

## **Biological Psychiatry**

*Steven Roose, MD, Acting Chief, Professor of Clinical Psychiatry*

*Harold Sackeim PhD, Professor of Psychology in Psychiatry*

*D. P. Devanand, MD, Psychiatrist (Research) II, Professor of Clinical Psychiatry*

*James R. Moeller, PhD, Research Scientist V, Assistant*

*Clinical Professor of Psychiatry*

*Joan Prudic, MD, Psychiatrist (Research) II, Associate Professor of Clinical Psychiatry*

*Yaakov Stern, PhD, Research Scientist VI, Professor Clinical Psychiatry.*

*Gregory Pelton, MD, Assistant Professor of Clinical Psychiatry*

*Matt Tabert, PHD, Assistant Professor of Psychology in Psychiatry*

*Jeremy Coplan, MD, Psychiatrist I*

*Tarrique Perara, MD, Assistant Professor of Clinical Psychiatry*

*Robert Berman MD, PhD, Research Fellow*

*Joel Sneed PhD, Research Fellow*

*David Hardesty MD, Research Fellow*

*Brett Rutherford MD, Research Fellow*

### **Overview**

The Department of Biological Psychiatry is engaged in a wide range of preclinical and clinical research efforts focused on somatic therapies in psychiatry. These include the operation of four outpatient research clinics: Brain Behavior Clinic, Late Life Depression Clinic, Huntington's Disease Center of Excellence, and Memory Disorders Center. The department has laboratories for the study of psychiatric treatments in preclinical models, laboratories and clinical research programs in Electroconvulsive Therapy (ECT), Vagus Nerve Stimulation (VNS) and is about to begin a program in deep brain stimulation (DBS).

### **Current Research**

#### *Electroconvulsive Therapy (ECT)*

The ECT program remains a leading research effort on this treatment modality. Research studies on variations in ECT technique, and their impact on outcome have yielded important new insights into the challenges of bringing best practice into widespread implementation in the community. The department continues in its mission to develop strategies to reduce the cognitive side effects of ECT by studying the use of ultra-brief pulse width stimulation and seizure induction in the prefrontal cortex through the use of unidirectional stimulation and an altered electrode design. Dr. Perara continues his work on animal models of focal stimulation to define the neural effects of these procedures. A pilot study in humans has been successfully completed and an expanded study is being planned.

#### *Aging, Memory Disorders, And Late Life Depression*

Dr. Devanand is continuing his leadership of multi-center clinical trial to determine how long Alzheimer's patients who develop psychosis or agitation need to continue on antipsychotic medication treatment. He has also received a new 5 year federal grant to continue studies of which patients with mild memory and cognitive problems go on to

develop dementia. This work is coupled with Dr. Devanand's pioneering work on the use of olfactory identification of deficits as an early diagnostic marker of Alzheimer's disease. Dr. Matthias Tabert obtained a K award from the NIA to expand this fMRI-olfaction work. In the area of late life depression, Dr. Devanand's work showed that fluoxetine may not be very effective in treating elderly patients with chronic mild-to-moderate depression (dysthymic disorder), and that the dual serotonin-norepinephrine reuptake inhibitor venlafaxine may be a promising treatment in this patient group. Dr. Gregory Pelton has begun the first prospective study of whether the use of combined antidepressants and cognitive enhancers will slow the onset of dementia in patients who present with both depression and mild cognitive impairment. Dr. Roose is part of a federal grant submission to study of the effectiveness of calcium channel blockers to prevent the progression of vascular depression. This study is part of a program to define the diagnostic criteria of vascular depression, which is the focus a K-award received by Dr. Sneed. Dr. Roose and Dr. Prudic are collaborating on a study of the antidepressant and cognitive effects of VNS in late-life patients, and DBS in treatment refractory patients. Dr. Ruthereford has begun a unique series of studies to define the impact of patient and doctor expectations on the outcome of antidepressant clinical trials.

## **Grants**

2002-2006 Alzheimer's Association IIRG-02-4126. Olfaction and Early Diagnosis of Alzheimer's Disease: fMRI study. \$239,957 direct costs. Principal Investigator: D.P. Devanand.

2005-2009 NIA P50 AG08702: 11-15. Alzheimer's Disease Research Center. \$5,314,086 direct costs. Principal Investigator: Michael Shelanski. Co-Investigator: D.P. Devanand.

2005-2009 NIMH. MH35636: 23-27. Affective and cognitive consequences of ECT. \$1,250,000 direct costs. Principal Investigator: Harold A. Sackeim. Co-Principal Investigator: D.P. Devanand.

2001-2007 NIA. R01 AG17761. Questionable Dementia: Course and Predictors of Outcome. \$1,963,506 direct costs. Principal Investigator: D.P. Devanand.

2003-2008 T32-MH20004. Clinical Research Training in Geriatric Psychiatry. Total Direct Costs: \$1,250,000. Principal Investigator: Steven P. Roose. Co-Principal Investigator: D.P. Devanand.

2003-2008 AG021488. Antipsychotic Discontinuation in Alzheimer's Disease. Total Direct Costs: \$1,260,840 (\$4,226,380 across 5 sites; multicenter study with NYSPI as lead coordinating site). Principal Investigator: D.P. Devanand.

2006-2008 Eli Lilly. Duloxetine treatment of dysthymic disorder in the elderly. Total Direct Costs: \$120,000. Principal Investigator: D.P. Devanand.

