LL**, Tyrka AR, Price LH. Patterns of quetiapine use in psychiatric inpatients: an examination of off-label use. *Ann Clin Psychiatry*. 2008;20(1):15-20.

66. Rikhye K, Tyrka AR, Kelly MM, Gagne GG, Jr., Mello AF, Mello MF, Price LH, **Carpenter LL**. Interplay between childhood maltreatment, parental bonding, and gender effects: impact on quality of life. *Child Abuse Negl.* 2008;32(1):19-34.
67. Tyrka AR, Wier L, Price LH, Ross N, Anderson GM, Wilkinson CW, **Carpenter LL**. Childhood parental loss and adult hypothalamic-pituitary-adrenal function. *Biol Psychiatry.* 2008;63(12):1147-1154.
68. Tyrka AR, Wier L, Price LH, Ross NS, **Carpenter LL**. Childhood parental loss and adult psychopathology: effects of loss characteristics and contextual factors. *Int J Psychiatry Med.* 2008;38(3):329-344.
69. Tyrka AR, Wier LM, Price LH, Rikhye K, Ross NS, Anderson GM, Wilkinson CW, **Carpenter LL**. Cortisol and ACTH responses to the Dex/CRH test: influence of temperament. *Horm Behav.* 2008;53(4):518-525.
70. Brown RA, Lejuez CW, Strong DR, Kahler CW, Zvolensky MJ, **Carpenter LL**, Niaura R, Price LH. A prospective examination of distress tolerance and early smoking lapse in adult self-quitters. *Nicotine Tob Res.* 2009;11(5):493-502.
71. **Carpenter LL**, Ross NS, Tyrka AR, Anderson GM, Kelly M, Price LH. Dex/CRH test cortisol response in outpatients with major depression and matched healthy controls. *Psychoneuroendocrinology.* 2009;34(8):1208-1213.
72. **Carpenter LL**, Tyrka AR, Ross NS, Khoury L, Anderson GM, Price LH. Effect of childhood emotional abuse and age on cortisol responsivity in adulthood. *Biol Psychiatry.* 2009;66(1):69-75.
73. Keegan TJ, Walker SA, Brooks C, Langdon T, Linsell L, Maconochie NE, Doyle P, Fletcher T, Nieuwenhuijsen MJ, Carpenter LM, Venables KM. Exposures recorded for participants in the UK Chemical Warfare Agent Human Research Programme, 1941-1989. *Ann Occup Hyg.* 2009;53(1):83-97.
74. Malone DA, Jr., Dougherty DD, Rezai AR, **Carpenter LL**, Friehs GM, Eskandar EN, Rauch SL, Rasmussen SA, Machado AG, Kubu CS, Tyrka AR, Price LH, Stypulkowski PH, Giftakis JE, Rise MT, Malloy PF, Salloway SP, Greenberg BD. Deep brain stimulation of the ventral capsule/ventral striatum for treatment-resistant depression. *Biol Psychiatry.* 2009;65(4):267-275.
75. Mello MF, Faria AA, Mello AF, **Carpenter LL**, Tyrka AR, Price LH. [Childhood maltreatment and adult psychopathology: pathways to hypothalamic-pituitary-adrenal axis dysfunction]. *Rev Bras Psiquiatr.* 2009;31 Suppl 2:S41-48.
76. Philip NS, **Carpenter LL**, Tyrka AR, Whiteley LB, Price LH. Varenicline augmentation in depressed smokers: an 8-week, open-label study. *J Clin Psychiatry.* 2009;70(7):1026-1031.
77. Tyrka AR, Price LH, Gelernter J, Schepker C, Anderson GM, **Carpenter LL**. Interaction of childhood maltreatment with the corticotropin-releasing hormone receptor gene: effects on hypothalamic-pituitary-adrenal axis reactivity. *Biol Psychiatry.* 2009;66(7):681-685.
78. Tyrka AR, Wyche MC, Kelly MM, Price LH, **Carpenter LL**. Childhood maltreatment and adult personality disorder symptoms: influence of maltreatment type. *Psychiatry Res.* 2009;165(3):281-287.
79. Amin Z, Kanarek K, Krupitsky E, Walderhaug E, Ilomaki R, Blumberg H, Price LH, Bhagwagar Z, **Carpenter LL**, Tyrka AR, Magnusson A, Landro NI, Zvartau E, Gelernter J, Epperson CN, Rasanen P,

- Siironen J, Lappalainen J. A sequencing-based survey of functional APAF1 alleles in a large sample of individuals with affective illness and population controls. *Am J Med Genet B Neuropsychiatr Genet.* 2010;153B(1):332-335.
80. **Carpenter LL**, Gawuga CE, Tyrka AR, Lee JK, Anderson GM, Price LH. Association between plasma IL-6 response to acute stress and early-life adversity in healthy adults. *Neuropsychopharmacology.* 2010;35(13):2617-2623.
81. Philip NS, **Carpenter LL**, Tyrka AR, Price LH. Nicotinic acetylcholine receptors and depression: a review of the preclinical and clinical literature. *Psychopharmacology (Berl).* 2010;212(1):1-12.
82. Philip NS, **Carpenter LL**, Tyrka AR, Price LH. Pharmacologic approaches to treatment resistant depression: a re-examination for the modern era. *Expert Opin Pharmacother.* 2010;11(5):709-722.
83. Schoedl AF, Costa MC, Mari JJ, Mello MF, Tyrka AR, **Carpenter LL**, Price LH. The clinical correlates of reported childhood sexual abuse: an association between age at trauma onset and severity of depression and PTSD in adults. *J Child Sex Abus.* 2010;19(2):156-170.
84. Tyrka AR, Price LH, **Carpenter LL**, Anderson GM. In Reply to: Childhood Maltreatment and Hypothalamic-Pituitary-Adrenal Axis Reactivity. *Biol Psychiatry.* 2010.
85. Tyrka AR, Price LH, Kao HT, Porton B, Marsella SA, **Carpenter LL**. Childhood maltreatment and telomere shortening: preliminary support for an effect of early stress on cellular aging. *Biol Psychiatry.* 2010;67(6):531-534.
86. Yip AG, **Carpenter LL**. Transcranial magnetic stimulation for medication-resistant depression. *J Clin Psychiatry.* 2010;71(4):502-503.
87. **Carpenter LL**, Shattuck TT, Tyrka AR, Geraciotti TD, Price LH. Effect of childhood physical abuse on cortisol stress response. *Psychopharmacology (Berl).* 2011;214(1):367-375.
88. **Carpenter LL**, Tyrka AR, Lee JK, Tracy AP, Wilkinson CW, Price LH. A placebo-controlled study of sertraline's effect on cortisol response to the dexamethasone/corticotropin-releasing hormone test in healthy adults. *Psychopharmacology (Berl).* 2011;218(2):371-379.
89. Cui D, Zhang H, Yang BZ, Listman JB, Li D, Price LH, **Carpenter LL**, Tyrka AR, Anton RF, Kranzler HR, Gelernter J. Variation in NGFB is associated with primary affective disorders in women. *Am J Med Genet B Neuropsychiatr Genet.* 2011;156B(4):401-412.
90. Nugent NR, Tyrka AR, **Carpenter LL**, Price LH. Gene-environment interactions: early life stress and risk for depressive and anxiety disorders. *Psychopharmacology (Berl).* 2011;214(1):175-196.
91. **Carpenter LL**, Gawuga CE, Tyrka AR, Price LH. C-reactive protein, early life stress, and wellbeing in healthy adults. *Acta Psychiatr Scand.* 2012;126(6):402-410.
92. **Carpenter LL**, Janicak PG, Aaronson ST, Boyadjis T, Brock DG, Cook IA, Dunner DL, Lanocha K, Solvason HB, Demitrack MA. Transcranial magnetic stimulation (TMS) for major depression: a multisite, naturalistic, observational study of acute treatment outcomes in clinical practice. *Depress Anxiety.* 2012;29(7):587-596.
93. Hsieh TH, Dhamne SC, Chen JJ, **Carpenter LL**, Anastasio EM, Pascual-Leone A, Rotenberg A. Minimal heating of aneurysm clips during repetitive transcranial magnetic stimulation. *Clin Neurophysiol.* 2012;123(7):1471-1473.c

94. Philip NS, **Carpenter LL**, Tyrka AR, Price LH. The nicotinic acetylcholine receptor as a target for antidepressant drug development. *ScientificWorldJournal*. 2012;2012:104105.
95. Tyrka AR, Price LH, Marsit C, Walters OC, **Carpenter LL**. Childhood adversity and epigenetic modulation of the leukocyte glucocorticoid receptor: preliminary findings in healthy adults. *PLoS One*. 2012;7(1):e30148.
96. Tyrka AR, Walters OC, Price LH, Anderson GM, **Carpenter LL**. Altered response to neuroendocrine challenge linked to indices of the metabolic syndrome in healthy adults. *Horm Metab Res*. 2012;44(7):543-549.
97. Aaronson ST, **Carpenter LL**, Conway CR, Reimherr FW, Lisanby SH, Schwartz TL, Moreno FA, Dunner DL, Lesem MD, Thompson PM, Husain M, Vine CJ, Banov MD, Bernstein LP, Lehman RB, Brannon GE, Keepers GA, O'Reardon JP, Rudolph RL, Bunker M. Vagus nerve stimulation therapy randomized to different amounts of electrical charge for treatment-resistant depression: acute and chronic effects. *Brain Stimul*. 2013;6(4):631-640.
98. Janicak PG, Dunner DL, Aaronson ST, **Carpenter LL**, Boyadjis TA, Brock DG, Cook IA, Lanocha K, Solvason HB, Bonneh-Barkay D, Demitrack MA. Transcranial magnetic stimulation (TMS) for major depression: a multisite, naturalistic, observational study of quality of life outcome measures in clinical practice. *CNS Spectr*. 2013;18(6):322-332.
99. Philip NS, Kuras YI, Valentine TR, Sweet LH, Tyrka AR, Price LH, **Carpenter LL**. Regional homogeneity and resting state functional connectivity: associations with exposure to early life stress. *Psychiatry Res*. 2013;214(3):247-253.
100. Philip NS, Sweet LH, Tyrka AR, Price LH, Bloom RF, **Carpenter LL**. Decreased default network connectivity is associated with early life stress in medication-free healthy adults. *Eur Neuropsychopharmacol*. 2013;23(1):24-32.
101. Price LH, Kao HT, Burgers DE, **Carpenter LL**, Tyrka AR. Telomeres and early-life stress: an overview. *Biol Psychiatry*. 2013;73(1):15-23.
102. Tyrka AR, Burgers DE, Philip NS, Price LH, **Carpenter LL**. The neurobiological correlates of childhood adversity and implications for treatment. *Acta Psychiatr Scand*. 2013;128(6):434-447.
103. Dunner DL, Aaronson ST, Sackeim HA, Janicak PG, **Carpenter LL**, Boyadjis T, Brock DG, Bonneh-Barkay D, Cook IA, Lanocha K, Solvason HB, Demitrack MA. A multisite, naturalistic, observational study of transcranial magnetic stimulation for patients with pharmacoresistant major depressive disorder: durability of benefit over a 1-year follow-up period. *J Clin Psychiatry*. 2014;75(12):1394-1401.
104. Mischoulon D, Price LH, **Carpenter LL**, Tyrka AR, Papakostas GI, Baer L, Dording CM, Clain AJ, Durham K, Walker R, Ludington E, Fava M. A double-blind, randomized, placebo-controlled clinical trial of S-adenosyl-L-methionine (SAME) versus escitalopram in major depressive disorder. *J Clin Psychiatry*. 2014;75(4):370-376.
105. Mischoulon D, Price LH, **Carpenter LL**, Tyrka AR, Papakostas GI, Fava M. Dr. Mischoulon and colleagues reply. *J Clin Psychiatry*. 2014;75(11):e1328-1329.
106. Philip NS, Carpenter SL, **Carpenter LL**. Safe use of repetitive transcranial magnetic stimulation in patients with implanted vagus nerve stimulators. *Brain Stimul*. 2014;7(4):608-612.

107. Philip NS, Valentine TR, Sweet LH, Tyrka AR, Price LH, **Carpenter LL**. Early life stress impacts dorsolateral prefrontal cortex functional connectivity in healthy adults: informing future studies of antidepressant treatments. *J Psychiatr Res*. 2014;52:63-69.
108. Dougherty DD, Rezai AR, **Carpenter LL**, Howland RH, Bhati MT, O'Reardon JP, Eskandar EN, Baltuch GH, Machado AD, Kondziolka D, Cusin C, Evans KC, Price LH, Jacobs K, Pandya M, Denko T, Tyrka AR, Brelje T, Deckersbach T, Kubu C, Malone DA, Jr. A Randomized Sham-Controlled Trial of Deep Brain Stimulation of the Ventral Capsule/Ventral Striatum for Chronic Treatment-Resistant Depression. *Biol Psychiatry*. 2015;78(4):240-248.
109. Leuchter AF, Cook IA, Feifel D, Goethe JW, Husain M, **Carpenter LL**, Thase ME, Krystal AD, Philip NS, Bhati MT, Burke WJ, Howland RH, Sheline YI, Aaronson ST, Iosifescu DV, O'Reardon JP, Gilmer WS, Jain R, Burgoyne KS, Phillips B, Manberg PJ, Massaro J, Hunter AM, Lisanby SH, George MS. Efficacy and Safety of Low-field Synchronized Transcranial Magnetic Stimulation (sTMS) for Treatment of Major Depression. *Brain Stimul*. 2015;8(4):787-794.
110. Newport DJ, **Carpenter LL**, McDonald WM, Potash JB, Tohen M, Nemeroff CB. Biomarkers APACoRTFoN, Treatments. Ketamine and Other NMDA Antagonists: Early Clinical Trials and Possible Mechanisms in Depression. *Am J Psychiatry*. 2015;172(10):950-966.
111. Philip NS, Carpenter SL, Ridout SJ, Sanchez G, Albright SE, Tyrka AR, Price LH, **Carpenter LL**. 5Hz Repetitive transcranial magnetic stimulation to left prefrontal cortex for major depression. *J Affect Disord*. 2015;186:13-17.
112. Ridout SJ, Ridout KK, Kao HT, **Carpenter LL**, Philip NS, Tyrka AR, Price LH. Telomeres, early-life stress and mental illness. *Adv Psychosom Med*. 2015;34:92-108.
113. Sarris J, Price LH, **Carpenter LL**, Tyrka AR, Ng CH, Papakostas GI, Jaeger A, Fava M, Mischoulon D. Is S-Adenosyl Methionine (SAME) for Depression Only Effective in Males? A Re-Analysis of Data from a Randomized Clinical Trial. *Pharmacopsychiatry*. 2015.
114. Tyrka AR, **Carpenter LL**, Kao HT, Porton B, Philip NS, Ridout SJ, Ridout KK, Price LH. Association of telomere length and mitochondrial DNA copy number in a community sample of healthy adults. *Exp Gerontol*. 2015;66:17-20.
115. Philip NS, Sweet LH, Tyrka AR, Carpenter SL, Albright SE, Price LH, **Carpenter LL**. Exposure to childhood trauma is associated with altered n-back activation and performance in healthy adults: implications for a commonly used working memory task. *Brain Imaging Behav*. 2016;10(1):124-135.
116. Philip NS, Dunner DL, Dowd SM, Aaronson ST, Brock DG, **Carpenter LL**, Demitrack MA, Hovav S, Janicak PG, George MS. Can Medication Free, Treatment-Resistant, Depressed Patients Who Initially Respond to TMS Be Maintained Off Medications? A Prospective, 12-Month Multisite Randomized Pilot Study. *Brain Stimul*. 2016;9(2):251-257
117. MacDonald K, Thomas ML, Sciolla AF, Schneider B, Pappas K, Bleijenberg G, Bohus M, Bekh B, **Carpenter L**, Carr A, Dannlowski U, Dorahy M, Fahlke C, Finzi-Dottan R, Karu T, Gerdner A, Glaesmer H, Grabe HJ, Heins M, Kenny DT, Kim D, Knoop H, Lobbestael J, Lochner C, Lauritzen G, Ravndal E, Riggs S, Sar V, Schafer I, Schlosser N, Schwandt ML, Stein MB, Subic-Wrana C, Vogel M, Wingenfeld K. Minimization of Childhood Maltreatment Is Common and Consequential: Results from a Large, Multinational Sample Using the Childhood Trauma Questionnaire. *PLoS One*. 2016;11(1):e0146058.

118. Philip NS, Ridout SJ, Albright SE, Sanchez G, **Carpenter LL**. 5-Hz Transcranial Magnetic Stimulation for Comorbid Posttraumatic Stress Disorder and Major Depression. *J Trauma Stress*. 2016;29(1):93-96.
119. Ridout, K.K., **Carpenter, L.L.**, Tyrka, A.R. The Cellular Sequelae of Early Stress: Focus on Aging and Mitochondria. *Neuropsychopharmacology*; 2016 Jan;41(1):388-9. PMID:26657966.
120. Tyrka AR, Parade SH, Welch ES, Ridout KK, Price LH, Marsit C, Philip NS, **Carpenter LL**. Methylation of the leukocyte glucocorticoid receptor gene promoter in adults: associations with early adversity and depressive, anxiety and substance-use disorders. *Translational psychiatry*. 2016; 6(7):e848.PMID: 27378548; PMCID:PMC4969762
121. Tyrka AR, Parade SH, Price LH, Kao HT, Porton B, Philip NS, Welch ES, **Carpenter LL**. Alterations of Mitochondrial DNA Copy Number and Telomere Length With Early Adversity and Psychopathology. *Biol Psychiatry*. 2016;79(2):78-86.
122. Philip NS, Tyrka AR, Albright SE, Sweet LH, Almeida I, Price LH, **Carpenter LL**. Early life stress predicts thalamic hyperconnectivity: A transdiagnostic study of global connectivity. *Journal of psychiatric research*. 2016; 79:93-100. NIHMSID: NIHMS789197 PMID: 27214526 PMCID: PMC4894492
123. Kubu CS, Brelje T, Butters MA, Deckersbach T, Malloy P, Moberg P, Tröster AI, Williamson E, Baltuch GH, Bhati MT, **Carpenter LL**, Dougherty DD, Howland RH, Rezai AR, Malone DA Jr. Cognitive outcome after ventral capsule/ventral striatum stimulation for treatment-resistant major depression. *Journal of neurology, neurosurgery, and psychiatry*. 2017; 88(3):262-265. PMID:27659923
124. Sharma A, Gerbarg P, Bottiglieri T, Massoumi L, **Carpenter LL**, Lavretsky H, Muskin PR, Brown RP, Mischoulon D. S-Adenosylmethionine (SAME) for Neuropsychiatric Disorders: A Clinician-Oriented Review of Research *Journal of Clinical Psychiatry*, 2017 Jun;78(6):e656-e67. PubMed PMID: 28682528. PMCID: PMC5501081.
125. McClintock SM, Reti IM, **Carpenter LL**, McDonald WM, Dubin M, Taylor SF, Cook IA, O'Reardon J, Husain MM, Wall C, Krystal AD, Sampson SM, Morales O, Nelson BG, Latoussakis V, George MS, Lisanby SH; National Network of Depression Centers rTMS Task Group; American Psychiatric Association Council on Research Task Force on Novel Biomarkers and Treatments. Consensus Recommendations for the Clinical Application of Repetitive Transcranial Magnetic Stimulation (rTMS) in the Treatment of Depression. *J Clin Psychiatry*. 2017 May 23. pii: 16cs10905. Doi: 10.4088/JCP.16cs10905. [Epub ahead of print] PubMed PMID: 28541649.
126. Philip NS, Nelson B, Frohlich F, Lim KO, Widge AS, and **Carpenter LL**. Low-Intensity Transcranial Current Stimulation in Psychiatry. *The American Journal of Psychiatry*. 2017; :appiajp201716090996. PMID:28231716
127. Conelea CA, Philip NS, Yip AG, Barnes JL, Niedzwiecki MJ, Greenberg BD, Tyrka AR, **Carpenter LL**. Transcranial magnetic stimulation for treatment-resistant depression: Naturalistic treatment outcomes for younger versus older patients. *J Affect Disord*. 2017 Aug 1;217:42-47. doi: 10.1016/j.jad.2017.03.063. Epub 2017 Mar 29. PubMed PMID: 28388464; PubMed Central PMCID: PMC5460629.
128. **Carpenter LL**, Aaronson ST, Clarke GN, Holtzheimer PE, Johnson CW, McDonald WM, Elizabeth L. Stannard EL, Schneider MB. rTMS with a two-coil array: Safety and efficacy for treatment resistant major depressive disorder. *Brain Stimul*. 2017. doi: 10.1016/j.brs.2017.06.003. Epub 2017 Jun 20.

