

CURRICULUM VITAE

Benjamin David Greenberg, MD PhD

EDUCATION

Undergraduate: Amherst College

Medical School: University of Miami

Graduate School: University of California, San Diego (UCSD), Neurosciences

POSTGRADUATE TRAINING

Residency: New York University VA Medical Center Internship in Internal Medicine

Neurological Institute of New York, Columbia-Presbyterian Medical
Resident in Neurology

Johns Hopkins Hospital Residency in Psychiatry

Fellowships: Harvard School of Public Health, Postdoctoral Fellowship,
Interdisciplinary Programs in Health

National Institute of Mental Health Intramural Program, Senior Staff
Fellow (Commissioned Corps), Section on Clinical
Neuropharmacology, Laboratory of Clinical Science

POSTGRADUATE HONORS AND AWARDS

Best Review Article of the Year, CNS Spectrums, 2003
Research Mentor Award, Brown University Department of Psychiatry and
Human Behavior, 2001
Early Career Award, EEG and Clinical Neuroscience Society (ECNS),
10/2001
APA/SmithKline Beecham Young Faculty Award, Hon. Mention, 2000
Young Investigator Award,
American Neuropsychiatric Assn, 1995
DISTA Fellowship, Society of Biological Psychiatry, 1991

PROFESSIONAL LICENCES AND BOARD CERTIFICATION

Rhode Island Medical License

Maryland Medical License

Diplomate in Psychiatry, American Board of Psychiatry and Neurology

ACADEMIC APPOINTMENTS

Associate Professor, Department of Psychiatry and Human Behavior,
Brown University 2/2000 - Present

Chief, Adult Obsessive-Compulsive Disorder Research Unit,
National Institute of Mental Health, Bethesda MD, 7/96-1/2000

Senior Staff Fellow, Laboratory of Clinical Science, Section on Clinical
Neuropharmacology, National Institute of Mental Health, Bethesda MD,
7/92 – 1/2000

Instructor in Psychiatry, Johns Hopkins University, Baltimore MD,
1992-2000

OTHER APPOINTMENTS

Board of Directors, Depression and Related Affective Disorders
Association, 1997-2000
Executive Board, EEG and Clinical Neuroscience Society, 2004-

ACADEMIC COMMITTEES

Brown Medical Faculty Executive Committee, 2003 -
Brown Collaboration for Translational Brain Research, 2002-
Brown Psychiatry/Psychology Working Group, 2002-
Brown Brain Science Program Executive Committee, 2000-
Brown University MRI Facility Executive Committee, 2001-
Brown University MRI Facility Scientific Advisory Committee, 2001-
Interdepartmental Advisory Committee for Psychology, Brown University, 2001
Brown University Psychiatry Residency Curriculum Committee
Brown University Brain Science Curriculum Committee, 2001-2
Brown University Psychiatry Residency UTP Clinic Committee, 2000
Director, Brown Psychiatry Residency PGY3 Rotation, Butler Hospital, 2000-
Associate Chair, Butler Hospital Institutional Review Board, 2000 -
NIMH Intramural Program Institutional Review Board, 1995-1999
NIMH Fellows Committee, 1994-1997

MEMBERSHIP IN SOCIETIES

American College of Neuropsychopharmacology, Associate Member, 1999
Obsessive-Compulsive Foundation, 1998
Founding member, International Society for Transcranial Stimulation, 1997
American Neuropsychiatric Association, 1997
American Society of Clinical Psychopharmacology, 1996-1999
Society of Biological Psychiatry, 1992
American Psychiatric Association, Maryland Psychiatric Society, 1992

PUBLICATIONS (peer reviewed)

1. Vosbeck KD, Greenberg BD, and Awad WM: The proteolytic enzymes of the K-1 strain of Streptomyces griseus obtained from a commercial preparation (Pronase): Specificity and immobilization of aminopeptidase. Journal of Biological Chemistry 1975; 250(10): 3981-3987.

2. Vosbeck KD, Greenberg BD, Ochoa MS, Whitney PL, and Award WM: Proteolytic enzymes of K-1 strain of Streptomyces griseus obtained from commercial preparation (Pronase): Effect of pH, metal ions, and amino acids on aminopeptidase activity. Journal of Biological Chemistry 1978; 253(1): 257-260.
3. Geyer MA, Segal DS, and Greenberg BD: Increased startle responding in rats treated with phencyclidine. Neurobehavioral Toxicology and Teratology 1984; 6: 161-164.
4. Russell JW, Greenberg BD, and Segal DS: Effects of phencyclidine on spontaneous aggressive behavior in the rat. Biological Psychiatry 1984; 19(2): 195-202.
5. Greenberg BD, Moore PM, Letz RE, and Baker EL: Computerized assessment of human neurotoxicity: Sensitivity to nitrous oxide exposure. Clinical Pharmacology and Therapeutics 1985; 38(6): 656-660.
6. Greenberg BD, and Segal DS: Acute and chronic behavioral interactions between phencyclidine and amphetamine: Evidence for involvement of dopaminergic mechanisms in some PCP-induced behaviors. Pharmacology, Biochemistry and Behavior 1985; 23(1): 99-105.
7. Greenberg BD, and Segal DS: Evidence for multiple opiate receptor involvement in different phencyclidine-induced unconditioned behaviors in rats. Psychopharmacology 1986; 88: 44-53.
8. Benjamin J, Li L, Patterson C, Greenberg BD, Murphy, DL, Hamer DH: Population and familial association between the D4 dopamine receptor gene and measures of novelty seeking. Nature Genetics 1996; 12:81-84.
9. Michelson D, Altemus M, Galliven E, Hill D, Greenberg BD, Gold P: Naloxone-induced pituitary-adrenal activation does not differ in patients with depression, obsessive-compulsive disorder and healthy controls. Neuropsychopharmacology 1996; 15:207-12.
10. Keuler D, Altemus M, Galliven E, Hill D, Greenberg B, Murphy DL: Behavioral Effects of Naloxone Infusion in Obsessive-Compulsive Disorder. Biological Psychiatry 1996; 40: 154-156.
11. Benjamin J, Greenberg BD, and Murphy DL: Daily administration of m-chlorophenylpiperazine to healthy human volunteers rapidly attenuates many of its behavioral, hormonal, cardiovascular and temperature effects. Psychopharmacology 1996; 127: 140-149.
12. Levine J, Witztum E, Greenberg BD, Barak Y: Inositol induced mania? (letter) American Journal of Psychiatry 1996;153: 839.
13. Lesch K-P, Bengel D, Heils A, Sabol SS, Greenberg BD, Petri S, Benjamin J, Muller CR, Hamer DH, Murphy DL: Association of anxiety-related traits with a polymorphism in the serotonin transporter gene regulatory region. Science, 1996; 274: 1527-1531.
14. Altemus M, Murphy DL, Greenberg B, Lesch P: Intact serotonin transporter gene in obsessive-compulsive disorder. American Journal of Medical Genetics (Neuropsychiatric Genetics) 1996; 409-411.

