

CURRICULUM VITAE

PART I: General Information

DATE PREPARED: 10/01/14

Name: James J. Levitt

Education:

1975 B.A. Harvard College, Cambridge, MA
1979 M.D. Mount Sinai School of Medicine, New York, NY

Postdoctoral Training:

6/1979-2/1980 Medical Intern, Waltham Hospital, Waltham, MA
3/1980-6/1980 Medical Intern, West Roxbury VA Medical Center, West Roxbury, MA
1980-1983 Resident in Psychiatry, Massachusetts Mental Health Center, Boston, MA
1981-1982 Consultation-Liaison Psychiatry as a Psychiatry Resident, Brigham and Women's Hospital, Boston, MA
1982-1983 Chief Resident in Psychopharmacology, Massachusetts Mental Health Center, Boston, MA
1983-1985 Residency in Child Psychiatry, the Children's Hospital/Judge Baker Guidance Center, Boston, MA
7/1985-2/1986 Chief Resident in Psychopharmacology, Brockton VA Medical Center, Brockton, MA (one-half time)

Licensure and Certification:

1980 Physician, Commonwealth of Massachusetts
1984 American Board of Neurology and Psychiatry (Psychiatry)

Academic Appointments:

1985-1987 Instructor in Psychiatry, Harvard Medical School, Department of Psychiatry, at the Cambridge Hospital, Cambridge, MA
1987-1992 Instructor in Psychiatry, Harvard Medical School, Department of Psychiatry, at the Massachusetts Mental Health Center, Boston, MA
1992-2000 Instructor in Psychiatry, Consolidated Department of Psychiatry, Harvard Medical School, Boston, MA
2000-2005 Assistant Professor, Department of Psychiatry, VA Boston Healthcare System, Harvard Medical School, Boston, MA
2005- Associate Professor, Department of Psychiatry, VA Boston Healthcare System, Harvard Medical School, Boston, MA

Hospital or Affiliated Institution Appointments:

1985-1987 Staff Psychiatrist, Outpatient Department, The Cambridge Hospital, Cambridge, MA (one-half time),
1986- Staff Psychiatrist, Brockton VA Medical Center, Brockton, MA

1986-89 Coordinator of Psychopharmacology Conference at Brockton VA Medical Center
1987-1992 Staff Psychiatrist, Outpatient Department, Massachusetts Mental Health Center

Major Administrative Responsibilities:

1989- Director and Chair of Psychopharmacology Conference at Brockton VA Medical Center
1989-1991 Director, Mental Hygiene Clinic, Brockton VA Medical Center, Brockton, MA
1990- Director, Psychopharmacology, Neuroscience Laboratory, Harvard Medical School, Department of psychiatry at the Brockton VA Medical Center, Brockton, MA
1991-1997 Chief, Mental Hygiene Clinic, Brockton VA Medical Center Medical Center, Brockton, MA
1997-2000 Co-Director, Ambulatory Mental Health Services, Brockton VA Medical Center
1997-2006 Director of Residency Psychopharmacology Training and Education, Harvard South Shore Psychiatry Residency Training Program, Brockton VA Medical Center
1998-2006 Director of Outpatient Neuropsychopharmacology
2000-2008 Chief, Mental Hygiene Clinic, VA Boston Healthcare System
2004-2008 Director of Structural Imaging, Psychiatry Neuroimaging Analysis Center, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, VA Boston Healthcare System and Harvard Medical School
2009- Director of HSS Residency General Mental Health Clinic Training
2012- Medical Director, General Mental Health Clinic, Brockton Campus

Major Committee Assignments:

1994-2012 Chair, Disturbed Behavior Committee, Brockton VA Medical Center
2002- Resident Promotion Committee of the Harvard South Shore Psychiatry Residency Program: member
2004-2012 Chair, Disruptive Behavior Committee, VA Boston Healthcare System
2008- Resident Education Committee of the Harvard South Shore Psychiatry Residency Program: member

Professional Societies:

1983- American Psychiatric Association
1983- Massachusetts Medical Society

Editorial Boards:

Ad hoc reviewer

Acta Psychiatrica Scandinavica
American Journal of Psychiatry
Archives of General Psychiatry
Biological Psychiatry
Bipolar Disorders
Brain

Cerebellum
 Experimental Brain Research
 International Journal of Neuropsychopharmacology
 JAMA
 Journal of Affective Disorders
 Journal of Psychiatric Research
 Journal of Psychiatry & Neuroscience
 Molecular Psychiatry
 Neurobiology of Aging
 National Science Foundation
 NeuroImage
 Neuropsychopharmacology
 NIMH Behavioral Science Track Award for Rapid Transition (B/START)
 PLOS ONE
 Progress in Neuro-Psychopharmacology and Biological Psychiatry
 Psychiatry Research
 Psychiatry Research: Neuroimaging
 Psychological Medicine
 Psychosomatic Medicine
 Schizophrenia Bulletin
 Schizophrenia Research
 Trends in Neurosciences
 World Journal of Biological Psychiatry

Awards and Honors:

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| 1975 | Cum Laude, English Literature, Harvard College |
| 1988-1989 | Research Advisory Group (RAG): Premorbid Adjustment, CT and ERP Findings in Schizophrenia |
| 1992-1993 | Outstanding Teacher Award, Massachusetts Mental Health Center-VA Medical Center (Brockton/West Roxbury) Psychiatry Residency Training Program, Harvard Medical School |
| 1999-2000 | Outstanding Teacher Award, Harvard South Shore Psychiatry Residency Training Program, Harvard Medical School |
| 2011 | Distinguished Fellowship in the American Psychiatric Association. |

PART II: Research, Teaching and Clinical Contributions:

A. Narrative Report of Research, Teaching, and Clinical Contributions:

Since 1986, I have supervised Brockton psychiatry residents during their year-long clinical rotation in outpatient psychiatry and have also supervised PGY I and III residents during their rotations through psychiatry triage. Another major component of my teaching responsibility has been my involvement in the *Psychopharmacology Case and Literature Conference* here at the Brockton VA Medical Center since my arrival at the Brockton VAMC in 1985 becoming co-chair in 1987 and chair in 1989. Additionally, my teaching responsibilities include involvement with the HMS 700 Course for Harvard Medical students offered at the Brockton VA Medical Center. I have been a preceptor and lecturer for this annual course since the early 1990s. I have given the lecture on the diagnosis and treatment of schizophrenia to the medical students for this course at Brockton since 1994.

I became director of the Mental Hygiene Clinic at the Brockton VAMC in 1987 and since then between 4 and 8 PGY III psychiatry residents and a PGY IV chief resident have rotated through this area under my direction. Prior to my leadership role in the Mental Hygiene Clinic, there were no psychiatry residents in this area of the VA. It was through my efforts that this part of the psychiatry residency training began. Over the years, the Mental Hygiene Clinic rotation has evolved into the main outpatient pharmacotherapy rotation for the PGY III year at our hospital. Starting in the mid-1990s, as the residency program here at Brockton grew, and became fully independent, other supervisors have joined me in providing supervision for individual residents, however, I have continued to be the general preceptor for the entire group of PGY III residents for their year-long outpatient pharmacotherapy rotation.

The bulk my clinical work at the Brockton VA involves direct outpatient pharmacotherapy for veterans who primarily suffer from anxiety and depressive disorders as well as posttraumatic stress disorder secondary to combat experiences. I also treat outpatients with psychotic disorders, including schizophrenia and affective disorders, and see a number of such cases as chair of the *Psychopharmacology Conference Series*. In addition, I cover psychiatry triage at our hospital 1 ½ to 2 days per week where walk-ins, admissions and emergency coverage for all outpatients in our system take place. A large number of these patients suffer from psychotic conditions and substance abuse.