129. Yip AG, George MS, Tendler A, Roth Y, Zangen A, **Carpenter LL**. 61% of unmedicated treatment resistant depression patients who did not respond to acute TMS treatment responded after four weeks of twice weekly deep TMS in the Brainsway pivotal trial. *Brain Stimul*. 2017 Jul - Aug;10(4):847-849. doi: 10.1016/j.brs.2017.02.013. Epub 2017 Mar 10. PubMed PMID: 28330592.
130. Ridout SI, Spofford CM, van't Wout-Frank M, Philip NS, Unger WS, **Carpenter LL** Shea MT (2017). Heart Rate Variability Responses to a Standardized Virtual Reality Exposure in Veterans with PTSD. *Current Treatment Options in Psychiatry*, 4(3), 271-280.
131. Voigt J, **Carpenter LL**, Leuchter A. Cost effectiveness analysis comparing repetitive transcranial magnetic stimulation to antidepressant medications after a first treatment failure for major depressive disorder in newly diagnosed patients - A lifetime analysis. *PLoS One*. 2017 Oct 26;12(10):e0186950. doi: 10.1371/journal.pone.0186950. eCollection 2017. PubMed PMID: 29073256
132. Philip NS, Barredo J, van 't Wout-Frank M, Tyrka AR, Price LH, **Carpenter LL**. Network Mechanisms of Clinical Response to Transcranial Magnetic Stimulation in Posttraumatic Stress Disorder and Major Depressive Disorder. *Biol Psychiatry*. 2018;83(3):263-72. doi: 10.1016/j.biopsych.2017.07.021. PubMed PMID: 28886760.
133. Kavanaugh BC, Aaronson ST, Clarke GN, Holtzheimer PE, Johnson CW, McDonald WM, Schneider MB, and **Carpenter LL**. Neurocognitive effects of rTMS with a two-coil device in treatment resistant major depressive disorder. *The Journal of ECT* 2018;34(4):258-65. doi: 10.1097/YCT.0000000000000494. PubMed PMID: 29613944.
134. Philip NS, Barredo J, Aiken E, **Carpenter LL**. Neuroimaging mechanisms of therapeutic repetitive transcranial magnetic stimulation for major depression. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* 2018;3(3):211-22. doi: 10.1016/j.bpsc.2017.10.007. PubMed PMID: 29486862; PMCID: PMC5856477.
135. Zeier Z, **Carpenter LL**, Kalin NH, Rodriguez CI, McDonald WM, Widge AS, Nemeroff CB. Clinical Implementation of Pharmacogenetic Decision Support Tools for Antidepressant Drug Prescribing. *Am J Psychiatry*. *American Journal of Psychiatry* 2018:appiajp201817111282. doi: 10.1176/appi.ajp.2018.17111282. PubMed PMID: 29690793.
136. **Carpenter LL**, Conelea C, Tyrka AR, Welch ES, Greenberg BD, Price LH, Niedzwiecki M, Yip AG, Barnes J, and Philip NS. 5 Hz Repetitive Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder Comorbid with Major Depressive Disorder. *Journal of Affective Disorders* 2018;235:414-20. doi: 10.1016/j.jad.2018.04.009. PubMed PMID: 29677606.
137. Russo GB, Tirrell E, Busch A, **Carpenter LL**. Behavioral activation therapy during transcranial magnetic stimulation for major depressive disorder. *J Affect Disord*. 2018; 236:101-4. doi: 10.1016/j.jad.2018.04.108. PubMed PMID: 29723763.
138. Welch E, Weigand, A, Philip NS, Tyrka AR, Press D, **Carpenter LL**. Feasibility and Tolerability of Computerized Cognitive-Behavioral Therapy Combined with Bifrontal Transcranial Direct Current Stimulation for of Major Depression. *Neuromodulation*, 2018 Aug 28. doi: 10.1111/ner.12807. PubMed PMID: 30153360.
139. Garnaat SL, Yuan S, Wang H, Philip NS, **Carpenter LL**. Updates on Transcranial Magnetic Stimulation Therapy for Major Depressive Disorder. *Psychiatr Clin North Am*. 2018;41(3):419-31. doi: 10.1016/j.psc.2018.04.006. PubMed PMID: 30098655.



140. Widge AS, Bilge MT, Montana R, Chang W, Rodriguez CI, Deckersbach T, **Carpenter LL**, Kalin NH, Nemeroff CB. Electroencephalographic Biomarkers for Treatment Response Prediction in Major Depressive Illness: A Meta-Analysis. *Am J Psychiatry*. 2018 Oct 3;appiajp201817121358. doi:10.1176/appi.ajp.2018.17121358. PubMed PMID: 30278789.
141. Laferton IAC, Vijapura S, Baer L, Clain AI, Cooper A, Papakostas G, Price LH, **Carpenter LL**, Tyrka AR, Fava M, Mischoulon D. Mechanisms of Perceived Treatment Assignment and Subsequent Expectancy Effects in a Double Blind Placebo Controlled RCT of Major Depression. *Front Psychiatry*. 2018 Sep 7;9:424. doi: 10.3389/fpsvt.2018.00424. eCollection 2018. PubMed PMID: 30245644; PubMed Central PMCID: PMC6137256.
142. Petrosino NJ, Zandvakili A, Carpenter LL, Philip NS. Pilot Testing of Peak Alpha Frequency Stability During Repetitive Transcranial Magnetic Stimulation. *Front Psychiatry*. 2018;9:605. doi: 10.3389/fpsvt.2018.00605. PubMed PMID: 30515110; PMCID: PMC6256033.
143. Philip NS, Leuchter AF, Cook IA, Massaro J, Goethe JW, **Carpenter LL**. Predictors of response to synchronized transcranial magnetic stimulation for major depressive disorder. *Depress Anxiety*. 2018. doi: 10.1002/da.22862. PubMed PMID: 30480860.
144. Bennett E, Almeida JRC, **Carpenter LL**. Do bipolar disorder soft signs impact outcomes following Transcranial Magnetic Stimulation (TMS) therapy for depression? *Journal of Affective Disorders*. 2018; 245 : 237-240.
145. Barredo J, Aiken E, van 't Wout-Frank M, Greenberg BD, **Carpenter LL**, Philip NS. Network Functional Architecture and Aberrant Functional Connectivity in Post-Traumatic Stress Disorder: A Clinical Application of Network Convergence. *Brain Connect*. 2018;8(9):549-57. doi: 10.1089/brain.2018.0634. PubMed PMID: 30398386.
146. Berlow YA, Zandvakili A, **Carpenter LL**, Philip NS. Transcranial direct current stimulation for unipolar depression and risk of treatment emergent mania: An updated meta-analysis. *Brain Stimul*. 2019;12(4):1066-8. doi: 10.1016/j.brs.2019.03.025. PubMed PMID: 30926260.
147. Zandvakili A, Philip NS, Jones SR, Tyrka AR, Greenberg BD, **Carpenter LL**. Use of Machine Learning in Predicting Clinical Response to Transcranial Magnetic Stimulation in comorbid Posttraumatic Stress Disorder and Major Depression: A Resting State Electroencephalography Study. *Journal of Affective Disorders* 2019;252:47-54. doi: 10.1016/j.jad.2019.03.077. PubMed PMID: 30978624; PMCID: PMC6520189.
148. Garnaat SL, Fukuda AM, Yuan S, **Carpenter LL**. Identification of clinical features and biomarkers that may inform a personalized approach to rTMS for depression. *Personalized Medicine in Psychiatry*. 2019;17:4-16. doi: 10.1016/j.pmip.2019.09.001.
149. Barredo J, Aiken E, van 't Wout-Frank M, Greenberg BD, **Carpenter LL**, Philip NS. Neuroimaging Correlates of Suicidality in Decision-Making Circuits in Posttraumatic Stress Disorder. *Front Psychiatry*. 2019;10:44. doi: 10.3389/fpsvt.2019.00044. PubMed PMID: 30809160; PMCID: PMC6379274.
150. Voigt J, **Carpenter L**, Leuchter A. A systematic literature review of the clinical efficacy of repetitive transcranial magnetic stimulation (rTMS) in non-treatment resistant patients with major depressive disorder. *BMC Psychiatry*. 2019;19(1):13. doi: 10.1186/s12888-018-1989-z. PubMed PMID: 30621636; PMCID: PMC6325728.

151. Fukuda AM, Tirrell E, Gobin AP, **Carpenter LL**. Repetitive Transcranial Magnetic Stimulation for depression relapse or recurrence: Naturalistic retreatment series outcomes. *Brain Stimul*. 2019. doi: 10.1016/j.brs.2019.06.016. PubMed PMID: 31266723.
152. Kavanaugh BC, Fryc A, **Carpenter LL**. Measurement and Modulation of Working Memory-Related Oscillatory Abnormalities. *J Int Neuropsychol Soc*. 2019;1-6. doi: 10.1017/S1355617719000845. PubMed PMID: 31358081
153. Yuan S, Tirrell E, Gobin AP, **Carpenter LL**. Effect of Previous Electroconvulsive Therapy on Subsequent Response to Transcranial Magnetic Stimulation for Major Depressive Disorder. *Neuromodulation*. 2020;23(3):393-398. doi: 10.1111/ner.13046.
154. Barredo J, Bellone JA, Edwards M, **Carpenter LL**, Correia S, Philip NS. White matter integrity and functional predictors of response to repetitive transcranial magnetic stimulation for posttraumatic stress disorder and major depression. *Depress Anxiety*. 2019 Nov;36(11):1047-1057. doi: 10.1002/da.22952.
155. Corlier J, **Carpenter LL**, Wilson AC, Tirrell E, Gobin AP, Kavanaugh B, Leuchter AF. The relationship between individual alpha peak frequency and clinical outcome with repetitive Transcranial Magnetic Stimulation (rTMS) treatment of Major Depressive Disorder (MDD). *Brain Stimul*. 2019 Nov - Dec;12(6):1572-1578. doi: 10.1016/j.brs.2019.07.018.
156. Zandvakili A, Berlow YA, **Carpenter LL**, Philip NS. Transcranial Direct Current Stimulation in Psychiatry: What Psychiatrists Need to Know. *Focus (Am Psychiatr Publ)*. 2019;17(1):44-9. doi: 10.1176/appi.focus.20180029. PubMed PMID: 31975960; PMCID: PMC6493146.
157. Kavanaugh BC, Cancilliere MK, Fryc A, Tirrell E, Oliveira J, Oberman LM, Wexler BE, **Carpenter LL**, Spirito A. Measurement of executive functioning with the National Institute of Health Toolbox and the association to anxiety/depressive symptomatology in childhood/adolescence. *Child Neuropsychol*. 2020;26(6):754-769. DOI 10.1080/09297049.2019.1708295
158. Reiff CM, Richman EE, Nemeroff CB, **Carpenter LL**, Widge AS, Rodriguez CI, Kalin NH, McDonald WM, the Work Group on B, Novel Treatments aDotAPACoR. Psychedelics and Psychedelic-Assisted Psychotherapy. *Am J Psychiatry*. 2020;177(5):391-410. doi: 10.1176/appi.ajp.2019.19010035. PubMed PMID: 32098487.
159. Ridout KK, Coe JL, Parade SH, Marsit CJ, Kao HT, Porton B, **Carpenter LL**, Price LH, Tyrka AR. Molecular markers of neuroendocrine function and mitochondrial biogenesis associated with early life stress. *Psychoneuroendocrinology*. 2020;116:104632. doi: 10.1016/j.psyneuen.2020.104632. PubMed PMID: 32199200.
160. Kimball A, Dichtel LE, Nyer MB, Mischoulon D, Fisher LB, Cusin C, Dording CM, Trinh NH, Yeung A, Haines MS, Sung JC, Pinna G, Rasmusson AM, **Carpenter LL**, Fava M, Klibanski A, Miller KK. The allopregnanolone to progesterone ratio across the menstrual cycle and in menopause. *Psychoneuroendocrinology*. 2020;112:104512.
161. Beck QM, Tirrell E, Fukuda AM, Kokdere F, **Carpenter LL**. Can early treatment response serve as a predictor of antidepressant outcome of repetitive Transcranial Magnetic Stimulation? *Brain Stimul*. 2020;13(2):420-1. doi: 10.1016/j.brs.2019.12.002. PubMed PMID: 31882372.
162. Dwver IB, Aftab A, Widge A, Rodriguez CI, **Carpenter LL**, Nemeroff CB, McDonald WM, Kalin NH: APA Council of Research Task Force on Novel Biomarkers and Treatments. Hormonal Treatments for Major Depressive Disorder: State of the Art. *Am J Psychiatry*. 2020 Aug 1;177(8):686-705. doi:

10.1176/appi.aip.2020.19080848. Epub 2020 May 27. Erratum in: *Am J Psychiatry*. 2020 Jul 1;177(7):642. PMID: 32456504.

163. Philip NS, McLaughlin NC, **Carpenter LL**, Phillips ML, Liu H, Haber SN, Greenberg BD. Transient aphasia induced by intermittent theta burst stimulation. *Brain Stimul*. 2020;13(4):941-942. doi: 10.1016/j.brs.2020.03.013. Epub 2020 Mar 25
164. Dichtel LE, **Carpenter LL**, Nyer M, Mischoulon D, Kimball A, Deckersbach T, Dougherty DD, Schoenfeld DA, Fisher L, Cusin C, Dording C, Trinh NH, Pedrelli P, Yeung A, Farabaugh A, Papakostas GI, Chang T, Shapero BG, Chen J, Cassano P, Hahn EM, Rao EM, Brady RO, Jr., Singh RJ, Tyrka AR, Price LH, Fava M, Miller KK. Low-Dose Testosterone Augmentation for Antidepressant-Resistant Major Depressive Disorder in Women: An 8-Week Randomized Placebo-Controlled Study. *Am J Psychiatry*. 2020:appiajp202019080844.
165. Zandvakili A, Barredo J, Swearingen HR, Aiken EM, Berlow YA, Greenberg BD, **Carpenter LL**, Philip NS. Mapping PTSD symptoms to brain networks: a machine learning study. *Transl Psychiatry*. 2020;10(1):195. doi 10.1038/s41398-020-00879-2
166. Philip NS, McLaughlin NC, **Carpenter LL**, Phillips ML, Liu H, Haber SN, Greenberg BD. Transient aphasia induced by intermittent theta burst stimulation. *Brain Stimul*. 2020;13(4):941-942. doi: 10.1016/j.brs.2020.03.013. Epub 2020 Mar 25.
167. Kavanaugh BC, Cancilliere MK, Fryc A, Tirrell E, Oliveira J, Oberman LM, Wexler BE, **Carpenter LL**, Spirito A. Measurement of executive functioning with the National Institute of Health Toolbox and the association to anxiety/depressive symptomatology in childhood/adolescence. *Child Neuropsychol*. 2020;26(6):754-769.
168. Kokdere F, Tirrell E, Fukuda AM, Gobin AP, Kavanaugh B, Price LH, **Carpenter LL**. Do Deviations from the 5 Sessions per Week Schedule Impact Outcomes of Transcranial Magnetic Stimulation for Major Depressive Disorder? *Brain Stimul*. 2020. doi: 10.1016/j.brs.2020.08.001.
169. Sackeim HA, Aaronson ST, **Carpenter LL**, Hutton TM, Mina M, Pages K, Verdoliva S, West WS. Clinical outcomes in a large registry of patients with major depressive disorder treated with Transcranial Magnetic Stimulation. *J Affect Disord*. 2020 Aug 7;277:65-74. doi: 10.1016/j.jad.2020.08.005. Epub ahead of print. PMID: 32799106.
170. Fukuda AM, Hindley LE, Kang JW, Tirrell E, Tyrka AR, Ayala A, **Carpenter LL**. Peripheral Vascular Endothelial Growth Factor Changes after Transcranial Magnetic Stimulation in Treatment-Resistant Depression. *Neuroreport*. 2020 Accepted Aug 18 2020; in press.

## **OTHER PUBLICATIONS, BOOKS AND CHAPTERS**

1. Kupfer DJ, Carpenter LL: Clinical evidence of comorbidity: a critique of treated samples and longitudinal studies. In Maser, JD and Cloninger, RC (Eds) *Comorbidity of Anxiety and Mood Disorders*, American Psychiatric Press, Inc., Washington, DC, 1990. (Chapt 13, pp. 231-238).
2. **Carpenter LL**, McDougle CJ, Epperson CN Price LH: A risk-benefit assessment of drugs used in the management of obsessive-compulsive disorder. *Drug Safety*, 1996; 15(2).
3. **Carpenter LL**, Leckman JF, McDougle CJ: Pharmacological approaches to the treatment of TS, OCD, and ADHD. In Leckman JF and Cohen DJ (Eds): *Tourette's Syndrome and Tic-related Obsessive Compulsive Disorder: Natural History, Genetics, Neurobiology and Treatment*. New York: Wiley-Liss,1998; 340-367.
4. Epperson CN, **Carpenter LL**, North WG, McDougle CJ: Cerebrospinal fluid oxytocin levels in trichotillomania. *CNS Spectrums*,1998; 52-55.
5. Price LH, **Carpenter LL**, Rasmussen SA: Drug combination strategies. In Amsterdam JD, Hornig M, Nierenberg AA (Eds): *Treatment-Resistant Mood Disorders*. Cambridge University Press, Cambridge, 2001;194-222.
6. De Mello MF, De Mello AAF, Juruena MF, **Carpenter LL**, Price LH: Psiconeuroendocrinologia. In: Marcelo Feijó de Mello; Rodrigo Affonseca Bressan; Sergio Baxter Andreoli; Jair de Jesus Mari. (Org.). Transtorno do Estresse Pós-traumático.Diagnóstico e Tratamento. 1ed.Barueri: Manole, 2006, v. 1, p. 43-59. Sao Paulo, Brazil
7. Greenberg BD, Price LH, Rauch SL, Friehs G, Noren G, Malone D, **Carpenter LL**, Rezai AR, Rasmussen SA. Neurosurgery for intractable obsessive-compulsive disorder and depression: Critical issues. Chapter in: *Surgery for Psychiatric Disorders*, Rezai AR, Rasmussen SA, Greenberg BD (Eds). *Neurosurgery Clinics of North America*, Vol 14(2), WB Saunders, Philadelphia, pp 199-212, 2003.
8. **Carpenter LL**, Friehs G, Price LH. "Cervical vagus nerve stimulation for treatment resistant depression". Chapter in: *Surgery for Psychiatric Disorders*. In the series: *Neurosurgery Clinics of North America*, WB Saunders, Philadelphia, pp 275-282, 2003.
9. Greenberg BD, Nahas Z, **Carpenter LL**, Current status of deep brain stimulation. *Primary Psychiatry*, 2005; 12(10): 59-64.
10. **Carpenter LL**, Philip NS. Advances in neurostimulation for depression: electroconvulsive therapy, transcranial magnetic stimulation, vagus nerve stimulation and deep brain stimulation, in *Depression: Treatment and Strategies and Management 2<sup>nd</sup> Edition*, Schwartz and Peterson, Informa, 2009
11. Block DR, Yonkers KA, **Carpenter LL**. "Sertraline" Chapter 14 (pp307-320) in Schatzberg AF and Nemeroff CB (Eds). *APPI Textbook of Pharmacology*, Third Edition 2009. American Psychiatric Publishing, Inc, Arlington VA.
12. **Carpenter LL**, Wyche MC, Friehs GM, O'Reardon JP. "Electroconvulsive Therapy, Transcranial Magnetic Stimulation, and Vagus Nerve Stimulation for Depression". Chapter 54 in *Neuromodulation: A Comprehensive Handbook*. Krames ES, Hunter P, Rezai AR (Eds). 2009 Academic Press, London.
13. **Carpenter LL**, Philip NS, O'Reardon J. "Advances in Neurostimulation for Depression: Electroconvulsive Therapy, Transcranial Magnetic Stimulation, Vagus Nerve Stimulation, and Deep

Brain Stimulation". Chapter 9 in *Depression: Treatment Strategies and Management, Second Edition*. TL. Schwartz and T. Peterson (Eds.) 2010, Informa Healthcare USA.