15. Greenberg BD, George MS, Martin JD, Benjamin J, Schlaepfer TE, Altemus M, Wassermann EM, Post RM, and Murphy DL: Effect of prefrontal repetitive transcranial magnetic stimulation in obsessive-compulsive disorder: a preliminary study. American Journal of Psychiatry 1997; 154: 867-869.
16. Schmidt LA, Greenberg BD, Holzman GB, Schulkin J. Treatment of Depression by Obstetrician-Gynecologists: A Survey Study. Obstetrics and Gynecology 1997; 90: 296-300.
17. George MG, Wassermann EM, Kimbrell TK, Little JT, Williams WE, Danielson BA, Greenberg BD, Hallett M, Post RM: Mood improvement following daily left prefrontal rTMS mood in patients with depression: a placebo-controlled crossover trial. American Journal of Psychiatry 1997; 154: 1752-6.
18. Schlaepfer TE, Strain EC, Greenberg BD, Preston KL, Lancaster E, Bigelow GE, Barta PE, Pearlson GD: The Site of Opioid Action in the Human Brain: μ and κ Agonists Produce Different Cerebral Blood Flow Effects. American Journal of Psychiatry 1998; 155: 470-473.
19. Greenberg BD, Benjamin J, Martin JD, Keuler D, Huang S-J, Altemus M, and Murphy DL: Delayed obsessive-compulsive disorder symptom exacerbation after a single serotonin antagonist dose in fluoxetine-treated but not untreated patients. Psychopharmacology, 1998; 140(4): 434-44.
20. Murphy DL, Sims K, Eisenhofer G, Greenberg B, George T, Butler R, Berlin F, Zametkin A, Ernst M, Breakfield XO. Are MAO-A deficiency states in the general population and in putative high-risk populations highly uncommon? Journal of Neural Transmission (Suppl) 1998; 52: 29-38.
21. Enoch MA, Kaye WH, Rotondo A, Greenberg BD, Murphy DL, Goldman D. 5HT2A promoter Polymorphism -1438G/A, anorexia nervosa, and obsessive-compulsive disorder. Lancet 1998; 351: 1785-1786.
22. Greenberg BD, Tolliver TJ, Huang S-J, Li Q, Murphy DL. Genetic variation in the serotonin transporter promoter region affects serotonin uptake in human blood platelets. American Journal of Medical Genetics (Neuropsychiatric Genetics), 1999; 88: 83-87.
23. Greenberg BD, Ziemann U, Harmon A, Murphy DL, Wassermann EM. Reduced intracortical inhibition in obsessive-compulsive disorder on transcranial magnetic stimulation. Lancet 1998; 352: 881-882.
24. Schuback DE, Mulligan EL, Sims KB, Tivol EA, Greenberg BD, Chang S-F, Yang S-L, Mau Y-C, Shen C-Y, Ho M-S, Yang N-H, Butler MG, Fink S, Schwartz CE, Berlin F, Breakfield XO, Murphy DL, Hsu Y-PP. Screen for MAOA mutations in target human groups. American Journal of Medical Genetics (Neuropsychiatric Genetics), 1999; 88: 25-28.
25. Sabol SZ, Nelson ML, Fisher C, Gunzerath L, Brody CL, Hu S, Sirota LA, Marcus SE, Greenberg BD, Lucas FR 4th, Benjamin J, Murphy DL, Hamer DH. A genetic association for cigarette smoking behavior. Health Psychology 1999;18(1):7-13.
26. Ellingson T, Duddempudi S, Greenberg BD, Hooper D, Eisenhofer G. Determination of differential activities of soluble and membrane-bound catechol-0-methyltransferase in tissues and erythrocytes. Journal of Chromatography, 1999; 729: 347-353.

27. Sirota LA, Greenberg BD, Murphy DL, Hamer DH. Non-linear association between the serotonin transporter promoter polymorphism and neuroticism: A caution against using extreme samples to identify quantitative trait loci. Psychiatric Genetics, 1999; 9 (1):35-8.
28. Altemus M, Greenberg BD, Keuler D, Jacobson KR, Murphy D. Open trial of flutamide for treatment of obsessive-compulsive disorder. Journal of Clinical Psychiatry 1999;60(7):442-5
29. Padberg F, Feneberg F, Schmidt S, Schwarz MJ, Körschenhausen D, Greenberg BD, Nolde T, Müller N, Trapmann T, König N, Möller HJ, Hampel H. CSF and serum levels of soluble interleukin-6 receptors (sIL-6R and sgp 130), but not of interleukin-6 are altered in multiple sclerosis. Journal of Neuroimmunology 1999;99(2):218-23.
30. Bengel D, Greenberg BD, Corá-Locatelli G, Altemus M, Heils A, Li Q, Murphy DL. Association of the serotonin transporter promoter regulatory region and obsessive-compulsive disorder. Molecular Psychiatry 1999; 4: 463-466.
31. Ben-Zion IZ, Meiri G, Greenberg BD, Murphy DL, Benjamin J. The serotonin agonist, metergoline, enhances carbon dioxide axiogenesis . American Journal of Psychiatry, 1999;156(10):1635-7.
32. Sher L, Hardin TA, Greenberg BD, Murphy DL, Li Q, Rosenthal N. Human seasonality is associated with the 5-HTTLPR polymorphism. American Journal of Psychiatry ,1999; 156(11):1837.
33. Kimbrell TA, Little JT, Dunn RT, Frye MA, Greenberg BD, Wassermann EM, Repella JD, Danielson AL, Willis MW, Benson BE, Speer AM, Osuch E, George MS, Post RM. Frequency dependence of antidepressant response to left prefrontal repetitive transcranial magnetic stimulation (rTMS) as a function of baseline cerebral glucose metabolism. Biological Psychiatry,1999; 46:1603-1613.
34. Hamer DH, Greenberg BD, Sabol SZ, Murphy DL. Role of the serotonin transporter gene in temperament and character. Journal of Personality Disorders 1999;13(4):312-27.
35. Smith MJ, Keel JC, Greenberg BD, Adams LF, Schmidt PJ, Rubinow DR, Wassermann EM. Menstrual cycle effects on cortical excitability. Neurology 1999; 53(9):2069-72.
36. Padberg F, Zwanzger P, Thoma H, Kathmann N, Haag C, Greenberg BD, Hampel H, Moller HJ. Repetitive transcranial magnetic stimulation (rTMS) in pharmacotherapy-refractory major depression: comparative study of fast, slow and sham rTMS. Psychiatry Research 1999; 88(3):163-71.
37. Greenberg BD, Ziemann U, Corá-Locatelli G, Harmon A, Murphy DL, Keel JC, Wassermann EM. Altered cortical excitability in obsessive-compulsive disorder. Neurology, 2000; 54(1):142-7.
38. Schmidt NB, Storey J, Greenberg BD, Santiago HT, Li Q, Murphy DL. Evaluating Gene X Psychological Risk Factor Effects in the Pathogenesis of Anxiety: A New Model Approach. Journal of Abnormal Psychology 2000;109(2):308-20.
39. Hu S, Brody CL, Fisher C, Gunzerath L, Nelson ML, Sabol SZ, Sirota LA, Marcus SE, Greenberg BD, Murphy DL, Hamer DH. Interaction between the serotonin transporter gene and neuroticism in cigarette smoking behavior Molecular Psychiatry 2000; 5(2):181-8.

