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I. EXECUTIVE SUMMARY



Karoly Mirnics was born on 08/06/1962 in Novi Sad, Serbia (Former Yugoslavia). He is an ethnic Hungarian. Karoly obtained his MD degree from University of Novi Sad School of Medicine in his home town in 1986 and his PhD degree from Semmelweis University in Budapest, Hungary under the mentorship of Prof. Gabor Faludi. He arrived as a postdoctoral fellow to the University of Pittsburgh in 1990 where he was mentored by Drs. H. Richard Koerber and Pat R. Levitt. Karoly established his own laboratory in 2000 at the Department of Psychiatry at University of Pittsburgh, where he rose to the rank of associate professor in 2006. In 2006 his laboratory moved to the Department of Psychiatry at Vanderbilt University in Nashville. In 2010 he was named James G. Blakemore Professor of Psychiatry, and he currently serves as the departmental Vice-Chair for Research and Associate Director of the Vanderbilt Kennedy Center.

Dr. Mirnics has a broad background in molecular neurobiology of brain diseases, with >20 years of experience in various molecular biology techniques, including generation of transgenic mice, immunohistochemistry and in situ hybridization, qPCR, in situ proteomics, laser dissection microscopy, microfluidics, transcriptome profiling and advanced cloning techniques. His research group is actively pursuing projects that include transcriptome changes across human brain diseases, animal models of neurodevelopmental and psychiatric disorders, effects of maternal immune activation and environment on gene expression, and neuroprotection by activity. His innovativeness and willingness to explore unconventional research are best illustrated by the following: he was the first person to perform a DNA microarray analysis of brain tissue, pioneered molecular pathway analyses, characterized immune system dysfunction in schizophrenia and autism, pioneered in situ proteomics in neuroscience, developed a new microarray platform, identified neuroprotection of enriched environment in Alzheimer's Disease models, holds a patent for RGS4 as a schizophrenia susceptibility gene, and developed a novel transgenic mouse technology, using BAC-driven, miRNA-mediated silencing in vivo. He is very collaborative, and he has worked with over 30 groups of investigators over the last 10 years.

He is married to Zeljka Korade, DVM, PhD, has two children (Marco and Emma). In his free time he enjoys reading and he is an avid chess player.

II. EDUCATION

- 1978-1980 School of Nursing, Novi Sad, Yugoslavia
Degree: Registered Nurse
- 1987-1989 Psychology, University of Novi Sad, Yugoslavia
Program: Undergraduate studies of psychology
- 1981-1986 University of Novi Sad School of Medicine, Yugoslavia
Degree: Doctor of Medicine
- 1987-1989 University of Novi Sad School of Medicine, Yugoslavia
Program: Master of Science in Clinical Pharmacology
- 1990-1991 Special Student, Dept of Veterinary Anatomy, Iowa State University
Advisor: Dr. Srdija Jeftinija, Ph.D
- 1991-1996 Research Associate, Dept of Neurobiology, U of Pittsburgh
Advisor: H. Richard Koerber, Ph.D.
- 1998-2000 Research Assistant Professor, Dept of Neurobiology, U of Pittsburgh
Advisor: Pat R. Levitt, Ph.D.
- 2010 Semmelweis University, Budapest, Hungary
Degree: Biological Psychiatry Program (Advisor: Gabor Faludi, MD, PhD)

III. ACADEMIC APPOINTMENTS

1992-1996 Department of Neurobiology, University of Pittsburgh
Title: Research Associate

1997-1998 Department of Neurobiology, University of Pittsburgh
Title: Instructor

1998-2000 Department of Neurobiology, University of Pittsburgh
Title: Research Assistant Professor

1999-2003 School of Medicine, University of Pittsburgh
Title: Director of DNA microarray core (PittArray)

2001 - 2006 Departments of Psychiatry (primary) and Neurobiology (secondary), U of Pittsburgh
Title: Assistant Professor

2006 Department of Psychiatry, University of Pittsburgh
Title: Associate Professor

2006 - Department of Psychiatry, University of Pittsburgh
Title: Adjunct Associate Professor

2006 - Department of Psychiatry, Vanderbilt University
Title: Associate Professor with tenure

2006 - Kennedy Center for Human Development, Vanderbilt University
Title: Investigator