14. **Carpenter LL**, and Gawuga CE. Immune Consequences of Early Life Stress: Relationship to Chronic Pain Syndromes. Chapter in *Pain in Women: A Clinical Guide*. C Bernstein and A Bailey (Eds), 2012, Springer, Inc., New York
15. **Carpenter LL**, Yonkers KA, Schatzberg AF, Block DR. "Sertraline" Chapter 14 in Schatzberg AF and Nemeroff CB (Eds). *APPI Textbook of Pharmacology*, Fourth Edition 2012; American Psychiatric Publishing, Inc, Arlington VA.
16. Gaud KG, Noah S, Philip NS, and **Carpenter LL**. Transcranial Magnetic Stimulation. *Encyclopedia of Psychopharmacology* DOI 10.1007/978-3-642-27772-6\_7023-1# Springer-Verlag Berlin Heidelberg 2014.
17. Janicak PG and **Carpenter LL**: "The Efficacy of Transcranial Magnetic Stimulation for Major Depression: A Review of the Evidence" *Psychiatric Annals*, DOI: 10.3928/00485713-2014 0609-06
18. Ridout SJ, Ridout KK, Kao H-T, **Carpenter LL**, Philip NS, Tyrka AR, Price LH. Telomeres, early-life stress, and mental illness. Chapter in: *Clinical Challenges in the Biopsychosocial Interface: Update on Psychosomatics for the 21st Century*. In the series: *Advances in Psychosomatic Medicine*, Balon R, Wise TN (eds), S. Karger AG, Basel, Switzerland (2015 pp92-108)
19. **Carpenter LL** and Schatzberg. "Sertraline" Chapter 45 in Schatzberg AF and Nemeroff CB (Eds). *APPI Textbook of Pharmacology*, Fifth Edition 2017; American Psychiatric Publishing, Inc, Arlington VA.
20. McDonald WM, Meeks TW, **Carpenter LL**, McCall WV, Zorumski CF. "Electroconvulsive Therapy and Other Neuromodulation Therapies" Chapter 45 in in Schatzberg AF and Nemeroff CB (Eds). *APPI Textbook of Pharmacology*, Fifth Edition 2017; American Psychiatric Publishing, Inc, Arlington VA.
21. Fukuda AM, Kavanaugh B, Yuan S, **Carpenter LL**. (2020). Transcranial Magnetic Stimulation in Major Depressive Disorder. *Chapter accepted*. In Nemeroff CB, Schatzberg A, Rasgon N, Strakowski SM (Eds). *The American Psychiatric Publishing Textbook of Mood Disorders, Second Edition*. American Psychiatric Association

#### **OTHER NON-PEER REVIEWED PUBLICATIONS**

1. Price LH, **Carpenter LL**: The use of antigluocorticoids for treating depression. Medscape Mental Health, 1997; <http://www.medscape.com/>.
2. Price LH, Lemmond K, **Carpenter LL**: Refractory depression: Assessment and treatment. *Directions in Psychiatry*, 1999; 19:1-20.
3. **Carpenter, LL**: Defining Treatment Resistant Depression. Chapter in: *Novel Approaches to the Patient with Treatment-Resistant Depression*. CME Monograph from symposium proceedings June 16, 2001; pp. 3- 10.
4. **Carpenter LL**, Kalin NH, Keller MB, Krishnan KRR, Nemeroff CB: Atypical Depression: Overview and new developments. *CNS News Special Report*, CME Monograph May 2003.

5. Philip NS, Tyrka AR, **Carpenter LL**, Whitely L, Price LH. Varenicline augmentation in depressed smokers: an 8-week, open-label study. *Continuing Medical Education, NCDEU* 2009.
6. Block DR, Kelly MM, **Carpenter LL**, Generalized Anxiety Disorders Diagnostic and Treatment Issues (CME). *Directions in Psychiatry*, 2006; 3 (26): 171-181.
7. Neurostimulation Therapies for Depression: Acute and Long-term Outcomes. Wyche MC, O'Reardon J, **Carpenter LL**. *Depression: Mind and Body* 2007; 3(3) 106-114.
8. Price LH, **Carpenter LL**, Tyrka AR. Lithium Augmentation for Refractory Depression: A Critical Reappraisal. *Primary Psychiatry* 2008; 15(1):35-42.
9. McCarrier KP, Abraham L, **Carpenter LL**, Deal LS, Thase M, Trivedi M, Blum SI. PMH39 Identifying Disease-Defining Concepts Using Spontaneous and Probed Responses From Semi-Structured Qualitative Interviews in Patients With Major Depressive Disorder. *Value in Health*, 2012;Volume 15 , Issue 7 , A341 <https://doi.org/10.1016/j.jval.2012.08.829>
10. McCarrier, KP, Martin ML, Bushnell DM, Abraham L, Bush EN, Houle CR, Mathews M, **Carpenter LL**, Blum SI. Qualitative development and cognitive evaluation of the symptoms of major depressive disorder (s mdd), a consortium-developed patient reported outcome measure. *Value in Health* , 2013; Volume 16 , Issue 3 , A63<https://doi.org/10.1016/j.jval.2013.03.1592>
11. Houle CR, Blum SI, **Carpenter LL**, Dedios C, Greco N, Thase M, Trivedi M, Martin ML, Ramasamy A. PMH40 How do Patients Describe Their Depression? - Incorporating the Patient's Voice Into Instrument Development. 2012 *Value in Health*, Volume 15, Issue 7 , A34. <https://doi.org/10.1016/j.jval.2012.08.830>
12. Mischoulon D, Price LH, **Carpenter LL**, Tyrka AR, Papakostas GI, Fava M. Dr. Mischoulon and colleagues reply. *J Clin Psychiatry*. 2014;75(11):e1328-1329.
13. Ridout SJ and **Carpenter LL**. Transcranial Magnetic Stimulation (TMS) for the treatment of Depression (2015) *Health Naturally* 30:14 – 21.
14. Conelea CA, Philip NS, Yip AG, Barnes JL, Niedzwiecki MJ, Greenberg BD, Tyrka AR, **Carpenter LL**. Response to Letter to the Editor regarding "Transcranial magnetic stimulation for treatment-resistant depression: Naturalistic outcomes for younger versus older patients". *J Affect Disord*. 2018;225:773-774.
15. McClintock SM, Reti IM, **Carpenter LL**, McDonald WM, Dubin M, Taylor SF, Cook IA, O'Reardon J, Husain MM, Wall C, Krystal A, Sampson S, Morales O, Nelson BG, George MS, Lisanby SH. Dr McClintock and Colleagues Reply. *J Clin Psychiatry*. 2018;79(1).
16. Brunoni AR, Arns M, Baeken C, Blumberger D, Brunelin J, **Carpenter LL**, Downar J, Keeser D, Langguth B, Rachid F, Sack AT, Vila-Rodriguez F, Padberg F. Mixing Apples and Oranges in Assessing Outcomes of Repetitive Transcranial Stimulation Meta-Analyses. *Psychother Psychosom*. 2019 Dec 3:1-2. doi: 10.1159/000504653.
17. Dhamne SC, Ilmoniemi RJ, Tsuboyama M, **Carpenter LL**, Pascual-Leone A, Rotenberg A. Safety of rTMS in patients with intracranial metallic objects. *Brain Stimul*. 2020;13(3):928-929.
18. **Carpenter LL**, Philip NS. The Future Is Now? Rapid Advances by Brain Stimulation Innovation. *Am J Psychiatry*. 2020;177(8):654-656.

## **ABSTRACTS**

- A1. Frank E, Kupfer DJ, **Carpenter LL**, Recurrent depression and familial risk. Amer Psychopath Assoc New Research Abstract, New York, March 1987.
- A2. Thase ME, **Carpenter LL**, Kupfer DJ. Atypical subtypes of recurrent major depression. Amer Psychiatr Assoc New Research Abstract, San Francisco, CA, May, 1989.
- A3. Price LH, Pelton GH, McDougle CJ, Malison RT, Jatlow P, **Carpenter LL**, Kirwin PD, Ward-O'Brien D, Heninger GR. Effects of acute pretreatment with risperidone on responses to cocaine in cocaine-dependent humans. Soc Neurosci Abstr 22(2):933(#365.7), November, 1996.
- A4. **Carpenter LL**, Anderson G, McDougle CJ, Kirwin PD, Price LH, Heninger GR. Tryptophan depletion during continuous sampling via indwelling lumbar catheter in healthy human subjects. Amer Psychiatr Assoc New Research Abstr p. 85 (#NR72), May, 1997.
- A5. **Carpenter LL**, Anderson G, Pelton G, Gudin JA, Kirwin PD, Price LH, Heninger GR, McDougle CJ. Tryptophan depletion during continuous CSF sampling via indwelling lumbar catheter in healthy human subjects. Soc Neurosci Abstr 23(2):1220(#483.16), October, 1997.
- A6. Pelton GH, McDougle CJ, **Carpenter LL**, Anderson GM, Gudin JA, Price LH, Malison RT, Kirwin P, Heninger GR. Cerebrospinal fluid levels of interleukin-1 and interleukin-6 increase after intravenous lipopolysaccharide in healthy humans. Soc Neurosci Abstr 23(1):992(#393.5), October, 1997.
- A7. Malison RT, Pelton GH, **Carpenter LL**, Sanacora G, Haroon E, Potenza M, Berman R, Baldwin RM, Seibyl JS, Price LH, Innis RB, Charney DS. Reduced midbrain serotonin transporter binding in depressed vs. healthy subjects as measured by [<sup>123</sup>I]β-CIT SPECT. Soc. Neurosci Abstr, New Orleans, LA, October, 1997.
- A8. Price LH, Pelton GH, McDougle CJ, Malison RT, Jatlow P, **Carpenter LL**, Kirwin PD, O'Brien DW, Nadim H, Heninger GR. Effects of acute pretreatment with risperidone on responses to cocaine in cocaine addicts. Abstr Amer Coll Neuropsychopharm p. 208, December, 1997.
- A9. Malison RT, Wright S, Sanacora G, Potenza M, Mechanic K, Haroon E, **Carpenter LL**, Pelton G, Self D, Kosten T, Krystal J, Nestler E. Reductions in Cocaine-induced craving following the selective D<sub>1</sub> Dopamine receptor agonist ABT-431 in human cocaine abusers. College for Problems of Drug Dependence, 1998.
- A10. Malison RT, Price LH, Berman R, Pelton GH, **Carpenter LL**, Sanacora G, Owens MJ, Nemeroff CB, Rajeevan N, Baldwin RM, Seibyl JP, Innis RB, Charney DS. Reduced midbrain serotonin transporter binding in major depression as measured by [<sup>123</sup>I]β-CIT SPECT. Soc Nucl Med Abstr 1998.

- A11. **Carpenter LL**, Jovic Z, Hall J, Rasmussen SA, Price LH. Mirtazapine augmentation in the treatment of refractory depression. Amer Psychiatr Assoc New Research Abstr p. 265(#NR728), May, 1998.
- A12. **Carpenter LL**, Anderson GM, Yasmin S, Keller MB, Chappell PB, Price LH. Acute changes in CSF 5-HIAA following oral paroxetine challenge in healthy humans. Amer Coll Neuropsychopharm Abstr, p. 210, 1998.
- A13. Price LH, **Carpenter LL**, Jovic Z, Rasmussen SA. Mirtazapine augmentation in the treatment of refractory depression. Amer Coll Neuropsychopharm Abstr, p. 312, 1998.
- A14. **Carpenter LL**, Anderson GM, Yasmin S, Keller MB, Chappell PB, Price LH. Acute changes in CSF 5-HIAA following oral paroxetine challenge in healthy humans. Amer Psychiatr Assoc New Research p.144(#NR287), May, 1999.
- A15. Yasmin S, **Carpenter LL**, Leon Z, Siniscalchi JM, Price LH. Adjunctive gabapentin in treatment-resistant depression. Amer Psychiatr Assoc New Research Abstr #NR153, May, 2000. Amer Psychiatr Assoc New Research Abstract
- A16. **Carpenter LL**, Yasmin S, Price, LH. Mirtazapine augmentation in refractory depression. NCDEU 40th Annual Meeting Abstracts, May 2000 (#17).
- A17. **Carpenter LL**, Yasmin S, Price LH. A double-blind, placebo-controlled study of mirtazapine augmentation for refractory major depression: preliminary findings. Inst on Psychiatr Servs Syllab and Procdngs pp. 145-146, October, 2000.
- A18. Price LH, Gagne GG, Furman MJ, **Carpenter LL**, The efficacy of continuation electroconvulsive therapy in chronically depressed patients. Abstr Amer Coll Neuropsychopharm p. 145, December, 2000.
- A19. **Carpenter LL**, Yasmin S, Price, LH. A double-blind, placebo-controlled study of mirtazapine augmentation for refractory major depression. Amer Coll Neuropsychopharm Abstr, p. 154, 2000.
- A20. **Carpenter LL**, Yasmin S, Price, LH. A double-blind, placebo-controlled study of mirtazapine augmentation for refractory major depression. Amer Psychiatr Assoc New Research Abstract May, 2000.
- A21. **Carpenter LL**, Pelton GH, Heninger GR, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Relationship between CSF Corticotropin Releasing Factor and Perceived Early Life Stress in Depressed Patients and Healthy Controls. Future Leaders In Psychiatry 3rd Annual Symposium, Boca Raton, FL, 2001.
- A22. **Carpenter LL**, Pelton GH, Heninger GR, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Relationship between CSF Corticotropin Releasing Factor and Perceived Early Life Stress in Depressed Patients and Healthy Controls. 5th Annual Brown University Research Day, March 2001.



- A23. **Carpenter LL**, Kirwin PDS, Pelton GH, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Standard Tryptophan Depletion Protocol Increases CSF Corticotropin Releasing Factor in Healthy Adult Humans. 5th Annual Brown University Research Day, March 2001.
- A24. **Carpenter LL**, Pelton GH, Heninger GR, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Relationship between CSF Corticotropin Releasing Factor and Perceived Early Life Stress in Depressed Patients and Healthy Controls. Amer Coll Neuropsychopharm Abstr, p. 137, 2001.
- A25. **Carpenter LL**, Kirwin PDS, Pelton GH, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Standard Tryptophan Depletion Protocol Increases CSF Corticotropin Releasing Factor in Healthy Adult Humans. Amer Coll Neuropsychopharm Abstr, p. 137, 2001.
- A26. **Carpenter LL**, Pelton GH, Heninger GR, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Relationship between CSF Corticotropin Releasing Factor and Perceived Early Life Stress in Depressed Patients and Healthy Controls. American Psychopathological Assoc, NYC, March 7, 2002.
- A27. **Carpenter LL**, Tyrka A, Price LH. Cerebrospinal Fluid (CSF) Interleukin-6 in Depressed Patients and Healthy Controls. 6th Annual Brown University Research Day, March 2002.
- A28. **Carpenter LL**, Sinischalchi J, Leon Z, Price LH. Orlistat (Xenical) for weight gain related to psychotropic medication use. 6th Annual Brown University Research Day, March 2002.
- A29. Tyrka A, **Carpenter LL**, Anderson GA, Brown R, Price LH. Relationship between early life stress and pituitary-adrenal function as measured by the dexamethasone/corticotrophin releasing hormone test. 6th Annual Brown University Research Day, March 2002.
- A30. Jaffe, RC, **Carpenter LL**, Price LH. Clinical utility of evoked response potentials (ERP) in the diagnosis and evaluation of depression. 6th Annual Brown University Research Day, March 2002.
- A31. **Carpenter LL**, Pelton GH, Heninger GR, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Relationship between CSF Corticotropin Releasing Factor and Perceived Early Life Stress in Depressed Patients and Healthy Controls (Abstract) Biol Psychiatry 57th Annual Convention and Scientific Program; Vol 51, May 2002.
- A32. **Carpenter LL**, Moreno FF, Kling MA. Effects of vagus nerve stimulation on cerebrospinal fluid components in depressed patients (Abstract/Symposium Presentation) Biol Psychiatry 57th Annual Convention and Scientific Program; Vol 51: 152S - 153S, May 2002.
- A33. **Carpenter LL**, Pelton GH, Heninger GR, McDougle CJ, Malison RT, Owens MJ, Nemeroff CB, Price LH. Relationship between CSF Corticotropin Releasing Factor and Perceived Early Life Stress in Depressed Patients and Healthy Controls (Abstract) Amer Psychiatr Assoc New Research Abstract; May, 2002.
- A34. **Carpenter LL**, Practical approaches to psychotic depression (#9E). Amer Psychiatr Assoc 2002 Annual Meeting Syllabus and Proceedings Summary, p.245, 2002.

- A35. **Carpenter LL**, The biology of PTSD and atypical depression: Focus on the role of early life trauma (#20B). Amer Psychiatr Assoc 2002 Annual Meeting Syllabus and Proceedings Summary, p.268, 2002.
- A36. **Carpenter LL**, Moreno FF, Kling MA. Effects of vagus nerve stimulation on cerebrospinal fluid components in depressed patients (Abstract) Amer Coll Neuropsychopharm Abstr, 2002.
- A37. **Carpenter LL**, Price LH, Kinkead B, Cassell T, Sanacora G, Owens MJ, Nemeroff CB. Elevated cerebrospinal fluid concentration of substance P in major depression. Brown Medical School Department of Psychiatry Research Day Poster Presentation, March 2003.
- A38. **Carpenter LL**, Tyrka AR, Schechter J, Haggarty R, Price LH. An open-label trial of tiagabine for major depressive disorder with anxiety. Brown Medical School Department of Psychiatry Research Day Poster Presentation, March 2003.
- A39. Tyrka AR, **Carpenter LL**, Brown RA, Strong DR, Kahler CW, Anderson GM, Price LH. Early-life stress and pituitary-adrenal function in healthy adults. Brown Medical School Department of Psychiatry Research Day Poster Presentation, March 2003.
- A40. **Carpenter LL**, Tyrka AR, Schechter J, Haggarty R, Price LH. An open-label trial of tiagabine for major depressive disorder with anxiety. SOBP, May 2003.
- A41. Tyrka AR, **Carpenter LL**, Brown RA, Strong DR, Kahler CW, Anderson GM, Price LH. Early-life stress and pituitary-adrenal function in healthy adults. Amer Psychiatr Assoc New Research Abstr #NR61, May, 2003.
- A42. **Carpenter LL**, Tyrka AR, Schechter J, Haggarty R, Price LH. An open-label trial of tiagabine for major depressive disorder with anxiety. APA New Research Abstract #NR501, May, 2003.
- A43. **Carpenter LL**, Tyrka AR, Schechter J, Haggarty R, Price LH. An open-label trial of tiagabine for major depressive disorder with anxiety. Institute on Psychiatric Services, October, 2003.
- A44. **Carpenter LL**, Moreno F, Kling MA, Price LH, Owens MJ, Nemeroff CB. Decreased cerebrospinal fluid (CSF) concentrations of substance P in medicated patients with treatment-resistant major depression. Amer Coll Neuropsychopharma Abstr, 2003.
- A45. **Carpenter LL**, Price LH, Kinkead B, Cassell T, Sanacora G, Owens MJ, Nemeroff CB. Elevated cerebrospinal fluid concentration of substance P in major depression. Amer Coll Neuropsychopharma Abstr, 2003.
- A46. **Carpenter LL**, The developmental timing of stress and adult HPA axis dysregulation (Abstr). The International Society for Traumatic Stress Studies 19<sup>th</sup> Annual Meeting Final Program and Proceedings, October, 2003 p.52.

- A47. Tyrka AR, **Carpenter LL**, Brown RA, Strong DR, Kahler WK, Anderson GM, Price LH. Early-Life Stress and Response to the Dexamethasone/Corticotropin-Releasing Hormone Test in Healthy Adults. Amer Coll Neuropsychopharma Abstr, 2003.
- A48. Tyrka AR, **Carpenter LL**, McDougle CJ, Kirwin PD, Owens MJ, Nemeroff CB, Price LH. CSF corticotropin-releasing factor increases during tryptophan depletion. Amer Psychiatr Assoc New Research Abstr #NR78, May, 2004.
- A49. Milosavljevic N, Schechter JM, Price LH, **Carpenter LL**. Antidepressant augmentation with open-label atomoxetine. Amer Psychiatr Assoc New Research Abstr #NR138, May, 2004.
- A50. **Carpenter LL**, Price LH, Kinkead B, Cassell T, Sanacora G, Owens MJ, Nemeroff CB. Elevated CSF concentration of substance P in major depression. Amer Psychiatr Assoc New Research Abstr #NR786, May, 2004.
- A51. **Carpenter LL**, Milosavljevic N, Schechter JM, Price LH. Antidepressant augmentation with open-label atomoxetine. APA Institute on Psych Services Annual Mtg. Oct 2004.
- A52. **Carpenter LL**, Milosavljevic, N, Schechter JM, Tyrka AR, Price LH. Open-label antidepressant augmentation with atomoxetine. Amer Coll Neuropsychopharma Abstr, 2004.
- A53. Tyrka AR, **Carpenter LL**, Mello AA, Mello MF, Gagne GG, Price LH. Temperament and cortisol response to the DEX/CRH test in healthy adults. Amer Coll Neuropsychopharma Abstr, 2004.
- A54. Moreno FA, Garriock H, Delgado PL, Kling MA, **Carpenter LL**, Burke M, Burke W, Schwartz T, Marangell L, Husain M, Erikson R. Monoamine related genes and association with major depression. Amer Coll Neuropsychopharma Abstr, 2004
- A55. Greenberg B, Friehs G, **Carpenter LL**, Tyrka A, Malone D, Rezai A, Shapira N, Foote K, Okun M, Goodman W, Rasmussen S Price L. Deep Brain Stimulation: Clinical Findings in Intractable Depression and OCD. Neuropsychopharmacology (2004) 29; S32
- A56. Friehs GM, **Carpenter LL**, Tyrka A, Malone D, Rezai, AR, Shapira NA, Foote K, Okun M, Goodman WK, Rasmussen SA, Price LH, Greenberg BD. Deep Brain Stimulation Clinical Findings in Intractable Depression and OCD. 10<sup>th</sup> Annual Conference of the international FES Society Montreal Canada, July 2005.
- A57. Tyrka, A.R., **Carpenter LL**, Feijo de Mello, A.A., Feijo de Mello, M., Gagne, G.G., Grover, K.E., Anderson, G.M., and Price, L.H. Temperament and Pituitary-Adrenal Response to the DEX/CRH Test in Healthy Adults. Annual Meeting of the Society of Biological Psychiatry, May, 2005
- A58. Grover, K.E., Tyrka, A.R., **Carpenter LL**, Mello, A.A.F., Mello, M.F., Gagne, G.G., and Price, L.H. Personality and hypothalamic-pituitary-adrenal function in healthy adults. Rhode Island Hospital 12th Annual Hospital Research Celebration, October, 2004.