40. Greenberg BD, Li Q, Lucas FR, Hu S, Sirota LA, Benjamin J, Lesch K-P, Hamer D, Murphy DL. Association between the serotonin transporter promoter polymorphism and personality traits in a primarily female population sample. American Journal of Medical Genetics (Neuropsychiatric Genetics) 2000; 96(2): 202-216.
41. Nawab SS, Miller CS, Dale JK, Greenberg BD, Friedman TC, Chrousos GP, Straus SE, Rosenthal NE. Self-reported sensitivity to chemical exposures in five clinical populations and healthy controls. Psychiatry Research 2000; 24;95(1):67-74.
42. Sher L, Greenberg BD, Murphy DL, Rosenthal NE, Sirota LA, Hamer DH. Pleiotropy of the serotonin transporter gene for seasonality and neuroticism. Psychiatric Genetics 2000; 10(3):125-30.
43. Enoch M, Greenberg BD, Murphy DL, Goldman D. Sexually dimorphic relationship of a 5-HT(2A) promoter polymorphism with obsessive-compulsive disorder. Biological Psychiatry 2001; 49(4): 385-388.
44. Wasserman EM, Greenberg BD, Nguyer M, Murphy DL. Motor cortex excitability correlates with an anxiety-related personality trait. Biological Psychiatry 2001; 50(5): 377-382.
45. Hoehn-Saric R, Schlaepfer TE, Greenberg BD, Daniel R McLeod DR, Pearlson GD, Wong SH. Cerebral bloodflow in obsessive-compulsive patients with major depression: effect of treatment with sertraline or desipramine on treatment responders and non-responders. Psychiatry Research 2001;108 (2):89-100.
46. Hill LD, Greenberg BD, Holzman GB, Schulkin J. Obstetrician-gynecologists' attitudes towards premenstrual dysphoric disorder and major depressive disorder. J Psychosom Obstet Gynaecol. 2001; 22(4): 241-50.
47. Meiri G, Ben-Zion IZ, Greenberg BD, Murphy DL, Benjamin J. Influence of the serotonin antagonist, metergoline, on the anxiogenic effects of carbon dioxide, and on heart rate and neuroendocrine measures, in healthy volunteers. Human Psychopharmacology. 2001;16(3): 237-245.
48. Ozaki N, Goldman D, Kaye WH, Plotnicov K, Greenberg BD, Lappalainen J, Rudnick G, Murphy DL. Serotonin transporter missense mutation associated with a complex neuropsychiatric phenotype. Molecular Psychiatry 2003; 8(11):895, 933-6.
49. Mosimann UP, Schmitt W, Greenberg BD, Kosel M, Muri RM, Berkhoff M, Hess CW, Fisch H-U, Schlaepfer, TE. Repetitive transcranial magnetic stimulation (rTMS) - a putative add-on treatment for major depression in elderly patients. Psychiatry Research 2004;126(2):123-33.
50. Okun MS, Bowers D, Springer U, Shapira NA, Malone D, Rezai AR, Nuttin B, Heilman KM, Morecraft RJ, Rasmussen SA, Greenberg BD, Foote KD, Goodman WK. What's IN A "smile?" intra-operative observations of contralateral smiles induced by deep brain stimulation. Neurocase 2004; 10(4): 271-279.
51. Hasler G, LaSalle-Ricci VH, Ronquillo JG, Crawley SA, Cochran LW, Kazuba D, Greenberg BD, Murphy DL. Transcranial magnetic stimulation-evoked cortical inhibition: a consistent

marker of attention-deficit/hyperactivity disorder scores in tourette syndrome. Biological Psychiatry. 2005; 57(12): 1597-600.

52. Samuels JF, Riddle MA, Greenberg BD, Fyer AJ, McCracken JT, Rauch SL, Murphy DL, Grados MA, Pinto A, Knowles JA, Piacentini J, Cannistraro PA, Cullen B, Bienvenu OJ 3rd, Rasmussen SA, Pauls DL, Willour VL, Shugart YY, Liang KY, Hoehn-Saric R, Nestadt G. The OCD collaborative genetics study: methods and sample description. American J Medical Genetics: Neuropsychiatric Genetics. 2006;141(3):201-7.
53. Shapira NA, Okun MS, Wint D, Foote KD, Byars JA, Bowers D, Springer US, Lang PJ, Greenberg BD, Haber SN, Goodman WK. Panic and fear induced by deep brain stimulation. J Neurology Neurosurgery Psychiatry. 2006;77(3):410-2.
54. Rauch SL, Dougherty DD, Malone D, Rezai A, Friehs G, Fischman AJ, Alpert NM, Haber SN, Stypulkowski PH, Rise MT, Rasmussen SA, Greenberg BD. A functional neuroimaging investigation of deep brain stimulation in patients with obsessive-compulsive disorder. J Neurosurgery 2006; 104(4):558-65.
55. Van Laere K, Nuttin, B, Gabriels L, Dupont P, Rasmussen S, Greenberg BD, Cosyns, P. Metabolic imaging of anterior capsular stimulation in refractory obsessive-compulsive disorder: a Key Role for the Subgenual Anterior Cingulate and Ventral Striatum. J Nuclear Medicine 2006; 47(5): 740-747.
56. Hu XZ, Lipsky RH, Zhu G, Akhtar LA, Taubman J, Greenberg BD, Xu K, Arnold PD, Richter MA, Kennedy JL, Murphy DL, Goldman D. Serotonin Transporter Promoter Gain-of-Function Genotypes Are Linked to Obsessive-Compulsive Disorder. American J Human Genetics. 2006; 78(5): 815-26.
57. Greenberg BD, Malone DA, Friehs GM, Rezai AR, Kubu CS, Malloy PF, Salloway SP, Okun MS, Goodman WK, Rasmussen SA. Three-year outcomes in deep brain stimulation for highly resistant obsessive-compulsive disorder. Neuropsychopharmacology 2006; On-line Rapid Publication: <http://www.acnp.org/Docs/RapidPub/NPP060906060045.pdf>
58. Shugart YY, Samuels J, Willour VL, Grados MA, Greenberg BD, Knowles JA, McCracken JT, Rauch SL, Murphy DL, Wang Y, Pinto A, Fyer AJ, Piacentini J, Pauls D, Cullen B, Page J, Rasmussen SA, Bienvenu OJ, Hoehn-Saric R, Valle D, Liang K-L, Riddle MA, Nestadt, G. Genome-wide linkage scan for obsessive-compulsive disorder: evidence for susceptibility loci on chromosome 3q, 7p, 15q, 6p, and 1q. Molecular Psychiatry; in press, 2006.

