

UNIVERSITY OF PENNSYLVANIA - SCHOOL OF MEDICINE

Curriculum Vitae

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Education: 1968-70 Hebrew University of Jerusalem  
1970-71 B.S. Michigan State University (Psychology)  
1971-72 M.A. Michigan State University  
1973-74 Predoctoral Fellowship, Stanford University  
1972-74 Ph.D. Michigan State University (Psychology)  
1974-75 Postdoctoral Fellowship, University of Pennsylvania  
1977-80 M.D. University of Pennsylvania

Postgraduate Training and Fellowship Appointments:

1974-75 Postdoctorate supervised clinical training  
Department of Psychiatry  
University of Pennsylvania  
1980-81 Internship (Medicine/Psychiatry)  
Hospital of the University of Pennsylvania  
1981-84 Resident in Neurology,  
Hospital of the University of Pennsylvania  
1984-86 Resident in Psychiatry,

Hospital of the University of Pennsylvania

Military Service:

1966-68 Israeli Defence Forces

Faculty Appointments:

1975-87 Assistant Professor, Department of Psychiatry  
University of Pennsylvania School of Medicine, Philadelphia PA

1987-89 Associate Professor, Department of Psychiatry  
Secondary appointment Department of Neurology  
University of Pennsylvania School of Medicine, Philadelphia, PA

1989- Professor, Department of Psychiatry  
Secondary appointments Departments of Neurology  
and Radiology  
University of Pennsylvania School of Medicine, Philadelphia, PA

2002- The Karl and Linda Rickels Professor of Psychiatry  
University of Pennsylvania School of Medicine, Philadelphia, PA

Hospital and Administrative Appointments:

1974-79 Faculty in Residence  
University of Pennsylvania School of Medicine, Philadelphia, PA

1982-Present Department of Psychiatry  
Philadelphia Veterans Administration Hospital, Philadelphia, PA

1984-Present Director of Neuropsychiatry Section  
Department of Psychiatry  
University of Pennsylvania School of Medicine, Philadelphia, PA

2003-Present Vice Chair for Research Development  
Department of Psychiatry  
University of Pennsylvania School of Medicine, Philadelphia, PA

2005-Present Associate Director  
Institute for Translational Medicine and Therapeutics (ITMAT)  
University of Pennsylvania School of Medicine, Philadelphia, PA

Specialty Certification: None

Licensure:

Licensed Physician, Commonwealth of Pennsylvania

Licensed Psychologist, Commonwealth of Pennsylvania

Awards, Honors and Membership in Honorary Societies:

1969	Dean's Honor Roll, Hebrew University of Jerusalem
1971	Foreign Student Award, Michigan State University
1971	B.S. with High Honors
1975	Member, Sigma Xi
1990	NIMH MERIT Award
1994	Member, American College of Neuropsychopharmacology
1997	NAMI Exemplary Psychiatrist Award
1998	William Osler Patient Oriented Research Award
1999	NARSAD Distinguished Investigator Award
2000	Fellow, American College of Neuropsychopharmacology
2001	American Psychiatric Association Kempf Fund Award
2001	Institute of Medicine
2007	American College of Psychiatrists Stanley Dean Award in Schizophrenia
2007	President, Society of Biological Psychiatry
2009	NARSAD - Lieber Prize for Outstanding Research in Schizophrenia
2011	American College of Physicians – William C. Menninger Memorial Award
2012	National Alliance on Mental Illness (Pennsylvania Montgomery County) Brain Scientific Research Award
2013	President-Elect, American College of Neuropsychopharmacology

Membership in Professional and Scientific Societies:

National Societies: American Academy of Neurology  
 American Medical Association  
 American Psychiatric Association  
 American College of Neuropsychopharmacology  
 Society for Neuroscience  
 Society of Biological Psychiatry  
 Institute of Medicine

Local Societies: Pennsylvania Psychiatric Society

National Scientific Committees:

1982-86 NIMH Psychopathology and Clinical Biology Study Section  
 1987-91 NIMH Psychopathology and Clinical Biology Study Section  
 1988 NIMH National Plan for Schizophrenia Research  
 1988-93 MacArthur Foundation Network I Scientific Core Group  
 1994 University of Pittsburgh Neuroimaging Center  
 1995 University of Pittsburgh Neuroscience Center  
 1991-95 NIMH Clinical Centers and Special Projects Review Committee  
 1996 NIMH Intramural Research Program Planning Committee  
 1996 NIH Co-Chair of Neuroscience and Behavior Working Group, Beyond Hunt Valley: Research on Women's' Health for the 21st century  
 1998 International Congress on Schizophrenia Research  
 1999 APA/NIMH DSM-V Research Planning Neuroscience Work Group  
 2000 American Foundation for Suicide Prevention  
 2003 American College of Neuropsychopharmacology Credentials Committee  
 2003 Council, American College of Neuropsychopharmacology  
 2004 Scientific Advisory Committee for Studies to Advance Autism Research and Treatment (STAART) Network  
 2004 NIH National Advisory Mental Health Council  
 2004-08 Institute of Medicine Membership Committee  
 2008-13 Society of Biological Psychiatry Executive Council