My psychiatric research interests began with a focus on the concept of schizoaffective disorder and its psychopharmacological management. An original conceptualization of it, with treatment implications, was published as a cover article for the *American Journal of Psychiatry* in 1988. My research next turned to the study of premorbid adjustment, an important longitudinal measure, in schizophrenia when I began working at the Brockton VA Medical Center in 1985. With the assistance of Dr. Robert McCarley's mentoring in 1988 I was awarded a RAG, entitled "Premorbid Adjustment, CT and ERP findings in Schizophrenia" (1988-1989). This resulted in two, first authored, empirical studies demonstrating that premorbid adjustment in schizophrenia, indeed, was significantly worse than in normals and that it correlated significantly with a current neurophysiologic measure (diminished N2 event-related potential amplitude), and poorer neuropsychological functioning (more perseverative errors and impairment of spatial working memory).

I have continued my research collaboration with Drs. McCarley and Shenton since 1986 and in 1993 started performing morphometric Magnetic Resonance Imaging (MRI) studies in schizophrenia. I began by measuring the volume of the cerebellum in schizophrenia as evidence suggested it was involved in higher cognitive functions as well as motor function. I found that the cerebellar vermis was enlarged in schizophrenia, driven primarily by its white matter component. Furthermore, I found that vermis white matter enlargement in schizophrenia correlated with clinical and neuropsychological abnormalities. These data are now summarized in a paper of mine published in 1999 in the *American Journal of Psychiatry*. More recently, I have collaborated with Dr. Roger Pitman's group at the Massachusetts General Hospital, using our MRI tracing methods, to measure the volume of vermis lobule volumes in a sample of identical twins discordant for combat post-traumatic stress disorder (PTSD) as such abnormalities in PTSD have been reported and we hope to confirm these findings in this unique sample. My research currently focuses on MRI structural and DTI studies of the basal ganglia, thalamus and internal capsule in schizophrenia and related disorders (see below).

B. Research Funding Information:

Past Grant Support:

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| 1988-1989 | Research Advisory Group (RAG): Principal Investigator "Premorbid Adjustment, CT and ERP findings in Schizophrenia" |
| 1995-2000 | Brockton VAMC Schizophrenia |

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| | | Center Grant Investigator |
| | “The Neuroscience of Schizophrenia” (Robert W. McCarley, M.D.: PI); Brockton VAMC site PI for Project: D-Cycloserine for Negative Symptoms of Schizophrenia | |
| 1998-2003 | | MRI Anatomy of Schizophrenia Investigator |
| | (Robert W. McCarley, M.D.: PI For VA Merit Review Grant) | |
| 2000-2003 | MR Brain Diffusion Tensor Imaging in Schizophrenia (Martha E. Shenton, Ph.D.: PI For VA Merit Review Grant) | Investigator |
| 2001-2002 | A Longitudinal MRI Study of the Shape and Volume of the Caudate and Thalamus in First-episode Schizophrenia (Milton Grant) | Principal Investigator |
| 2003-2008 | | VA Research Enhancement Award Program Investigator |
| | “Neuroimaging Studies of Schizophrenia” (Robert W. McCarley, M.D.: PI) | |
| 2003-2008 | | MRI Anatomy of Schizophrenia Investigator |
| | (Robert W. McCarley, M.D.: PI For VA Merit Award) | |
| Current Grant Support: | | |
| 2004-2009 | MR Brain Diffusion Tensor Imaging in Schizophrenia (Martha E. Shenton, Ph.D.: PI For VA Merit Review Grant) | Investigator |
| 2005-2010 | Biological Basis of Schizotypal Personality Disorder (Robert W. McCarley, M.D.: PI For NIMH ROI MH052807) | Investigator |
| 2005-2010 | Computerized Image Analyses of MR Scans in Schizophrenia (Martha E. Shenton, Ph.D.: PI For NIMH ROI MH050740) | Investigator |
| 2006-2011 | Neuroimaging Insights into Schizophrenia & Treatment Implications | |

(Robert W. McCarley, M.D.: PI
For VA Schizophrenia Center Grant)

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| 2009-2012 | MR Brain Imaging of Frontal-Striatal-Thalamic Circuits in Schizophrenia For VA Merit Award | Principal Investigator |
| 2009-2014 | Computational Morphometry in Schizophrenia and Related Disorders (Sylvain Bouix, Ph.D.: PI For NIMH R01 MH 082918) | Consultant |
| 2009-2014 | MR Brain Diffusion Tensor Imaging in Schizophrenia (Martha E. Shenton, Ph.D.: PI) For VA Merit Award | Investigator |
| 2009-2014 | | MRI Anatomy of Schizophrenia Investigator |

(Robert W. McCarley, M.D.: PI
For VA Merit Award)

C. Report of Current Research Activities:

Major Research Interests:

- 1) MRI findings in schizophrenia with a specific focus on: 1) frontal-subcortical circuitry in schizophrenia; and 2) subcortical structures in schizophrenia including the basal ganglia, caudate nucleus, putamen, nucleus accumbens, thalamus, cerebellum, vermis, and brainstem.
- 2) Diffusion Tensor Imaging (DTI) in schizophrenia with a specific focus on subcortical white matter in frontal-basal ganglia circuitry including the anterior limb of the internal capsule.
- 3) The effect of neuroleptic medication on volumetric measurement of subcortical brain structures in schizophrenia.
- 4) Premorbid adjustment in schizophrenia: clinical and biological correlations.
- 5) Novel glutamatergic psychopharmacological treatments for schizophrenia.
- 6) Schizoaffective disorder and other atypical psychoses.
- 7) Schizotypal personality Disorder.
- 8) Shape analysis of brain structures in schizophrenia and schizophrenia related disorders.
- 9) Cortical thickness and complexity analyses in schizophrenia.

My current research activities continue in the area of morphometric MRI in schizophrenic spectrum disorders, employing both structural MRI to assess the volume and shape of brain structures and Diffusion Tensor MRI to assess fractional anisotropy (FAI) and volume of white matter structures. My focus is on subcortical gray and white brain matter brain structures and circuitry and, in particular, on the striatum in the basal ganglia and on the anterior limb of the internal capsule, a white matter tract linking basal ganglia structures, via the thalamus, with the prefrontal cortex. My role as an investigator on 4 funded grants (see above) permits me to pursue these research interests. In an article of mine published in the *American Journal of Psychiatry* (2002), we found a bilateral reduction in volume of the caudate nucleus in neuroleptic naïve schizotypal personality disorder which correlated with impaired working memory function. Additionally, I am using high resolution structural MRI technology to measure the shape of the caudate nucleus and thalamus to complement our current volumetric measurements. I was awarded a Milton Grant (2001-2) entitled “A

10-15 psychiatry residents
5-10 psychiatry staff
4 hours/week for full year

1989-1992 Director and Chair, Continuing Medical Education Accredited Psychopharmacology Case and Literature Conference at Brockton VA Medical Center (1 ½ hour meeting per week)
15 psychiatry residents
3-5 psychiatry staff
3 hours/week for full year

1992- Director and Chair, Continuing Medical Education Accredited Psychopharmacology Case and Literature Conference (1 ½ hour meeting per week)
15 psychiatry residents
3-5 psychiatry staff
3 hours/week for 10 months out of the year

1992- Director, Continuing Medical Education Accredited Psychopharmacology Lecture Series imbedded in Psychopharmacology Case and Literature Conference (1 ½ hour meeting per week)
15 psychiatry residents
3-5 psychiatry staff
3 hours/week for 2 months out of the year
During the beginning years of this lecture series (1992-1995) I gave 4 overview lectures on the psychopharmacology of the major psychiatric disorders including schizophrenia, bipolar disorder, depression and anxiety disorders. For the past several years, I have given 2 to 3 such lectures, focusing on the psychopharmacology of schizophrenia and bipolar disorder.

c. Local Invited Teaching Presentations:

1982-1983 As Chief Resident in Psychopharmacology at Massachusetts Mental Health Center, I gave the following lectures and presentations:

Lecture at Massachusetts Mental Health Center Psychopharmacology Lecture Series.
Topic: "Schizoaffective Disorder: Differing Views"

Lecture at Massachusetts Mental Health Center Psychopharmacology Lecture Series.
Topic: "Approach to the Organic Patient"

Basic principles of Clinical Psychopharmacology in weekly seminar for Harvard Medical School students as part of their clinical rotation in Psychiatry at Massachusetts Mental Health Center.