PEER-REVIEWED LETTERS

1. Martin JD, George MS, Greenberg BD, Wassermann EM, Schlaepfer TS, Murphy DL, Hallett M, Post RM. Mood effects of prefrontal repetitive high-frequency TMS in healthy volunteers. CNS Spectrums 1997; 2: 53-54.
2. Greenberg BD, McCann UD, Benjamin J, Murphy DL. Repetitive TMS as a probe in anxiety disorders: Theoretical considerations and case reports. CNS Spectrums 1997; 2: 47-51.
3. Corá-Locatelli G, Greenberg BD, Martin JD, Murphy DL: Valproate monotherapy in an SRI-intolerant OCD patient. Journal of Clinical Psychiatry 1998; 59: 82.

4. Greenberg BD, Swedo SE, Murphy DL: Exacerbation of vocal tics, obsessive thoughts, depression and anxiety associated with streptococcal pharyngitis in an adult with obsessive-compulsive disorder and chronic vocal tics. American Journal of Psychiatry 1998; 155: 1459-1460.
5. Corá-Locatelli G, Greenberg BD, Martin JD, Leong, YM, Murphy DL. Gabapentin augmentation for fluoxetine-treated patients with obsessive-compulsive disorder, Journal of Clinical Psychiatry 1998; 59: 480-1.
6. Corá-Locatelli G, Greenberg BD, Martin JD, Murphy DL. Rebound psychiatric and physical symptoms after gabapentin discontinuation. Journal of Clinical Psychiatry 1998; 59: 131.
7. Benjamin J, Geraci M, McCann U, Greenberg BD, Murphy DL. Attenuated response to m-CPP and to pentagastrin after repeated m-CPP in panic disorder. Psychopharmacology (Berl) 1999; 143 (2): 215-6.

OTHER PUBLICATIONS

1. Greenberg BD, Segal DS, and Jacobs BL: Phencyclidine. In: Psychopharmacology 2, Part 1: Preclinical Psychopharmacology, D.G. Grahame-Smith, editor, pp. 343-363. Elsevier (Amsterdam), 1985.
2. Altemus M, Greenberg BD, and Murphy DL: Recognition and treatment of obsessive-compulsive disorder. Hospital Medicine 1995; 31: 37-41.
3. Murphy, DL, Greenberg BD, Altemus M, Benjamin J, Grady T, and Pigott T: The neuropharmacology and neurobiology of obsessive compulsive disorder: An update on the serotonin hypothesis. Advances in the Neurobiology of Anxiety Disorders, (Wiley) 1996.
4. George MS, Greenberg BD: Obsessive-Compulsive Behavior. In: Epilepsy: A Comprehensive Textbook. J Engel, TA Pedly (eds). Raven Press, NY 1997, Volume 3, Chapter 269, 2791- 2796.
5. Greenberg BD, Benjamin J: Obsessions in depression. Masters in Psychiatry Series 1996: 9-12.
6. Greenberg BD, Altemus M, Murphy DL : The role of neurotransmitters and neuropeptides in obsessive-compulsive disorder. International Review of Psychiatry, 1997; 9: 31-34.
7. Hoehn-Saric R, Greenberg BD: Psychobiology of obsessive-compulsive disorder: Anatomical and physiological considerations. International Review of Psychiatry, 1997; 9: 15-30.
8. Murphy DL, Corá-Locatelli G, Greenberg BD. OCD: Perspectives on the next millennium from the adult OCD research unit, NIMH intramural research program. CNS Spectrums 1998; 3(5; Suppl 1): 19-20.
9. Greenberg BD, Corá-Locatelli G, Wassermann EM, Ziemann U, Murphy DL. Transcranial magnetic stimulation as a probe and potential treatment in obsessive-compulsive disorder. CNS Spectrums 1998; 3(5; Suppl 1): 30-32.
10. Murphy DL, Andrews AM, Wichems CD, Li Q, Greenberg BD. Brain serotonin neurotransmission: An overview an update with an emphasis on serotonin subsystem

heterogeneity, multiple receptors, interactions with other neurotransmitter systems, and consequent implications for understanding the actions of serotonergic drugs. Journal of Clinical Psychiatry, 1998; 59[suppl 15]: 4-12.