- 2011 American College of Neuropsychopharmacology Honoric Awards Committee
- 2007-2013 DSM-V Psychosis Work Group
- 2013-17 NIH Behavioral Genetics and Epidemiology Study Section, Center for Scientific Review

Local Scientific Committees:

- 2000 Imaging and Treating the Human Brain: Ethical and Social Implications, The Center for Bioethics, University of Pennsylvania

Editorial Positions:

- 1991-04 Associate Editor; Schizophrenia Bulletin
- 1988-00 Editorial Board; Neuropsychiatry, Neuropsychology and Behavioral Neurology
- 1990-96 Editorial Board; Psychiatry Research
- 1992-96 Editorial Board; Critical Reviews in Neurobiology
- 1997-98 Editorial Board; Neuropsychopharmacology
- 1998-06 Field Editor; Neuropsychopharmacology
- 1998-04 Editorial Board; Schizophrenia Research
- 1998-01 Editorial Board; Biological Psychiatry
- 2002-05 Editorial Board; The American Journal of Psychiatry
- 2003-07 Section Editor; Current Psychiatry Reports
- 2004-08 Editorial board; Schizophrenia Bulletin
- 2008- Editorial Committee; Biological Psychiatry

Academic Committees at the University of Pennsylvania and Affiliated Hospitals:

- 1992-95 Member, Committee on Appointments and Promotion, School of Medicine
- 1996-99 Member, Core Research Facilities Committee, School of Medicine
- 1996 Member, Committee to Review the General Clinical Research Center
- 1996-99 Member, Academic Review Committee, School of Medicine
- 1990-Present Member, Committee on Appointments and Promotion, Department of Psychiatry
- 1990-98 Member, Research Committee, Department of Psychiatry

- 1998-Present Member, M.D. Ph.D. Admissions Committee, School of Medicine
- 2002-05 Member, Research Coordinating Council, School of Medicine
- 2003-04 Institute of Neurological Sciences Advisory Board
- 2006 Chair, Department of Neuroscience Review Committee, School of Medicine
- 2011 Strategic Planning Committee for Developing New Approaches to Corporate Research Relationships, School of Medicine.
- 2011 Penn Medicine Biobank Research Strategy and Recruitment Committee, School of Medicine
- 2012-Present Leader, Cross Cutting Committee, Neuroscience of Behavior Initiative Search Committee, Perelman School of Medicine

Major Teaching and Clinical Responsibilities at the University of Pennsylvania:

1. Lectures in the Biological Basis of Psychiatric Disorders undergraduate course, nursing school course/annual
2. Lecture series on schizophrenia, Residency program in Psychiatry/annual
3. Brain Behavior Clinic, HUP one afternoon /week
4. Schizophrenia Clinic, HUP one afternoon/week
5. Medical students lectures in Integrative Neuroscience and Introduction to Clinical Medicine/annual
6. Neuropsychiatry Faculty-Fellows Seminars/monthly

Lectures by Invitation: (Outside Philadelphia; past five years only)

- June 2008 Facial Emotion Identification and Expression in Schizophrenia: Lessons from Image Analysis of Brains and Faces. 1<sup>st</sup> International Research Society Conference, Venice, Italy
- June 2008 Target Detection Discrimination Investigated by Event Related Functional Magnetic Resonance Imaging. 1<sup>st</sup> International Research Society Conference, Venice, Italy
- September 2008 Neurocognition in Schizophrenia: Treatment Challenges. World Federation of Biological Psychiatry (WFSBP) Asia-Pacific Regional Meeting, Toyoma, Japan.

- September 2008 The Perception, Experience and Expression of Emotions: A Neuropsychiatric Perspective. World Federation of Biological Psychiatry (WFSBP) Asia-Pacific Regional Meeting, Toyoma, Japan.
- October 2008 Brain Behavior Relationships of Normal and Disturbed Emotions in Schizophrenia and Autism, IRTG Winter School, Aachen University, Aachen, Germany
- December 2008 Translational Research in Schizophrenia: Lost and Found? NIMH MD/PhD Student Conference on Clinical Neuroscience, Washington, DC
- March 2009 Practical Issues Related to Cognition Research in Psychiatric Patients International Workshop on Psychiatric Genetics, Ethics and Related Methodological Issues, New Delhi, India
- April 2009 The Emotional Brain in Schizophrenia: A Neuropsychiatric Perspective The Henry and Amelia Nasrallah Lecture, Ohio State University, Columbus, Ohio
- June 2009 Is Consciousness a Relevant Concept for Psychiatry Research? 9<sup>th</sup> World Congress of Biological Psychiatry Meeting Paris, France
- September 2009 Emotions in Schizophrenia: From Flat Affect to Genes Emory University Grand Rounds, Atlanta, Georgia
- October 2009 The Neurobiology of Schizophrenia: Then and Now NARSAD Symposium XII, New York City, New York.
- March 2010 Schizophrenia: A Clinical Neuroscience Perspective Princeton University, Princeton, New Jersey
- May 2010 Translational Research in Schizophrenia: Challenges and Promises American Psychiatry Association Annual Meeting, New Orleans, Louisiana
- June 2010 Implications of Genetics for Prevention Research NIMH, Denver CO
- November 2010 Translational Research in Schizophrenia: Challenges and Promises University of Medicine and Dentistry of New Jersey, Newark, New Jersey
- November 2010 Translational Research in Schizophrenia: Challenges and Promises DGPPN Congress, German Association for Psychiatry and Psychotherapy