1985 Lecture at Massachusetts Mental Health Center Psychopharmacology Lecture Series.
Topic: "Schizoaffective Disorder: The concept"

1987 Lecture at Massachusetts Mental Health Center Psychopharmacology Lecture Series.
Topic: "The Heterogeneity of Schizoaffective Disorder"

1988 Continuing Education Program at the Cambridge Hospital on Psychopharmacology for the non-psychiatrist. Workshop on a review of Psychopharmacological

agents.

- 1988 Lecture at the Cambridge Hospital Psychopharmacology Lecture Series.
Topic: "A Review of the Concept of Schizoaffective Disorder"
- 1990- Annual series of lectures for residents and staff on review of basic clinical psychopharmacology
at Brockton VA Medical Center
- 1992 Lecture to Brockton VA Medical Center Medical Staff.
Topic: "Psychopharmacology for Ambulatory Medical Physicians"
- 1993 Lecture for Grand Rounds at Corrigan Mental Health Center.
Topic: "Schizoaffective Disorder"
- 1994 Lecture for Grand Rounds at Taunton State Hospital.
Topic: "Typical and Atypical Psychoses: Differential Diagnosis and Treatment"
- 1994 Grand Rounds at Taunton State Hospital.
Case Conference: Periodic Consultant and Chair
- 1994 Lecture Harvard Medical Students for Harvard Medical School Psychiatry Course 700 at the
Brockton VA Medical Center. "Schizoaffective Disorder: Differential Diagnosis and Treatment"
- 1995 Presentation to Harvard Medical Students for Harvard Medical School Psychiatry Course 700 at
the Brockton VA Medical Center. "The Psychiatric Interview of Schizophrenia"
- 1996 Grand Rounds presentation at Brockton VA Medical Center. "Differential Diagnosis of
Psychotic Disorders: Applicability of the SCID for Clinical and Research Purposes"
- 1996 Lecture for Geriatric Psychiatry Lecture Series at Brockton VA Medical Center.
"Geriatric Psychopharmacology: Treatment of Behaviorally Disruptive and Agitated States"
- 1997 Presentation to Harvard Medical Students for Harvard Medical School Psychiatry
Course 700 at the Brockton VA Medical Center. "An introduction to Schizophrenia"
- 1998 Lecture for Geriatric Psychiatry Lecture Series at Brockton VA Medical Center.
"Geriatric Psychopharmacology: Treatment Principles for Agitation, Psychosis and Depression"
- 1998-1999 Lecture to residents for Anxiety Disorders Didactic Series: "The diagnosis and
Psychopharmacological Treatment of Panic Disorder"
- 1998-1999 Lecture at Brockton VA Medical Center Psychopharmacology Conference. "The
Psychopharmacology of Schizophrenia I"
- 1998 Lecture at Brockton VA Medical Center Psychopharmacology Conference. "The
Psychopharmacology of Schizophrenia II"
- 1998-1999 Lecture at Brockton VA Medical Center Psychopharmacology Conference. "The
Psychopharmacology of Affective Disorders I"

- 1998-1999 Presentation to Harvard Medical Students for Harvard Medical School Psychiatry Course 700 at the Brockton VA Medical Center. “Diagnostic and Treatment issues in Schizophrenia”
- 1998-1999 Lecture to Brockton VA Medical Center residents for Psychopathology Didactic Series Course: “Schizophrenia, Schizotypal Personality Disorder and other Schizophrenia Spectrum Conditions”
- 1998-1999 Lecture to Brockton VA Medical Center residents for Psychopathology Didactic Series Course: “Schizophrenia and its Spectrum Conditions: Psychopharmacological Treatment”
- 1998 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The role of Subcortical Structures in Schizophrenia”
- 1998 Lecture at Massachusetts Mental Health Center Psychopharmacology Lecture Series. “An MRI Study of the Cerebellum and Vermis in Schizophrenia: Clinical and Cognitive Correlates”
- 1999 Grand Rounds presentation at Brockton VA Medical Center. “A Case Presentation of a Veteran with Schizoaffective Disorder, PTSD and Suicidality”
- 2000 Lecture for Brockton VA Medical Center Anxiety Disorders Didactic Series: “The Neurobiology, Diagnosis and Psychopharmacological Treatment of Panic Disorder”
- 2000 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Psychopharmacology of Schizophrenia”
- 2000 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Psychopharmacology of Affective Disorders”
- 2000 Lecture at Brockton VA Medical Center Psychopathology Didactic Series Course: “Schizophrenia, Schizotypal Personality Disorder and other Schizophrenia Spectrum Disorders: Diagnostic and Psychopharmacologic Treatment Issues”
- 2000 Lecture for Harvard medical Students for HMS 700 Course. “Diagnostic and Treatment issues in Schizophrenia”
- 2001 Lecture for Brockton VA Medical Center Anxiety Disorders Didactic Series: “A Review of the Neurobiology, Diagnosis and Psychopharmacological Treatment of Panic Disorder”
- 2001 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “A Review of the Psychopharmacology of Schizophrenia”
- 2001 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Psychopharmacology of Affective Disorders”
- 2001 Lecture at Brockton VA Medical Center Psychopathology Didactic Series Course: “The Heterogeneity of Schizophrenic Conditions: Diagnostic and Treatment

Implications”

- 2001 Grand Rounds presentation at Brockton VA Medical Center. “Psychopharmacology Algorithms” in Psychiatry: Strengths and Limitations”
- 2001 Lecture for Harvard medical Students for HMS 700 Course. “The Diagnosis and Treatment of Schizophrenia”
- 2002 Lecture for Brockton VA Medical Center Neurobiology Didactic Series: “Magnetic Resonance Imaging in Schizophrenia”
- 2002 Lecture for Brockton VA Medical Center Anxiety Disorders Didactic Series: “A Review of the Psychopharmacological Management of Panic Disorder and its Comorbid Conditions”
- 2002 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Neurobiology and Psychopharmacological Management of Bipolar Disorder”
- 2002 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Neurobiology and Psychopharmacological Management of Schizophrenia”
- 2002 Lecture for Harvard medical Students for HMS 700 Course. “The Neurobiology, Diagnosis and Treatment of Schizophrenia”
- 2002 Preceptoring of Harvard medical Students for HMS 700 Course. “A Case Based Approach to the Management of Schizophrenia”
- 2002 Lecture at Brockton VA Medical Center Psychopathology Didactic Series Course: “Schizoaffective Disorder and Schizophrenia: Diagnostic and Treatment Distinctions”
- 2002 Preceptoring of Harvard medical Students for HMS 700 Course. “A Case Based Approach to the Management of Bipolar Disorder”
- 2003 Lecture for the Laboratory of Neuroscience, Department of Psychiatry at the Brockton VA Medical Center. “The Mechanism of Action of Neuroleptic Medication in the Treatment of Schizophrenia”
- 2003 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Neurobiology and Psychopharmacological Management of Schizophrenia”
- 2003 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Neurobiology and Psychopharmacological Management of Bipolar Disorder”
- 2003 Lecture at Brockton VA Medical Center for PGY I Didactic Lecture Series. “Neuroimaging in Schizophrenia, with a focus on Frontal-Striatal Circuitry”
- 2003 Lecture for Harvard medical Students for HMS 700 Course. “The Neurobiology, Diagnosis and Treatment of Schizophrenia”
- 2003 Lecture at Brockton VA Medical Center Psychopathology Didactic Series Course: “Schizoaffective Disorder and Schizophrenia: Diagnostic and Neuroimaging Assessment”