2008 - Department of Psychiatry, Vanderbilt University
Title: Vice Chair for Basic Science Research

2008 - Department of Psychiatry, Vanderbilt University
Title: Full Professor with tenure

2009 - Kennedy Center for Human Development, Vanderbilt University
Title: Director of Neurosciences Core B

2011 - Department of Psychiatry, Vanderbilt University
Title: James G. Blakemore Professor of Psychiatry

2011- University of Szeged, School of Medicine, Szeged, Hungary
Title: Visiting Professor

2012- Vanderbilt Kennedy Center for Research on Human Development
Title: Associate Director of VKC

2012- Vanderbilt Institute for Integrative Biosystems Research and Education (VIIBRE)
Title: Senior Fellow

IV. HOSPITAL APPOINTMENTS

1987-1988 University Hospital of Novi Sad, Yugoslavia
Title: Medical Doctor on Rotating Internship

V. OTHER EMPLOYMENT

1988-1990 INEX-Hemofarm Pharmaceutical Company, Vrsac, Yugoslavia
Title: Associate in Marketing

VI. MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

1991 - Federation of Societies for Experimental Biology (FASEB)
1991 - International Brain Research Organization (IBRO)
1991 - Society for Neuroscience (SFN)
1994 - American Association for Advancement of Science (AAAS)
1994 - The New York Academy of Sciences (NYAS)
2003 - Society for Biological Psychiatry (SBP)
2005 - European College of Neuropsychopharmacology (ECNP)
2005 - American College of Neuropsychopharmacology (ACNP)
2005 - Hungarian Academy of Sciences Foreign Scientist Council
2006 - Hungarian Neuropsychopharmacological Society
2008 - International Society for Interferon and Cytokine Research
2012 - Schizophrenia International Research Society

VII. PROFESSIONAL ACTIVITIES

A. INTRAMURAL:

1999 University of Pittsburgh, Microarray Seed Fund Reviewer
1999 University of Pittsburgh, Internal Grant Reviewer for Children's Hospital
1999 University of Pittsburgh, Internet Technology Task Force
1999-2002 University of Pittsburgh, Bioinformatics Task Force
1999-2003 University of Pittsburgh, Director of PittArray (University DNA Microarray Core)
1999-2003 University of Pittsburgh, Center for Human Genetics Board Member
2003-2006 University of Pittsburgh, Director of NeuroArray
1998-2006 University of Pittsburgh, Competitive Research Medical Fund Reviewer (CMRF)
2007 Vanderbilt University, Kennedy Center – Science Day Organizer and Moderator
2007 Vanderbilt University, Kennedy Center – Strategic Planning Committee
2007 Vanderbilt University, Kennedy Center – VKC Balance Group
2008- Vanderbilt University, Kennedy Center – P30/U54 Neuroscience Core Director
2008- Vanderbilt University, Dept of Psychiatry – Faculty Recruitment Committee
2008 Vanderbilt University, Basic Science Planning - Measuring Excellence / Progress
2008 Vanderbilt University, Center for Molecular Neurosci Web Development Committee
2008- Vanderbilt University, Dept of Psychiatry – Appointments and Promotion Committee
2008- Vanderbilt University, Dept of Psychiatry – Leadership Council
2009 Moderator, Vanderbilt Kennedy Center 2009 Science Day
2009- Director of Neuroscience Cores, Vanderbilt Kennedy Center
2010 Chair of the Vanderbilt Kennedy Center 2010 Science Day committee
2010- Vanderbilt International Scholar Program in Biomedical Research committee member
2010-2012 Center for Molecular Neuroscience advisory board
2010- Vanderbilt International Scholar Program Steering Committee Member
2011- 2013 IMPACT group leader for [VISP students](#)
2011- Vanderbilt Brain Institute Steering Committee Member
2012- Associate Director, Vanderbilt Kennedy Center
2012- Hobbs Grant Evaluation Committee, Vanderbilt Kennedy Center
2012 – VKC Leadership Council
2012- VCTRS / VPSD selection committee
2012- EDGE Review Committee
2012- CISR Advisory Board
2012- Appointments and Promotions Committee, Dept of Psychiatry, SOM
2012- Endowed McGavock Chair Evaluation Committee SOM
2013 Chair of Search Committee for Director of Addiction Division
2013 Chair of Search Committee for Mood Division
2013 Chancellor's Strategic Plan Academic Planning Group on EdTech
2014 MPB McGavock Endowed Professor Evaluation Committee
2014 Dept of Pharmacology Chair Search Committee

