BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Cowan, Ronald L.	Assistant Professor of Psychiatry and Radiology & Radiological Sciences
eRA COMMONS USER NAME cowanrl	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Christian Brothers College, Memphis, TN	BS	1980	Biology
University of Tennessee, Memphis, TN	PhD	1990	Anatomy & Neurobiology
Cornell University Medical College, New York, NY	MD	1994	Medicine

A. Positions and Honors

Positions and Employment

1982-1983 Polysomnographic Technician and Research Assistant. Baptist Memorial Hospital: Sleep Disorders Center and Regional SIDS and Apnea Center, Memphis, TN
1983-1984 Registered Polysomnographic Technologist and Research Assistant. Baptist Memorial Hospital: Sleep Disorders Center and Regional SIDS and Apnea Center, Memphis, TN
1984-1990 Graduate Teaching Assistant. University of Tennessee, Memphis, TN
1990-1994 Research Associate. Cornell University Medical College, Department of Neurology and Neuroscience; New York, NY. (Sponsor: Dr. Virginia M. Pickel).
1994-1995 Clinical Fellow in Medicine. Harvard Medical School, Boston, MA.
1994-1995 Intern in Medicine. Massachusetts General Hospital, Boston, MA
1995-1998 Clinical Fellow in Psychiatry. Harvard Medical School, Boston, MA
1995-1998 Resident in Psychiatry. McLean Hospital, Belmont, MA
1996-1999 Consultant. Vinfen Corporation, Cambridge, MA
1998-2002 Instructor in Psychiatry. Harvard Medical School, Boston, MA.
1998-2002 Assistant Psychiatrist. McLean Hospital, Belmont, MA.
1998-2002 Assistant Physiologist, Brain Imaging Center. McLean Hospital, Belmont, MA.
1999-2000 Medical Director, After Hours Program, May Behavioral Health/Bayridge Hospital
2001-2002 Director, Laboratory of Human Neurophysiology. Brain Imaging Center, McLean Hospital, Belmont
2000-2005 Medical Director, Depression Section, Veritas Medicine (veritasmedicine.com) Cambridge, MA.
2003-2003 Research Associate, Psychiatry, Harvard Medical School, Boston MA.
2002-2003 Research Associate, Brain Imaging Center, McLean Hospital, Belmont, MA
2002-pres Assistant Professor of Psychiatry, Vanderbilt University Medical Center, Nashville, TN.
2002-pres Assistant Professor of Radiology & Radiological Sciences, Vanderbilt University Medical Center.
2002-pres Attending Psychiatrist, Vanderbilt University Hospital, Nashville, TN
2003-pres Faculty, Vanderbilt University Institute for Imaging Sciences (VUIIS)
2003-pres Investigator, Vanderbilt Center for Integrative and Cognitive Neuroscience (CICN)
2004-pres Member, Vanderbilt Kennedy Center for Research on Human Development
2005-pres Program Director, Vanderbilt Brain Awareness Month
2006-pres Director, Psychiatric Neuroimaging Program, Vanderbilt University Medical Center
2007-pres Faculty, Vanderbilt Addiction Center

Honors and Awards

1980-1981 Christian Brothers Academic Scholar
1987 IMHOTEP Medical Leadership Society (Inducted)
1984-1986 Anatomy Predoctoral Fellow

1986-1988 Neuroscience Center of Excellence Predoctoral Fellow
1989-1990 Snider Scholar
1988-1990 NIMH Predoctoral Fellow
1992-1994 Bigelow Scholar
1991-1994 Astor Scholar
1993 NIH Summer Research Fellow
1993-1994 Rock Sleyster Memorial Scholar
1994 Oskar Diethelm Prize for Excellence in Psychiatry
1996-1998 APA/Glaxo Wellcome Fellow
1996-1998 Council for Research, American Psychiatric Association
1998-1999 Ethel Dupont-Warren Fellow
1998-1999 Livingston Award
1999-pres Drug Abuse Research Scholars Program in Psychiatry (NIDA/APA Career Award)
2001 Partners in Excellence Award
2004 Future Leaders in Psychiatry
2007 Future Leaders in Psychiatry

B. Selected Peer-Reviewed Publications (in chronological order)

Cowan RL, Reimao R, Lemmi H, and Vander Zwagg R. (1985). Narcolepsia e inicio subito de periodos REM apos despertares noturnos. *Arquivos De Neuro-Psiquiatria*; 43(3):229-233.

Reimao, R., Akiskal HS, Cowan RL, Lemmi H and Belluomini J. (1985). Polissonografia da disfuncao sexual masculina dados normativos da impotencia nao-organica. *Review of Brasilian Neurology*; 21(3):105-107.

Cowan RL, Reimao R, Lemmi H and Belluomini J. (1988). Analysis of thermocouples and expired $C0_2$ monitors in clinical polysomnography. *Journal of the Association of Polysomonographic Technologists*.

Cowan RL, Wilson CJ, Emson PC and Heizmann CW. (1990). Parvalbumin-containing GABAergic interneurons in the rat neostriatum. *Journal of Comparative Neurology*; 302:197-205.

Cowan RL, Sesack SR, Van Bockstaele EJ, Branchereau P, Chan J and Pickel VM. (1994). Analysis of synaptic inputs and targets of physiologically characterized neurons in rat frontal cortex: combined in vivo intracellular recording and immunolabeling. *Synapse*; 17:101-114.

Cowan RL and Wilson CJ. (1994). Spontaneous firing patterns and axonal projections of single corticostriatal neurons in the rat medial agranular cortex. *Journal of Neurophysiology*; 71:17-32.