- 2003 Grand Rounds presentation at Brockton VA Medical Center. I chaired a case presentation of a veteran with a history of head trauma, a basal ganglia lacunar infarct and prosopagnosia. I discussed the neuropsychiatric syndromes associated with temporal lobe lesions, and with frontal-subcortical circuitry dysfunction.
- 2004 Lecture at Brockton VA Medical Center for PGY I Didactic Lecture Series. “The Phenomenology and Neuroanatomy of Schizophrenia, with a Focus on the Temporal Lobe”
- 2004 Lecture for Brockton VA Medical Center Anxiety Disorders Didactic Series: “A Review of the Psychopharmacological Management of Panic Disorder and its Underlying Neurobiology”
- 2004 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “The Neurobiology of Schizophrenia: Implications for Psychopharmacological Treatment”
- 2004 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “Bipolar Disorder: Neurobiological and Diagnostic issues and its Psychopharmacological Management”
- 2004 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “Bipolar Disorder I, Bipolar Disorder II and Bipolar Depression: Clinical Management Issues”
- 2004 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “Dementia: Diagnostic and Treatment approaches”
- 2004 Lecture at Brockton VA Medical Center for PGY II Psychopathology Didactic Series Course: “The Heterogeneity of Schizophrenia: Neural Substrate, Diagnostic, and Treatment Implications”
- 2004 Lecture for Harvard medical Students for HMS 700 Course. “The phenomenology and Neural Substrates of Schizophrenia”
- 2005 Lecture for the Brigham and Women’s Hospital Radiology Surgical Planning Laboratory Imaging Series: A Diffusion Tensor Imaging Study of the Anterior Limb of the Internal Capsule in Schizophrenia
- 2005 Lecture at Brockton VA Medical Center Psychopharmacology Conference: “Magnetic Resonance Diffusion Tensor Imaging in Psychiatry”
- 2005 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Neurobiology of Schizophrenia
- 2005 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Neurobiology of Affective Disorder
- 2005 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Use of the Concept of Endophenotypes in Psychiatry
- 2005 Presentation for Harvard medical Students for HMS 700 Course. The Diagnostic

Assessment of Schizophrenia and Brain Findings

- 2006 Lecture for the Brigham and Women's Hospital Surgical Neuroimaging Laboratory: CATIE STUDY results
- 2006 Lecture for the Brigham and Women's Hospital Surgical Neuroimaging Laboratory: Frontal Striatal Circuitry in Schizophrenia
- 2006 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Frontal Lobes in Psychiatry
- 2006 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: Neurobiological and Neuroimaging Insights into Schizophrenia
- 2006 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Concept of Schizoaffective Disorder
- 2006 Presentation for Harvard medical Students for HMS 700 Course. The Diagnostic Assessment of Schizophrenia including Brain Findings
- 2007 Grand Rounds presentation at VA Boston Healthcare System, Brockton Campus: "Brain Imaging of Frontal-Striatal-Thalamic Circuits in Schizophrenia"
- 2007 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Frontal Lobes in Psychiatry
- 2007 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Organization of the Cerebral Cortex: Behavioral Implications
- 2007 Presentation for Harvard medical Students for HMS 700 Course. The Assessment of Schizophrenia: Diagnosis and Phenomenology
- 2008 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: MRI Morphometric Findings in Schizophrenia and Schizotypal Personality Disorder
- 2008 Lecture at Harvard South Shore Psychiatry Residency Training Program Summer Lecture Series for PGY IIIs and IVs: An introduction to the Art and Practice of Supportive Psychotherapy
- 2008 Lecture at Harvard South Shore Psychiatry Residency Training Program Summer Lecture Series for PGY IIIs and IVs: The Concept and Treatment of Schizoaffective Disorder
- 2008 Lecture at Harvard South Shore Psychiatry Residency Training Program Summer Lecture Series for PGY IIIs and IVs: Brain Structure and Function: It's Relationship to Schizophrenia
- 2008 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Role of the Prefrontal Cortex in Neuropsychiatry

- 2008 Lecture at Harvard South Shore Psychiatry Research Series for PGY IIIs: The Olfactory System: It's Relationship to limbic and Orbitofrontal Cortex in Schizophrenia
- 2008 Presentation for Harvard medical Students for HMS 700 Course. The Phenomenology and Diagnosis of Schizophrenia
- 2009 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: The Role of Frontal-Thalamic-Striatal Circuitry in Neuropsychiatry
- 2009 Lecture at Harvard South Shore Psychiatry Summer Series for PGY IIIs: Supportive Psychotherapy: An Introduction.
- 2009 Lecture at Harvard South Shore Psychiatry Summer Series for PGY IIIs: The Diagnosis and Psychopharmacological Treatment of Outpatient Bipolar Disorder
- 2009 Lecture at Harvard South Shore Psychiatry Summer Series for PGY IIIs: An Introduction to the Treatment of Patients in the Outpatient Setting
- 2009 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: Volumetric and Morphometric Brain Imaging Studies in Schizophrenia: A Review
- 2009 Presentation for Harvard medical Students for HMS 700 Course. The Diagnostic Assessment of Schizophrenia: Its relationship to Prefrontal Cortical Syndromes
- 2010 Lecture at Harvard South Shore Psychiatry Summer Series for PGY IIIs: An Introduction to Supportive Psychotherapy in an Outpatient Context
- 2010 Lecture at Harvard South Shore Psychiatry Summer Series for PGY IIIs: The Assessment of Comorbid Conditions in Psychiatry: An Emphasis on Schizoaffective Disorder and Comorbid Anxiety and Mood Disorders
- 2010 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: Macro and Micro Circuitry in the Brain: It's Impact on Higher Cognitive and Language Functioning
- 2010 Presentation for Harvard medical Students for HMS 700 Course. Schizophrenia: Diagnostic Considerations and Differential Diagnosis
- 2011 Lecture at Harvard South Shore Psychiatry PGY I Summer Seminars. Introduction to the Use of Typical and Atypical Antipsychotic Medication
- 2011 Lecture at Harvard South Shore Psychiatry Orientation to Outpatient Clinics Course. Orientation to the General Mental Health Clinic
- 2011 Lecture at Harvard South Shore Psychiatry Orientation to Outpatient Clinics Course: The Role of Treatment Engagement in Outpatient Psychiatry

- 2011 Lecture at Brockton VA Medical Center Neuropsychiatry/Neuroscience Case and Literature Conference: Fronto-Striatal-Thalamic Circuitry Abnormalities in Schizophrenia as Understood through Brain Imaging
- 2011 Presentation for Harvard medical Students for HMS 700 Course. Schizophrenia: Diagnostic Considerations in the Assessment of Schizophrenia and Depression
- 2012 Lecture at Harvard South Shore Psychiatry PGY I Summer Seminars. Introduction to the Use of Antipsychotic Medication
- 2012 Lecture at Harvard South Shore Psychiatry Orientation to Outpatient Clinics Course. Orientation to the General Mental Health Clinic
- 2012 Lecture at Harvard South Shore Psychiatry Orientation to Outpatient Clinics Course. Schizophrenia: Phenomenology and Underlying Neural Circuitry
- 2012 Lecture at Brockton VA Medical Center Neuroscience Conference: An Assessment of Frontostriatal Pathway Abnormalities in Schizophrenia using Diffusion Tensor Imaging
- 2013 Presentation for PGY IIIs at HSS Program Day, Spring, 2013. Transition to PGY IV
- 2013 Presentation for PGY IIIs at HSS Program Day, Spring, 2013. Introduction to the General Mental Health Clinic
- 2013 Lecture at Brockton VA Medical Center Neuroscience Conference: A review of Neuroanatomy I
- 2013 Lecture at Brockton VA Medical Center Neuroscience Conference: A review of Neuroanatomy II
- 2013 Presentation for Harvard medical Students for HMS 700 Course. Schizophrenia: Diagnostic Considerations in the Assessment of Schizophrenia, Schizoaffective Disorder and Depression
- 2013 Lecture at Brockton VA Medical Center Neuroscience Conference: Basal Ganglia Circuitry: It's impact on schizophrenia
- 2014 Presentation for PGY IIIs at HSS Program Day, Spring, 2014. Introduction to the General Mental Health Clinic
- 2014 Lecture at Brockton VA Medical Center Neuroscience Conference: A review of Neuroanatomy: Central and Peripheral Nervous Systems

d. Continuing Medical Education Course:

Brockton VA Medical Center

- 1986-1989 Coordinator, Continuing Medical Education Accredited Psychopharmacology Case and Literature Conference at Brockton VA Medical Center (1 ½ hour meeting per week)
See II.D.1.b above
- 1989-1992 Director and Chair, Continuing Medical Education Accredited Psychopharmacology