B. EXTRAMURAL

1) Journal reviewer (ad hoc):

Cell, Nature, Nature Neuroscience, Nature Medicine, Nature Biotechnology, Lancet, Neuron, Journal of Neuroscience, American Journal of Psychiatry, Neuroscience, Molecular Psychiatry, Neurobiology of Disease, Neuropsychopharmacology, PLOS Biology, EMBO J, Nucleic Acid Research, etc.

2) Editorial Board

The Scientific World (section editor), Biological Psychiatry, Biological Psychiatry Cognitive Neuroscience and Neuroimaging, Neurobiology of Disease, European Neuropsychopharmacology (ECNP Journal), Progress in Neurobiology, Neuroimmunology and Neuroinflammation, Faculty 1000 Neurogenetics, Frontiers in Neurogenetics (reviewing editor), Frontiers in Neurogenomics (reviewing editor), Journal of Neural Transmission, International Journal of Developmental Neuroscience, the Open Neuropsychopharmacology Journal, and Neuropsychopharmacologica Hungarica.

Guest editor: '**Assessment of Gene Expression in Neuropsychiatric Disease**' Special Issue of Neurobiology of Disease, 2011.

Guest editor: "**Neurodevelopmental Aspects of Schizophrenia**" Special Issue of International Journal of Developmental Neuroscience (IJDN), 2011.

Guest editor of "**Schizophrenia: Biology, Diagnostics and Therapy**" Special Issue of Neuropsychopharmacologica Hungarica, 2011.

Guest editor of "**Pharmacogenetics and Pharmacogenomics in Neuroscience**" Special Issue of Progress in Neurobiology, 2015

3) Grant reviewer:

National Science Foundation, NIH Center for Scientific Review (MDCN5, SEP-A, ZGR1 BDCN-A11, NPAS, PMDA), Wellcome Foundation, NARSAD, Alzheimer Foundation, Irish Research Council, MJ Fox Foundation, chartered NIH-NPAS member, chartered NIH-PMDA member, minor foundation grants.

4) Organizing activities:

- **May 2004:** International Society of Neurochemistry Focused Meeting: "*Changes in neuronal gene expression and CNS drug responses*"; 13-16 May in Avignon, France
Co-organizers: David J. Lockhart, Jacques Mallet, **Karoly Mirnics**, Hermona Soreq
- **October 2004:** US-Japanese Information Exchange by NIH USA and NIH Japan: "*Bioinformatic Analysis of Brain Function*" September 30-October 2, Hawaii, HI, USA.
Co-organizers: Kazuhiro Ikenaka (Japan) and **Karoly Mirnics** (USA).
- **April 2009:** IBRO CEERC "Neuroimaging and Neurogenomics of Developmental Disorders"

April 30 – May 6, Dubrovnik, Croatia

Co-organizers: Ivica Kostovic (Croatian Institute for Brain Research), Alan C. Evans (McGill University), Pasko Rakic (Yale University), **Karoly Mirnics** (Vanderbilt University)

- **2011-** ACNP Mentor to Dr. Caitlin McOmish.
- **2011-2014** ACNP Program Committee
- **2012-** ACNP CME Course Director for 51st Annual Meeting
- **2013-** ICOSR CME Course Director
- **2013-** ACNP CME Course Director for 52nd Annual Meeting
- **2014-** ACNP CME Course Director for 53rd Annual Meeting

C. RECOGNITIONS AND AWARDS:

2003-2005 Counterdrug Technology Assessment Center (Office of the President of the USA)
Role: Elected task force member

2005- Hungarian Academy of Sciences
Appointment: Elected member of the Foreign Scientist Council