- A59. **Carpenter LL**, Tyrka, A.R., Carvalho, J., Wier, L. Gagne, G., Mello, A.F., Mello, M.F., and Price, L.H. Decreased cortisol response to the trier social stress test in healthy adults with significant childhood adversity. Ninth Annual Brown University Research Symposium, March 2005.
- A60. Rikhye, K. **Carpenter LL**, Tyrka, A.R., Gagne, G, Feijo de Mello, A.A., Feijo de Mello, M., Price, L.H. Interplay between childhood adversity, parental bonding, and sex effects: Impact on quality of life. Ninth Annual Brown University Research Symposium, March 2005.
- A61. Tyrka, A.R., **Carpenter LL**, Feijo de Mello, A.A., Feijo de Mello, M., Gagne, G.G., Grover, K.E., Anderson, G.M., and Price, L.H. Temperament and Pituitary-Adrenal Response to the DEX/CRH Test in Healthy Adults. Ninth Annual Brown University Research Symposium, March 2005.
- A62. Grover KE., Tyrka AR, **Carpenter LL**, Gagne GG, Feijo de Mello AA, Feijo de Mello M., and Price LH. The Relationship between Childhood Abuse and Adult Personality Disorder Symptoms. Ninth Annual Brown University Research Symposium, March 2005.
- A63. Tyrka AR, **Carpenter LL**, Feijo de Mello AA, Feijo de Mello M, Gagne GG, Grover KE, Anderson GM, and Price LH. Temperament and Pituitary-Adrenal Response to the DEX/CRH Test in Healthy Adults. Annual Meeting of the Society of Biological Psychiatry, May, 2005.
- A64. Tyrka AR, **Carpenter LL**, Feijo de Mello AA, Feijo de Mello M, Gagne GG, Grover KE, Anderson GM, and Price LH. Temperament and Response to the Dex/CRH Test in Healthy Adults. Annual Meeting of the International Society of Psychoneuroendocrinology, September, 2005.
- A65. **Carpenter LL**, Carvahlo JP, Tyrka AR, Wier LM, Gagne GG, Mello AF, Mello MF, Anderson GM, Price LH. Decreased Cortisol Response to the Trier Social Stress Test in Healthy Adults with Significant Childhood Adversity. Annual Meeting of the International Society of Psychoneuroendocrinology, September, 2005.
- A66. Carvalho JP, Tyrka AR, Wier LM, Gagne GG, Mello AF, Mello MF, Anderson GM, Price LH, **Carpenter LL**, The Relationship Between Childhood Adversity and Stress Responsivity. 13th Annual Research Celebration, Rhode Island Hospital, Providence, RI. September 29, 2005.
- A67. Wier LM, Tyrka AR, **Carpenter LL**, Carvalho JP, RikhyE K, Anderson GM, and Price LH. Stress Reactive Temperaments and Cortisol Response in Healthy Adults. 13th Annual Research Celebration held at Rhode Island Hospital, Providence, RI. September 29, 2005.
- A68. Tyrka AR, **Carpenter LL**, Feijo de Mello AA, Feijo de Mello M, Gagne GG, Grover KE, Anderson GM, Price LH. Temperament and pituitary-adrenal response to the DEX/CRH test in healthy adults. Soc Biol Psychiatry Ann Mtg #690, May, 2005.
- A69. Friehs G, **Carpenter LL**, Tyrka A, Malone D, Rezai AR, Shapira NA, Foote K, Okun M, Rauch SL, Goodman WK, Rasmussen SA, Price LH, Greenberg BD. Deep brain stimulation in intractable OCD, and preliminary results in intractable depression. 10<sup>th</sup> Ann Conf Internat FES Soc p. 44, July, 2005.

- A70. Tyrka AR, **Carpenter LL**, Wier L, Feijo de Mello AA, Feijo de Mello M, Gagne GG, Grover KE, Anderson GM, Price LH. Temperament and response to the DEX/CRH test in healthy adults. Internat Soc Psychoneuroendocrin Ann Mtg, September, 2005.
- A71. **Carpenter LL**, Carvalho JP, Tyrka AR, Wier LM, Gagne GG, Mello AF, Mello MF, Gagne GG, Anderson GM, Price LH. Temperament and response to the DEX/CRH test in healthy adults. Internat Soc Psychoneuroendocrin Ann Mtg, September, 2005.
- A72. **Carpenter LL**, Tyrka AR, Carvalho JP, Wier L, Gagne GG, Mello AF, Mello MF, Anderson GM, Price LH. Decreased cortisol response to the Trier Social Stress Test in healthy adults with significant childhood adversity. Abstr Amer Coll Neuropsychopharm S153 #28, December, 2005.
- A73. Tyrka AR, **Carpenter LL**, Anderson GM, Price LH. Inhibited temperament and HPA axis function in healthy adults. Abstr Amer Coll Neuropsychopharm S242 #86, December, 2005.
- A74. Kelly MM, Tyrka AR, Anderson GM, Price LH, **Carpenter LL**, Sex differences in emotional and physiological responses to the Trier Social Stress Test. 40th annual meeting of the Association for Behavioral and Cognitive Therapies, Chicago, IL. November, 2006.
- A75. **Carpenter LL**, Carvahlo JP, Tyrka AR, Wier LM, Gagne GG, Mello AF, Mello MF, Anderson GM, Price LH. Decreased Cortisol Response to the Trier Social Stress Test in Healthy Adults with Significant Childhood Adversity. Neuropsychopharmacology, 2006; (30) S153
- A76. Tyrka AR, **Carpenter LL**, Anderson GM, Price LH. Inhibited Temperament and HPA Axis Function in Healthy Adults. Neuropsychopharmacology, 2006; (30) S242.
- A77. Kelly MM, **Carpenter LL**, Tyrka AR, Anderson GM, Price LH. Parental bonding and stress reactivity: The mediating effects of trait anxiety. 10th annual Brown Research Day, Providence, RI, April 2006.
- A78. Kelly MM, Tyrka AR, Anderson GM, Price LH, **Carpenter LL**, Sex differences in emotional and physiological responses to the Trier Social Stress Test. 10th annual Brown Research Day, Providence, RI. April 2006 A70.
- A79. Kelly MM, **Carpenter LL**, Tyrka AR, Anderson GM, Price LH. Parental bonding and stress reactivity: The mediating effects of trait anxiety. 26th annual meeting of the Anxiety Disorders Association of America, Miami, FL, March 25, 2006.
- A80. **Carpenter LL**, Carvahlo JP, Tyrka AR, Wier LM, Gagne GG, Mello AF, Mello MF, Anderson GM, Price LH. Decreased Cortisol Response to the Trier Social Stress Test in Healthy Adults with Significant Childhood Adversity. 10th annual Brown Research Day, Providence, RI, April 2006
- A81. Wyche MC, Tyrka AR, Kelly MM, Wier LM, Carvalho JP, Rikhye K, Price LH, **Carpenter LL**. Childhood abuse and adult personality: Does type of maltreatment matter? 10th annual Brown Research Day, Providence, RI, April 2006

- A82. Wyche MC, Tyrka AR, Kelly MM, Wier LM, Carvalho JP, Rikhye K, and Price LH, and **Carpenter LL**. Childhood Abuse and Adult Personality: Does Type of Maltreatment Matter? 14th Annual Research Celebration, Rhode Island Hospital, Providence, RI. November 9, 2006.
- A83. Wier LM, **Carpenter LL**, Carvalho, J.P., Rikhye, K., Wyche, M.C., Price, L.H., and Tyrka, A.R. The Relationship Between Childhood Parental Loss and Adult Psychological Function. 14th Annual Research Celebration, Rhode Island Hospital, Providence, RI. November 9, 2006.
- A84. Tyrka, A.R., **Carpenter LL**, Gelernter, J., Kelly, M.M., and Price, L.H. COMT genetic variation and depression: gene-environment interaction and HPA axis correlates. Annual Meeting of the American College of Neuropsychopharmacology, December 2006.
- A85. Wier, W., **Carpenter, L.L.**, Price, L.H., Ross, N., Anderson, G.M., Wilkinson, C.W., and Tyrka, A.R. Parental loss in childhood and pituitary-adrenal response to the dexamethasone/corticotropin-releasing hormone test in healthy adults. Eleventh Annual Brown University Research Symposium, April 2007.
- A86. Ross, N., Tyrka, A.R., Price, L.H., Anderson, G.M., and **Carpenter LL**. Childhood maltreatment, female sex, and perceived stress burden: significant determinants of cortisol response to the Dex/CRH test in healthy adults. Eleventh Annual Brown University Research Symposium, April 2007.
- A87. Tyrka, A.R., **Carpenter, L.L.**, Gelernter, J., Kelly, M.M., and Price, L.H. COMT genetic variation and depression: gene-environment interaction and HPA axis correlates. Eleventh Annual Brown University Research Symposium, April 2007.
- A88. **Carpenter, L.L.**, Ross, N.S., Tyrka, A.R., Mello, A.F., Mello, M.F., Anderson, G.M., Wilkinson, C.W., and Price, L.H. Childhood abuse, depression and gender are significant determinants of cortisol and ACTH response to the dex/crh test. Annual Meeting of the Society of Biological Psychiatry, May, 2007.
- A89. Tyrka, A.R., **Carpenter, L.L.**, Gelernter, J., Kelly, M.M., and Price, L.H. COMT genetic variation and depression: gene-environment interaction and HPA axis correlates. Annual Meeting of the Society of Biological Psychiatry, May, 2007.
- A90. Tyrka, A.R., Wier, L., Price, L.H., Anderson, G., and **Carpenter, L.L.** Childhood parental loss and cortisol response to the dexamethasone/corticotropin-releasing hormone test in healthy adults. Annual Meeting of the Society of Biological Psychiatry, May, 2007.
- A91. Philip NS, Mello K, **Carpenter LL**, Tyrka AR, Price LH. Off-label use of quetiapine in psychiatric inpatients. New Research, Psychiatric Association 160<sup>th</sup> Annual Meeting. San Diego CA, May 2007
- A92. Dougherty, D.D., Malone, D., **Carpenter, L.**, Tyrka, A., Friehs, G., Rezai, A. Eskander, E., Machado, A., Kubu, C., Malloy, P., Salloway, S., Rauch, S.L., Price, L., Rasmussen, S. Greenberg, B. Long-term

outcomes of ventral capsule/ventral striatum DBS for highly treatment-resistant depression. Annual Meeting of the American College of Neuropsychopharmacology, December 2007.

- A93. Tyrka, A.R., **Carpenter, L.L.**, Gelernter, J., Price, L.H. Serotonin transporter polymorphism, childhood maltreatment, and cortisol response to the Dex/CRH test in healthy adults: Preliminary findings. Annual Meeting of the American College of Neuropsychopharmacology, December 2007.
- A94. **Carpenter, L.L.**, Tyrka, A.R., Anderson, G.M., Wilkinson, C.W., Price, L.H. Depression, childhood maltreatment, and gender are significant determinants of cortisol response to the Dex/CRH test. Annual Meeting of the American College of Neuropsychopharmacology, December 2007.
- A95. **Carpenter, L.L.**, Malone, D.A. Jr, Dougherty, D.A., Rezai, A.R., Friehs, G.M., Eskandar, E.N., Rauch, S.L., Rasmussen, S.A., Machado, A.G., Kubu, C.S., Tyrka, A.R., Price, L.H., Stypulkowski P.H., Giftakis, J.E., Rise, M.T., Malloy, P.F., Salloway, S.P., Greenberg, B.D. Deep Brain Stimulation (DBS) of the Ventral Capsule/Ventral Striatum for Treatment Resistant Major Depression. Twelfth Annual Brown University Research Symposium March, 2008.
- A96. **Carpenter, L.L.**, Price, L.H, Gelernter, J., Ross, N.S., Anderson, G., Tyrka, A.R. Serotonin transporter polymorphism, childhood maltreatment, and cortisol response to the Dex/CRH test in healthy adults: Preliminary findings. Twelfth Annual Brown University Research Symposium March, 2008.
- A97. Tyrka, A.R., Price, L.H., Gelernter, J., Anderson, G., Tracy, A.P., **Carpenter, L.L.** Corticotropin releasing hormone receptor (CRHR1) polymorphisms interact with early life stress to influence the cortisol response to the Dex/CRH test. Twelfth Annual Brown University Research Symposium March, 2008.
- A98. Khoury, L.M., **Carpenter, L.L.**, Price, L.H., Anderson, G., Tyrka, A.R. Early life stress and HPA axis function. Twelfth Annual Brown University Research Symposium March, 2008.
- A99. Philip, N.S., **Carpenter, L.L.**, Tyrka, A.R., Price, L.H. Depression and suicidality in outpatients during varenicline (Chantix) treatment: A preliminary report. Twelfth Annual Brown University Research Symposium March, 2008.
- A100. Tyrka, A.R., **Carpenter, L.L.**, Gelernter, J., Price, L.H. Serotonin transporter polymorphism, childhood maltreatment, and cortisol response to the Dex/CRH test in healthy adults: Preliminary findings. Annual Meeting of the American College of Neuropsychopharmacology, December 2007.
- A101. Tyrka, A.R., Price, L.H., Gelernter, J., Anderson, G., and **Carpenter, L.L.** Corticotropin releasing hormone receptor (CRHR1) polymorphisms interact with early life stress to influence the cortisol response to the Dex/CRH test: Preliminary findings. Paper presented at the Annual Meeting of the Society of Biological Psychiatry, May, 2008.
- A102. Tyrka, A.R., Price, L.H., Kao, H.T., Porton, B., Marsella, S., and **Carpenter, L.L.** Reported Childhood Maltreatment Linked to Shortened Telomere Length in Healthy Adults: A Pilot Study. Brain Research Meeting: Stress, Coping and Disease, November, 2008.

- A103. **Carpenter LL**, Lee JK, Tyrka AR, Anderson GM, Price LH. "Elevated IL-6 response to stress in healthy adults with early life adversity". Presented at Elsevier Conference "A Brain Research Meeting: Stress, Coping and Disease" Arlington, Washington DC, November, 2008
- A104. Tyrka, A.R., Price, L.H., Kao, H.T., Porton, B., Marsella, S., and **Carpenter, L.L.** Reported Childhood Maltreatment Linked to Shortened Telomere Length in Healthy Adults: A Pilot Study. Annual Meeting of the American College of Neuropsychopharmacology, December 2008.
- A105. Schoedl AF, Costa MCP, Tyrka AR, **Carpenter LL**, Price LH, Mari JJ, Feijo Melo M. The clinical correlates of reported childhood sexual abuse: An association between age at trauma onset and severity of depression and PTSD in adults. International Symposium on Violence and Mental Health #71, p 51, June, 2008.
- A106. Cui DH, Zhang HP, Kranzler HR, Blumberg HP, Tyrka AR, Yang BZ, Wei F, **Carpenter LL**, Price L, Gelernter J. Association between NGFB and affective disorder suggests potentially different genetic backgrounds between primary and drug dependence-comorbid affective disorders. The American Society of Human Genetics (ASHG) 58th Annual Meeting, November, 2008.
- A107. **Carpenter LL**, Lee JK, Tyrka AR, Anderson GM, Price LH. Elevated IL-6 response to stress in healthy adults with early life adversity. Annual Meeting of the American College of Neuropsychopharmacology, December 2008.
- A108. Malone DA\*, Dougherty DD\*, Rezai AR, **Carpenter LL**, Friehs GM, Eskander E, Rauch SL, Rasmussen SA, Machado AG, Kubu CS, Tyrka AR, Price LH, Stypulkowski PH, Giftakis J, Malloy PF, Salloway SP, and Greenberg BD. Deep Brain Stimulation of the Ventral Capsule/Ventral Striatum for Treatment-Resistant Depression. American Psychiatric Association Annual Meeting, May 2008.
- A109. Walters, C., **Carpenter, L.L.**, Price, L.H., and Tyrka, A.R. Association of Indices of the Metabolic Syndrome with Altered Cortisol Responses to Neuroendocrine Challenge. 17th Annual Research Celebration, Rhode Island Hospital, Providence, RI. October, 2009.
- A110. Marsella, SA, **Carpenter, LL**, Tyrka, AR, Wilkinson, CW, and Price, LH. Eszopiclone Treatment and Decreased Cortisol Levels in Adults with Primary Insomnia. 17th Annual Research Celebration, Rhode Island Hospital, Providence, RI. October, 2009.
- A111. Philip NS, **Carpenter LL**, Tyrka AR, Whitely LB, Price LH. Antidepressant effects of varenicline: an 8-week, open-label augmentation study. New Investigator Section, 49<sup>th</sup> Annual NCDEU Meeting, Hollywood FL, 2009
- A112. Tyrka AR, Price LH, Walters C, Anderson GM, and **Carpenter LL**. Hypothalamic-Pituitary-Adrenal Axis Activity and Indices of the Metabolic Syndrome. Annual Meeting of the American College of Neuropsychopharmacology, December, 2009.
- A113. **Carpenter LL**, Tyrka AR, Geraciotti TD, Shattuck TT, and Price LH. Diminished Cortisol Response to Stress in Healthy Adults Reporting Physical Abuse. Annual Meeting of the American College of Neuropsychopharmacology, December, 2009.



- A114. Tyrka AR, Price LH, Marsit C, **Carpenter LL**. Methylation of leukocyte glucocorticoid receptor in healthy adults: Associations with childhood parenting experience. *NY Acad Sci: Behavioral Epigenetics* #41, October, 2010.
- A115. Tyrka AR, Price LH, Gelernter J, Walters C, **Carpenter LL**. BDNF Val/Met polymorphism interacts with early-life stress to predict HPA axis function. *Abstr Amer Coll Neuropsychopharm* #I.106, December, 2010.
- A116. Tyrka, A.R., Price, L.H., Walters, C., Anderson, G.M., and **Carpenter, L.L.** Indices of the metabolic syndrome in healthy adults: Associations with hypothalamic-pituitary-adrenal axis function. Annual Meeting of the Society of Biological Psychiatry, May, 2010.
- A117. **Carpenter, L.L.**, Shattuck, T.T., Tyrka, A.R., Geraciotti, T.D, and Price, L.H. Childhood physical abuse is associated with dampened cortisol stress response in adulthood. Annual Meeting of the Society of Biological Psychiatry, May, 2010.
- A118. Philip NS, Sweet LH, Tyrka AR, Niaura RS, Price LH, **Carpenter LL**. The effect of early life stress on default network activity in healthy adult subjects. *Soc Biol Psychiatry Ann Mtg* #261, May, 2011.
- A119. Tyrka AR, Price LH, Marsit C, Walters C, Wilkinson CW, **Carpenter LL**. Epigenetic modulation of leukocyte glucocorticoid receptor in healthy adults: Effects of childhood parenting experiences. *Soc Biol Psychiatry Ann Mtg* #517, May, 2011.
- A120. Tyrka AR, Price LH, Kao HT, Porton B, **Carpenter LL**. Impact of early childhood adversity on cell aging markers in adulthood. *Soc Biol Psychiatry Ann Mtg* #647, May, 2011
- A121. Philip NS, Sweet LH, Tyrka AR, Price LH, **Carpenter LL**, Niaura RS. The Effect of Early Life Stress on Default Network Activity in Healthy Adult Subjects. 66<sup>th</sup> Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA, 2011
- A122. Philip NS, Sweet LH, Tyrka AR, Price LH, **Carpenter LL**, Niaura RS. Effects of Early Life Stress on the Default Network. Organization of Human Brain Mapping, Quebec City, QC, 2011
- A123. Tyrka, A.R., Price, L.H., Marsit, C., Walters, O.C., and **Carpenter, L.L.** Epigenetic modulation of leukocyte glucocorticoid receptor in healthy adults: Effects of childhood parenting experiences. American College of Neuropsychopharmacology, December, 2011.
- A124. **Carpenter, LL**, Gawuga, C., Tyrka, A.R., Price, L.H. CRP is associated with physical well-being, but not with early life stress or depression symptoms, in healthy adults. American College of Neuropsychopharmacology, December, 2011.
- A125. Clement AM, Burgers DE, Tyrka AR, Price LH, **Carpenter LL**. Does a Laboratory Neuroendocrine Test Predict Response to a Psychosocial Stress Test? Fifteenth Annual Research Symposium on Mental Health Sciences, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, March, 2012.