2006-2008 Forest Laboratories. Effects of combined Memantine and Escitalopram treatment in elderly depressed patients with cognitive impairment. Total Direct Costs: \$150,000. Principal Investigator: Gregory H. Pelton. Co-Principal Investigators: Steven P. Roose, D.P. Devanand.

2006-2008 Glaxo Smith Kline. PET amyloid imaging in Alzheimer's disease, mild cognitive impairment, and healthy controls. Total Direct Costs: \$960,040. Principal Investigator: J. John Mann. Co-Principal Investigator: D.P. Devanand.

2006-2008 Glaxo Smith Kline. PET Imaging Of Mild Alzheimer's Disease And Healthy Elderly Subjects With [11C]-6-OH-BTA-1. Total Direct Costs: \$367,640. Principal Investigator: D.P. Devanand. Co-Principal Investigator: J. John Mann.

2006-2010 K23 MH70056-01A1. National Institute of Mental Health (NIMH) Vascular depression: A distinct diagnostic entity? Principal Investigator: Joel Sneed.

### **Publications**

Devanand DP, Nobler MS, Cheng J, Turret N, Pelton GH, Roose SP, Sackeim HA. Randomized, double-blind, placebo-controlled trial of fluoxetine treatment for elderly patients with dysthymic disorder. Am J Geriatr Psychiatry 2005; 13:59-68.

Devanand DP, Pelton GH, Zamora D, Liu X, Tabert M, Goodkind M, Scarmeas N, Braun I, Stern Y, Mayeux R. Predictive utility of apolipoprotein E genotype for Alzheimer's disease in outpatients with mild cognitive impairment. Arch Neurol 2005; 62:975-980.

Tabert M, Liu X, Doty RI, Serby M, Zamora D, Pelton GH, Marder K, Albers MW, Stern Y, Devanand DP. A 10-item smell identification scale related to risk for Alzheimer's disease. Annals of Neurology 2005; 58:155-160.

Chen CS, Tsai JC, Tsang HY, Kuo YT, Lin HF, Chiang IC, Devanand DP. Homocysteine Levels, MTHFR C677T Genotype, and MRI Hyperintensities in Late-onset Major Depressive Disorder. Am J Geriatr Psychiatry 2005; 13:869-875.

Scarmeas N, Brandt J, Albert M, Hadjigeorgiou G, Papadimitriou A, Dubois B, Sarazin M, Devanand DP, Honig L, Marder K, Bell K, Wegesin D, Blacker D, Stern Y. Delusions and hallucinations are associated with worse outcome in Alzheimer Disease. Arch Neurol 2005; 62:1601-1608.

Devanand, D.P., Habeck, C.G., Tabert, M.H., Scarmeas, N., Pelton, G.H., Moeller, J. R., Mensch, B., Tarabula, T., Van Heertum, R., Stern, Y. PET network abnormalities and cognitive decline in patients with mild cognitive impairment. Neuropsychopharmacology 2006; 31:1327-1334.

Tabert MH, Manly JJ, Liu X, Pelton GH, Rosenblum S, Jacobs M, Zamora D, Goodkind M, Bell K, Stern Y, Devanand DP. Neuropsychological Prediction of Conversion to

Alzheimer's Disease in Patients with Mild Cognitive Impairment. Archives of General Psychiatry, 2006; 63:916-924.

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Goodwin, R.D., Devanand, D. P. Stroke, depression and functional health outcomes among adults in the community. Journal of Geriatric Psychiatry and Neurology, in press.

Roose, S.P., Devanand, D.P. Geriatric Mood Disorders. In Textbook of Mood Disorders. First Edition, pp 603-619. Stein D, Kupfer DJ, Schatzberg AF, Eds. American Psychiatric Publishing, Washington D.C., 2006.

Sneed, J. R., Roose, S. P., & Sackeim, H. A. (in press). Vascular depression: A distinct diagnostic entity? Biological Psychiatry.

Fogel, S., Sneed, J. R., & Roose, S. P. (in press). Psychiatric treatment among psychiatric residents in Manhattan: Evidence of stigma. Journal of the American Psychoanalytic Association.

Rutherford, B. R., Sneed, J. R., Aizaga, K., Roose, S. P. (in press). A survey of psychiatry residents informed consent practices. Journal of Clinical Psychiatry.

Sneed, J. R., Kasen, S., & Cohen, P. (in press). Early life risk factors for late-onset depression. International Journal of Geriatric Psychiatry.

Sneed, J. R., Roose, S. P., Keilp, J. G., Krishnan, K. R. R., Alexopoulos, G., Sackeim, H. A. (in press). Response inhibition predicts poor antidepressant treatment response in the very old depressed. American Journal of Geriatric Psychiatry.

Sneed, J. R., Hamagami, A., McArdle, J. J., Cohen, P., & Chen, H. (in press). The Dynamic Interdependence of Developmental Domains in Emerging Adulthood: Use of Dynamic Systems Analysis. Journal of Youth and Adolescence.

Kasen, S., Chen, H., Sneed, J. R., Crawford, T., Cohen, P. (in press). Social role and birth cohort influences on gender-linked personality traits in women: A 20-year longitudinal analysis. Journal of Personality and Social Psychology.

Skodol, A. E., Johnson, J. G., Cohen, P., & Sneed, J. R., Crawford, T. N. (in press). Association of personality disorder stability with impairment and functioning during early adulthood: A community-Based longitudinal Study. *British Journal of Psychiatry*.