2005- Faculty of 1000 Medicine, Neurogenetics section
Role: Elected member

2005-
Role: American College of Neuropsychopharmacology
Elected member

2005-
Role: European College of Neuropsychopharmacology
Elected member

2005
Role: Uppsala University, Sweden
Thesis opponent for Lina Emilsson

2006
Award: National Alliance on Research on Schizophrenia and Depression (NARSAD)
Daniel X. Freedman Prize runner-up

2010
Role: Research, Development and Innovation Program Committee of the European Union
Committee Member

2010
Role: NARSAD Council
Member

2011
Role: 'Assessment of Gene Expression in Neuropsychiatric Disease'
Guest Editor of Special Issue of Neurobiology of Disease

2011
Role: "Neurodevelopmental Aspects of Schizophrenia"
Guest editor of Special Issue of International Journal of Developmental Neuroscience

2010
Award: Hungarian Association of Neuropsychopharmacologists
Honorary member (5th in the history of the society)

2011-2014
Role: Neural Basis of Psychopathology, Addictions and Sleep Disorders Study Section
Chartered NPAS/NIH membership starting July 1, 2011

2011
Role: "Schizophrenia: biology, diagnostics and therapy"
Guest Editor of Special Issue of Neuropsychopharmacologica Hungarica

2011 -
Title: Department of Psychiatry, Vanderbilt University
James G. Blakemore Professor of Psychiatry

2011 -
Role: Schizophrenia Research Forum
Advisory Board Member

2011
Nominated to Membership in Academia Europaea

2011
Hans Selye Visiting Professor
University of California, Long Beach VA Healthcare

2012
Plenary "State-of-the-art lecture" at 75th Anniversary of Albert Szent-Györgyi's Nobel Prize
Award Celebration, March 22-24, 2012, Szeged, HUNGARY

2012
NIH - Biobank Workgroup Member

2013
"Pharmacogenetics and Pharmacogenomics in Neuroscience"

Role: Guest editor of Special Issue of Progress in Neurobiology

2012 ACNP CME Course Director for 51st Annual Meeting

2012-2015 ACNP Program Committee Member

2012 Co-chair NPAS NIH Study section

2013 ICOSR CME Course Director

2013 Ad hoc review member of the NIMH Board of Scientific Counselors (BSC)

2013 ACNP CME Course Director for 52st Annual Meeting

2014 ACNP CME Course Director for 53st Annual Meeting

2014-
Role: Pathophysiological Basis of Mental Disorders and Addictions Study Section
Chartered PMDA/NIH membership starting Sept 1, 2014

2015 External reviewer of Johns Hopkins NIMH Conte Center

2015 ACNP CME Course Director for 54th Annual Meeting

VIII. TEACHING AND MENTORING ACTIVITIES

A. COURSE TEACHING

- 1988-1989 University of Novi Sad, Yugoslavia
Course: Clinical Pharmacology
Contact hours: >100/year
- 1998 University of Pittsburgh School of Medicine
Course: Musculoskeletal Anatomy (Course Director)
Contact hours: >40/year
- 1998 Ross University School of Medicine, Portsmouth, Dominica
Course: Human Gross Anatomy
Contact hours: >40/year
- 1998-2003 Seton Hill College, Greensburg, PA
Course: Human Gross Anatomy
Contact hours: >40/year (Course Co-Director)
Developed course and wrote/published syllabus
- 1996-2004 University of Pittsburgh School of Medicine
Course: Human Gross Anatomy
Contact hours: >200/year
- 2004-2006 University of Pittsburgh School of Medicine
Course: CNUP Journal club (course facilitator)
Contact hours: ~20/year
- 2007- Vanderbilt University
Courses: NURO346, NURO292, NURO366, NSC235, Independent Study
Contact hours: ~40/year
- 2011- Vanderbilt University, Department of Psychiatry
Course: Teaching the residents
Contact hours: ~8/year
- 2013- Vanderbilt University, Department of Psychiatry
Course: Medical student teaching
Contact hours: ~8/year
- 2014- Vanderbilt University, Department of Psychiatry
Course: Psychology Interns
Contact hours: ~8/year
- 2015- Vanderbilt University, Vanderbilt Brain Institute
Course: Neurobiology of Disease, Course Director (developed a new course)
Contact hours: ~120/year

B. RESEARCH SUPERVISION -POSTDOCTORAL TRAINEES/JUNIOR FACULTY

Name: Frank A. Middleton

Training period: 09/1998-09/1999

Degree: Ph.D.