- A126. Kuras YI, **Carpenter LL**, Price LH, Marsit C., Philip NS, Tyrka AR. Epigenetic modulation of the leukocyte glucocorticoid receptor and childhood parental loss. Fifteenth Annual Research Symposium on Mental Health Sciences, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, March, 2012.
- A127. Chipetine K, **Carpenter LL**, Price LH, Tyrka AR. Childhood adversity, resilience, and HPA axis reactivity. Fifteenth Annual Research Symposium on Mental Health Sciences, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, March, 2012.
- A128. Philip NS, Sweet LH, Tyrka AR, Price LH, Bloom RF, **Carpenter LL**. Towards imaging biomarkers of early life stress: Decreased resting state default network connectivity. Fifteenth Annual Research Symposium on Mental Health Sciences, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, March, 2012.
- A129. Chipetine, K., **Carpenter, L.L.**, Price, L.H., Tyrka, A.R. Childhood adversity, resilience, and HPA axis reactivity. Fifteenth Annual Research Symposium on Mental Health Sciences, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, March, 2012.
- A130. Clement AM, Burgers DE, Tyrka AR, Price LH, **Carpenter LL**. Does a Laboratory Neuroendocrine Test Predict Response to a Psychosocial Stress Test? Fifteenth Annual Research Symposium on Mental Health Sciences, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, March, 2012
- A131. Tyrka AR, Price LH, Marsit C, **Carpenter LL**. Childhood parental loss and epigenetic modulation of the leukocyte glucocorticoid receptor in healthy adults. Annual Meeting of the Society of Biological Psychiatry, May 2012.
- A132. Philip NS, Sweet LS, Tyrka AR, Price LH, **Carpenter LL**. Imaging biomarkers of early life stress: working memory, resting state connectivity, and the default network. Soc Biol Psychiatry Ann Mtg #545, May, 2012.
- A133. Dougherty DD, **Carpenter LL**, Bhati MT, Howland RH, O'Reardon JP, Denko T, Jacobs KJ, Pandya MM, Price LH, Tyrka AT, Evans K, Rezai AR, Baltuch G, Machado AG, Eskandar EN, Kondziolka D, Cusin C, Malone DA. A Randomized Sham-Controlled Trial of DBS of the VC/VIS for Treatment-Resistant Depression. Soc Biol Psychiatry Ann Mtg #720, May, 2012.
- A134. McCarrier KM, Abraham L, Blum SI, Bush EN, Bushnell DM, **Carpenter LL**, Coons SJ, Houle CR, Martin ML, Mathews M, Trivedi MH, Thase ME .Qualitative Development and Cognitive Evaluation of the Symptoms of Major Depressive Disorder (S-MDD) Scale, a New Patient-Reported Outcome (PRO) Measure Developed Using a Consortium-Based Approach. NCDEU Annual Meeting, June 2013.
- A135. Clark, U., Sweet, L., Jasper, C., Folkers, A., Ross, S., Pina, M., Philip, N., **Carpenter, LL.**, Tashima, K., and Cohen, R. (2013). Effects of early-life stress on amygdala function in HIV positive patients: A pilot study. The International Neuropsychological Society 2013 Mid-Year Meeting. July 2013.

- A136. Tyrka, A.R., Price, L.H., Marsit, C., Kuras, Y.I., Philip, N.S., **Carpenter, L.L.** Epigenetic modulation of leukocyte glucocorticoid receptor and childhood parental loss. American College of Neuropsychopharmacology, December 2012.
- A137. Philip NS, **Carpenter LL.** Effects of Early Life Stress on Impacts DLPFC Functional Connectivity: Implications for Transcranial Magnetic Stimulation. Annual Meeting of the International Society for ECT and Neurostimulation, San Francisco, CA May 2013
- A138. Eslinger NM., **Carpenter LL.**, Price LH., Philip NS., Gelernter J., Geracitoi TD., Kuras YI., Tyrka, AR. Childhood maltreatment: 5-HTTLPR genotype interaction influences adrenocortical responses. Sixteenth Annual Research Symposium on Mental Health Sciences, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, May 2013.
- A139. Tyrka AR, Price LH, Gelernter J, Geracioti TD, Eslinger NM, Philip NS, **Carpenter LL.** 5-HTTLPR and childhood maltreatment: effects on adrenocortical response to psychosocial challenge. Annual Meeting of the Society of Biological Psychiatry, May 2013.
- A140. Demitrack MA, Janicak PG, **Carpenter LL**, Dunner DL, Brock DG, Dafna Bonne-Barkay D. A Multisite, Longitudinal, Naturalistic Observational Study of Transcranial Magnetic Stimulation (TMS) for Major Depression in Clinical Practice. Annual Meeting of the American Psychiatric Association, May 2013.
- A141. Philip NS, Valentine T, Tyrka AR, Price LH and **Carpenter LL.** Evaluating the Impact of Early Life Stress on DLPFC Functional Connectivity in Healthy Adults: Informing Future Studies of Transcranial Magnetic Stimulation. Annual Meeting of the American Psychiatric Association, May 2013.
- A142. Philip NS, Kuras Y, Sweet LH, Tyrka AR, Price LH and **Carpenter LL.** Reduced resting state activity drives functional connectivity in early life stress: a coupled regional homogeneity and seed connectivity analysis. 68<sup>th</sup> Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA 2013.
- A143. Philip NS, **Carpenter LL.** Early life Stress Impacts DLPFC Functional Connectivity in Healthy Adults: Potential Implications for Transcranial Magnetic Stimulation. Late breaking reports, 68<sup>th</sup> Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA 2013.
- A144. Carpenter SL., Sweet LH., Tyrka AR., Price LH., **Carpenter LL.** and Philip N.S. Childhood maltreatment is associated with impaired working memory and task-associated activation. Brown University Mind Brain Research Day, March 2014.
- A145. Eslinger NM., **Carpenter LL**, Parade SH, Marsit C, Philip NS, Price LH, Tyrka AR. Early life adversity: leukocyte glucocorticoid receptor methylation and HPA axis function in adults. Brown University Mind Brain Research Day, March 2014.
- A146. Tyrka AR., Parade S., Price LH, Kao HT, Porton B, Philip NS, Welch ES., **Carpenter LL.** Mitochondrial

DNA copy number and telomere length: Associations with childhood adversity and psychopathology. Annual Meeting of the Society for Biological Psychiatry, May, 2014.

- A147. Philip N.S., Carpenter S.L., Tyrka A.R., Price L.H. and **Carpenter L.L.** Childhood Maltreatment is Associated with Impaired Working Memory Performance and Task-Associated Activation. Annual Meeting of the Society for Biological Psychiatry, May, 2014
- A148. AF Leuchter, IA Cook, D Feifel, JW Goethe, M Husain, **LL Carpenter**, ME Thase, AD Krystal, NS Philip, MT Bhati, WJ Burke, RH Howland, YI Sheline, ST Aaronson, DV Iosifescu, JP O'Reardon, WS Gilmer, R Jain, KS Burgoyne, B Phillips, Y Jin, P Manberg, J Massaro, SH Lisanby, MS George. Annual Meeting of the Society for Biological Psychiatry, May, 2014
- A149. Philip NS, Carpenter SL, Sanchez, G. Sweet LH, Kao HT, Porton B, Price LH, **Carpenter LL** and Tyrka AR. Telomere Length is Associated with Altered Amygdala Resting State Functional Connectivity. *Brain Connectivity*. November 2014, 4(9): A45
- A150. Philip NS, Carpenter SL, Tyrka AR, Sanchez G, Price LH, **Carpenter LL**. Preliminary Efficacy of 5 Hz Repetitive Transcranial Magnetic Stimulation for Depression and Comorbid Anxiety. *American College of Neuropsychopharmacology*, December 2014:W132
- A151. AF Leuchter, IA Cook, D Feifel, JW Goethe, M Husain, **LL Carpenter**, ME Thase, AD Krystal, NS Philip, MT Bhati, WJ Burke, RH Howland, YI Sheline, ST Aaronson, DV Iosifescu, JP O'Reardon, WS Gilmer, R Jain, KS Burgoyne, B Phillips, Y Jin, P Manberg, J Massaro, SH Lisanby, MS George .Efficacy and Safety of Synchronized Transcranial Magnetic Stimulation (sTMS) for Treatment of Major Depression. *American College of Neuropsychopharmacology*, December 2014.
- A152. Tyrka, A.R., Parade, S., Price, L.H., Kao, H.T., Porton, B., Philip, N.S., Welch, E.S., **Carpenter, L.L.** Alterations of mitochondrial DNA copy number and telomere length with childhood adversity and psychopathology. *American College of Neuropsychopharmacology*, December, 2014.
- A153. Philip ACNP Tyrka, AR, Price, LH, Kao, HT, Porton, B, Philip, N, **Carpenter, LL**. Mitochondrial DNA Copy Number and Telomere Length: Associations with Childhood Adversity and Psychopathology, *Brown Mind Brain Research Symposium*, 2015.
- A154. Philip, N.S., Carpenter, S.L., Ridout, S.J., Sanchez, G., Albright, S., Tyrka, A.R., Price, L.H., **Carpenter, L.L.** 5 Hz rTMS Therapy to Left Prefrontal Cortex for MDD Patients Unable to Tolerate Standard 10 Hz Protocol. *Society of Biological Psychiatry Annual Meeting*, Toronto, ON. (2015, May)
- A155. Ridout, S.J., Minami, H., Tyrka, A.R., Price, L.H., **Carpenter, L.L.** Cortisol Response to Dex/CRH Test as Predictor of Future Mood/Anxiety Symptoms. *American College of Neuropsychopharmacology Annual Meeting*, Hollywood, FL. (2015, December)
- A156. Philip NS, Dunner DL, Dowd SM, Aaronson ST, Brock DG, **Carpenter LL**, Duffy WJ, Demitrack MA, Janicak PG, and George MS. A Randomized Pilot Study of Maintenance Transcranial Magnetic Stimulation in Patients with Major Depression. *Society of Biological Psychiatry*, 2015

- A157. Philip NS, Tyrka AR, Albright SA, Sweet LH, Price LH and **Carpenter LL**. Severity of Early Life Stress Predicts Thalamic Hyperconnectivity and Multiple Network Disruption: A Transdiagnostic Study of Global Connectivity. American College of Neuropsychopharmacology, 2015:M5
- A158. Philip NS, Barredo J, Albright S, Frank M, Ridout S, Ridout KL, Almeida J, Tyrka AR, Price LH and **Carpenter LL**. Repetitive Transcranial Magnetic Stimulation Corrects Network Pathology in Patients with Comorbid Posttraumatic Stress Disorder and Major Depressive Disorder. Society for Biological Psychiatry, 2016
- A159. Ridout, K.K., Parade, S., **Carpenter, L.L.**, Price, L.H., Philip, N.S., Kao, H-T, Porton, B., Tyrka, A.R. Associations Between Neuroendocrine Function and Mitochondrial DNA Copy Number in a Sample of Healthy Adults. Society of Biological Psychiatry Annual Meeting, May 2016
- A160. Ridout SJ, Philip NS, Tyrka AR, Niedzwiecki M, Greenberg B, Barnes J, Price LH, **Carpenter LL**. Effects of Transcranial Magnetic Stimulation Therapy on Heart Rate Variability in Depression. Society for Biological Psychiatry, 2016
- A161. Almeida JRC, Philip NS, Tirrell E, Tyrka AR, Niedzwiecki M, Greenberg B, Barnes J, Price LH, **Carpenter LL**. Bipolar features associated with subjective activation in patients with major depressive disorder treated with repetitive transcranial magnetic stimulation. Soc Biol Psychiatry Ann Mtg #130, May, 2016.
- A162. Philip NS, Tyrka AR, Price LH, **Carpenter LL**. Early life trauma is associated with disruptions in multiple intrinsic neural networks: A transdiagnostic resting state connectivity study. Soc Biol Psychiatry Ann Mtg #930, May, 2016.
- A163. Ridout KK, Parade SH, **Carpenter LL**, Philip NS, Kao H-T, Porton B, Tyrka AR. Association between Molecular Markers of Neuroendocrine Function and Cellular Metabolism with Early Life Stress and Psychopathology. Molecular Psychiatry Meeting, Maui, HI, 2016.
- A164. Yip AG, Conelea C, Barnes JL, Niedzwiecki MJ, Philip NS, Greenberg BD, Tyrka AR, **Carpenter LL**. Transcranial magnetic stimulation (TMS) for treatment-resistant depression (TRD) in older vs younger patients: a case series International Society for ECT and Neurostimulation (ISEN), May 2016, Atlanta GA.
- A165. Yip AG, George MS, Tendler A, Roth Y, Zangen A, **Carpenter LL**. Twice-weekly continuation deep transcranial magnetic stimulation (dTMS) monotherapy for treatment-resistant depression: a subgroup analysis of non-responders to acute-course treatment. International Society for ECT and Neurostimulation (ISEN), May 2016, Atlanta GA.
- A166. Philip NS, Barredo J, Albright S, Frank M, Ridout S, Ridout KL, Almeida J, Tyrka AR, Price LH and **Carpenter LL**. Repetitive Transcranial Magnetic Stimulation Corrects Network Pathology in Patients with Comorbid Posttraumatic Stress Disorder and Major Depressive Disorder. Society for Biological Psychiatry, May 2016
- A167. Ridout SJ, Philip NS, Tyrka AR, Niedzwiecki M, Greenberg B, Barnes J, Price LH, **Carpenter LL**.

Effects of Transcranial Magnetic Stimulation Therapy on Heart Rate Variability in Depression. Society for Biological Psychiatry, 2016

- A168. Philip NS, Barredo J, van 't Wout M, Almeida JR, Tyrka AR, Price LH, **Carpenter LL**. Network Mechanisms of 5Hz Repetitive Transcranial Magnetic Stimulation in Patients with Comorbid Posttraumatic Stress and Major Depressive Disorders. American College of Neuropsychopharmacology, 2016
- A169. Aiken E, Dunlap C, Barredo J, van 't Wout-Frank M, Tyrka AR, Price LH, **Carpenter LL**, Philip NS. Mechanisms of 5hz transcranial magnetic stimulation in patients with posttraumatic stress disorder and major depressive disorder. Brown University Mind Brain Research Day, 2017
- A170. Bellone J, Edwards M, Correia S, Barredo J, **Carpenter LL**, Philip NS. The association between white matter coherence and PTSD before and after repetitive transcranial magnetic stimulation. Brown University Mind Brain Research Day, 2017
- A171. Zand vakili A, Philip NS, Greenberg BD, **Carpenter LL**. EEG signal after 5-hz transcranial magnetic stimulation in Patients with comorbid posttraumatic stress disorder and Major depression. Brown University Mind Brain Research Day, 2017
- A172. Barredo J, **Carpenter LL**, van 't Wout-Frank M, Aiken E, Dunlap C, Greenberg BD, Philip NS. The influence of early life stress and PTSD on functional network organization: a novel application of convergence analysis. Brown University Mind Brain Research Day, 2017
- A173. Bennett E, RC de Almeida J, Philip NS, Tyrka AR, Niedziwicki M, Greenberg BD, Price LH, **Carpenter LL**. Do risk factors for bipolar disorder impact outcomes following transcranial magnetic stimulation (TMS) therapy for depression? Brown University Mind Brain Research Day, 2017
- A174. Welch E, Press D, Weigand A, Tyrka AR, Philip NS, **Carpenter LL**. Feasibility and tolerability of computerized cognitive behavioral therapy combined with bifrontal transcranial direct current stimulation for treatment of major depression. Brown University Mind Brain Research Day, 2017
- A175. Dunlap C, Aiken E, Tirrell BA, Conelea C, Price LH, Tyrka AR, **Carpenter LL**, Philip NS. 5 Hz repetitive transcranial magnetic stimulation for posttraumatic stress disorder comorbid with major depressive disorder. Brown University Mind Brain Research Day, 2017
- A176. Philip NS, Conelea CA, Yip AG, Barnes JL, Niedzwiecki MJ, Greenberg BD, Tyrka AR, and **Carpenter LL**. 5 Hz Repetitive Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder Comorbid with Major Depressive Disorder. Society for Biological Psychiatry, 2017
- A177. Barredo J, **Carpenter LL**, van 't Wout-Frank M, Aiken E, Dunlap C, Greenberg BD, and Philip NS. Early Life Stress and PTSD Impacts Functional Network Organization: A Novel Application of Convergence Analysis. Late-Breaking Abstracts, Society for Biological Psychiatry, 2017
- A178. Zand vakili A, Philip NS, **Carpenter LL**, Greenberg BG. EEG Signal after 5-Hz Transcranial Magnetic

Stimulation in Patients with Comorbid Posttraumatic Stress Disorder and Major Depression. Society for Biological Psychiatry, 2017

- A179. Philip NS, Barredo J, Aiken E, van 't Wout-Frank M, Greenberg BG, **Carpenter LL**. Therapeutic Transcranial Magnetic Stimulation Improves Cortical Information Flow in Posttraumatic Stress Disorder. American College of Neuropsychopharmacology, December 2017
- A180. Barredo J, Aiken E, **Carpenter LL**, Greenberg BD, and Philip NS. Interactions between Cognitive Control and Decision-Making Networks: A Potential Biomarker of Suicidality. Society for Biological Psychiatry, 2018
- A181. Greenberg BG, McLaughlin N, Barredo J, Blanchette B, Rasmussen SR, Philip NS, **Carpenter LL**. Effects of Cathodal tDCS Over Pre-SMA on Brain Functional Connectivity in OCD. Society for Biological Psychiatry, 2018
- A182. Berlow YA, Grizansio KA, Fleming S, Rashed Ahmed AP, Aiken E, **Carpenter LL**, and Philip NS. Symptom Profile Subtypes Predict Treatment Response to 5 Hz rTMS in MDD and Co-Morbid PTSD. American College of Neuropsychopharmacology, 2018
- A183. Tirrell E, Russo GB, Busch A, **Carpenter LL**. Behavioral Activation Therapy during Daily Transcranial Magnetic Stimulation in the Treatment of Major Depressive Disorder Brown University Mind Brown Research 2018 and Clinical TMS Society Meeting 2018
- A184. Yuan A, Tirrell E, Desrochers N, Gobin AP, **Carpenter LL**. Does history of previous ECT treatment affect responsiveness of MDD patients to TMS? Brown University Mind Brown Research 2018
- A185. Yuan S, Tirrell E, Polly Gobin AP, Carpenter **LL**. Does history of previous ECT treatment affect responsiveness of MDD patients to TMS? Clinical TMS Society Annual Meeting 2018
- A186. Tirrell E, Beck Q, Kokdere F, Carpenter LL. Can Early Treatment Response Serve as a Predictor of Antidepressant Outcome to Repetitive Transcranial Magnetic Stimulation (rTMS)? Brown University Mind Brain Research 2019; Clinical TMS Society Annual Meeting 2019
- A187. Fukuda AM, Tirrell E, Carpenter LL. Characterization of Repetitive Transcranial Magnetic Stimulation Retreatment Series in a Naturalistic Environment. Brown University Mind Brain Research 2019
- A188. Berlow YA, Zandvakili A, **Carpenter LL**, and Philip NS. Transcranial Direct Current Stimulation for Depression and Risk of Treatment Emergent Mania: An Updated Meta-Analysis. Society of Biological Psychiatry, 2019
- A189. Yuan S, Zandvakili A, Temereanca I, Leuchter AF, Tirrell E, Philip NS, and **Carpenter LL**. Baseline EEG Theta Cordance States and rTMS Treatment Outcomes in Individuals with Post-Traumatic Stress Disorder and Comorbid Major Depressive Disorder. Society of Biological Psychiatry, 2019
- A190. Yuan S, Zandvakili A, Temereanca S, Leuchter AF, Tirrell E, Philip NS, **Carpenter LL**. Transcranial

Magnetic Stimulation in Major Depressive Disorder: EEG Theta Cordance Change and Treatment Response. 2019 Neuromodulation: The Science and NYC Neuromodulation Joint Meeting.