11. Greenberg BD, McMahon FJ, Murphy DL. Serotonin transporter candidate gene studies in affective disorders and personality: Promise and potential pitfalls. Molecular Psychiatry 1998; 3:186-189.
12. Rauch SL, Corá-Locatelli G, Greenberg BD. Pathogenesis of Obsessive Compulsive Disorders. Textbook of Anxiety Disorders, DJ Stein and E Hollander (eds), American Psychiatric Press, Washington, DC, 2000.
13. Greenberg BD, Rauch SL. Transcranial magnetic stimulation in anxiety disorders. In: Transcranial Magnetic Stimulation in Neuropsychiatry. Eds.: MS George and RH Belmaker, American Psychiatric Press, Washington, 2000.
14. McDonald WM, Greenberg BD. Electroconvulsive therapy in the treatment of neuropsychiatric conditions and transcranial magnetic stimulation as a pathophysiological probe in neuropsychiatry. Depression and Anxiety, 2000;12(3):135-43.
15. Greenberg BD, Murphy DL, Rasmussen SA. Neuroanatomically-based approaches to OCD: Neurosurgery and Transcranial Magnetic Stimulation. Psychiatric Clinics of North America, 2000; 23(3):671-86.
16. Lesch KP, Greenberg BD, Higley JD, Murphy DL. Serotonin transporter, personality, and behavior: toward dissection of gene-gene and gene-environment interactions. In: Molecular Genetics of Human Personality, Eds.: J Benjamin, RP Ebstein, and RH Belmaker, American Psychiatric Press, Washington, in press.
17. Rasmussen S, Greenberg BD, Friehs G, Noren G, Neurosurgical approaches to intractable obsessive-compulsive disorder. CNS Spectrums 2000; 5(11):23-34.
18. Greenberg, BD, Brain Stimulation in OCD Research and Treatment in: Obsessive disorders. J Vallejo and L Sanchez-Planell (eds). Barcelona, Spain.
19. Rauch SL, Cora-Locatelli G, Greenberg BD. Pathogenesis of Obsessive Compulsive Disorders. Textbook of Anxiety Disorders, DJ Stein and E Hollander (eds), American Psychiatric Press, Washington, DC, 2002.
20. Hollander E, Bienstock CA, Korna LM, Pallanti S, Marazziti D, Rasmussen SA, Ravizza L, Benkelfat C, Saxena S, Greenberg BD, Sasson Y, Zohar J. Refractory obsessive-compulsive disorder: state-of-the-art-treatment. Journal of Clinical Psychiatry, 2002;63 Suppl 6:20-9.
21. George MS, Nahas Z, Lisanby SH, Schlaepfer T, Greenberg BD. Transcranial magnetic stimulation. Neurosurgery Clinics of North America 2003;14(2): 283-301.
22. Greenberg BD, Price LH, , Rauch SL, Jenike M, Malone D, Friehs G, Noren G, Rasmussen SA. Neurosurgery for Intractable Obsessive-Compulsive Disorder and Depression: Critical Issues. Neurosurgery Clinics of North America, 2003; 14(2): 199-212.

23. Phillips KA, Price LH, Greenberg BD, Rasmussen SA. Should DSM's diagnostic groupings be changed? In: Phillips KA, First MB, Pincus H, eds. Advancing DSM: Dilemmas in Psychiatric Diagnosis. Washington DC: American Psychiatric Publishing, Inc, in 2003
24. The OCD-DBS collaborative group. Deep brain stimulation for psychiatric disorders Neurosurgery, 2002; 51(2): 519.
25. Greenberg BD. Update on Deep Brain Stimulation. Journal of ECT 2002;18(4):193-6.
26. Greenberg BD, Rezai AR. Mechanisms and the current state of deep brain stimulation in neuropsychiatry. CNS Spectr. 2003; 8(7): 522-6.
27. Rauch SL, Dougherty DD, Cosgrove GR, Cassem EH, Price BH, Greenberg BD, Rasmussen SA. [What is the role of psychiatric neurosurgery in the 21st Century?] Rev Bras Psiquiatr. 2004 Mar;26(1):4-5.
28. Greenberg BD, Nahas Z, Carpenter LL. Greenberg Current Status of Deep Brain Stimulation. Primary Psychiatry 2005; 12(10): 59-64.
29. Rauch SL, Greenberg BD, Cosgrove GR. Neurosurgical treatments and deep brain stimulation. In: Sadock BJ and Sadock VA, eds. Kaplan and Sadock's Comprehensive Textbook of Psychiatry, Eighth Edition; pp. 2983- 2989; Lippincott Williams and Wilkins; Philadelphia, 2005.
30. 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, 140-1.

ABSTRACTS (representative)

1. Greenberg BD, Herynek V, Giedd J, Vymazal J, Corá-Locatelli G, Keel J, Harmon A, Brooks R, Murphy DL,. Basal ganglia MR relaxometry study in obsessive-compulsive disorder. American College of Neuropsychopharmacology, Las Croabas, Puerto Rico, December 1998.
2. Roca CA, Schmidt PJ, Greenberg BD, Murphy DL, Rubinow DR. Serotonin and the efficacy of estrogen in perimenopausal depression. Society of Biological Psychiatry, Washington, DC, May, 1999.
3. Keel J, Greenberg BD, Wassermann EM, Ziemann U, Justement L, Murphy DL, Rasmussen S. Reduced cortical excitability after capsulotomy for OCD: A transcranial magnetic stimulation case study. American Psychiatric Association New Research, Washington, DC, May, 1999.
4. Leong Y-M, Greenberg BD, Corá-Locatelli G, Murphy DL. Personality in obsessive-compulsive disorder using the five-factor model. American Psychiatric Association New Research, Washington, DC, May, 1999.