Institution: Psychiatry, U of Pittsburgh

Research Project: 14-3-3 expression in schizophrenia

Current Position: Associate Professor, SUNY Upstate

Role in training: Training grant committee member

Name: Julie Pongrac

Training period: 09/2002-09/2003

Degree: Ph.D.

Institution: Psychiatry, U of Pittsburgh

Research Project: Gene expression in the PFC of schizophrenia

Current Position: Senior postdoctoral fellow, U of British Columbia

Role in training: Major advisor

Name: Rehana Leak

Training Period: 2/2005 – ongoing

Degree: Ph.D.

Institution: Neurology, U of Pittsburgh

Research Project: Neuroprotection and 6-OHDA models

Current Position: Assistant Professor, Duquesne U

Role in training: Co-advisor for genomic studies

Name: Armando Signore

Training period: 06/2002 – 06/2003

Degree: Ph.D.

Institution: Psychiatry, U of Pittsburgh

Research Project: Gene expression in the striatum of a Parkinsonian model

Current Position: Research associate, U of Pittsburgh, after unknown

Role in training: Gene expression advisor

Name: David Putz

Training Period: 1/2004 – 9/2004

Degree: Ph.D.

Institution: Anthropology, U of Pittsburgh

Research Project: Gene expression changes as a result of antipsychotic treatments

Current Position: Faculty, U of Michigan

Role in training: Research advisor

Name: Etienne Sibille

Training period: 12/2003 - 2008

Degree: Ph.D.

Institution: Psychiatry, U of Pittsburgh

Research Project: Gene expression profiling of major depression

Current Position: Professor, U of Pittsburgh

Role in training: Co-sponsor on K01 award

Name: Kelly Wood

Training period: 09/2003 – 08/2008

Degree: MD

Institution: Department of Critical Care Medicine, U of Pittsburgh

Research Project: Microarray Determinants in Community-Acquired Pneumonia

Current Position: Associate Professor Department of Critical Care Medicine, U of Pgh

Role in training: Co-sponsor on K23 award

Name: Dominique Arion

Training period: 03/2003 - 2011

Degree: Ph.D.

Institution: Psychiatry, U of Pittsburgh

Research Project: Layer-specific cortical gene expression

Current Position: Senior Research Principal, U of Pittsburgh

Role in training: Major advisor

Name: Krassimira Garbett

Training period: 09/2006 - ongoing

Degree: Ph.D.

Institution: Psychiatry, Vanderbilt University

Research Project: Gene expression in autism, schizophrenia and animal models

Current Position: Senior Research Associate, Vanderbilt U

Role in training: Major advisor

Name: Philip Ebert

Training period: 03/2007 – 01/2008

Degree: Ph.D.

Institution: Psychiatry, Vanderbilt University

Research Project: miRNA driven animal models of psychiatric disorders

Current Position: Scientist - group leader at Eli Lilly and Co, Bloomington, IN

Role in training: Major advisor

Name: Szatmar Horvath

Training period: 12/2008 – 12/2009

Degree: M.D./Ph.D.

Institution: Psychiatry, Vanderbilt University

Research Project: Characterization of miRNA-driven animal models of psychiatric disorders

Current Position: Assistant Professor, U of Szeged, Hungary

Role in training: Major advisor

Name: Maximilian Michel

Training period: 12/2011 – 7/2012

Degree: Ph.D.

Institution: Psychiatry, Vanderbilt University

Research Project: Anatomical characterization of miRNA-driven animal models of psychiatric disorders

Current Position: postdoc position in Mirnics laboratory

Role in training: Major advisor

Name: Libin Xu

Training period: 07/2012 – ongoing

Degree: Ph.D.

Institution: Chemistry, Vanderbilt University
Research Project: Characterization of SLOS models
Current Position: Research Assistant Professor of Chemistry, Vanderbilt U
Role in training: Mentor on K99 award

Name: Troy Hackett

Training period: 07/2012 – 8/2014
Degree: Ph.D.

Institution: Hearing and Speech, Vanderbilt University
Research Project: Gene Expression During Postnatal Development of the Central Auditory Pathway
Current Position: Associate Professor, Vanderbilt
Role in training: Mentor on K18 Award

Name: Jacquelyn A. Brown

Training period: 07/2012 – 07/2014
Degree: Ph.D.