Case and Literature Conference at Brockton VA Medical Center (1 ½ hour meeting per week)
See II.D.1.b above

1992- Director and Chair, Continuing Medical Education Accredited
Psychopharmacology Case and Literature Conference (1 ½ hour meeting per week)
3 hours/week for 10 months out of the year
See II.D.1.b above

1992- Director, Continuing Medical Education Accredited Psychopharmacology
Lecture Series imbedded in Psychopharmacology Case and Literature Conference (1 ½ hour
meeting per week)
3 hours/week for 2 months out of the year
See II.D.1.b above

e. Advisory and Supervisory Responsibilities:

Cambridge Hospital

Clinical advisees

1985-1987 Supervisor for Cambridge Hospital PGY III psychiatry residents
1 PGY III resident per year
1 hour/week for full year

Massachusetts Mental Health Center

Clinical advisees

1988-1992 Supervisor for Massachusetts Mental Health Center PGY III psychiatry residents
1-2 PGY III residents per year
1 hour/week for full year

Brockton VA Medical Center

Clinical advisees

1986- I have supervised over 120 psychiatry residents at the BVAMC since 1986

1988- I have supervised 28 individuals who were either Summer Research Interns,
pursuing Independent Research Projects or who were Research Assistants in our Laboratory

1986-90 Preceptor and Supervisor for Brockton VA Medical Center PGY II-IV psychiatry
residents
1 PGY II resident per year for year long supervision
3 to 5 PGY III residents per year rotating for year long rotation through my clinic
1 PGY IV chief resident of my clinic per year for year long rotation
6 hours/week for full year

1991- Preceptor and Supervisor for Brockton VA Medical Center PGY III-IV psychiatry residents
4-8 PGY III residents per year rotating for year long rotation through my clinic

1 PGY IV chief resident of my clinic per year rotating for year long rotation
5 hours/week for full year

2000- Preceptor for Brockton VA Medical Center PGY I psychiatry residents
5 to 7 residents per year rotating through psychiatry triage
1 hour per week for full year

f. Teaching Leadership:

Brockton VA Medical Center

1986-1989 Coordinator, Continuing Medical Education Accredited Psychopharmacology Case and Literature Conference at Brockton VA Medical Center (1 ½ hour meeting per week)

1989-1992 Director and Chair, Continuing Medical Education Accredited Psychopharmacology Case and Literature Conference at Brockton VA Medical Center (1 ½ hour meeting per week)

1992- Director and Chair, Continuing Medical Education Accredited Psychopharmacology Case and Literature Conference (1 ½ hour meeting per week)

1992- Director, Continuing Medical Education Accredited Psychopharmacology Lecture Series imbedded in Psychopharmacology Case and Literature Conference (1 ½ hour meeting per week)

1990- Preceptor and lecturer for Harvard Medical students for the Harvard Medical School Psychiatry Course 700 at the Brockton VA Medical Center
4 medical students per year
6 hours per year

A major component of my teaching responsibility throughout my years at the Brockton VA Medical Center has been my involvement in the *Psychopharmacology Case and Literature*. I have been involved with the conference since my arrival at the Brockton VAMC in 1985, and in 1987 I became, first, co-chair and then, in 1989, I became the chair of the conference. The conference modified the standard approach to psychopharmacology case conferences by introducing the idea, first suggested by Dr. Ming Tsuang, that rather than present a weekly case, we would have a case conference one week alternating with a literature conference the second week. During the second week, we would specifically choose an article that provided empirical support, from the psychiatric literature, for the clinical judgments and recommendations regarding diagnosis and pharmacological treatment management for the patient from the preceding week. Thus, the conference for week number one (the case conference week) starts with a resident presenting cases comprehensively, then has the patient interviewed by the conference chair, which has been my role over the years, and then this is followed by a full discussion of the patient by conference participants. The following week, the same resident (and recently a second resident as well), presents an article on a subject related to the case of the previous week. During the literature week, the residents critically present the relevant articles and then residents and staff jointly discuss the work. The selection of articles has evolved over the years with an emphasis on psychopathology and phenomenology in earlier years, and how this might impact psychopharmacological treatment. For example, a great amount of attention was directed to the differential diagnosis among schizophrenia, schizoaffective disorder, bipolar disorder and psychotic depression and to the psychopharmacological treatment implications of these different diagnoses. With Dr. David Osser joining our conference in recent years, he has added an emphasis on evidence-based medicine and medication treatment algorithms for psychiatric disorders. Additionally, in the past several years, there has been an ever increasing emphasis on neuroscience and on brain-behavior relationships. This has led to reviewing articles on the neural substrates for mental disorders and

the neurobiological mechanisms by which psychotropic medications might work. Throughout the course of the conference, however, guiding principles have remained that patient care and understanding is enhanced when psychopharmacological treatment recommendations are firmly based upon a careful review of the published psychiatric literature in addition to relying on the clinical wisdom and experience of senior clinicians. Furthermore, residents learn best, and learn how to learn, when they are responsible for selecting, reading and presenting material, themselves.

g. Names of advisees or trainees:

Psychiatry Residents I have supervised more than 150 psychiatry residents since 1985

Summer Research Internships

1999 Payal Bansal, Wellesley College student
2003 Payman Zamani, Harvard Medical Student

Independent Research Projects

2002-2004 Laura Wiegand, Research Assistant, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, Boston Healthcare System, and Harvard Medical School. She is a graduate of Harvard College, Class of 2002. She currently is a medical student at the University of Pittsburgh.

2003-2003 Na Young Ji, M.D., Research Associate, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, Boston Healthcare System, and Harvard Medical School. She entered Residency Training in Psychiatry at the University of North Carolina, Chapel Hill, NC in 2003.

2003-2004 Cece Chan, Volunteer, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, Boston Healthcare System, and Harvard Medical School. She currently is an undergraduate at MIT, Class of 2007.

2003- Flavia May, B.A., Volunteer, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, Boston Healthcare System, and Harvard Medical School.

2003-2003 Raluca Savu, M.D., Harvard South Shore Psychiatry Residency Training Program, PYG-IV, Department of Psychiatry, Harvard Medical School. She is currently a psychiatrist working at Taunton State Hospital.

2002- Min-Seong Koo, M.D., Ph.D., Visiting Research Fellow, Visiting Scholars Program, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, Boston VA Healthcare System, and Harvard Medical School, visiting from College of Medicine, Kwandong University, Seoul, Korea.

2003-2004 Payman Zamani, Research Assistant, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, Boston Healthcare System, and Harvard Medical School. He currently is a medical student at Harvard Medical School, Class of 2006.

2004-2005 Zora Kikinis, Ph.D. Research Associate, Clinical Neuroscience Division, Laboratory of Neuroscience, Department of Psychiatry, Boston Healthcare System, and Harvard Medical School. She is currently collaborating with Martha Shenton, Ph.D. in an effort to study Cognitive and Behavioral Correlates of MRI Brain Abnormalities in William's Syndrome.

2008- An Nguyen, M.D. Harvard South Shore Psychiatry Residency Training Program, PYG-IV, Department of Psychiatry, Harvard Medical School.