5. Lu J, Corá-Locatelli G, Martin JD, Leong Y-M, Murphy DL, Greenberg BD. A flexible clinical research management system. American Psychiatric Association New Research, Washington, DC, May, 1999.
6. Smith MJ, Keel J, Greenberg BD, Adams LF, Schmidt PJ, Rubinow DR, Wassermann EM. Relationship of menstrual cycle-related changes in cortical excitability and gonadal steroids. Society of Biological Psychiatry, Washington, DC, May, 1999.
7. Murphy DL, Wichems C, Andrews AM, Li Q, Hamer D, and Greenberg BD. Consequences of engineered and spontaneous genetic alterations of the 5-HT transporter in mice, men, and women. Behavioral Pharmacology Society, Boston, Mass, August 1999.
8. Smith MJ, Greenberg BD, Adams LF, Schmidt PJ, Rubinow DR, Wassermann EM. Menstrual-cycle related changes in motor cortex excitability. Society for Neuroscience, Miami FL, November 1999.
9. Greenberg BD, Keel J, Wassermann E, Ziemann U, Justement L, Nguyen M, Murphy DL, Rasmussen SA. Reduced cortical excitability after capsulotomy for OCD: a case series. International Society for Transcranial Stimulation, Chicago, IL, May 2000.
10. Nguyen M, Greenberg BD, Murphy DL, Smith MJ, Wassermann EW. Personality and motor cortex excitability. Society of Biological Psychiatry, Chicago, IL, May 2000.
11. Greenberg BD, Noren G, Rauch SL, Malloy PF, Marsland R, Jenike M, Baer L, Mindus P, Rasmussen SA. Gamma capsulotomy in intractable OCD. "Hot Topics" Presentation, American College of Neuropsychopharmacology, San Juan, PR, December 2000.
12. Greenberg BD, Cora-Locatelli G, Smith MJ, Nguyen MB, Keel J, Justement BI, Leong Y-M, Murphy DL. Controlled study of gabapentin augmentation of fluoxetine in OCD: Effects on symptoms and on cortical excitability. 5th International OCD Conference, Sardinia, Italy, April 2001.
13. Sporn J, Jean-Mary J, Cora-Locatelli G, Smith MJ, Justement BL, Wassermann EM, Greenberg BD, Murphy, DL. A double-blind placebo controlled trial of gabapentin augmentation of fluoxetine for obsessive-compulsive disorder. New Drug Clinical Evaluation Unit (NCDEU), Boca Raton, FL, May 2001.
14. LaFrance WC, Salloway S, Greenberg BD. Obsessive Compulsive, Mood Symptoms and Laterality in Patients with Spasmodic Torticollis. Brown University Department and Psychiatry and Human Behavior, June 2001.
15. Greenberg BD, Noren G, Rauch SL, Malloy PF, Marsland R, Jenike M, Baer L, Rasmussen SA. Lesion Characteristics And Clinical Response After Gamma Capsulotomy For Intractable OCD. American College of Neuropsychopharmacology (ACNP), December, 2001.
16. Benjamin D. Greenberg, Lawrence H. Price, Gerhard Friebs, Donald Malone, Ali R. Rezai, N. Andrew Shapira, Kelly D. Foote, M.A. Okun, Scott L. Rauch, Darin Dougherty, Georg Noren, Paul F. Malloy, Steven Salloway, Richard Marsland, Audrey Tyrka, Linda Carpenter, Wayne Goodman, Steven A. Rasmussen. Deep Brain Stimulation in Intractable OCD, and Preliminary Results in Intractable Depression. NCDEU June 2004, Phoenix, AZ

17. Benjamin D. Greenberg*, Gerhard Friehs, Georg Noren, Donald Malone, Ali R. Rezai, N. Andrew Shapira, Kelly D. Foote, Michael A Okun, Scott L. Rauch, Linda Carpenter, Audrey Tyrka, Wayne Goodman, Lawrence H. Price, Steven A. Rasmussen. Surgical Outcomes. ASSFN Neuromodulation Meeting Cleveland October 2004
18. Deep Brain Stimulation: Clinical Findings in Intractable Depression and OCD Ben Greenberg*, Gerhard Friehs, Linda Carpenter, Audrey Tyrka, Donald Malone, Ali Rezai, Nathan Shapira, Kelly Foote, Michael Okun, Wayne Goodman, Steven Rasmussen and Lawrence Price. ACNP December 2004 San Juan, PR
19. Greenberg, Ben MD, PhD; Friehs, Gerhard MD; Carpenter, Linda MD; Tyrka, Audrey MDPHD; Malone, Donald MD; Rezai, Ali MD; Shapira, Nathan MD; Foote, Kelly MD; Okun, Michael MD; Goodman, Wayne MD; Rasmussen, Steven MD; Price, Lawrence MD. Deep Brain Stimulation: Clinical Findings in Treatment-Intractable OCD and Intractable Depression. Research Day, Brown Medical School, April 2005.
20. Youssef, Rouba; Pearlson, Rebecca; Friehs, Gerhard MD; Malloy, Paul F, PhD; Salloway, Steven, MD; Malone, Donald MD; Rezai, Ali MD; Foote, Kelly MD; Okun, Michael MD; Goodman, Wayne MD; Marsland, Richard RN; Rasmussen, Steven MD; Greenberg, Benjamin D MD, PhD. Exploratory Study of Clinical Predictors of Outcome in Deep Brain Stimulation for Highly Resistant Obsessive-Compulsive Disorder
21. Research Day, Brown Medical School, April 2006.
22. Greenberg, Ben MD, PhD; Friehs, Gerhard MD; Malloy, Paul F, PhD; Salloway, Steven, MD; Malone, Donald MD; Rezai, Ali MD; Foote, Kelly MD; Okun, Michael MD; Goodman, Wayne MD; Youssef, Rouba; Richard RN; Rasmussen, Steven MD. Three-year Outcomes in Deep Brain Stimulation for Highly Resistant Obsessive-Compulsive Disorder. Research Day, Brown Medical School, April 2006.

HUMOR

Benjamin J, Greenberg BD. A simple and foolproof method for deciding who was first: Bilateral conventional photographic imaging (BCPI). Journal of Irreproducible Results, 1995.

INVITED PRESENTATIONS

1. Repetitive transcranial magnetic stimulation in obsessive-compulsive disorder. American Psychiatric Association Annual Meeting, May 1996
2. Recognition and clinical management of obsessive-compulsive disorder. Georgetown University Department of Psychiatry, September 1996
3. Repetitive transcranial magnetic stimulation as a neuropsychiatric tool. Johns Hopkins University Department of Psychiatry, October 1996
4. Obsessive-compulsive disorder: Management and New Research. Grand Rounds, Department of Psychiatry, Walter Reed Hospital Center, Washington, DC. February 1997

5. Serotonin and anxiety. Plenary lecture. Anxiety Disorders Association of America. New Orleans, LA. March 1997.
6. Anxiety in depression. Depression and Related Affective Disorders Association, Bethesda, MD. June 1997.
7. Implications of repetitive transcranial magnetic stimulation for obsessive-compulsive disorder and anxiety. First International Meeting on Transcranial Magnetic Stimulation. Interlaken, Switzerland. August 1977.
8. Grand Rounds: Serotonin and anxiety. University of Iowa Department of Psychiatry. September 1997.
9. Research Seminar: Implications of repetitive transcranial magnetic stimulation for obsessive-compulsive disorder. University of Iowa Department of Psychiatry. September 1997.
10. Symposium chairman. Probing and treating neuropsychiatric illness with transcranial magnetic stimulation. American Neuropsychiatric Association, Honolulu. February 1998.
11. Transcranial magnetic stimulation. 12th Annual Mood Disorders Symposium, Johns Hopkins Medical Institutions, Baltimore, MD. April 1998.
12. Grand Rounds: Transcranial magnetic stimulation. University of Florida Department of Psychiatry. April 1998.
13. Symposium chairman. Mapping brain circuitry involved in obsessive-compulsive disorder. Lecture: Transcranial magnetic stimulation as an anatomical and physiological probe in OCD. Collegial Internationale Neuro-Psychopharmacologicum, Glasgow, Scotland. July 1998.
14. Recognition and management of obsessive-compulsive disorder and depression in primary care: What's as good as it gets? Charlotte, NC. August 1998.
15. Transcranial magnetic stimulation as an anatomical and physiological probe in OCD; Augmentation of SRI monotherapy in OCD by GABA system modulation. Third International Obsessive-Compulsive Disorder Conference, Madeira, Portugal. September 1998.
16. Transcranial magnetic stimulation in neuropsychiatry. Amherst College Neuroscience Program 25th Anniversary Colloquium, Amherst, MA. September 1998.
17. Transcranial magnetic stimulation as an anatomical and physiological probe in OCD; Session Chair, TMS in Psychiatry, International Symposium on transcranial magnetic stimulation, Goettingen, Germany. October 1998.
18. Grand Rounds: Transcranial magnetic stimulation: Implications for psychiatry. Department of psychiatry, University of Wuertzburg, Germany. October 1998.
19. Clinical Seminar: Pathophysiology and treatment of obsessive-compulsive disorder. Department of Psychiatry, University of Bern, Switzerland. October 1998.
20. Transcranial magnetic stimulation in neuropsychiatry. Krasnow Institute for Advanced Study, George Mason University, Fairfax, VA. October 1998.