Institution: Psychiatry, Vanderbilt University
Research Project: Behavioral characterization of miRNA-driven animal models of psychiatric disorders
Current Position: P30-funded postdoctoral fellow in Mirnics Lab
Role in training: Major advisor

Name: Rita Baldi

Training period: 01/2014 – 04/2015
Degree: Ph.D.

Institution: Psychiatry, Vanderbilt University
Research Project: Functional characterization of neurogliaform interneurons in transgenic models
Current Position: Rostoczy Foundation funded postdoctoral fellow in Mirnics Lab
Role in training: Major advisor

C. RESEARCH SUPERVISION -PREDOCTORAL TRAINEES

Name: Elizabeth Crouch

Training period: 06/2002 – 09/2002 and 06/2003 – 09/2003
Degree: BS, accepted into medical school
Institution: Psychiatry, U of Pittsburgh
Research Project: Cortical gene expression of HBs
Current Position: MD/PhD finished, clinician-researcher at ???
Role in training: Major advisor in summer student program

Name: Terrie Vasilopoulos

Training period: 06/2002 – 09/2002
Degree: BS, accepted into Ph.D. program
Institution: Psychiatry, U of Pittsburgh
Research Project: Cortical gene expression in schizophrenia
Current Position: Graduate Student at U of North Carolina
Role in training: Major advisor in summer student program

Name: David Putz

Training period: 1/2003 – 11/2003
Degree: BS, PhD program at Anthropology
Institution: Psychiatry and Anthropology, U of Pittsburgh

Research Project: Gene expression changes in response to antipsychotic medication

Current Position: Faculty at U of Michigan

Role in training: Major advisor for gene expression work

Name: Christos Colovos

Training period: 06/2004 – 05/2005

Degree: Ph.D.

Institution: Psychiatry, U of Pittsburgh

Research Project: Gene Gender-specific gene expression

Current Position: Medical student at U of Pittsburgh, lost touch after that

Role in training: Major advisor for summer research program

Name: Christin Glorioso

Training period: 06/2004 – 09/2005

Degree: B.S.

Institution: Psychiatry, U of Pittsburgh

Research Project: Gene expression changes in BDNF-deficient mice

Current Position: Postdoctoral fellow

Role in training: Major advisor for summer research program

Name: Michael Sabatini

Training period: 06/2002 – 08/2005

Degree: B.S. (defended PhD on August 15, 2005)

Institution: Psychiatry and Neurobiology, U of Pittsburgh

Research Project: Effect of maternal separation on amygdala gene expression

Current Position: MD/PhD student at U of Pittsburgh, faculty at U Pitt

Role in training: Major advisor for Ph.D. thesis

Name: Amanda Mitchell

Training period: 12/2007 – 12/2011

Degree: B.S.

Institution: Psychiatry, Vanderbilt University

Research Project: Neuroprotection by exercise

Current Position: Postdoctoral fellow at Mt. Sinai

Role in training: Major advisor for Ph.D. thesis

Martin Schmidt

Training period: 07/2008 – 12/2014

Degree: Ph.D.

Institution: IGP, Vanderbilt University

Research Project: Animal models of psychiatric disorders

Current Position: Postdoctoral fellow at Washington University St. Louis

Role in training: Major advisor for Ph.D. thesis

Khine Lwin

Training period: 07/2008 - 2011

Degree: B.S.

Institution: Vanderbilt University

Research Project: Animal models of psychiatric disorders

Current Position: MD resident

Role in training: Mentor

Sara Kalman

Training period: 07/2011-08/2012

Degree: BS

Institution: University of Szeged, Hungary

Research Project: Gene expression pattern after maternal immune activation

Role in training: VISRA advisor

Name: Andrea Vereczkei

Training period: 02/2011 – 03/2012

Degree: BS

Institution: Semmelweis University, Budapest, Hungary

Research Project: Gene expression pattern and epigenetic modification in major depression