Research Assistants

All RA's listed below have entered either a Ph.D. program or medical school, and many have made important contributors to the research work which has been recognized by co-authorship on publications.

| | |
|-----------|------------------------------|
| 1988-1989 | Amy Ludwig |
| 1995-1996 | Maria Karapelou |
| 1995-1996 | Robert Donnino |
| 1996-1998 | Creola Petrescu |
| 1997-1998 | Tanya Kisler |
| 1998-1999 | Danielle Synderman |
| 1999-1999 | Payal Bansal |
| 1999-2001 | Aleksandra Ciszewski |
| 2001-2003 | Magdalena Spencer |
| 2001-2003 | Hal Ersner-Hershfield |
| 2002-2005 | Daniel Schwartz |
| 2002-2004 | Laura Weigand |
| 2002-2005 | Katherine Long |
| 2003-2004 | Payman Zamani |
| 2003-2004 | Sophie Woolston |
| 2004-2005 | Erin Connor |
| 2004-2005 | Lida Ungar |
| 2004-2006 | Laura Rosow |
| 2004-2006 | Georgia Bushell |
| 2004-2006 | Adam Cohen |
| 2005-2005 | Anjuli Singh |
| 2006-2008 | Doug Markant |
| 2006-2008 | Usman Khan |
| 2007- | Charlie Davidson |
| 2007- | Jorge Alvarado |
| 2007- | Kate Smith |
| 2008- | Laurel Bobrow |
| 2008- | An Nguyen |
| 2008- | Paula Pelavin |
| 2008- | Diandra Lucia |
| 2009- | Padmapriya Srinivasan, M.S. |
| 2009- | Nate Schreiber |
| 2010- | Toshiyuki Otani, M.D., Ph.D. |
| 2010- | Meina Quan, M.D., Ph.D. |
| 2010- | Yukiko Saito, M.D., Ph.D. |
| 2011-2012 | Kelsey Smith, B.S |
| 2012-2014 | Brian Dahlben, M.S. |
| 2014- | Laura Levin, B.S. |

2. Regional Contributions:

1991 Invited oral presentation at the Society of Biological Psychiatry Meeting, May 8-12, 1991, New Orleans, Louisiana. "Premorbid adjustment in schizophrenia."

- 1994 Invited oral presentation at the Society of Biological Psychiatry Meeting, May 18-22, 1994, Philadelphia, PA. "EP and neuropsychological correlates of premorbid adjustment in schizophrenia."
- 1999 Invited oral presentation at the American Psychiatric Association Meeting, May 15-20, 1999, Washington, D.C. "Caudate volume in schizotypal personality disorder: an MRI Study in neuroleptic-naive subjects."
- 2003 Invited Lecture at Science Lecture Series in Psychiatry, Tufts University, NEMC. "MR Brain Imaging of Frontal-Striatal Circuits in Schizophrenia"

3. Teaching Awards

- 1992-1993 Outstanding Teacher Award, Massachusetts Mental Health Center-VA Medical Center (Brockton/West Roxbury) Psychiatry Residency Training Program, Harvard Medical School
- 1999-2001 Outstanding Teacher Award, Harvard South Shore Psychiatry Residency Training Program, Harvard Medical School

E. Report of Clinical Activities:

Description of Clinical and Administrative Contributions:

Most of my clinical work, as described in the narrative report above involves direct outpatient care. I offer pharmacotherapy to veterans at the Brockton VA campus in which I both prescribe psychiatric medications and provide a supportive therapeutic environment. The patients suffer from a wide array of disorders. The most conditions that I treat involve different types of anxiety and depressive disorders. Many of the patients in my clinical also have posttraumatic stress disorder (PTSD) secondary to their combat experiences during WW II, the Korean War, the Vietnam War and more recently the Persian Gulf Wars. In my capacity as chair of the *Psychopharmacology Conference Series*, I also see a number of patients with psychotic disorders including schizophrenia and bipolar disorders. Pharmacotherapy, as I practice it, combines psychopharmacology treatment with supportive therapy. This type of treatment promotes a safe environment where a patient will feel understood and feel free to talk about what troubles him or her, but is not focussed on patients examining themselves or the interpretation of transference reactions. Transference reactions, however, are common and need to be recognized and, at times, skilfully addressed in order that the therapeutic alliance remains intact. I have seen many of my patients for years, some even over 15 years. Therefore, in this form of therapy, there is an opportunity to view the patients' longitudinal course, which I believe, is highly revealing of their psychopathology as well as of their psychological strengths. Approximately one-half of the patients I see do not have an additional therapist. Furthermore, I cover psychiatry triage at our hospital 1 ½ to 2 days per week. This setting handles all walk-ins and provides emergency coverage for all outpatients in our system. All patients who are admitted to our acute psychiatry and detoxification units from outside our hospital first are evaluated in triage. Major functions of the triage physician include 1) referring patients to outpatient programs; and, 2) determining whether patients are safe to leave the hospital, or whether they instead require, or would benefit from a psychiatric or detoxification admission. A large number of patients who I evaluate in the psychiatry triage are suffering from mood disorders, psychotic disorders as well as from substance abuse either by itself or in combination with another psychiatric disorder.

With regard to my administrative functions, I direct the year-long PGY III outpatient clinical rotation through the Mental Health Clinic. At this point, there are generally between 6 and 8 PGY IIIs and 1 chief resident who comprise the residents in this clinical rotation. I oversee the distribution of cases for the residents during this year-long rotation, and

provide direct year-long supervision, often for 3 to 4 of the residents, and arrange supervision with other faculty for the rest of the residents. Furthermore, I address, aided by our outpatient chief resident under my supervision, whatever other administrative issues may arise for the residents during this rotation. I also serve on a number of hospital wide committees in different capacities that include the following: 1) The Disturbed Behavior Committee: Chairman; 2) The Clinical Committee on Violence, member; 3) Root Cause Analysis Committee: Ad Hoc member; 4) Resident Promotion Committee of the Harvard South Shore Psychiatry Residency Program: member; and 5) VA police screening and annual psychological evaluations: Ad Hoc screening and annual psychological evaluations for VA police. In addition, I administrate the CME accreditation and educational aspects of the year-long weekly Psychopharmacology Case and Literature Conference described above under the section describing my teaching Contributions.

Other:

Summer 1995 Consultant for Drs. Jane Murphy and Alexander Leighton; performed SCID interviews for a Psychiatric Epidemiology Study in Atlantic Canada

PART III: Bibliography

Original Reports:

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3. **Levitt JJ**, Shenton ME, McCarley RW, Faux SF, Ludwig AS: Premorbid adjustment in schizophrenia: implications for psychosocial and ventricular pathology. Schizophr Res 1994; 12:159-168.
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9. **Levitt JJ**, McCarley RW, Nestor PG, Petrescu C, Donnino R, Hirayasu Y, Kikinis R, Jolesz FA, Shenton ME: Quantitative volumetric MRI study of the cerebellum and vermis in schizophrenia: clinical and cognitive correlates. Am J Psychiatry 1999; 156:1105-1107.

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12. **Levitt JJ**: Algorithms in psychopharmacology: potential limitations. Paper presented at the American Psychiatric Association Meeting, May 5-May 10, 2001, New Orleans, LA.

13. **Levitt JJ**, McCarley RW, Hal Ersner-Hershfield H, Salisbury DF, Kikinis R, Jolesz FA, Shenton ME: An MRI Study of caudate nucleus and lateral ventricle volume in first-episode schizophrenia and affective psychosis. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 16-May 18, 2002, Philadelphia, PA.

14. McCarley RW, Dickey CC, **Levitt JJ**, Niznikiewicz MA, Shenton ME: Schizotypal Personality Disorder, Schizophrenia and Affective Psychosis: MRI Brain Endophenotypes. Paper presented at the American College of Neuropsychopharmacology Meeting, December 8-12, 2002, San Juan, Puerto Rico.

15. Ersner-Hershfield H, **Levitt JJ**, McCarley RW, Kubicki M, Westin CF, Kikinis R, Jolesz FA, Shenton ME. An MRI diffusion tensor imaging study of the anterior limb of the internal capsule. Eleventh Annual Research Day, Harvard Medical School. Sponsored by the Mysell Committee, Department of Psychiatry, March 19, 2003.

16. **Levitt JJ**, McCarley RW, Ersner-Hershfield H, Kubicki M, Westin CF, Kikinis R, Jolesz FA, Shenton ME. Fiber Disorder in Schizophrenia: A DTI study of thalamo-cortical connections. Paper presented at the American College of Neuropsychopharmacology Meeting, December 7-11, 2003, San Juan, Puerto Rico.