	Berlin, Germany
December 2010	Neurodevelopmental Genomic Studies of Brain and Behavior Tel Aviv University, Tel Aviv, Israel
January 2011	Neurodevelopmental Genomics Strategies in the Study of Schizophrenia Johns Hopkins University, Baltimore, MD
March 2011	Social Cognition in Schizophrenia: A Window to Negative Symptoms Cooper University Hospital, Camden, NJ
April 2011	Neurodevelopmental Genomics: Trajectories of Complex Phenotypes NIMH Professional Coalition for Research Progress, Washington, DC
November 2011	Neuroimaging Applications in Genetic Studies of Psychosis Institute of Psychology, Chinese Academy of Sciences. Beijing, China
March 2012	Recent Discoveries from the Philadelphia Neurodevelopmental Cohort NIMH Council, Bethesda, MD
May 2012	Brain Function in Psychosis Prone Youths and Schizophrenia American Psychiatric Association, Philadelphia, PA
March 2013	Mental Illness and Violence, A Neurodevelopmental Perspective Congressional Neuroscience Caucus Briefing, Washington, DC

#### Organizing Roles in Scientific Meetings:

International Congress of Schizophrenia Research. 2001, 2003

Future Leaders in Psychiatry. April 2002

American Psychiatric Association. May 2002

NIMH – First Episode Schizophrenia: Preventing Chronicity, Improving Outcomes. July 2002

The Annenberg Foundation Trust: Adolescent Schizophrenia Commission. 2002-2003

#### Bibliography:

##### Research Publications, peer reviewed:

1. Gur RE, Reyher J. The relationship between style of hypnotic induction and direction of lateral eye movements. *Journal of Abnormal Psychology*, 1973, 82, 499-505.
2. Alexander LT, Gur RC, Gur RE, Patterson L. Peer assisted learning. *Improving Human Performance Quarterly*, 1974, 3, 175-186.



3. Gur RC, Gur RE. Handedness, sex and eyedness as moderating variables in the relation between hypnotic susceptibility and functional brain asymmetry. *Journal of Abnormal Psychology*, 1974, 83, 635-643.
4. Gur RE, Gur RC, Marshalek B. Classroom seating and functional brain asymmetry. *Journal of Educational Psychology*, 1975, 67, 151-153.
5. Gur RE. Conjugate lateral eye movements as an index of hemispheric activation. *Journal of Personality and Social Psychology*, 1975, 31, 751-757.
6. Gur RE, Gur RC. Defense mechanisms, psychosomatic symptomatology and conjugate lateral eye movements. *Journal of Consulting and Clinical Psychology*, 1975, 43, 416-420.
7. Gur RE, Gur RC, Harris LJ. Cerebral activation, as measured by subject's lateral eye movements, is influenced by experimenter location. *Neuropsychologia*, 1975, 13, 35-44.
8. Gur RC, Sackeim HA, Gur RE. Classroom seating and psychopathology: some initial data. *Journal of Abnormal Psychology*, 1976, 85, 122-124.
9. Gur RE. Motoric laterality imbalance in schizophrenia. *Archives of General Psychiatry*, 1977, 34, 33-37.
10. Gur RE, Gur RC. Sex differences in the relations among handedness, sighting-dominance and eye acuity. *Neuropsychologia*, 1977, 15, 585-590.
11. Gur RE. Left hemisphere dysfunction and left hemisphere overactivation in schizophrenia. *Journal of Abnormal Psychology*, 1978, 87, 226-238.
12. Gur RE. Cognitive concomitants of hemispheric dysfunction in schizophrenia. *Archives of General Psychiatry*, 1979, 36, 269-274.
13. Gur RC, Sussman NM, Alavi A, Gur RE, Rosen AD, O'Connor M, Goldberg HI, Greenberg JH, Reivich M. Positron emission tomography in two cases of childhood epileptic encephalopathy (Lennox-Gastaut Syndrome). *Neurology*, 1982, 32, 1191-1194.
14. Gur RC, Gur RE, Obrist WD, Hungerbuhler JP, Younkin D, Rosen AD, Skolnick BE, Reivich M. Sex and handedness differences in cerebral blood flow during rest and cognitive activity. *Science*, 1982, 217, 659-661.
15. Sussman NM, Gur RC, Gur RE, O'Connor MJ. Mutism as a consequence of callosotomy. *Journal of Neurosurgery*, 1983, 59, 514-519.
16. Natale M, Gur RE, Gur RC. Hemispheric asymmetries in processing emotional expressions. *Neuropsychologia*, 1983, 21, 555-565.