- A191. McLaughlin N, Barredo J, Blanchette B, **Carpenter L**, Philip NS, Phillips ML, Haber S, Rasmussen SR, Greenberg BD. Cathodal Transcranial Direct Current Stimulation Targeting the Pre-Supplementary Motor Area on Resting State Functional Connectivity in OCD. American College of Neuropsychopharmacology, 2019
- A192. Sakurai H, **Carpenter L**, Tyrka A, Price LH, Papakostas G, Dording CM, Yeung AS, Cusin C, Ludington E, Bernard-Negron R, Fava M, Mischoulon D, Dose Increase of S-Adenosyl-Methionine and Escitalopram in a Randomized Clinical Trial for Major Depressive Disorder. 32nd European College of Neuropsychopharmacology, Copenhagen, 2019.
- A193. Yuan S, Parameshwaran D, Tirrell E, Gold M, Thiagarajan TC, **Carpenter LL**. Resting-State EEG Waveform Complexity as A Predictive Biomarker for Repetitive Transcranial Magnetic Stimulation Treatment Outcomes in Major Depressive Disorder. ACNP Annual Meeting 2019; Brown Mind Brain Research Day 2020.
- A194. Yuan S, Zand Vakili A, Temereanca S, Tirrell E, Philip NS, **Carpenter LL**. Transcranial Magnetic Stimulation in Major Depressive Disorder: EEG Theta Cordance Change and Treatment Response. Poster Presentation. Neuromodulation: The Science and NYC Neuromodulation Joint Meeting 2019; Brown Mind Brain Research Day 2019.
- A195. Yuan S, Tirrell E, **Carpenter LL**. The Effect of Previous ECT Treatment on Responsiveness of MDD Patients to rTMS. Poster Presentation. SOBP Annual Meeting 2018; Brown Mind Brain Research Day 2018 First Prize winner.
- A196. Yuan S, Tirrell E, Desrochers N, Gobin AP, **Carpenter LL**. Does History of Previous ECT Treatment Affect Responsiveness of MDD Patients to TMS? Poster Presentation. CTMSS Annual Meeting 2018.
- A197. Tirrell E, Beck Q, Kokdere F, **Carpenter LL**. Use and Impact of Psychotropic Medications during Transcranial Magnetic Stimulation (TMS) Therapy for Major Depressive Disorder (MDD). Brown University Mind Brain Research 2019
- A198. Fukuda AM, Tirrell E, Beck Q, Kokdere F, **Carpenter LL**. Impact of Psychotropic Medications during Repetitive Transcranial Magnetic Stimulation for Major Depressive Disorder. American College of Neuropsychopharmacology Meeting 2019
- A199. Kavanaugh B, Tirrell E, Pizzagalli DA, **Carpenter LL**, Tyrka AR. Gamma Oscillations as a Potential Marker of Cognitive Control in Childhood. Society of Biological Psychiatry Meeting 2019
- A200. Kokdere F Tirrell E, Fukuda AM, Gobin AP, Kavanaugh B, **Carpenter LL**. Does it Matter if Depressed Patients get TMS Treatment Sessions Less Often than 5 Times per Week? A Treatment Schedule Density Analysis. Brown University Mind Brain Research 2020; Clinical TMS Society Meeting 2020 (top 4 poster award)



- A201. Yuan S, Tirrell E, **Carpenter LL**. The effect of L-theanine on Motor Cortical Excitability in Healthy Subjects and Depression: A Paired-Pulse TMS Research Protocol. APA Research Colloquium 2020.
- A202. Fukuda AM, Kang JD, Tirrell E, **Carpenter LL**. “Anhedonia in Major Depressive Disorder: Can it be the Chicken AND the Egg for Transcranial Magnetic Stimulation?” 2020 Clinical Transcranial Magnetic Stimulation Society Annual Meeting; (top 4 poster award)
- A203. Tirrell E, Cavallero F, Kokdere F, Gold M, Donachie N, Steinfink D, Kriske J, **Carpenter LL**. Audio-Guided Mindfulness Meditation during TMS Sessions for the Treatment of Major Depressive Disorder (MDD): A Feasibility Pilot Study. Brown University Mind Brain Research 2020; Clinical TMS Society Meeting 2020
- A204. Fukuda A, Hindley LE, Kang JD, Tirrell E, **Carpenter LL**. Vascular Endothelial Growth Factor in Serum Increases in those whose Depression Remit after Repetitive Transcranial Magnetic Stimulation but not in Non-Remitters. 2020 Mind Brain Research Day, Brown University
- A205. Fukuda A, Beck Q, Tirrell E, Tyrka A, **Carpenter LL**. Impact of Early Life Adverse Events on Clinical Outcome of Transcranial Magnetic Stimulation for Depression 2020 Mind Brain Research Day, Brown University
- A206. Gonsalves M, Barredo J, Beck Q, Fukuda A, Tirrell E, Kokdere F, Kronenberg EF, Iadarola ND Hagberg S, **Carpenter LL**. Mechanical Affective Touch Therapy (MATT): Effects on Brain Connectivity. Brown University Mind Brain Research 2020; Brainbox Initiative 2020
- A207. Kronenberg EF, Tirrell E, Kokdere F, Fukuda AM, **Carpenter LL**. Exploring EEG Biomarkers for Anxiety and Depression Using Mechanical Affective Touch Therapy (MATT) as a Noninvasive Neuromodulation Treatment Brown University Mind Brain Research 2020;
- A208. Tirrell E, Kokdere F, Kronenberg EF, Fukuda AM, **Carpenter LL**. Clinical Evaluation of Mechanical Affective Touch Therapy (MATT) as a Noninvasive Neuromodulation Treatment Modality for Anxiety Disorders. Brown University Mind Brain Research 2020

### **INVITED PRESENTATIONS**

1. “Stress, Depression, and Suicide” Family Services Society Centurion Program, Providence, RI, September 17, 1997.
2. “New Frontiers in Affective Disorders Research” Depression Day, Butler Hospital, RI, October 9, 1997.
3. “HPA Axis, Stress, and Depression” National Alliance for the Mentally Ill Annual Conference, Newport, RI, May 21, 1998.
4. “What’s in the future for the treatment of clinical depression” National DMDA International Conference, St. Louis, MO, August 1998.

5. "New Research in Stress and Depression" WHJJ, Women Talk Health, Providence, RI, October 4, 1998.
6. "Differential Diagnosis and Treatment of Bipolar Disorder" (Abbott Labs); Community CME Presentation, Providence, RI, April 13, 1999.
7. "Differential Diagnosis for Bipolar Disorders and Enhanced Management of the Bipolar Spectrum" CME symposium, (Abbott Labs); Dearborn, MI, April 25, 1999.
8. "Augmentation Strategies in the Treatment of Refractory Depression" CME/Grand Rounds, St. Elizabeth's Medical Center, Boston, MA (Organon); June 6, 1999.
9. "Bipolar Disorder: Focus on Lamictal" Community Psychiatrists of RI Educational Program, Providence, RI (Glaxo Wellcome); June 9, 1999.
10. "Augmentation Strategies in the Treatment of Refractory Depression" CME/Grand Rounds at Westwood Lodge Hosp., Boston, MA, (Organon); September 27, 1999.
11. "Assessment and Treatment of Refractory Depression" (CME); Psychiatry Department Grand Rounds, St. Luke's Hospital, New Bedford, MA, November 2, 1999.
12. "New Hope and Treatments for Refractory Depression" NAMI RI Conference, Newport, RI, November 5, 1999.
13. "Anxiety Disorders: Treatments and Comorbidities" (CME); (Parke-Davis); Providence RI, March 28, 2000
14. "Psychopharmacologic Treatment of Eating Disorders(CNE); Rhode Island State Nurses Association Advanced Psychopharmacology Course (Pfizer); Providence, RI, March 25, 2000.
15. "VNS as a Potential New Treatment for Resistant Depression;" CME Symposium, (Cyberonics, Inc.); Providence, RI, Oct 14, 2000.
16. "The Depression Gap: Why Women are Twice as Vulnerable as Men" Butler Hospital Community Program on Women's Mental Health Issues. Nov 15, 2000.
17. "Are TCAs Better than SSRIs in the Treatment of Severe Depression?"(CME); Butler Hospital Geriatric Clinical Conference Series, Nov. 17, 2000.
18. "Bipolar or Borderline? Key Issues in the Diagnosis and Treatment of Mood Instability and Impulsivity" (CME); (Abbott), Southeastern Massachusetts Psychiatric Association, Hyannis, MA, Feb 7, 2000.
19. "Clinical Applications of Vagus Nerve Stimulation" (CME) Butler Hospital Staff Association Educational Program, Providence, RI, April 5, 2001.
20. "Maintenance Therapy with Depakote: A Critical Review of the Data" Psychiatry Consultant Meeting (Abbott), Mashantucket, CT, April 28, 2001.
21. "Novel Approaches to the Patient with Treatment Resistant Depression: Defining Treatment Resistant Depression" CME Symposium (Cyberonics, Inc.); Baltimore MD, June 16, 2001.
22. "Anxious Depression" Pfizer Educational Program (Pfizer); Providence, RI, September 28 and October 5, 2001.

23. "Bipolar to Borderline: Diagnosis and Treatment Across the Spectrum" (CME); Danbury Hospital Staff Association Meeting (Abbott); Danbury, CT, October 8, 2001.
24. "Acute Treatment of Depression: The Initial Step in Long-Term Management" CME Symposium "Long-term Treatment Options: Improving Outcomes in Depression" (Cyberonics, Inc); Chicago IL, October 13, 2001.
25. "Investigation of VNS for Treatment of Depression" Cyberonics Reimbursement Advisory Board Meeting (Cyberonics, Inc.); Irving, TX, October 23, 2001.
26. "Borderline or Bipolar? Key Issues in the Diagnosis and Treatment of Mood Instability and Impulsivity" Twin Valley Behavioral Healthcare Collaborative CME/Grand Rounds Presentation (Abbott); Ohio State University Department of Psychiatry, Columbus, OH, November 5, 2001.
27. "Bipolar or Borderline? Key Issues in the Diagnosis and Treatment of Mood Instability and Impulsivity" (CME); (Abbott), Psychiatry Department Grand Rounds, St. Luke's Hospital, New Bedford, MA, November 6, 2001.
28. "What makes a drug a mood stabilizer? A review of the efficacy data on anti-manic agents and newer anticonvulsants" (CME); (Abbott), Psychiatric Group of the North Shore, Lynn, MA, November 29, 2001.
29. "Women and Depression: What You Should Know" 3rd annual *Enhance Your Spirit, Free Your Mind* conference sponsored by Women & Infants Hospital, Rhode Island College, Providence, RI, January 19, 2002.
30. "Diagnostic Issues in the Bipolar Spectrum" (CME) Clinical Case Conference Series, Butler Hospital, Providence, RI, January 31, 2002.
31. "Human Imaging and Treatment" Symposium Chair, Amer Psychopath Assoc Annual Meeting, NYC, March 9, 2002.
32. "Practical Approaches to Psychotic Depression" In APA CME Symposium (Organon, Inc); "Depressive Subtypes: The Multiple Faces of Depression", Philadelphia, PA May 19, 2002.
33. "The Biology of PTSD and Atypical Depression: Focus on the Role of Early Life Trauma" In APA CME Symposium (Somerset Pharmaceuticals, Inc.); "Atypical Depression: Overview and New Developments" Philadelphia, PA May 19, 2002.
34. "Anatomy of the Vagus Nerve" American Psychiatric Association 155th Annual Meeting CME Course 70, "Vagal Nerve Stimulation" Philadelphia, PA, May 21, 2002.
35. "Practical Approaches to Psychotic Depression" In APA CME Symposium (Organon, Inc); "Depressive Subtypes: The Multiple Faces of Depression", 54th Institute on Psychiatric Services, Chicago IL, Oct 10, 2002.
36. "On the Horizon: Vagus Nerve Stimulation for Treatment Resistant Depression" (CME); Westwood Pembroke Health System Grand Rounds, (Cyberonics); Oct 23, 2002.
37. "Depression and Anxiety in the Primary Care Patient" (Pfizer, Inc); Community Primary Care Providers, Providence, RI, March 5, 2003.

38. "Revisiting the HPA Axis: the Impact of Early Life Adversity" (CME); Brown University Department of Psychiatry Research Day, Speaker, March 26, 2003.
39. "Revisiting Stress and the HPA Axis: the Impact of Early Life Adversity" Butler Hospital Association Annual Meeting Educational Program/CME; Providence, RI April 3, 2003.
40. "Mirtazapine Augmentation: The Ultimate Solution?" Latin American Remeron Scientific Experts Meeting, (Organon, Inc.); Buenos Aires, Argentina, May 2, 2003.
41. "Stress and Trauma Across the Lifespan: Neurobiological Consequences" in APA CME Symposium (Wyeth); "Striving to Heal the Mind: The Challenge of PTSD." San Francisco, May 21, 2003.
42. "Treatment of Anxiety Disorders: Panic Disorder and GAD" Emory Psychiatry Residents' Symposium, Palm Beach Florida, August 12, 2003.
43. "Mirtazapine Augmentation or Combination for Treatment-Resistant Depression" XVIII National Congress of Psychiatry (Organon, Inc); Monterrey, Mexico. Sept 12, 2003.
44. "The Developmental Timing of Stress and Adult HPA Axis Regulation" in ISTSS symposium "HPA Axis Adaptation to Traumatic Stress: Understanding the Variability" (CME); International Society for Traumatic Stress Studies 19<sup>th</sup> Annual Meeting, Oct 31, 2003.
45. "Six Strategies to Survive the Season Sanely" Providence Professional Women's Organization (LHT); Providence Federal Reserve, Nov 25, 2003.
46. "Childhood Adversity and the HPA Axis: Toward an Endophenotype for Mood and Anxiety Disorders" University of North Carolina Chapel Hill Psychiatry Department Grand Rounds (Unrestricted Grant, AstraZenica); Jan 29, 2004.
47. "Clinical Issues Affecting Long-Term Outcomes" in "Treatment of Long-Term Depression: Striving Toward a Sustained Response" (CME Symposium; Cyberonics, Inc.); Coral Gables, FL Jan 31, 2004.
48. "Childhood Adversity and the HPA Axis: Toward an Endophenotype for Mood and Anxiety Disorders" Natchaug Hospital CME Presentation, Mansfield Center, CT (AstraZeneca); February 5, 2004.
49. "On the Horizon: Vagus Nerve Stimulation for Depression" University of Connecticut Psychiatry Department Grand Rounds (Unrestricted Grant, Cyberonics, Inc.); Feb 6, 2004.
50. "Prevalence, Cost, and Clinical Implications of Treatment Resistance for Chronic/Recurrent Mood Disorders" in "Treatment of Long-Term Depression: Striving Toward a Sustained Response" (CME Symposium; Cyberonics, Inc.); Houston, TX, Feb 7, 2004.
51. "Treatment of Long-Term Depression: Striving Toward a Sustained Response" (CME activity, Cyberonics, Inc.); Providence, RI, March 15, 2004.
52. "Treatment of Long-Term Depression: Striving Toward a Sustained Response" (CME activity, Cyberonics, Inc.) Hartford, CT, March 16, 2004.
53. "A Depression is Not Just a Depression: Subtyping Counts" in CME Symposium "Supratentorial Sustenance for Savvy Sagacious Savants" Sponsored by University of Wisconsin Medical School and Madison Institute of Medicine, Inc; Madison, WI, March 20, 2004.

54. "Generalized Anxiety Disorder: Current Opinions and Future Options" in APA CME Symposium (Pfizer); "The Many Faces of Anxiety: Origins, Pathogenesis, and Management" New York City, May 2, 2004.
55. "The Relationship between Substance P, Serotonin, and other Neurotransmitter Systems" in APA CME Symposium (Merck); "Beyond Serotonin: New Treatments for Depression" New York City, May 2, 2004.
56. "Practical Treatment of Anxiety in Primary Care" (CME, Pri-Med Update 2004); Hartford, CT, June 10, 2004.
57. "Clinical Insights: Antipsychotic Therapy for Bipolar Mania" (Seroquel Promotional Medical Education Program, AstraZeneca), Providence, RI July 21, 2004.
58. "Childhood Adversity and the HPA Axis: Toward an Endophenotype for Mood and Anxiety Disorders" (CME); Butler Hospital Child & Adolescent Services Program Lecture Series, Providence, RI, Sept 9, 2004.
59. "Vagus Nerve Stimulation for Depression" (CME); American Society for Stereotactic and Functional Neurosurgery Biennial Meeting. Cleveland, OH, Oct 2, 2004
60. "Dosing Considerations When Treating Bipolar Mania with a Psychotropic Agent," AstraZeneca Medical Education Program, Providence, RI Oct 5, 2004.
61. "Childhood Adversity and the HPA Axis: Toward an Endophenotype for Mood and Anxiety Disorders" (CME); Rhode Island Psychiatric Society General Membership Meeting (Pfizer), East Providence, RI, Oct 21, 2004.
62. "Beyond Monoamines: Promising New Treatments for Major Depression" Psychiatry Department CME Grand Rounds, St. Luke's Hospital, New Bedford, MA, Dec 7, 2004.
63. "Treatment Considerations for Women with Mood Disorders: Updates for 2005" Pfizer Educational Program, Warwick, RI, Jan 13, 2005.
64. "Stress and the HPA Axis: Discovering an Endophenotype for Mood and Anxiety Disorders" (CME) Dartmouth Medical School Department of Psychiatry Grand Rounds, Jan 25, 2005.
65. "Generalized Anxiety Disorder: Current Opinions and Future Options" in Nevada Psychiatric Association's 10<sup>th</sup> Annual Psychopharmacology Update (CME), Feb 16, Las Vegas, Feb 16, 2005.
66. "Treatment of Depression Across the Life Cycle in Women" Pfizer Educational Program, Worcester, MA, March 31, 2005.
67. "Antidepressant Augmentation in the Treatment of Major Depression" Sepracor Corporate Educational Program, Marlborough, MA, April 4, 2005.
68. "Update 2005: Treatment Considerations for Female Patients with Mood Disorder" Pfizer Educational Program, Boston, MA, April 19, 2005.
69. "Neurotherapeutics in Resistant Depression" presentation in Industry-Sponsored CME Symposium at APA 158<sup>th</sup> Annual Meeting "Achieving Remission in Depression: Is the Bar Set Too Low or Too High?" (Cephalon), Atlanta, GA, May 21, 2005.

70. "Improved Remission Rates: Do Any Antidepressants Stand Out?" presentation in Industry-Sponsored CME Symposium at APA 158<sup>th</sup> Annual Meeting "Overcoming Traditional Dilemmas in Treating Depressive Illnesses: Evidence-Based Updates." (Wyeth) Atlanta, GA, May 23, 2005.
71. "Treatment of Depression Across the Female Life Cycle" Grand Rounds, Cambridge Hospital, Somerville, MA (CME; Pfizer), June 6, 2005.
72. "Special Considerations in the Treatment of Depressed Women." Pfizer Educational Program, Boston, MA, July 27, 2005.
73. "Stress and the HPA Axis: Discovering an Endophenotype for Mood and Anxiety Disorders". Simposio Internacional sobre impulsividade, violencia e Estresse Pos-Traumático, Sao Paulo, Brazil, September 3, 2005.
74. "Brain Stimulation Therapies for Treatment Resistant Depression" Yale Medical School Department of Psychiatry Grand Rounds (CME), September 23, 2005.
75. "VNS Therapy Experience in Treatment Resistant Depression" and "VNS Patient Selection" Cyberonics Regional Symposium, Cleveland OH September 24.
76. "Realities in Research: Can Stimulating the Brain Bring Hope?" Annual Bridging the Gaps (NAMI), URI Kingston, RI, October 7, 2005.
77. "The Persistent Neuroendocrine Effects of Exposure to Stress During Early Development: Understanding a Biological Risk Factor for Adult Depression and Anxiety. Brown Department of Psychiatry and Human Behavior Academic Child & Adolescent Grand Rounds (CME), Providence, RI October 12, 2005.
78. "Special Considerations for Treatment of Depression in Women." Annual Central New York Psychopharmacology Update Symposium (CME), SUNY Upstate Medical University College of Medicine, Department of Psychiatry Syracuse, New York, October 27, 2005.
79. "Brain Stimulation Therapies for Treatment Resistant Depression." Neuropsychiatric Research Institute, University of North Dakota School of Medicine, Neuroscience and Psychiatry Department Grand Rounds (CME), Fargo, ND, November 2, 2005.
80. "VNS Therapy Experience in Treatment Resistant Depression" and "VNS Patient Selection" Cyberonics Regional Symposium, Hartford, CT, Nov 11, 2005.
81. "Brain Stimulation Therapies for Treatment Resistant Depression" Psychiatry Grand Rounds (CME) Institute of Living/Hartford Hospital, Hartford CT, January 11, 2006.
82. "Special Considerations for the Treatment of Depression and Anxiety in Women." 6<sup>th</sup> Annual North American Women's Healthcare Forum (CME), Foundation for Better Health Care, Anaheim CA, March 17, 2006.
83. "New Strategies for Treatment-Resistant Depression" presentation in Industry-Sponsored CME Symposium "New Vistas in Treatment-Resistant Depression." (Pfizer) at APA 159<sup>th</sup> Annual Meeting, Toronto, Canada May 21, 2006.
84. "Brain Stimulation Therapies for Treatment-Resistant Depression" presentation in Industry-Sponsored CME Symposium "Treatment-Resistant Depression: New Data, New Approaches." (Cyberonics) at APA 159<sup>th</sup> Annual Meeting, Toronto, Canada May 21, 2006.