17. Woolston S, **Levitt, JJ**, Kuroki N, Frumin M, Kikinis R, Jolesz FA, McCarley RW, Shenton ME: An MRI study of the ventromedial striatum in schizophrenia. Twelfth Annual Research Day, Harvard Medical School. Sponsored by the Mysell Committee, Department of Psychiatry, March 24, 2004.
18. Kuroki N, Kubicki M, McCarley RW, Park H-J, **Levitt JJ**, Woolston S, Frumin M, Shenton ME: Fornix integrity and hippocampal volume in schizophrenia. Twelfth Annual Research Day, Harvard Medical School. Sponsored by the Mysell Committee, Department of Psychiatry, March 24, 2004.
19. **Levitt JJ**, Ersner-Hersfield H, Kubicki M, Westin CF, Kikinis R, Jolesz FA, McCarley RW, Shenton ME. An MR-DTI study of thalamo-cortical connections in schizophrenia. Paper presented at the Society of Biological Psychiatry Annual Meeting, April 29-May 1, 2004, New York, New York.
20. Kuroki N, Kubicki M, Nestor PG, McCarley RW, Park HJ, **Levitt JJ**, Woolston S, Frumin M, Niznikiewicz M, Westin CF, Maier SE, Shenton ME. Fornix Integrity and Hippocampal Volume in Schizophrenia. Paper presented at the Society of Biological Psychiatry Annual Meeting, April 29-May 1, 2004, New York, New York.
21. Koo M, **Levitt JJ**, McCarley RW, Seidman LJ, Dickey CC, Niznikiewicz MA, Voglmaier MM, Zamani P, Long KR, Kim SS, Shenton ME. Caudate nucleus volume and its clinical and cognitive correlates in female neuroleptic - naive patients with schizotypal personality disorder. Paper presented at the Society for Neuroscience, October 22-October 26, 2004, Washington, DC
22. **Levitt JJ**, Connor EE, Woolston SL, Ungar LP, Kuroki N, Kikinis R, Jolesz FA, McCarley RW, Shenton ME. The limbic striatum in schizophrenia: an MRI study. Paper presented at the XX International Congress on Schizophrenia Research Annual Meeting, April 2-April 6, 2005, Savannah, Georgia
23. **Levitt JJ**, Rosow LK, Connor EE, Ungar LP, Kuroki N, Kikinis R, Jolesz FA, McCarley RW, Shenton ME. The Ventromedial and Dorsal Striatum in Schizophrenia: An MRI Study. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 19-May 21, 2005, Atlanta, Georgia
24. Koo MS, Dickey CC, Shenton ME, Ji NY, Bouix S, Volglmaier MM, **Levitt JJ**, Nakamura M, McCarley RW. Neocortical gray matter and CSF abnormalities in female neuroleptic-naïve subjects with schizotypal personality disorder determined with new segmentation method. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 19-May 21, 2005, Atlanta, Georgia
25. **Levitt JJ**, Connor EE, Woolston SL, Kikinis R, Jolesz FA, McCarley RW, Shenton ME. The ventromedial striatum in schizophrenia: an MRI study. Paper presented at the American Psychiatric Association Meeting, May 21-May 26, 2005, Atlanta, GA.
26. Markant D, **Levitt JJ**, Cohen A, Bouix S, McCarley RW, Shenton ME: Optimized Voxel-Based Morphometric Analysis of Gray Matter in Chronic Schizophrenia. Twelfth Annual Research Day, Harvard Medical School. Sponsored by the Mysell Committee, Department of Psychiatry, March 24, 2006.
27. **Levitt JJ**, Rosow LK, Connor EE, Ungar LP, Kuroki N, Kikinis R, Jolesz FA, McCarley RW, Shenton ME. An MRI study of ventral and dorsal striatum in schizophrenia. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 18-May 20, 2006, Toronto, Ontario, Canada
28. Nakamura M, Nestor PG, Shenton ME, Niznikiewicz MA, **Levitt JJ**, Kawashima T, Cohen AS, McCarley RW. Orbitofrontal volume deficit and sulcal pattern alteration in schizophrenia and volumetric association with the Iowa

gambling task. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 18-May 20, 2006, Toronto, Ontario, Canada

29. Koo M, Kubicki M, McCarley RW, Niznikiewicz M, Kuroki N, Lee KU, **Levitt JJ**, Westin C, Bouix S, **Shenton ME**. Diffusion tensor imaging study of the fornix and hippocampus in neuroleptic-naive schizotypal personality disorder. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 18-May 20, 2006, Toronto, Ontario, Canada

30. Davidson CA, **Levitt JJ**, Kuroki N, Niznikiewicz M, McCarley RW, Shenton ME. "An MRI study of septi pellucidi in relation to hippocampus and fornix in schizophrenia." Poster presented at the 15th Annual Research Day, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, April 25, 2007.

31. Alvarado JL, **Levitt JJ**, Khan U, Markant D, Niznikiewicz M, McCarley RW, Shenton ME. "Abnormalities in the anterior limb of the internal capsule in schizophrenia using diffusion tensor imaging." Poster presented at the 15th Annual Research Day, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, April 25, 2007.

32. Markant D, **Levitt JJ**, Cohen A, Bouix S, Niznikiewicz M, McCarley RW, Shenton ME. "Inferior frontal gyrus volume reduction in chronic schizophrenia: An MRI study." Poster presented at the 15th Annual Research Day, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, April 25, 2007.

33. McCarley RW, Nakamura M, Nestor PG, Niznikiewicz MA, **Levitt JJ**, Kawashima T, Hsu L, Cohen A, Shenton ME. "Region-specific orbitofrontal volume deficit in schizophrenia and orbitofrontal volumetric association with Iowa Gambling Task in healthy population. Paper presented at the XXI International Congress on Schizophrenia Research Annual Meeting, March 28-April 1, 2007, Colorado Springs, Colorado

34. **Levitt JJ**, Rosow LK, Khan U, Kikinis R, Jolesz FA, McCarley RW, Shenton ME. The Ventral and Dorsal Striatum in Schizophrenia: an MRI Study. Paper presented at the XXI International Congress on Schizophrenia Research Annual Meeting, March 28-April 1, 2007, Colorado Springs, Colorado

35. Nakamura M, Nestor PG, McCarley RW, Niznikiewicz MA, **Levitt JJ**, Kawashima T, Hsu L, Cohen A, Shenton ME. Altered orbitofrontal sulco-gyral pattern in schizophrenia. Paper presented (oral presentation by **Levitt JJ**) at the XXI International Congress on Schizophrenia Research Annual Meeting, March 28-April 1, 2007, Colorado Springs, Colorado

36. **Levitt JJ**, Markant D, McCarley RW, Kawashima T, Nakamura M, Bouix S, Kubicki M, Shenton ME. Inferior Frontal Gyrus and Thalamic Volume Reduction in Schizophrenia: an MRI Study. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 17-May 19, 2007, San Diego, California

37. Nakamura M, Nestor PG, McCarley RW, Niznikiewicz MA, **Levitt JJ**, Kawashima T, Hsu L, Cohen A, Shenton ME. Oral Presentation, Altered Orbitofrontal Sulcogyral Pattern and Region-Specific Orbitofrontal Volume Deficit in Schizophrenia. 3rd Annual Meeting of Japanese Society of Schizophrenia Research, March 14, 2008, Tokyo, Japan.

38. **Levitt JJ**, Martin Styner M, Niethammer M, Bouix S, Koo MS, Voglmaier MM, Dickey CC, Niznikiewicz MA, McCarley RW, Shenton ME. Caudate Nucleus Shape Abnormalities in Schizotypal Personality Disorder. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 1-May 3, 2008, Washington, D.C.

39. **Levitt JJ**, Alvarado JL, Kubicki M, Niznikiewicz M, McCarley RW, Shenton ME. Decreased fractional anisotropy in the anterior limb of the internal capsule in schizophrenia: a diffusion tensor imaging study. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 1-May 3, 2008, Washington, D.C.