17. Gur RE, Skolnick BE, Gur RC, Caroff S, Rieger W, Obrist WD, Younkin D, Reivich M. Brain function in psychiatric disorders: I. Regional cerebral blood flow in medicated schizophrenics. *Archives of General Psychiatry*, 1983, 40, 1250-1254.
18. Gur RC, Gur RE, Rosen AD, Warach S, Alavi A, Greenberg J, Reivich M. A cognitive-motor network demonstrated by positron emission tomography. *Neuropsychologia*, 1983, 21, 601-606.
19. Gur RE, Gur RC, Sussman NM, O'Connor MJ, Vey MM. Hemispheric control of the writing hand: the effect of callosotomy in a left-hander. *Neurology*, 1984, 34, 904-908.
20. Gur RE, Skolnick BE, Gur RC, Caroff S, Rieger W, Obrist WD, Younkin D, Reivich M. Brain function in psychiatric disorders: II. Regional cerebral blood flow in medicated depressives. *Archives of General Psychiatry*, 1984, 41, 695-699.
21. Gur RE. Positron emission tomography in psychiatric disorders. *Psychiatric Annals*, 1985, 15, 286-271.
22. Gur RE, Gur RC, Skolnick BE, Caroff S, Obrist WD, Resnick S, Reivich M. Brain function in psychiatric disorders: III. Regional cerebral blood flow in unmedicated schizophrenics. *Archives of General Psychiatry*, 1985, 42, 329-334.
23. Trivedi SS, Gur RC, Gur RE, Skolnick BE, Obrist WD, Reivich M. Imaging regional cerebral blood flow measured by the 133-Xenon technique. *rCBF Bulletin*, 1986, 9, 175-178.
24. Gur RE, Resnick SM, Alavi A, Gur RC, Caroff S, Dann R, Silver F, Saykin AJ, Chawluk JB, Kushner M, Reivich M. Regional brain function in schizophrenia: I. A positron emission tomography study. *Archives of General Psychiatry*, 1987, 44, 119-125.
25. Gur RE, Resnick SM, Gur RC, Alavi A, Caroff S, Kushner M, Reivich, M. Regional brain function in schizophrenia: II. Repeated evaluation with positron emission tomography. *Archives of General Psychiatry*, 1987, 44, 126-129.
26. Trope I, Fishman B, Gur RC, Sussman NM, Gur RE. Contralateral and ipsilateral control of fingers following callosotomy. *Neuropsychologia*, 1987, 25, 287-291.
27. Gur RC, Gur RE, Obrist WD, Skolnick BE, Reivich M. Age and regional cerebral blood flow at rest and during cognitive activity. *Archives of General Psychiatry*, 1987, 44, 617-621.
28. Gur RC, Gur RE, Resnick SM, Skolnick BE, Alavi A, Reivich M. The effect of anxiety on cortical cerebral blood flow and metabolism. *Journal of Cerebral Blood Flow and Metabolism*, 1987, 7, 173-177.
29. Gur RC, Gur RE, Silver FL, Obrist WD, Skolnick BE, Kushner M, Hurtig HI, Reivich M.

Regional cerebral blood flow in stroke: hemispheric effects of cognitive activity. *Stroke*, 1987,18, 776-780.

30. Warach S, Gur RC, Gur RE, Skolnick BE, Obrist WD, Reivich M. The reproducibility of the Xe-133 inhalation technique in resting studies: task order and sex related effects in healthy young adults. *Journal of Cerebral Blood Flow and Metabolism*, 1987, 7, 702-708.

31. Gur RC, Gur RE, Skolnick BE, Resnick SM, Silver FL, Chawluk JB, Muenz L, Obrist WD, Reivich M. Effects of task difficulty on regional cerebral blood flow: relationships with anxiety and performance. *Psychophysiology*, 1988, 25, 392-399.

32. Schmidt ML, Gur RE, Gur RC, Trojanowski JQ. Intraneuronal and extracellular neurofibrillary tangles exhibit mutually exclusive cytoskeletal antigens. *Annals of Neurology*, 1988, 23, 184-189.

33. Resnick SM, Gottlieb GL, Gur RE, Gur RC, Forcica MA, Zimmerman RA, Malamut B, Saykin AJ, Reivich M, Alavi, A. Identical twins with probable Alzheimer's Disease: behavior, anatomy and physiology. *Neuropsychiatry, Neuropsychology and Behavioral Neurology*, 1988, 1, 61-72.

34. Gur RC, Trivedi SS, Saykin AJ, Gur RE. "Behavioral imaging" - a procedure for analysis and display of neuropsychological test scores: I. Construction of algorithm and initial clinical evaluation. *Neuropsychiatry, Neuropsychology and Behavioral Neurology*, 1988, 1, 53-60.

Quantitative algorithm to hypothesis testing in a population of hemiparkinsonian patients. *Neuropsychiatry, Neuropsychology and Behavioral Neurology*, 1988, 1, 87-96.

36. Gottlieb GL, Gur RE, Gur RC. Reliability of psychiatric scales in patients with DAT. *American Journal of Psychiatry*, 1988, 145, 857-860.