Role in training: Major advisor for PhD work in the USA

Name: Danielle DeCampo

Training period: 02/2011 – 12/2014

Degree: PhD

Institution: U of Rochester, NY

Research Project: Gene expression patterns in non-human primates

Role in training: NRSA co-advisor for genomic studies

Name: Zita Olah

Training period: 02/2014 – 12/2014

Degree: BS, exchange graduate student

Institution: Vanderbilt U, Psychiatry – U Szeged, Hungary

Research Project: Peripheral biomarkers of MDD

Role in training: Major advisor

Name: Kelli Money

Training period: 09/2015 – ongoing

Degree: BS, exchange graduate student

Institution: Vanderbilt U, MSTP student

Research Project: Peripheral biomarkers of MDD and gestational diabetes-ASD connection

Role in training: Major advisor

D. RESEARCH SUPERVISION – UNDERGRADUATE/HIGH SCHOOL TRAINEES

- Sara Hart, Neuroscience, Vanderbilt, 2011-2012
- Lauren Viehmann, Neuroscience, Vanderbilt, 2013-ongoing
- Adriana Ocon, Neuroscience, Vanderbilt, 2012-ongoing
- Rafayat Ahsen, Neuroscience, Vanderbilt, 2011-2012
- Nola Novak – Hume-Fogg High School, Nashville, Summer of 2012
- Reece Myre – Ashville, NC, High School Student, Winter of 2013
- Wesley Sun – Neuroscience, Vanderbilt, Spring 2013
- Devon Carter, Chemistry, Xavier U, Summer 2013
- Shezza Shagrabi, Neuroscience, Emory U, Summer 2013
- Rohan Tammala – Ravenwood High School, Summer 2013
- Jennifer Da, Ravenwood High School, Summer 2011
- Anastasia Koumtchev, MLK High School, Summer 2014
- Marco Mirnics, EHS High School, Summer 2014
- Anna Denton, EHS High School, Summer 2014

IX. RESEARCH PROGRAM AND FUNDING

A. CURRENT GRANT SUPPORT:

U54 NICHD (PI: Dykens)

09/01/15 – 08/31/20

Role on Project: Director of Neurosciences Core

Granting Agency: NICHD

Total Cost: >\$5,000,000, Mirnics cost \$1,270,695

Mirnics cost: 20% salary support, core service support

Title: *Eunice Kennedy Shriver Intellectual and Developmental Disability Research Center*

Description: A diverse collection of core services for NIH-funded investigators involved in research of human development and developmental disabilities.

1R01 - MH093332 (PI: Akbarian)

04/01/11– 03/31/16

Role on Project: Co-Investigator

Granting Agency: NIMH

Total Cost: \$1,500,000

Mirnics cost: \$750,000

Title: *Epigenome Mapping in Cortical Interneurons*

Description: The two major goals of this project is to 1) provide the research community and public domain for the first time with a comprehensive genome-wide atlas of the histone methylation landscape in selected subpopulations of cortical GABAergic interneurons and other cells residing in mouse cerebral cortex; and 2) To gain first insights into chromatin remodeling mechanisms of GABAergic neurons during the transition from juvenile to mature age.

Hobbs Society 2015 (PI: Mirnics)

07/01/15– 06/30/16

Role on Project: Principal Investigator (MPI with Wallace)

Granting Agency: Nicholas Hobbs Society

Total Cost: \$30,542

Title: *Autism and schizophrenia data mining in SD and BioVU*

Description: We hypothesize that mining Vanderbilt's electronic data resources using sophisticated machine learning algorithms employing a hypothesis-free, data-driven approach will allow us to uncover previously unknown relationships between different disease domains and descriptors, resulting in a meaningful pattern of sub-stratification of patients.

B. COMPLETED GRANT SUPPORT (Selected):

5 P30 HD15052-30 (Dykens)

07/01/09 – 06/30/14

Role on Project: Director of Neurosciences Core

Granting Agency: NICHD

Total Cost: >\$5,000,000

Mirnics cost: 20% salary support, core service support

Title: *Eunice Kennedy Shriver Intellectual and Developmental Disability Research Center*

Description: A diverse collection of core services for NIH-funded investigators involved in research of human development and developmental disabilities.

1R01 MH079299-02 (Mirnics)

03/12/07 – 02/28/13

Role on Project: Principle Investigator

Granting Agency: NIMH

Total Cost: \$1,890,000

Title: *Neuroimmune changes in schizophrenia*

Description: This study will examine the hypothesis that various environmental influences, via pro-inflammatory cytokine induction, trigger a strong transcriptome response in the developing brain that may persist into adult life.