Cowan RL, Frederick B deB, Rainey M, Levin JM, Maas LC, Bang J, Hennen J, Lukas SE, Renshaw PF. (2000). Sex differences in response to red and blue light in human primary visual cortex: a BOLD fMRI study. Psychiatry Research, *Neuroimaging*, 100:129-138.

Cowan RL, IK Lyoo, SW Kong, SM Sung, E Haga, RLP Vimal, SE Lukas, PF Renshaw (2003). Reduced Focal Cortical Gray Matter Density in Human MDMA (Ecstasy) Users: A Voxel-Based Morphometry Study. *Drug and Alcohol Dependence*, 72:225-235.

Schiffer F, Mottaghy FM, Vimal RLP, Renshaw PF, Cowan RL, Pascual-Leone A, Teicher M, Valente E, Rohan M (2004). Lateral visual field stimulation reveals extrastriate cortical activation in the contralateral hemisphere: An fMRI study. *Psychiatry Res*. 131(1):1-9.

Murphy MJ, Cowan RL, Sederer LI. (2004). *Blueprints in Psychiatry, 3rd edition*. Malden, MA: Blackwell Science, 114.

Cowan RL, NR Bolo NR, Dietrich M, Haga E, Lukas SE, Renshaw PF. (in press). Occipital cortical proton MRS at 4 Tesla in human MDMA polydrug users. *Psychiatry Research: Neuroimaging.*

Cowan RL. (in press). Challenges for Structural Neuroimaging Research in Human MDMA Users: A Review. Invited Review. *Psychopharmacology.*

Cowan RL, Haga E, Frederick B deB, Dietrich MS, Vimal RLP, Lukas SE, Renshaw PF. (in press). MDMA use is associated with increased spatial BOLD fMRI visual cortex activation in human MDMA users. *Pharmacology Biochemistry and Behavior*.

C. Research Support

Ongoing Research Support

1 R21 MH073800-02 Cowan (PI) 01/01/06 – 12/31/07
NIH/NIMH
SERT polymorphisms and human cortical 5-HT2A receptors
This project seeks to examine the influence of common polymorphisms of the serotonin transporter on 5-HT2A receptor binding in healthy control subjects assayed using setoperone PET.

1 R21 DA020149-01 Cowan (PI) 05/05/07 – 04/30/09
NIDA
Genetic factors in human MDMA toxicity: a PET study
This project seeks to examine the influence of common polymorphisms of the serotonin transporter on MDMA-induced neurotoxicity as assayed by 5-HT2A receptor binding assayed using setoperone PET.

1 R01 DA019670-02 Zald (PI) 04/10/06 – 12/31/09
NIDA
Individual differences in extrastriatal DA release
This project uses PET imaging with Fallypride to examine DA release following amphetamine administration in human subjects.
Role: Co-Investigator

1 R21 DA021034-02 Avison (PI) 09/30/05 – 08/31/08
NIDA
Neural Bases of ADHD in Fetal Drug or Alcohol Exposure
This project examines ADHD and structural and functional MRI assays of brain function in children prenatally exposed to cocaine or alcohol.
Role: Co-Investigator

Completed Research Support

1 R01 DA15137-05 Cowan (PI) 08/01/04 – 05/31/07
NIDA (No cost Extension until 05/31/08)
MR Analysis of Persistent CNS Damage in Human MDMA Users
This project is designed to conduct a comprehensive neuroimaging study of regional brain changes in human MDMA users. The study employs structural (voxel-based morphometry), chemical (magnetic resonance spectroscopy, MRS), and functional (functional magnetic resonance imaging, fMRI) methods to assay CNS neurotoxicity resulting from loss of serotonergic innervation.

1 R21 DA019672-01 Park S (PI) 07/01/05 – 04/30/07
NIDA
Neurocognitive consequences of cannabis use
The present proposal seeks support to examine neurocognitive and psychiatric consequences of cannabis use in young adults. Attention, inhibitory control, and social cognition will be investigated in current and past cannabis users and nonusers at the beginning of the first year of college. They will be monitored regulary during the first year to track changes in behavior in relation to cannabis. In addition, schizotypal personality will be examined in young cannibus users.
Role: Co-Investigator

1 R03 DA016617-01 Cowan (PI) 09/01/03 – 08/31/05
NIDA
High-Field Functional MRI of Human Euphoria
This study is a 1-year application under the I/START program to obtain funds to conduct pilot studies examining the neurobiology of euphoria in human subjects using fMRI, following amphetamine administration.
Role: PI

R01 NS33332-05 Gore (PI) 07/01/00 – 06/30/05
NINDS
Biophysical Basis of Functional Brain MRI
To develop an improved understanding of mechanisms involved in functional MRI of the brain and optimize imaging and data analysis strategies for the detection of neuronal activity.
Role: Co-Investigator

1 R01 DA 14178 Renshaw (PI) 07/01/07 – 06/30/06
NIDA
High Field MR Research in Drug Abuse: A Bioengineering Partnership
The goal of this BRP application is to develop a consortium of investigators with an interest in the development of those engineering methods that are most important for clinical and preclinical substance abuse neuroimaging research.
Role: Consultant

2 R01 DA03994-15A1 Lukas (PI) 09/01/01 – 08/31/06
NIDA
Polydrug Abuse: Imaging and Behavior
This project is designed to examine alterations in EEG activity, event-related potential, physiological responses, subjective reports of drug effect and cognitive function during acute intoxication with cocaine, marihuana and ethanol combinations.
Role: Co-Investigator