37. Resnick SM, Gur RE, Alavi A, Gur RC, Reivich M. Positron emission tomography and subcortical glucose metabolism in schizophrenia. *Psychiatric Research*, 1988, 24, 1-11.

38. Blonder LX, Gur RE, Gur RC. The effects of right and left hemiparkinsonism on prosody. *Brain and Language*, 1989, 36, 193-207.

39. Blonder LX, Gur RE, Gur RC, Saykin AJ, Hurtig HI. Neuropsychological functioning in hemiparkinsonism. *Brain and Cognition*, 1989, 36, 193-207.

40. Saykin AJ, Gur RC, Sussman NM, Gur RE. Memory deficits before and after temporal lobectomy: effect of laterality and age of onset. *Brain and Language*, 1989, 9, 191-200.

41. Gur RE, Resnick SM, Gur RC. Laterality and frontality of cerebral blood flow and metabolism in schizophrenia: Relationship to symptom specificity. *Psychiatry Research*, 1989, 27, 325-334.

42. Trojanowski JQ, Schmidt ML, Otvos L, Gur RC, Gur RE, Hurtig H, Lee VMY. Selective

- expression of epitomes in multi-phosphorylation repeats of the high and middle molecular weight neurofilament proteins in alzheimer neurofibrillary tangles. *Annals of Medicine*, 1989, 21, 113-116.
43. Erwin RJ, Mawhinney-Hee M, Gur RC, Gur RE. Effects of task and gender on EEG indices of hemispheric activation: similarities to previous rCBF findings. *Neuropsychiatry, Neuropsychology, and Behavioral Neurology*, 1989, 2, 248-260.
44. Sperling MR, Gur RC, Alavi A, Gur RE, Resnick S, Oconnor MJ, Reivich M. Subcortical metabolic alterations in partial epilepsy. *Epilepsia*, 1990, 31, 145-155.
45. Gur RC, Saykin AJ, Benton A, Kaplan E, Levin H, Kester DB, Gur RE. "Behavioral imaging": III. Inter-rater agreement and reliability of weightings. *Neuropsychiatry, Neuropsychology, and Behavioral Neurology*, 1990, 3, 113-124.
46. Gur RE, Gur RC. Gender differences in regional cerebral blood flow. *Schizophrenia Bulletin*, 1990, 16, 247-254.
47. Gur RE, Gur RC, Saykin AJ. Neurobehavioral studies in schizophrenia: implications for regional brain dysfunction. *Schizophrenia Bulletin*, 1990, 16, 445-451.
48. Chawluk JB, Dann R, Alavi A, Hurtig HI, Gur RE, Resnick S, Zimmerman RA, Reivich M. The effect of focal cerebral atrophy in positron emission tomographic studies of aging and dementia. *Nuclear Medicine in Biology*, 1990, 17, 797-804.
49. Gur RC, Saykin AJ, Muenz LR, Trivedi SS, Gur RE. Response to Yeo et al.'s critique of behavioral imaging. *Neuropsychiatry, Neuropsychology, and Behavioral Neurology*, 1990, 3, 304-312.
50. Kohn MI, Tanna NK, Herman GT, Resnick SM, Mozley PD, Gur RE, Alavi A, Zimmerman RA, Gur RC. Analysis of brain and CSF volumes from magnetic resonance imaging: methodology, reliability and validation. *Radiology*, 1991, 178, 115-122.
51. Gur RC, Mozley PD, Resnick SM, Gottlieb GE, Kohn MI, Zimmerman RA, Herman GT, Atlas SW, Grossman RI, Berretta D, Erwin RJ, Gur RE. Gender differences in age effect on brain atrophy measured by magnetic resonance imaging. *Proceedings of the National Academy of Sciences*, 1991, 88, 2845-2849.
52. Gur RE, Mozley PD, Resnick SM, Levick S, Erwin RJ, Saykin AJ, Gur RC. Relations among clinical scales in schizophrenia: overlap and subtypes. *American Journal of Psychiatry*, 1991, 148, 472-478.
53. Gur RE, Mozley PD, Resnick SM, Shtasel DL, Kohn MI, Zimmerman RA, Herman GT, Atlas