21. Keynote Speaker: Conference on extreme hoarding behavior in older adults. Fairfax County Government Center, Fairfax, VA. October 1998.
22. New approaches to anxiety disorders. Psychopharmacology Update 1998, Baylor University, Houston, TX. November 1998.
23. Grand Rounds: Advances in understanding and treating obsessive-compulsive disorder. Department of Psychiatry, Medical University of South Carolina, Charleston, SC. November 1998.
24. Grand Rounds: Categorical and dimensional approaches to obsessive-compulsive disorder: new methods, new findings. George Washington University Department of Psychiatry. Washington DC, March 1999.
25. Genes and obsessive-compulsive disorder: Science and adjudication. Einstein Institute for Science, Health and the Courts. Airlie House, Warrenton, VA, June 1999.
26. Current NIMH intramural research in obsessive-compulsive disorder. National Alliance for the Mentally ILL Interactive "Video Tour," Bethesda, MD and Chicago, IL, July 1999.
27. Transcranial magnetic stimulation. George Washington University Department of Psychiatry. Washington DC, October 1999.
28. Transcranial magnetic stimulation in neuropsychiatry. Brown University Neuroscience Department, January 2000.
29. Transcranial magnetic stimulation as a corticobasal probe and potential treatment in OCD. International Workshop on the Corticobasal Circuitry and Obsessive-Compulsive Disorder. Hospitale San Raffaele, Milan, Italy, February 2000.
30. Greenberg BD, Corá-Locatelli G, Smith MJ, Justement L, Leong Y-M, Murphy DL. Gabapentin Augmentation in OCD Patients Poorly Responsive to Fluoxetine Monotherapy. Fourth International OCD Conference, St. Thomas, February 2000.
31. Grand Rounds: Transcranial magnetic stimulation and brain circuits in OCD and Tourette Syndrome. Department of Neurology, Brown University, Providence, RI, March 2000.
32. Cortical excitability is abnormal in obsessive-compulsive disorder and is associated with a neuropsychiatric risk factor in a nonclinical sample. International Society for Transcranial Stimulation, Chicago, IL, May 2000.
33. New stimulation techniques in research and treatment of OCD and related disorders. International Symposium about Current Issues and Controversies in Psychiatry – "Obsessive-Compulsive Spectrum Disorders," Barcelona, Spain, March 2001.
34. Brain stimulation in OCD research and treatment. Department of Psychiatry, University Hospital, Bern, Switzerland. March 2001.
35. OCD: new treatments. Fifth International OCD Conference, Sardinia, Italy, April 2001.

36. Grand Rounds: Brain stimulation in OCD research and treatment. Department of Psychiatry, University of Chicago, Chicago, IL, April 2001.
 37. Grand Rounds: Brain stimulation in neuropsychiatry. Department of Psychiatry, VA Medical Center, Providence, RI, May 2001.
 38. Transcranial Magnetic Stimulation in Psychiatry: Tics, Depression, OCD. International Conference of Clinical Neurophysiology, Buenos Aires, Argentina, May 2001.
 39. Featured Speaker, Annual Meeting of the National Association for Obsessive-Compulsive Disorder, Department of Psychiatry, University of Sao Paulo, Brazil, September 2001. Lectures: 1) OCD: Theory and genetics; 2) Clinical management of OCD; 3) Brain stimulation and neurosurgery in OCD research and treatment.
 40. Award Presentation: Brain Stimulation in OCD. EEG and Clinical Neuroscience Society, Monterey, California, October, 2001.
- Herbal and Nutraceutical Products in Psychiatry. Butler Hospital Staff Association, March, 2002.
41. Gamma Knife Capsulotomy in Intractable OCD. NIMH New Drug Clinical Evaluation Unit (NCDEU), Boca Raton, Florida, June 2002.
 42. Gamma Knife Capsulotomy and Deep Brain Stimulation in Intractable OCD. Collegium Internationale Neuro-psychologicum (CINP), Montreal, June, 2002.
 43. Deep Brain Stimulation for Intractable OCD. OCD Institute, McLean Hospital, Belmont, Massachusetts, June 2002.
 44. Gamma Knife Capsulotomy in Intractable OCD. Neuromodulation 2002: Defining the Future, Aix-les-Bains, France, June 2002.
 45. Repetitive Transcranial Magnetic Stimulation for Depression: The Search for Effective Parameters. EEG and Clinical Neuroscience Society, Baltimore, Maryland, September 2002.
 46. Treating Refractory Anxiety: From the Ordinary to the Extraordinary. Psychopharmacology Update, Baylor University, Houston, Texas, October 2002
 47. Brain Stimulation in Psychiatry. Symposium in Medicine and Psychiatry. St. Joseph's Hospital, Towson, Maryland, November 2002.
 48. Issues in Psychiatric Neurosurgery. American Association of Stereotactic and Functional Neurosurgery, New York, New York, May 2003.
 49. Beyond Medication and Behavior Therapy: Surgery and Deep Brain Stimulation for Intractable OCD. Obsessive-Compulsive Foundation Annual Meeting, Nashville, Tennessee, July 2003.
 50. Surgery for Psychiatric Disorders, Banbury Conference Series, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, January 2005.
 51. Deep Brain Stimulation in Highly Treatment Resistant OCD and Depression.
 52. Grand Rounds, Department of Psychiatry, Dartmouth Medical School, April 2005.