85. "Treatment of Depression and Anxiety in Women: Critical Issues" University of Massachusetts Medical Center, Family Medicine and Community Healthy Department Grand Rounds, Worcester, MA, May 30, 2006
86. "GABA, genes and depression" Symposium, Society of Biological Psychiatry Annual Scientific Convention. May 20, 2006
87. "Neuromodulation for the Treatment of Severe Psychiatric Disorders" Butler Hospital Professional Education Programs in Psychiatry (CME), June 28, 2006.
88. "Shifting the Landscape of Research & Treatment Using Stimulation of the brain with NAMI-RI's 2006." Annual Bridging the Gaps (NAMI) URI Kingston, RI October 06, 2006
89. "Special Considerations for the Treatment of Depression and Anxiety" Annual Regional North American Women's Healthcare forum for the Foundation for Better Health Care. Minneapolis, MN, September 29, 2006
90. "Special Considerations for the Treatment of Depression and Anxiety in Women." 6th Annual North American Women's Healthcare Forum (CME), Foundation for Better Health Care, Anaheim CA, March 17, 2006.
91. "Special Considerations for the Treatment of Depression and Anxiety" Annual Regional North American Women's Healthcare forum for the Foundation for Better Health Care. Braintree, MA, October 6, 2006
92. "Psychiatry Meets Modern Technology: New Treatments for Depression" Keynote Address, The 11<sup>th</sup> Annual Pathways to Recovery Conference, Mental Health Consumer Advocates of Rhode Island, Inc. May 25, 2007.
93. "Management of Treatment Resistant Depression" Emory School of Medicine Department of Psychiatry and Behavioral Sciences Annual Psychiatry Residents' Symposium. Palm Beach, FL, September 6, 2007.
94. "Stress and the HPA Axis: Discovering Endophenotypes for Mood and Anxiety Disorders" Emory School of Medicine Department of Psychiatry and Behavioral Sciences Grand Rounds Lecture (CME), Atlanta, GA, October 24, 2007
95. "Neuromodulation Therapies for Depression" University of Arkansas Medical Center Grand Rounds Lecture (CME), Little Rick, AK, February 7, 2008.
96. "Neurostimulation Therapies in Psychiatry: Updates on VNS, TMS, DBS. Rhode Island Psychiatric Society (CME), Warwick, RI, February 11, 2008.
97. "Neuromodulation for Pharmacoresistant Depression" SUNY Upstate Medical University Department of Psychiatry Grand Rounds Lecture (CME), Syracuse, NY, March 6, 2008.
98. "Update on Neuromodulation Therapies for Depression" Butler Hospital Professional Education Programs in Psychiatry Series (CME), Providence, RI March 18, 2008.
99. "Brain Stimulation Therapies for Treatment-Resistant Depression" Rhode Island Association of Peri-Anesthesia Nurses Annual Conference (CNE), Warwick RI, March 29, 2008.

100. "Sub-Convulsive Therapies: Vagus Nerve Stimulation and Transcranial Magnetic Stimulation." In American Psychiatric Association 2008 Annual Meeting Course "Course Brain Stimulation Therapies in Psychiatry" (CME), Washington DC, May 8, 2008.
101. "Neuromodulation Therapies for Depression." Grand Rounds Lecture, UMass Medical School Department of Psychiatry (CME), Worcester, MA, May 15, 2008.
102. "Update of Brain Stimulation Treatments for Depression" Providence Veterans Administration Medical Administration Colloquium Lecture (CME), Providence RI, June 18, 2008.
103. "Early Life Stress and Chronic Pain" in Harvard/MGH (CME) Symposium "Sex, Gender, and Pain: Dilemmas in Clinical Practice" Boston, MA, September 12, 2008
104. "Advances in Technology-Based Treatments: Neuromodulation for Depression." Tufts University School of Medicine Psychiatry Department Grand Rounds (CME), Boston MA, November 2, 2008
105. "Managing Mood and Anxiety Disorders in Primary Care Practice: A Focus on Complex and Difficult-to-Treat Patients." SciMed LLC Best Practices in Primary Care Lecture Series (CME) Reston, VA October 10, 2008.
106. "Managing Mood and Anxiety Disorders in Primary Care Practice: A Focus on Complex and Difficult-to-Treat Patients." SciMed LLC Best Practices in Primary Care Lecture Series (CME) Dearborn, Michigan November 21, 2008.
107. "Managing Mood and Anxiety Disorders in Primary Care Practice: A Focus on Complex and Difficult-to-Treat Patients." SciMed LLC Best Practices in Primary Care Lecture Series (CME) Cleveland, Ohio November 20, 2008.
108. "Atypical Antipsychotics in Major Depressive Disorder: When Current Treatments are Not Enough" CME Outfitters, LLC Telebroadcast Program (CME), Washington DC, December 3, 2008.
109. Neuromodulation Therapies for Depression: Focus on Transcranial Magnetic Stimulation" Butler Hospital Staff Association Meeting (CME), Providence RI, December 4, 2008.
110. "Transcranial Magnetic Stimulation and Vagus Nerve Stimulation" NAMI Rhode Island Chapter Meeting, March 26, 2009
111. "Advances in Technology-Based Treatments: Neuromodulation Therapies for Treatment Resistant Depression." Department Grand Rounds Lecture (CME) St. Luke's Hospital, Nov 10, 2009
112. "The New Frontier: Neuromodulation of Treatment Resistant Depression." Maryland Psychiatric Society Symposium on Treatment Resistant Depression (CME), Baltimore, MD March 28, 2009
113. "Pharmacotherapy Options for Treatment Resistant Depression." CME Lecture in APA-Sponsored Symposium, "Advances in Pharmacology," American Psychiatric Association Annual Meeting, San Francisco, May 2009.
114. "Subconvulsive Therapies: Vagus Nerve Stimulation and Transcranial Magnetic Stimulation" CME Course "Brain Stimulation Therapies in Psychiatry," American Psychiatric Association Annual Meeting, San Francisco, May 2009.
115. "Advances in Technology-Based Treatments: Neuromodulation Therapies for Depression" Grand Rounds Lecture (CME) St. Luke's Hospital, New Bedford, MA, Nov 10, 2010



116. "Pharmacotherapy for Major Depressive Disorder." Master of Psychopharmacology Course (CME), American Physician Institute for Advanced Professional Studies, LLC, Orlando FL, March 11, 2010
117. "Pharmacotherapy for Bipolar Disorder." Master of Psychopharmacology Course (CME), American Physician Institute for Advanced Professional Studies, LLC, Orlando FL, March 11, 2010
118. "Transcranial Magnetic Stimulation Therapy for Treatment Resistant Major Depression" Rhode Island Employee Assistance Services, Warwick, RI, May 7, 2010.
119. "Demystifying Transcranial Magnetic Stimulation (TMS) for Treatment Resistant Depression. Butler Hospital Nurse's Day (Continuing Education Lecture). Providence RI, May 5, 2010.
120. "What Can Device-Based Treatments Offer Your patients? Recent Advances in Neuromodulation Therapies for Depression." Rhode Island Psychological Association (Continuing Education Lecture) Providence, RI, March 14, 2010
121. "2010 Updates: Vagus Nerve Stimulation and Transcranial Magnetic Stimulation" CME Course "Brain Stimulation Therapies in Psychiatry," American Psychiatric Association Annual Meeting, New Orleans, May 21, 2010.
122. "Augmentation and Combination Strategies for Treatment Resistant Depression." CME Lecture in APA-Sponsored Symposium, "Advances in the Management of Treatment-Resistant Depression," American Psychiatric Association Annual Meeting, San Francisco, May 22, 2009.
123. "Vagus nerve Stimulation" CME Lecture in APA-Sponsored Symposium "Focal Brain Stimulation for Psychiatric Disorders: Clinical Update" New Orleans, May 22, 2010,.
124. "Transcranial Magnetic Stimulation for Resistant Depression: Review of the OPT-TMS NIMH-Funded Trial Data" McLean Hospital TMS Meeting Series, Belmont, MA, June 2, 2010
125. "Clinical Experience with Transcranial Magnetic Stimulation for Resistant Depression" CME Lecture for Mood Disorders Research Program and Clinic, University of Texas Southwestern Medical Center, Dallas, TX, July 21, 2010.
126. "Transcranial Magnetic Stimulation: A New Treatment Option for Depression." CME Lecture for University of Michigan Depression Center Colloquium Series, Ann Arbor, MI July 30, 2010.
127. "Transcranial Magnetic Stimulation for Pharmacoresistant Depression." Walter Reed Army Medical Center Department of Psychiatry, Regularly Scheduled Grand Rounds (CME), Washington, DC, September 29, 2010.
128. "Neuromodulation Therapies for Depression: *Is Transcranial Magnetic Stimulation Here to Stay?*" Grand Rounds, Department of Psychiatry and Psychology, Mayo Clinic College of Medicine (CME), Rochester, MN, Sept 28, 2010.
129. "Augmentation and Combination Strategies for Treatment Resistant Depression" 39<sup>th</sup> Anniversary Psychopharmacology Symposium (CME), Sponsored by Las Vegas Psychiatric Society, Las Vegas NV, February 18, 2011.
130. "Neuromodulation Therapies for Depression: *Transcranial Magnetic Stimulation is Here to Stay*" Pine Rest Christian Mental Health Services Grand Rounds Lecture (CME), Grand Rapids, MI, March 9, 2011

131. "Transcranial Magnetic Stimulation Therapy for Major Depression" Rhode Island and Massachusetts Employee Assistance Professionals Organization Lecture Series (CEU), Providence RI, March 11, 2011.
132. "Brain Stimulation Therapies in Psychiatry: Vagus Nerve Stimulation" and "Introduction to TMS." CME Course at American Psychiatric Association Annual Meeting. Honolulu, HI, May 17, 2011.
133. "Neurobiological Consequences of Early Life Stress." American Headache Society Annual Meeting Symposium (CME), Washington DC, June 2, 2011.
134. "Update on Neuromodulation Therapies in Psychiatry: Transcranial Magnetic Stimulation for Depression" (CME) Michigan State University/ Kalamazoo Center for Medical Studies Hospital Grand Rounds, Kalamazoo MI, August 9, 2011.
135. "Stress, Depression, and Physical Health" CME Lecture in Women's Health Council of Rhode Island Second Annual Quality Conference "Women's Health: Bridging Physical and Behavioral Health" Providence RI, November 10, 2011.
136. "Neurobiological Consequences of Early Life Stress: Implications for Pain and Migraine." Multidisciplinary Monthly Headache Meeting, Beth Israel Deaconess Medical Center, Boston MA, January 17, 2012
137. "Neuromodulation Therapies for Depression: 2012 and Beyond" Dartmouth-Hitchcock Medical Center Dept of Psychiatry Grand Rounds (CME), Lebanon NH, February 7, 2012
138. "Women: At Risk for Depression and Suicide" CME Lecture in Women's Health Council of Rhode Island Critical Workshop Training: "Managing Women's Physical and High-Risk Behavioral Health." Providence RI, March 6, 2012.
139. "Vagus Nerve Stimulation for Treatment Resistant Depression." Lecture in "Innovative Therapeutics for Depression" A Johnson & Johnson Sponsored Symposium Co-hosted by COSAT and J&J Neuroscience. Philadelphia PA March 2-3.2012.
140. "Neuromodulation Therapies for Treatment-Resistant Depression: 2012 and Beyond" University of Miami Department of Psychiatry Grand Rounds (CME), Miami FL, April 3, 2012
141. "Neuromodulation Therapies for Treatment-Resistant Depression" McLean Hospital Invited Lecture sponsored by the Center for Depression, Anxiety and Stress Research, Belmont MA, July 26, 2012
142. "Stress: The Trajectory to Physical and Mental Health Disorders" in Harvard Medical School Department of Continuing Education CME Symposium "Depression, Anxiety and Stress." Boston, MA, September 7, 2012
143. "Vagus Nerve Stimulation, Deep Brain Stimulation, or Neither?" in Symposium: Recent Advances in Brain Stimulation (RABS) 2012: The Debate Series. Douglas Mental Health Institute, Montreal, Canada, September 30, 2012.
144. "Transcranial Magnetic Stimulation (TMS) for Depression: Updates for Rhode Island" Rhode Island Psychiatric Society Membership Meeting, Providence, RI, October 15, 2012
145. "Diagnosis and Treatment of Mood Disorders in Women" McLean Hospital Symposium on Women's Mental Health (CME), November 2, 2012, Belmont, MA

146. "Neuromodulation Therapies for Depression: From Investigational Devices to Standard of Care" Brown Department of Psychiatry and Human Behavior Grand Rounds Lecture (CME), Providence, RI, March 6, 2013
147. "Neuromodulation Therapies for Depression: Where do they Belong in Current Patient Care?" University of Medicine & Dentistry of New Jersey-SOM Department of Psychiatry Grand Rounds Lecture (CME) Cherry Hill, NJ, March 13, 2013
148. "TMS therapy for Depression: From Investigational Devices to Standard of Care." Women's Medical Association of Fairfield County (CME), Westchester NY, April 10, 2013.
149. Clinical Application of rTMS for Treatment of Pharmacoresistant Major Depression." MagStim Neuroenhancement Conference and Workshop 2013, Oxford, UK, May 4-5, 2013.
150. Clinical Application of rTMS for Treatment Major Depression." Beth Israel Deaconess Medical Center/Berenson-Allen Center TMS Course (CME) Boston MA. October 28, 2013,
151. "Clinical Application of Transcranial Magnetic Stimulation to Treat Depression and Other Brain Disorders: On the Trajectory from Research to Standard of Care" Providence VAMC Research Week Invited Lecture. March 21, 2014
152. "Evaluating Non-ECT Brain Stimulation Treatments for Treatment Resistant Depression," 4<sup>th</sup> Annual Yale Psychopharmacology Master Class: Focus on Depression (CME) New Haven March 28, 2013
153. "TMS Therapy for Pharmacoresistant Major Depressive Disorder" CME (Symposium Chair) and "Delivery of TMS Therapy in Clinical Practice Settings" (Speaker), American Psychiatric Association Annual Meeting, New York City, May 2014.
154. "Current and Future Application of Transcranial Magnetic Stimulation for Treating Depression and Other Brain Disorders" MagStim Neuroenhancement Conference and Workshop Oxford, UK, May 2014.
155. "Acute and Long-Term Outcomes: rTMS for Depression" MagStim Neuroenhancement Conference and Workshop Oxford, UK, May 2014.
156. "rTMS Using Summation of Electromagnetic Fields from a Two-Coil Array: Efficacy for Treatment Resistant Major Depressive Disorder. 1<sup>st</sup> International Brain Stimulation Conference March 2015, Singapore
157. "State of the Art Lecture: Standards of Care for TMS Therapy." (CME) The Clinical TMS Society Annual Meeting, May 2015, Toronto
158. "The Convergence of Technology and Psychiatry: Transcranial Magnetic Stimulation for Major Depression and other Brain Disorders" (CME) Institute of Living/Hartford Hospital Psychiatry Grand Rounds, February 2016, Hartford CT
159. "Technology meets Psychiatry: Transcranial Magnetic Stimulation (TMS) Therapy for Neuropsychiatric Disorders" (CME) University of Minnesota Psychiatry Department Grand Rounds, March 2016

160. "Technology meets Psychiatry: Transcranial Magnetic Stimulation (TMS) Therapy for Neuropsychiatric Disorders" (CME) Institute for Engineering in Medicine, University of Minnesota, March 2016
161. "Long-term Outcomes with TMS Therapy: A Review of Continuation and Maintenance Data" (CME) International Society of ECT and Neuromodulation Annual Meeting, May 2016, Atlanta
162. "Long-term Outcomes with TMS Therapy: A Review of Continuation and Maintenance Data" (CME) The Clinical TMS Society Annual Meeting, May 2016, Atlanta
163. "TMS Clinical Applications and Depression Evidence" (CME) Berenson-Allen Center for Noninvasive Stimulation Beth Israel Deaconess Medical Center, Intensive Course in Transcranial Magnetic Stimulation (TMS), Boston May 22, 2016
164. "Technology Meets Psychiatry: Transcranial Magnetic Stimulation (TMS) Therapy for Depression" (CME) Semel Institute UCLA Grand Rounds, November 14, 2016 Los Angeles CA
165. "Invasive and Noninvasive Stimulation for Neuropsychiatric Disorders : What's Next?" (CME) Semel Institute Neuromodulation Seminar Series Lecture, November 15, 2016 Los Angeles CA
166. "Technology Meets Psychiatry: Transcranial Magnetic Stimulation (TMS) Therapy for Depression" (CME) UConn Health Grand Rounds, January 6, 2017, Farmington CT
167. "Transcranial Magnetic Stimulation (TMS) Therapy for Major Depression: Updates for Clinical Practice in 2017" Coastline Employee Assistant Program (CME), February 10, 2017, Warwick RI
168. "A New Standard of Care: rTMS Therapy for Major Depressive Disorder" (CME) Mental Health Grand Rounds, VA Boston Healthcare System/Harvard South Shore Psychiatry Residency Training Program, March 2, 2017, Brockton, MA
169. "Vagus Nerve Stimulation for Chronic Medical Disorders" Symposium "Clinical Neuroscience Informing Application of Non-invasive Brain Stimulation" Lecture at Brain Stimulation Annual Meeting, March 8, 2017 Barcelona
170. "Training and Continuing Education for TMS Providers" Lecture in APA Workshop "Starting your TMS private practice: What We wish we would have known" (CME) May 20, 2017 San Diego, CA.
171. "Neuromodulation: Evolution of rTMS into Psychiatry" (CME) Lecture in the PULSES TMS training course, May 18, 2017 (San Diego), Feb 10, 2018 (London), May 11, 2018 (Brooklyn, NY)
172. "rTMS Therapy for Major Depression: A Paradigm Shift for Psychiatry" University of Massachusetts Medical School Psychiatry Department Grand Rounds, October 12, 2017, Worcester, MA
173. "Grantsmanship" Lecture in ACNP Junior Investigator Career Development Symposium, December 2, 2017 Palm Springs, CA
174. "TMS Therapy for Depression: Overview and Cost Effectiveness Data" Magellen National Meeting of Behavioral Health Medical Directors January 29, 2018
175. "Evolution of Transcranial Magnetic Stimulation in Psychiatry" PULSES Introductory TMS Course Lecture, November 12, 2018 (Orlando FL); February 20, 2019 (Vancouver, Canada)

176. "Insights and Inspiration from the First Decade of TMS Therapy in Psychiatry." McLean Hospital Grand Rounds, November 15, 2018, Belmont MA
177. "Insights and Inspiration from the First Decade of TMS" Psychiatry Department Grand Rounds Lecture, University of Colorado Grand Rounds, January 23, 2019, Denver, CO
178. "The First Decade of TMS Therapy in Psychiatry" Yale Department of Psychiatry Grand Rounds, February 15, 2019, New Haven CT
179. "Combining TMS with Other Brain Activities to Enhance Therapeutic Outcomes." Clinical TMS Society Annual Meeting CME Presentation, February 23, 2019, Vancouver Canada
180. "TMS from Genesis to Clinical Application" International Brain Stimulation Meeting Workshop Presentation, February 24, 2019 Vancouver Canada
181. "Individual Alpha Frequency: Proximity to Stimulation Frequency (10 Hz) and MDD Clinical Outcomes" International Brain Stimulation Meeting Symposium Presentation, February 27, 2019 Vancouver Canada
182. "Transcranial Magnetic Stimulation: Insights and Updates" University of Illinois at Chicago Psychiatry Grand Rounds Presentation, April 10, 2019, Chicago IL
183. "Transcranial Magnetic Stimulation for Depression" Lecture in Berenson-Allen Center for Non-Invasive Brain Stimulation CME Course "Introduction to tDCS in Neuropsychiatric Research" June 24, 2019, Boston MA
184. "Basic Science to Clinical Practice: Repetitive TMS Becomes a Psychiatric Therapy." Lecture in PULSES TMS Course at Institute of Engineering and Technology, London UK, July 5, 2019

## **GRANTS**

1. NARSAD (Young Investigator Award), "Regulation of Cerebrospinal Fluid Corticotrophin Releasing Factor in Normal Healthy Subjects and Depressed Patients," **Princ. Investig**; 7/97 - 6/99, \$60,000.
2. Solvay Pharmaceuticals, "A multicenter, double-blind, placebo-controlled, parallel group study of the safety, tolerability and efficacy of three fixed doses of fluvoxamine vs. placebo in outpatients with major depressive disorder," Co-Investig; 9/97 - 8/98, \$240,000.
3. NIAAA R01 AA11211-01 (Abrams); "Motivating Alcoholics to Quit Smoking," 9/96 - 9/01, \$444,394 (salary support)
4. Pfizer, Inc., "A phase III, randomized, placebo-controlled study evaluating the safety and outcome of treatment with oral ziprasidone in subjects with mania receiving lithium," Co-Investig; 1/98 - 1/99, \$169,313.
5. Pfizer, Inc., "An open extension study evaluating the safety and outcome of 40-160 mg daily of oral ziprasidone in the treatment of subjects who have participated in Protocol 602," Co-Investig; 1/98 - 1/00, \$36,300.
6. Forest Laboratories, Inc., "An open-label evaluation of the efficacy, safety, and dosing of citalopram in outpatients with depression," Co- Investig; 2/98 - 3/99, \$40,040.