- SW, Grossman RI, Erwin RJ, Gur RC. Magnetic resonance imaging in schizophrenia: I. Volumetric analysis of brain and cerebrospinal fluid. *Archives of General Psychiatry*, 1991, 48, 407-412.
54. Saykin AJ, Gur RC, Gur RE, Mozley PD, Mozley LH, Resnick SM, Kester DB, Stafiniak P. Neuropsychological function in schizophrenia: selective impairment in memory and learning. *Archives of General Psychiatry*, 1991, 48, 618-624.
55. Shtasel DL, Gur RE, Mozley PD, Richards J, Taleff MM, Heimberg C, Gallacher F, Gur RC. Volunteers for biomedical research: recruitment and screening of normal controls. *Archives of General Psychiatry*, 1991, 48, 1022-1025.
56. Milton WJ, Atlas SW, Lexa FJ, Mozley PD, Gur RE. Deep gray matter hypointensity on MRI at 1.5T in the normal adult population: stratification with aging. *Radiology*, 1991, 181, 715-719.
57. Arnold SE, Lee VMY, Gur RE, Trojanowski JQ. Abnormal expression of two microtubule-associated proteins (MAP2 and MAP5) in specific subfields of the hippocampal formation in schizophrenia. *Proceedings of the National Academy of Sciences*, 1991, 88, 10850-10854.
58. Kapouleas I, Alavi A, Alves WM, Gur RE, Weiss DW. Registration of three-dimensional MR and PET images of the human brain without markers. *Radiology*, 1991, 181, 731-739.
59. Erwin RJ, Mawhinney-Hee M, Gur RC, Gur RE. Midlatency auditory evoked responses in schizophrenia. *Biological Psychiatry*, 1991, 30, 430-442.
60. Gur RE, Gur RC. Neurotransmitters are important, but so is metabolism. *Neuropsychopharmacology*, 1992, 7, 63-65.
61. Warach S, Gur RC, Gur RE, Skolnick BE, Obrist WD, Reivich M. Decreases in frontal and parietal lobe regional cerebral blood flow related to habituation. *Journal of Cerebral Blood Flow and Metabolism*, 1992, 12, 546-553.
62. Gur RC, Erwin RJ, Gur RE. Neurobehavioral probes for physiologic neuroimaging studies. *Archives of General Psychiatry*, 1992, 49, 409-414.
63. Erwin RJ, Gur RC, Gur RE, Skolnick BE, Mawhinney-Hee M, Smailis J. Facial emotion discrimination: I. Task construction and behavioral findings in normals. *Psychiatry Research*, 1992, 42, 231-240.
64. Gur RC, Erwin RJ, Gur RE, Zvil AS, Heimberg C, Kraemer HC. Facial emotion discrimination: II. Behavioral findings in depression. *Psychiatry Research*, 1992, 42, 241- 251.
65. Heimberg C, Gur RE, Erwin RJ, Shtasel DL, Gur RC. Facial emotion discrimination: III.

Behavioral findings in schizophrenia. *Psychiatry Research*, 1992, 42, 253-265.

66. Shtasel DL, Gur RE, Gallacher F, Heimberg C, Cannon TD, Gur RC. Phenomenology and functioning in first episode schizophrenia. *Schizophrenia Bulletin*, 1992, 18, 449-462.
67. Kumar A, Yousem D, Souder E, Miller D, Gottlieb G, Gur RE, Alavi A. High-intensity signals in alzheimer's disease without cerebrovascular risk factors: A magnetic resonance imaging evaluation. *American Journal of Psychiatry*, 1992, 149, 248-250.
68. Shtasel DL, Gur RE, Gallacher F, Heimberg C, Gur RC. Gender differences in the clinical expression of schizophrenia. *Schizophrenia Research*, 1992, 7, 225-232.
69. Gur RE. MRI and cognitive behavioral function in schizophrenia. *Journal of Neural Transmission*, 1992, 36, 13-22.
70. Gur RC, Jaggi JL, Ragland JD, Resnick SM, Shtasel DL, Muenz L, Gur RE. Effects of memory processing on regional brain activation: Cerebral blood flow in normal subjects. *International Journal of Neuroscience*, 1993, 72, 31-44.
71. Gur RE, Pearlson GD. Neuroimaging in schizophrenia Research. *Schizophrenia Bulletin*, 1993, 19, 337-353.
72. Crawford HJ, Gur RC, Skolnick BE, Gur RE, Benson D. Effects of hypnosis on regional cerebral blood flow during ischemic pain with and without suggested hypnotic analgesia. *International Journal of Psychophysiology*, 1993, 15, 181-195.
73. Levick SE, Lorig T, Wexler BE, Gur RE, Gur RC, Schwartz GE. Asymmetrical visual deprivation: A technique to differentially influence lateral hemispheric function. *Perceptual and Motor Skills*, 1993, 76, 1363-1382.
74. Resnick SM, Karp JS, Turetsky BI, Gur RE. Comparison of anatomically-defined versus physiologically-based regional localization: Effects on PET-FDG quantitation. *Journal of Nuclear Medicine*, 1993, 34, 2201-2207.
75. Erwin RJ, Shtasel DL, Gur RE. Effects of medication history on midlatency auditory evoked responses in schizophrenia. *Schizophrenia Research*, 1994, 11, 251-258.
76. Saykin AJ, Shtasel DL, Gur RE, Kester DB, Mozley LH, Stafiniak P, Gur RC. Neuropsychological deficits in neuroleptic naive, first episode schizophrenic patients. *Archives of General Psychiatry*, 1994, 51, 124-131.
77. Schneider F, Gur RC, Gur RE, Muenz L. Standardized mood induction with happy and sad facial expressions. *Psychiatry Research*, 1994, 51, 19-31.