53. Behavioral effects of deep brain stimulation in movement disorders. Collaboration for Translation Brain Research Symposium, Brown University, Providence, April 2005.
54. Current Status of Deep Brain Stimulation. American Psychiatric Association, Atlanta, May 2005
55. Deep brain stimulation for otherwise intractable obsessive-compulsive disorder. American Psychiatric Association, Atlanta, May 2005
56. Resultados de la neurocirugía en los trastornos psiquiátricos SOCIEDAD MEXICANA DE CIRUGIA NEUROLOGICA XVIII CONGRESO MEXICANO DE CIRUGIA NEUROLOGICA. MERIDA, Mexico. July, 2005
57. State of the art and promise of physical treatments in OCD. European College of Neuropsychopharmacology, Amsterdam, October 2005

NIMH INTRAMURAL PROJECTS

Principal Investigator on the following NIMH Intramural Program studies from 1992 to 1999:

1. Effect of Serotonergic Challenges on Clinical State and Cerebral Blood Flow in Obsessive-Compulsive Disorder, 1993-1998.
2. Mapping Personality Traits to Genes, 1995 – 1999.
3. Genetics of Obsessive-Compulsive Disorder, 1996-1999.
4. Magnetic Resonance Imaging of Brain Iron in Obsessive-Compulsive Disorder, 1997-1998.
5. Repetitive Transcranial Magnetic Stimulation in Obsessive-Compulsive Disorder, 1998-1999.

Three of the above projects were still recruiting subjects in January 1999. They received approval after a newly instituted extramural scientific review and were supported by the NIMH intramural budget.

6. Co-Investigator: A Double-Blind, Placebo-Controlled Trial of Gabapentin Augmentation in Combination with Fluoxetine for Treatment of Obsessive-Compulsive Disorder (OCD), 1997-1999.
7. Co-Investigator: Magnetic Resonance Imaging of Childhood-Onset Psychiatric Illnesses, 1998-1999.

GRANTS

Investigator Award (S. Rasmussen PI) 2/2/2001 – 6/30/2006 5%
 Medtronic, Inc. \$100,000
 Deep Brain Stimulation for Intractable Obsessive Compulsive Disorder
 Role: Principal Researcher
 Efficacy and safety of deep brain stimulation of the internal capsule in intractable OCD

Investigator Award (Greenberg) 6/1/2001 – 6/30/2005 5%
 Charles A. Dana Foundation \$35,875 (no cost extension)

Diffusion Tensor MRI Mapping of How Brain Fiber Tracts Change After Gamma Knife Capsulotomy for Intractable Obsessive Compulsive Disorder

The main hypothesis is that reduction on thalamo-orbitofrontal cortex fibers on diffusion tensor imaging after gamma capsulotomy will be associated with symptomatic improvement.

RO-1 MH50214 (Nestadt) 6/1/2001 - 5/31/2006 15%
NIMH \$97,081 (sub only)

Collaborative OCD Genetics Study

Role: Lead Site Investigator

This study aims to refine the OCD phenotype by identifying homogeneous clinical subtypes and conducts a systematic genome wide scan to 1) refine the OCD phenotype and 2) to identify potential chromosomal regions linked to OCD susceptibility genes and to initiate studies to narrow potentially relevant chromosomal loci.

Award (Greenberg) 11/1/2004 - 10/31/2005 5%

Collaboration for Translational Brain Research, Brown Medical School \$35,000 (Direct)

Behavioral Aspects of Deep Brain Stimulation

This award supports systematic data collection on psychiatric and behavioral effects of deep brain stimulation in movement disorder patients.

RO-1 (S. Haber, PI) 1R01MH073111-01A1 12/1/2005 - 11/31/2010 12.5%
NIMH/NIDA \$55,922 (Year 1 Direct Costs)

Neural Networks in OCD

Role: Principal Site Researcher

This translational study aims to understand the mechanisms of therapeutic action of deep brain stimulation in OCD using neuroimaging in patients, neuroanatomy in primates, and electrophysiology in rodents.

Applied for

RO-1 B.D. Greenberg, PI

NIMH

Controlled Trial of Deep Brain Stimulation for Obsessive-Compulsive Disorder

This multisite clinical study will use a controlled parallel design to test the efficacy and safety of DBS in highly resistant OCD, together with PET neuroimaging to test hypotheses about regional brain metabolic predictors of response and correlates of therapeutic effects in this severely affected patient group.

UNIVERSITY TEACHING ROLES

Neuropsychiatry seminar, Johns Hopkins University, "Frontal-Subcortical Circuits in Behavioral Regulation," 1992

Medical student psychiatry lectures, University of Maryland, "Pathophysiology and Treatment of Obsessive-Compulsive Disorder, Tic Disorders, and Related Illnesses" 1992-1996

Psychiatric residents seminar, Georgetown University, "Pathophysiology and Treatment of Obsessive-Compulsive Disorder," "Serotonergic Mechanisms in Anxiety," 1995-1999

Psychiatric research seminars, Johns Hopkins University, "Transcranial Magnetic Stimulation in Neuropsychiatry," "Serotonin and the Genetics of Anxiety," 1996-2000

Psychiatric residents seminar, George Washington University, "Pathophysiology and Treatment of Obsessive-Compulsive Disorder," 1999

Lecturer in the Brain and Behavior course, Brown Medical School, "Neural Stimulation in Neuropsychiatry" 4/2000

Psychiatric resident (PGY I – IV) seminars in psychopharmacology and neuropsychiatry, Department of Psychiatry and Human Behavior, Brown University, 2/2000-present:

"Serotonergic Agents,"
"Pathophysiology and Treatment of Obsessive-Compulsive Disorder,"
"Transcranial Magnetic Stimulation in Neuropsychiatry,"
"Herbal and Dietary Supplement Treatments in Psychiatry"
"Careers in Psychiatry"
"Neuroanatomically-Based Approaches to OCD"

Director of Butler Hospital PGY 3 Psychiatry Resident Rotation

Individual general outpatient PGY 3 resident supervision and group administrative supervision

Brown University Brain and Behavior Undergraduate Colloquium Series: "How They Got There" - Studying the Pathophysiology of Obsessive-Compulsive Disorder. June 2000, 01

Brown University Undergraduate/Graduate Seminar: How they got there: career paths in brain and behavioral sciences. June 2000-2001

Dissertation Committee: "Personality in Obsessive Compulsive Disorder and Other Proposed Obsessive Compulsive Spectrum Disorders Using the Five-Factor Model," PhD Thesis, Yung-Mei Leong, The Catholic University of America, Washington, DC, 2004.

June 2006