7. Forest Laboratories, Inc., "An open-label extension of citalopram treatment in outpatients with depression," Co-Investig; 3/98 - 3/99, \$29,912.
8. Eli Lilly and Co., "Comparative efficacy of switching SSRI nonresponders to fluoxetine vs. continued antidepressant treatment with the same SSRI," Co-Investig; 3/98 - 3/00, \$74,961.
9. Organon, "Mirtazapine augmentation in the treatment of refractory depression," Investig-Initiated Grant **Princ. Investig.**; 7/98, \$95,000.
10. Pfizer, Inc. "Validation of serial CSF collection method for assessment of central serotonergic function," Co- Investig; 7/98 - 10/98, \$47,956.
11. Departmental Research Award, Brown Univ. Dept. of Psychiatry and Human Behavior; "A new method for serial CSF sampling in the study of central serotonergic function and metabolites in depression"; **Princ. Investig.**; 7/97 - 6/99, \$58,900.
12. Pfizer, Inc., "A six-week, double-blind, placebo-controlled, multicenter study to evaluate the safety and efficacy of 3 doses of CP-448,187 (0.5, 3, and 10mg) and fluoxetine (Prozac) in subjects with major depressive disorder," Co- Investig; 5/00 - 5/02, \$82,797.
13. Merck Research Laboratories, "A double-blind, multicenter study of two doses of L-759274 vs. paroxetine hydrochloride and placebo in the treatment of outpatients with major depressive disorder," Co-Investig; 8/99 - 3/00, \$197,520.
14. NCI R21 CA88297-01 (Brown), "Biobehavioral Vulnerability to Early Smoking Relapse" Co-Investig; 7/00 - 6/02, \$362,500.
15. Cyberonics, Inc. "A multicenter, pivotal, safety and efficacy study of the NeuroCybernetic Prosthesis (NCP) System in Patients with Depression, Study D-02" **Princ. Investig.**; 6/00 - 5/05; \$117,145.
16. Cyberonics, Inc. "A long-term, prospective, multicenter study to compare the clinical quality of life, and health care utilization outcomes of the NeuroCybernetic Prosthesis (NCP) System to the standard of care treatment in patients with depression. **Princ. Investig.**; 1/01 - 1/05; \$61,680.
17. Cyberonics, Inc. "CSF Neurochemical correlates of vagus nerve stimulation in depressed patients." Investig-Initiated Grant; **Princ. Investig.**; 1/01 - 1/03, \$157,500.
18. Executive Council On Research (ECOR) Award, Brown University Department of Psychiatry and Human Behavior. "HPA axis function and associated clinical features in adults who were preterm infants," **Princ. Investig.**; 1/01 - 12/01, \$10,000.
19. Pfizer, Inc., "A six-week, double-blind, placebo-controlled, multicenter study to evaluate the safety and efficacy of 3 doses of CP-448,187 (0.5, 3, and 10mg) and fluoxetine (Prozac) in subjects with major depressive disorder," Co- Investig; 5/00- 5/02, \$82,797.
20. Merck Research Laboratories, "A worldwide, multicenter, double-blind, parallel, active-controlled, long-term safety study of MK-0869 in outpatients with major depressive disorder (Protocol 066-00)," Co-Investig; 2/01- 2/02, \$251,880.
21. Pfizer/Society for Women's Health (SWHR) Research Scholars Grant for Faculty Development in Women's Health 2002. "The relationship between early life stress, HPA axis function, and depression in women" **Princ. Investig.**; 7/02 - 6/05, \$195,000.

22. Scirex Corp/Corcept Therapeutics, Inc. "1073-02 A Phase III, Randomized, Double-Blind, Placebo-Controlled Study of the Safety and Efficacy of C-1073 (Mifepristone) in Patients with Major Depressive Disorder with Psychotic Features" (Multisite) Site **Princ. Investig**; 11/01 – 10/03, \$14,967.
23. Scirex Corp/Corcept Therapeutics, Inc. "1073-03 A Phase III, Randomized, Double-Blind, Placebo-Controlled Study of the Safety and Efficacy of C-1073 (Mifepristone) in Patients with Major Depressive Disorder with Psychotic Features Who are not Receiving Antidepressants or Antipsychotics" (Multisite) Site **Princ. Investig**; 11/01 – 10/03, \$14,967.
24. Cephalon, Inc. "An Open-Label, 8-Week Study with flexible Doses of Gabitril™ (tiagabine hydrochloride) in Patients with Major Depressive Disorder with Anxiety (MDD-A)" Investigator-Initiated; **Princ. Investig**; 3/02 – 2/04, \$127,500.
25. Pfizer, Inc. "Sertraline Treatment and Cortisol Response to the DEX/CRH Test in Healthy Subjects," Investigator-Initiated Grant; **Princ. Investig**; 12/04 – 11/06, \$300,684.
26. NIMH R01 MH0687670 "DEX/CRH Response: Mood/Anxiety Disorder Endophenotype," **Princ. Investig**; 4/04 – 1/09, \$1,227,776.
27. NCCAM/NIMH R01 AT001742, "Double-blind, placebo-controlled study of SAME vs. escitalopram in MDD," Co-Investig; 4/04 - 3/10, \$1,002,013.
28. US Department of the Interior, "Perceived Early Life Stress and DEX/CRH Test Response as Predictors of Psychological Sequelae following Exposure of Healthy Adults to War Stress" **Princ. Investig**; 7/04 – 6/05, \$40,000.
29. UCB Pharma, Inc. "Keppra Treatment and Cortisol Response to the DEX/CRH test in Healthy Subjects" Investigator-Initiated Grant; **Princ. Investig**; 6/04 -3/09, \$111,624.
30. Medtronic, Inc. "Electrical Stimulation of the Anterior Limb of the Internal Capsule to Treat Major Depressive Disorder" (Investigator-Initiated Price); Co-Investig; 10/02 - 9/04, \$315,000
31. NARSAD 2006 Independent Investigator Award. "Do Emotional and Biological Responses to a Laboratory Stress Test Predict Risk for Depression and Anxiety Disorders?" **Princ. Investig**; 9/06 – 9/09; \$100,000
32. Sepracor, Inc. " ESRC101: Eszopiclone Treatment and Cortisol Response to HPA Axis Tests" Investigator-Initiated Grant; **Princ. Investig**; 9/06 – 2/09; \$254,318.75
33. NIMH R34 MH073625 (Miller, PI) "Development of an Intervention for Suicide Attempters" 3/1/09-2/28/10; Co-Investig; \$191,848
34. Cyberonics, Inc. "Randomized Comparison of Outcomes in Patients with Treatment-Resistant Depression Who Receive VNS Therapy Administered at Different Amounts of Electrical Charge" **Princ. Investig**; 11/1/07-9/10; \$286,350
35. NIMH R01 MH0687670-01 "DEX/CRH Response: Mood/Anxiety Disorder Endophenotype? PHASE 2," **Princ. Investig**; 7/1/2009 – 7/31/2016 (NCE), \$3,514,780.
36. Medtronic, Inc. "RECLAIM Deep Brain Stimulation (DBS) Clinical Study for Treatment- Resistant Depression." Multi-Site; Site **Princ. Investig**4/16/2009 – 7/15/2012.

37. NIH 2R01NR003695-14A1 (Sullivan, PI) "Risk and Protection in Trajectories of Preterm Infants: Birth to Adulthood;" Consultant; 4/1/2009 – 4/2013
38. Neuronetics, Inc, "NeuroStar Transcranial Magnetic Stimulation Therapy® System: Data Management, Analysis and Reporting Format for Clinical Treatment Utilization and Outcomes" Multisite; **Princ. Investig**; 9/2009 – 8/2012.
39. Brown Institute for Brain Sciences (BIBS) "Brain Stimulation Facility Core" (Equipment Grant \$400,000) **Co-Princ. Investig**; 10/30/2012
40. NeoSync, Inc. "Evaluation of Low Emission NeoSync EEG Synchronized TMS Technology for the Treatment of Major Depressive Disorder: A Multicenter Randomized, Double-Blind, Sham-Controlled, Trial" Multi-site; Site **Princ. Investig**; 4/25/11 – 4/25/14
41. Neuronetics, Inc. "A 12-Month Prospective Randomized Dual-Arm Pilot Study of Maintenance Neurostar Transcranial Magnetic Stimulation (TMS) in Patients With Major Depressive Disorder" Multisite; Site **Co-Princ. Investig**; 5/1/12-1/12/14
42. NIMH 1R21MH091508 (Tyrka, PI) "Childhood Maltreatment: Epigenetic Modulation of the Glucocorticoid Receptor" Co-Investig; 4/21/2011 – 3/31/2013.
43. 3R01MH068767-07S1 "Dex/CRH Response: Mood/Anxiety Disorder Endophenotype?"; Supplemental Award; **Princ. Investig**; 6/17/2011 – 2/28/2014 \$157,036.
44. 3 R01MH068767-08W1 07S1 Supplemental Award; **Princ. Investig**; 6/17/2012 – 2/28/2014
45. Cervel Neurotech, Inc. "A Prospective, Double-Blind, Randomized, Parallel-Group, Sham-Controlled Feasibility Trial of Multi-Coil rTMS for the Treatment of Major Depressive Disorder" Multisite; Site **Princ. Investig**; 5/31/2013 - 6/1/15.
46. NIMH 1R34MH099310-01A1 "Collaborative Study: Testosterone Augmentation in Women" **Princ. Investig**; 7/1/2013 – 6/30/2016;
47. HHSN2712011000061 (NIMH Contract PI, Fava) "Rapidly-Acting Treatments for Treatment Resistant Depression" **Site Princ. Investig**; 2014 – 2016; \$242,551 (Total Direct Costs)
48. R01 MHMH101107-1 (Tyrka, PI) "Early Life Stress: Epigenetic Regulation of Endocrine and Immune Pathways" Co-Investig; 4/17/2014-3/31/2019; \$355,494 (Annual Direct Cost)
49. NIMH 1 R01 MH083704 (Tyrka, PI) "Childhood Maltreatment: Biomarkers of Risk and Resilience" Co-Investig; 12/01/09-11/30/2015 (NCE)
50. Neuronetics, Inc. "5 Hz Repetitive Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder comorbid with Major Depressive Disorder" Investig- Initiated Grant; **Princ. Investig**; 9/12/14 – 9/12/16; \$29,750 (Direct Costs)
51. The Roddy-Holden Foundation. "Antidepressant efficacy of computerized cognitive-behavioral therapy (CBT) combined with bifrontal transcranial direct current stimulation (tDCS)" **Princ. Investig**; 10/28/2014; \$17,600 (Equipment Grant; Direct Cost)
52. Fred M. Roddy Foundation, Inc. "Measuring electroencephalography (EEG) changes during neuromodulation." **Princ. Investig**; 3/26/2016; \$35,000 (Equipment Grant; Direct Cost)



53. P50 MH106435 (Haber, Director; Greenberg, Project 4 PI) “Neurocircuitry of OCD: Effects of Modulation” Role: Core C, Co-Investig (6/1/15 – 5/31/19)
54. R21 MH112055-01 (Liu, PI) “Modulating impulsivity in suicidal adolescents with tDCS: A proof-of-concept study” Co-Investigator (1/1/17 – 12/30/19)
55. R21 DA04298901A1 (Lechner/Philip MPI) “Working Memory Training Combined with Repetitive Magnetic Stimulation in Smokers” Co-Investigator (7/1/17 – 6/30/19)
56. Janssen Research & Development, LLC. “A Randomized, Double-blind, Multicenter, Active-Controlled Study of Intranasal Esketamine Plus an Oral Antidepressant for Relapse Prevention in Treatment-resistant Depression” Multisite; Site **Princ. Investig**; (6/6/17 – 3/30/2018)
57. Janssen Research & Development, LLC. “An Open-label Long-term Extension Safety Study of Intranasal Esketamine in Treatment-resistant Depression” Multisite; Site **Princ. Investig**; (4/7/17 – ongoing).
58. R01 MH113929-01 (Fox) “Using human brain connectivity to identify the causal neuroanatomical substrate of depression symptoms.” Co-Investig; (7/1/2017 – 6/30/2022)
59. NeoSync, Inc. “A Prospective, Multicenter, Double-Blind, Sham-Controlled Adaptive Design Study to Confirm the Safety and Efficacy of NEST sTMS in Subjects with Major Depressive Disorder Who Have Not Responded to at Least One Antidepressant Medication in the Current Episode” Multisite; Site **Princ. Investig**; (10/1/17 – 9/20/20)
60. Carney Innovation Award (Brown University) “Luminance-Dependent Brain Activation in Seasonal Affective Disorder and Depression” (MPI with Sanes, Bersky); **Princ. Investig**; (9/18/18 – 8/18/19)
61. UG3 DA047793-01 (Abrantes & Stein) “tDCS to Decrease Opioid Relapse” Co-Investig; (09/30/18-09/30/21)
62. P20 GM130452-01 (Greenberg, PI) “COBRE Center for Neuromodulation (CCN)” Role: **Deputy Director** of CCN Administrative Core; **Director** of CCN Neuromodulation and Neuroimaging Core. (2/28/19 – 2/27/24)
63. I01 HX002572 (Primack/Philip, MPI) “Combined Transcranial Magnetic Stimulation and Brief Cognitive Therapy to Reduce Suicide Behavior in High-Risk Veterans” Co-Investig; 4/1/2019-3/30/2023
64. Feelmore Labs, Inc. (Carpenter) “Mechanical Affective Tougc Therapy to Improve Symptoms in Anxiety Patients” Investig-Initiated Grant; **Princ. Investig**; (11/12/18 – 11/11/21)
65. Neuronetics, Inc. (Carpenter) “EMA-Guided Adaptive-Schedule TMS Therapy” **Princ. Investig**; 11/6/19 – 11/5/21

## **TEACHING ROLES**

### Brown University

Medical Student Primary Research Mentor/Supervisor 2003-2004 (J. Schecter).

Brown Neuroscience Dept (Bio 195/196) Research Faculty Sponsor 2002-2003 (R. Jaffe).

Brown Brain Science Program Undergraduate Research Fellowship/Thesis Advisor and Neuroscience Research Mentor (R. Jaffe 2001-2002, L. Bayat 2005 – 2006)

Psychiatry Inpatient Supervisor/preceptor, 3<sup>rd</sup>,4<sup>th</sup>-year Brown medical students 1997-2010.

Clinical Supervisor, Brown Psychiatry Residents and Neuropsychiatry Fellows (PGY-1 - PGY-4), 1997-present.

Research Mentor, Brown Psychiatry Residents, 2002 – 2014 (Michael Posternak, Audrey Tyrka, David Block, Nada Milosavljevic, Noah Philip, Thaddeus Shattuck)

Doctor-on-call Supervisor, Butler Hosp. Patient Assessment Service, 1997-2007.

BioMed 278-Intro to Clinical Psychiatry, Section Leader (Brown medical students)1998-2005.

Psychopharmacology Course Lecturer, PGY 1-4 Residents, 1998-present.

Psychopathology Course Lecturer and Mood Disorders Module Director, PGY 1-4 Residents 1999 -2015.

Psychiatry Residency “Mock” National Board Examiner - Brown University/Dartmouth Faculty Exchange Program, 2002, 2004, 2007

Faculty Presenter, Brown Medical School Faculty Development Workshop, 2006.

Psychiatry Research Mentor, post-bachelor/post-doctorate trainees (S. Creamer, R. Haggarty, A. Tracy, L. Wier, K. Grover, M. Wyche, J. Lee, S. Wenze, E. Welch)

Mentor, Psychiatry Research Post-Residency Fellowship, Butler Hospital Mood Disorders Research Program (J. Gagne, J. Schechter) 2000- 2005

Psychology PhD (Suffolk University) Clinical Practicum Co-Mentor (R. Haggarty, 2004)

Mentor, Clinical Neuroscience Research Fellowship on HPA Axis Markers of Early Life Stress (Andrea Feijo de Mello and Marcelo Feijo Feijo de Mello, University of Sao Paulo) 2002 - 2003

Brown Graduate School, Department of Cognitive & Linguistic Sciences Doctoral Thesis Advisor (S. Mather) 2007 -2008

Lecturer, Brown University Neuroscience Department “Bench to Bedside” Lecture Series, 2008 - present

Director/Supervisor, Butler Neuromodulation Clerkship (Brown Psychiatry Residency) 2009 – present.

Faculty Trainer/Thesis Adviser, PhD Graduate Program, Brown Department of Molecular Pharmacology, Physiology, and Biotechnology (C. Gawuga) 2010 – 2016.

Faculty Mentor (Neuromodulation) Brown University Geriatric Psychiatry Fellowship Training Program 2010 - present

Faculty Mentor or Co-Mentor, Career Award Applicants (Brown University Dept Psychiatry Junior Faculty), 2008 – present (N. Philip, G. Epstein-Lubow, U. Clark, S. Wenze, E. Conradt, B. Kavanaugh)

Faculty Mentor, VA Career Development Award, 2013 – 2017 (N. Philip).

Faculty Mentor, K12 Scholarship Awardee, 2015- 2017 (Agustin Yip, MD PhD)

Brown R25 Research Resident Faculty Mentor, (S. Ridout, J. Almeida, A. Zandvakili, B. McCarthy, H. Wang, S. Yuan, A Fukuda) 2015 – present

Brown Department of Neuroscience Undergraduate Research Supervisor/Senior Thesis Advisor (M. Gold, 2019-2020)

Brown Department of Cognitive, Linguistic and Psychological Science Undergraduate Research Supervisor/Senior Thesis Advisor (Frances Kronenberg, 2019-2020)

Brown University Neuroscience PhD Mentor (Meghan Gonsalves, 2020-)

Faculty Mentor, International J1 Research Scholars : Fiamma Cavallero (2019), Fatih Kokdere (2019)

Brown Undergraduate Thesis/Medical School Research Project Supervisor (Grace Russo, Luke Sullivan)

### National

Distinguished Lecturer in Psychiatry, ASCP Model Psychopharmacology Curriculum 2006, 2007.

Faculty Mentor, Emory University Sponsored “Future Leaders in Psychiatry” Symposium, 2005

Faculty Mentor, Emory University Sponsored “Psychiatry Residents Symposium” 2007, 2008

Faculty Lecturer, ACNP Junior Investigator Research Colloquium, 2017

Mentor, Travel Awardee/Junior Investigator Program, ACNP, 2008, 2009, 101, 2011, 2012, 2014, 2015, 2016, 2017

Faculty Mentor, APA Research Colloquium for Junior Investigators, 2007, 2009, 2010, 2012, 2014, 2016, 2017

Faculty Mentor, SOBP Junior Investigator and Travel Award Program, 2010, 2012, 2014, 2015, 2016, 2017

Faculty Mentor for Junior Investigators, Anxiety and Depression Association of America, Career Development Leadership Program, 2015

Faculty Lecturer, “PULSES” Introductory TMS Course (CME) Offered domestically/internationally by the Clinical TMS Society (May 2017 – present)

Faculty Lecturer, Harvard Medical School/Berenson-Allen Center “Intensive Course in Transcranial Magnetic Stimulation (CME) (2013, 2016, 2018, 2019)

Clinical TMS Society Committee Member: Education Committee (2017 – present); Annual Program Committee (2017 – present)