78. Gur RE, Mozley PD, Shtasel DL, Cannon TD, Gallacher F, Turetsky BI, Grossman RI, Gur RC. Clinical subtypes of schizophrenia differ in brain and cerebrospinal fluid volume. *American Journal of Psychiatry*, 1994, 151, 343-350.
79. Gur RC, Skolnick BE, Gur RE. Effects of emotional discrimination tasks on cerebral blood flow: Regional activation and its relation to performance. *Brain and Cognition*, 1994, 25, 271-286.
80. Gur RE, Jaggi JL, Shtasel DL, Ragland JD, Gur RC. Cerebral blood flow in schizophrenia: Effects of memory processing on regional activation. *Biological Psychiatry*, 1994, 35, 3-15.
81. Gur RC, Ragland JD, Resnick SM, Skolnick BE, Jaggi JL, Muenz L, Gur RE. Lateralized increases in cerebral blood flow during performance of verbal and spatial tasks: Relationship with performance level. *Brain and Cognition*, 1994, 24, 244-258.
82. Mozley PD, Gur RE, Shtasel DL, Resnick SM, Richards J, Kohn MI, Grossman RI, Herman GT, Gur RC. Magnetic resonance imaging in schizophrenia: II. Relationship to clinical measures. *Schizophrenia Research*, 1994, 12, 195-203.
83. Kumar A, Newberg A, Alavi A, Moberg PJ, Berlin J, Miller D, Souder E, Gur RE, Gottlieb G. MRI volumetric studies in alzheimer's disease: Relationship to clinical and neuropsychological variable. *The American Journal of Geriatric Psychiatry*, 1994, 2, 21-31.
84. Cowell PE, Turetsky BI, Gur RC, Grossman RI, Shtasel DL, Gur RE. Sex differences in aging of the human frontal and temporal lobe. *The Journal of Neuroscience*, 1994, 14, 4748-4755.
85. Cannon TD, Zorrilla LE, Shtasel DL, Gur RE, Gur RC, Marco EJ, Moberg PJ, Price RA. Neuropsychological functioning in siblings discordant for schizophrenia and healthy volunteers. *Archives of General Psychiatry*, 1994, 51, 651-661.
86. Holdnack JA, Moberg PJ, Arnold SE, Gur RE, Gur RC. MMPI characteristics in adults diagnosed with ADD: A preliminary report. *International Journal of Neuroscience*, 1994, 79, 47-58.
87. Schneider F, Gur RC, Jaggi JL, Gur RE. Differential effects of mood on cortical cerebral blood flow: A  $^{133}\text{Xenon}$  clearance study. *Psychiatry Research*, 1994, 52, 215-236.
88. Resnick SM, Lazar J, Gur RE, Gur RC. The stability of tachistoscopic measures of hemispheric specialization. *Neuropsychologia*, 1994, 32, 1419-1430.
89. Gur RC, Mozley LH, Mozley PD, Resnick SM, Karp JS, Alavi A, Arnold SE, Gur RE. Sex differences in regional cerebral glucose metabolism during a resting state. *Science*, 1995, 267, 528-531.

90. Kareken DA, Gur RC, Mozley PD, Mozley LH, Saykin AJ, Shtasel DL, Gur RE. Cognitive functioning and neuroanatomic volume measures in schizophrenia. *Neuropsychology*, 1995, 9, 211-219.
91. Ragland JD, Gur RC, Deutsch GK, Gur RE. Reliability and validity of the paired-associate recognition memory test: A test of declarative memory using wisconsin card sorting stimuli. *Psychological Assessment*, 1995, 7, 25-32.
92. Arnold SE, Gur RE, Shapiro RM, Fisher KR, Moberg PJ, Gibney MR, Gur RC, Blackwell P, Trojanowski JQ. Prospective clinicopathologic studies of schizophrenia: accrual and assessment of patients. *American Journal of Psychiatry*, 1995, 152, 731-737.
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None.

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None.

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#### Books:

Gur RE, Andreasen NA, Asarnow R, Gur RC, Jones P, Kendler K, Matcheri K, Lieberman J,

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Gur RE, Johnson AB. *If Your Adolescent Has Schizophrenia: An Essential Resource for Parents*. New York: Oxford University Press, The Annenberg Foundation Trust at Sunnylands, and the Annenberg Public Policy Center of the University of Pennsylvania, 2006.

Alternative Media:

None

Research Support:

CURRENT

RC2 MH089983 (Gur, RE) 09/30/09 - 08/31/13 2.40 calendar months

NIH \$2,659,149

Neurodevelopmental Genomics: Trajectories of Complex Phenotypes

Advances in genomics are revolutionizing medicine with discoveries that help elucidate mechanisms and design novel treatments. For mental illnesses to benefit from genomics, data are needed linking behavior to brain function in large prospective samples. We propose phenotypic characterization of 10,000 genotyped children and adolescents - clinical, neurocognition, affect and, in a subsample, neuroimaging - creating a landmark dataset to propel understanding and treatment of developmental neuropsychiatric disorders.

There is also a supplement to the parent grant Neurodevelopmental Genomics: Trajectories of Complex Phenotypes project which is to integrate clinical phenomenology, neurobehavioral and neuroimaging data, where Penn leads the effort, with genomics, where CHOP leads the effort.