40. **Levitt, JJ**, Alvarado JL, Kubicki M, Niznikiewicz M, McCarley RW, Shenton ME. Decreased fractional anisotropy in the anterior limb of the internal capsule in schizophrenia: a diffusion tensor imaging study. Paper presented at the Society for Neuroscience, November 15-November 19, 2008, Washington, D.C
41. Alvarado J, Davidson CA, Niethammer M, McCarley RW, Kubicki MR, Shenton ME, **Levitt JJ**. Sobel filter segmentation of the globus pallidus in schizophrenics. Poster presented at the 16th Harvard Psychiatry Annual Research Day, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, April 30, 2008.
42. Torres L, Niethammer M, Alvarado JL, Dickey CC, **Levitt JJ**, Hoogenboom WS, McCarley RW, Shenton ME. Hypothalamus volume and positive symptoms in schizophrenia spectrum disorders. Poster presented at the 16th Harvard Psychiatry Annual Research Day, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, April 30, 2008.
43. Pelavin P, Rausch AC, Alvarado JL, McCarley RW, Shenton ME, **Levitt JJ**. Volumetric abnormalities in the dorsal and ventral striatum in chronic schizophrenia using MRI. Poster presented at the 17th Harvard Psychiatry Annual Research Day, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, April 8, 2009.
44. **Levitt JJ**, Alvarado JL, Kubicki M, Nestor PG, McCarley RW, Shenton ME. Decreased Fractional Anisotropy in the Anterior Limb of the Internal Capsule in Schizophrenia and its Cognitive Correlates. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 14-16, 2009, Vancouver, Canada
45. **Levitt JJ**, Bobrow LH, Lucia DM, Smith KM, McCarley RW, Shenton ME. An MRI Study of Anterior Cingulate Gyrus Subregions in Schizophrenia. Paper presented at the Society of Biological Psychiatry Annual Meeting, May 14-16, 2009, Vancouver, Canada
46. **Levitt JJ**, Lucia DM, Bobrow LH, McCarley RW, Shenton ME: Anterior cingulate and paracingulate abnormalities in schizophrenia. Oral Presentation presented at the Society for Neuroscience 39th annual meeting, October 17-21, 2009, Chicago, Ill
47. Ohtani T, **Levitt JJ**, Nestor P, Niznikiewicz M, Kawashima T, Takeshi A, Asami T, LaVenture A, Pelavin P, Hawley K, Ballinger T, Alvarado J, Terry D, Shenton ME, McCarley RW: Prefrontal cortex volume deficit in schizophrenia. Poster presented at the 18th Harvard Psychiatry Annual Research Day, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, March 24, 2010.
48. **Levitt JJ**, Lucia DM, Bobrow LH, McCarley RW, Shenton ME: Anterior Cingulate Gyrus and Paracingulate Sulcal Patterns in Schizophrenia: An MRI Study. Paper presented at the Society of Biological Psychiatry 65th Annual Meeting, May 20-22, 2010, New Orleans, LA
49. **Levitt JJ**, Alvarado AL, Pelavin P, Niethammer M, McCarley RW, Shenton ME: An mri study of globus pallidus internal and external segments in schizophrenia. Paper presented at the Society for Neuroscience, November 13-17, 2010, San Diego, CA
50. Schreiber NA, Margaret A. Niznikiewicz MA, Pizzagalli DA, McCarley RW, **Levitt JJ**. Reward Based Learning and Feedback-Related Negativity in Schizophrenia: Evidence from a Signal-Detection Response Bias Task. Poster presented at the 19th Harvard Psychiatry Annual Research Day, Sponsored by the Mysell Committee, Department

of Psychiatry, Harvard Medical School, March 30, 2011.

51. **Levitt JJ**, Pelavin PE, Alvarado JL, McCarley RW, Shenton ME. Regionally Selective Differential Effects of Atypical Neuroleptic Medication on Dorsal but not Ventral Striatum in Schizophrenia. Paper presented at the Society of Biological Psychiatry 66th Annual Meeting, May 12-14, 2011, San Francisco, California
52. Quan M, Lee S-H, Otsuka T, Kikinis Z, Kubicki M, Rathi Y, Meshulam-Gately RI, Goldstein JM, Seidman LJ, McCarley RW, **Levitt JJ**⁺, Martha E Shenton⁺. Abnormalities of White Matter Tracts between Rostral Middle Frontal Gyrus / Inferior Frontal Gyrus and Striatum in First-Episode Schizophrenia. Paper presented at the Society of Biological Psychiatry 66th Annual Meeting, May 12-14, 2011, San Francisco, California
53. **Levitt JJ**, Pelavin PE, Alvarado JL, McCarley RW, Shenton ME. An mri study of atypical neuroleptic medication effects on ventral and dorsal striatum in schizophrenia. Paper presented at the Society for Neuroscience, November 12-16, 2011, Washington, DC
54. **Levitt JJ**, Rathi Y, Raviv TR, Eckbo R, Simpson JC, McCarley RW, Shenton ME. MR-DTI Frontostriatal Tractography Findings in Chronic Schizophrenia. Paper presented at the 14th International Congress on Schizophrenia Research Annual Meeting, April 21-April 25, 2012, Orlando, Florida
55. **Levitt JJ**, Vu MT, Lucia DM, Bobrow LH, Smith, KM, McCarley RW, Shenton ME. Anterior Cingulate Gyrus Morphometry and Paracingulate Sulcus Pattern in Schizophrenia. Paper presented at the Society of Biological Psychiatry 67th Annual Meeting, May 3-5, 2012, Philadelphia, Pennsylvania
56. **Levitt JJ**, Pelavin PE, Ballinger T, McCarley RW, Shenton ME. A Study of Striatal Gray Matter Volumes and WM Diffusivity Measures of the Anterior Limb of the Internal Capsule in Schizophrenia. Paper presented at the Society of Biological Psychiatry 67th Annual Meeting, May 3-5, 2012, Philadelphia, Pennsylvania
57. Quan M, Tang Y, Kubicki M, McCarley R, **Levitt J**, Wang J, Shenton M. VLPFC-Striatum Pathway in First-Episode Schizophrenia: A Cross-Sectional and Longitudinal DTI Study. Paper presented at 18th Annual Meeting of the Organization for Human Brain Mapping, June 10-June 14, 2012, Beijing, China, 2012
58. **Levitt JJ**, Pelavin, PE, Ballinger T, McCarley RW, Shenton ME. A study of Frontostriatal Circuitry Gray and White Matter in Schizophrenia. Paper presented at the Society for Neuroscience, October 13-17, 2012, New Orleans, LA
59. Dahlben BA, Rathi Y, Riklin-Raviv T, Eckbo R, Simpson JC, McCarley RW, Shenton ME, **Levitt JJ**. Aberrant wiring in fronto-striatal pathways in chronic schizophrenia. Poster presented at the 21st *Harvard Psychiatry Annual Research Day*, Sponsored by the Mysell Committee, Department of Psychiatry, Harvard Medical School, April 10, 2013.
60. **Levitt JJ**, Rathi Y, Raviv TR, Eckbo R, Simpson JC, McCarley RW, Shenton ME. MR-DTI frontostriatal tractography findings in chronic schizophrenia. Paper presented at the *International Congress of Schizophrenia Research*, April 21-15, 2013, Orlando Grande Lakes, Florida
61. **Levitt JJ**, Kikinis Z, Green K, Dahlben B, Yogesh Rathti Y, Shenton M. Impact of Genetic Variation in the Proline Dehydrogenase Gene on Deafferentation of the Striatum in Schizophrenia. Paper presented at XXIst World Congress of Psychiatric Genetics, October 17-21, 2013 Boston, MA
62. Kikinis Z, Green K, Giwerc M, Bouix S, Makris N, **Levitt JJ**, Corfas G, Kucherlapati R, Kikinis R, Kubicki M, Shenton ME. Genetic Variant in the Proline Dehydrogenase Gene is associated with Demyelination of Brain White Matter

and Severity of Clinical Symptoms in schizophrenia Patients. Paper presented at XXIst World Congress of Psychiatric Genetics, October 17-21, 2013 Boston, MA

63. **Levitt JJ**, Rathi Y, Raviv T, McCarley RW, Shenton ME. DTI Connectivity-Based Parcellation of the Striatum in Schizophrenia. Paper presented at the Society of Biological Psychiatry 69th Annual Meeting, May 8-10, 2014, New York, NY