R01 MH065578 (Gur, RE) 04/16/10 - 01/31/14 1.20 calendar months

NIH \$235,848

4/5-The Genetics of Endophenotypes and Schizophrenia

This collaborative linked RO1 aims to understand the genetic architecture of functionally important quantitative neurophysiological and neurocognitive endophenotypes and the qualitative phenotype of schizophrenia in 3,000 patients and 1,000 community comparison subjects.

U01 MH087626 (Gur, RE)	09/10/10 – 05/31/15	2.40 calendar months
NIH	\$966,032	

1/2 - Brain-Behavior and Genetic studies of the 22q11DS

Brain-Behavior and Genetic Studies of the 22q11DS is a collaborative U01 between Children's Hospital of Philadelphia and the University of Pennsylvania combines genetic and neurobiologic paradigms to advance understanding of the pathogenesis of schizophrenia.

R01 MH042191 (Gur, RC)	09/09/08-05/31/14	0.60 calendar months
NIH	\$437,799	

A Neurobehavioral Family Study of Schizophrenia (MGI)

The objective of this collaborative R01 is to examine neurocognitive functions as endophenotypic markers in multiplex families with schizophrenia. Families will be ascertained, phenotyped and neurocognitively assessed at the University of Pennsylvania and at the University of Pittsburgh. Southwest Foundation for Biomedical Research will provide the expertise in genetics of complex traits and carry out the molecular and statistical genetic analyses.

T32 MH019112 (Gur, RE)	07/01/09-06/30/14	Mentor
NIH	\$304,024	

Schizophrenia: A Neuropsychiatric Perspective

This postdoctoral training grant provides stipends for Fellows to pursue research training in the neurobiology of schizophrenia.

R01MH093383 (Gur, RC)	05/01/12-03/31/15	0.60 calendar months
NIH	\$50,000	

3/5 – Genetics of Transcriptional Endophenotypes for Schizophrenia

The goal of this project is to identify genes influencing risk of schizophrenia utilizing information from intermediate traits, including levels of gene expression and measures of cognitive function, in

families from three genetic consortia.

P50MH096891 (Gur, RE)	09/01/12-05/31/17	3.00 calendar months
NIH	\$1,376,531	

#### Developmental Trajectories of Negative Symptoms in Schizophrenia

The goal of this Center grant is to probe brain circuitry that underlies the core negative symptoms of schizophrenia, diminished emotional expressivity and social drive, in humans and mice. It capitalizes on new collaborations and advances in the field, pursuing translational aims with multi-level complementary approaches focused on dissecting major phenotypic features of schizophrenia that are of clinical importance yet poorly understood.

R01MH097273 (Gur, RC)	07/01/12-06/30/15	0.60 calendar months
NIH	\$73,301	

#### 2/3-Networks from multidimensional data for schizophrenia and related disorders

This project proposes to develop methods for Integrating a broad range of genomic, imaging and clinical data, hosting all data, methods and results on a novel, flexible and extensible computing platform.

P30MH097488 (Evans)	06/03/13 – 05/31/18	0.60 calendar months
NIH	\$1,053,569	

#### Penn mental health AIDS research center

The overarching theme of the proposed Penn Mental Health AIDS Research Center at the University of Pennsylvania and Children's Hospital of Philadelphia is to transform how individuals with comorbid mental illness/AIDS are treated and managed by developing innovative, interdisciplinary, and integrative approaches to optimize psychiatric, behavioral, and medical outcomes and achieving a better understanding of the biological, psychological, and behavioral mechanisms underlying these combined illnesses and treatments.

PENDING

R01MH10886157 (Susser)	12/01/12-11/30/17	0.24 calendar months
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NIH \$75,884

Genomics of Schizophrenia in the South African Xhosa

This project proposes a 10-test neurocognitive battery in a genomic study in South Africa.

R01MH101719 (Gur, RE) 07/01/13 – 06/30/17 1.20 calendar months

NIH \$536,430

1/5 International Consortium on Brain and Behavior in 22q11.2 Deletion Syndrome

This is a collaborative RO1 of 22 institutions, with one genomic and four phenotyping leading sites. The collaboration combines genomic with neuropsychiatric and neurobehavioral paradigms to advance the understanding of the pathogenesis of schizophrenia (SZ) and related phenotypes. The Consortium provides the largest available sample to date of 1000 genetically and phenotypically characterized individuals with 22q11DS.

T32MH019112 (Gur, RE) 07/01/14 -06/30/19 Mentor

NIH \$301,228

Schizophrenia: A Neuropsychiatric Perspective

This is a training grant aiming to provide basic and clinical neuroscientists with the skills and experiences necessary to launch an interdisciplinary research career that can contribute to understanding the neurobiology of schizophrenia spectrum disorders. This competing renewal application capitalizes on the depth of resources, facilities and faculty dedicated to research and training in translational neuroscience at the University of Pennsylvania.

Patents:

Gur RC, Gur RE, Trivedi SS. "Behavioral Imaging: Topographic Display of Neuropsychological Data" U.S. Patent No. 4862359.