2R01MH067234-06 (Mirnics)

09/01/08 – 08/31/13

Role on Project: Principle Investigator

Granting Agency: NIMH

Total Cost: \$1,890,000

Title: *Consequences of Neocortical GAD67 Downregulation*

Description: This study will focus on creation and analysis of transgenic animals with GAD67 silencing in cortical interneurons using a novel, BAC-miRNA method. Analysis will be performed using anatomical and behavioral tools.

1R01 AG027854-01A1 (Sisodia)

02/01/07 – 01/31/12

Role on Project: Co-Investigator

Granting Agency: NIA

Total Cost: \$1,890,000

Mirnics cost: \$300,000

Title: *Modulation of A β Deposition by Environmental Enrichment*

Description: We will investigate molecular, cellular and physiological framework by which environmental enrichment modulates amyloid deposition in transgenic mice.

1 P50 MH078028-01A1 (Blakely)

09/15/07 – 06/30/12

Role on Project: Co-Investigator

Granting Agency: NIMH

Total Cost: >\$5,000,000

Mirnics cost: \$20,000

Title: *Genes Controlling Assembly and Function of Serotonin Systems*

Description: This proposal seeks the creation of an NIMH Silvio O. Conte Center for Neuroscience. Research at Vanderbilt University to investigate genes controlling assembly and function of serotonin systems. Dr. Mirnics is co-investigator in the Bioanalytical Core. He is a formal consultant to the core in the area of punch and laser-associated microdissection of brain regions for gene and protein profiling.

4 R37 MH43784-17 (Lewis)

02/01/06 – 01/31/11

Role on Project: Co-Investigator

Granting Agency: NIMH

Total Cost: >\$2,500,000

Mirnics cost: \$200,000

Title: *GABA Neurons and Cortical Circuitry in Schizophrenia*

Description: The studies proposed in this application are designed to identify the affected subset of cortical GABA neurons in schizophrenia, to define the postsynaptic consequences of the alterations in these neurons, and to characterize the pathophysiological mechanisms that may produce these alterations.

K02 MH070786 (Mirnics)

4/01/04 – 03/31/09

Role on Project: Principle Investigator

Granting Agency: NIMH

Total Cost: \$527,051

Title: *Uncovering complex expression patterns in schizophrenia*

Description: Salary award, research focusing on gene expression patterns in schizophrenia.

1 R01 MH067234-01A1 (Mirnics)**7/1/03 - 6/30/08**Role on Project: Principal InvestigatorGranting Agency: NIMHTotal cost: \$1,253,713Title: Neocortical Transcriptome Changes in SchizophreniaDescription: These studies examined the gene expression profiles as a function of brain region, hemisphere and sex in schizophrenia.**2 P50 MH45156-14 (CNMD PI: Lewis, Project 2 PI: Mirnics)****7/1/03 - 6/30/08**Role on Project: Principal Investigator on Project 2.Granting Agency: NIMHTotal cost Project 2 Mirnics: \$898,527Title: Cortical Circuitry and Cognition in SchizophreniaDescription: This program focused on transcriptome profiling of the prefrontal cortex of subjects with schizophrenia. In particular, it attempted to define the putatively altered molecular phenotype of deep layer III pyramidal neurons.**2 P50 MH45156-14 (Lewis)****7/1/03 - 6/30/08**Role on Project: Co-InvestigatorGranting Agency: NIMHTotal cost: \$1,315,520Title: Cortical Circuitry and Cognition in Schizophrenia - Project 1Description: The proposed studies investigated the specific subsets of pyramidal neurons that are affected in schizophrenia in order to determine both the potential causes of these abnormalities and their contributions to disturbed DLPFC information processing.**2 P01 NS019608-19A1 (UDALL Center PI: Zigmond)****8/1/03 - 4/30/08**Role on Project: Co-InvestigatorGranting Agency: NINDSMirnics costs: \$163,593Title: Neuroprotection and Early Detection in Parkinson's DiseaseDescription: This program project continued the line of research that focused on the compensatory changes that underlie the preclinical phase of Parkinson's Disease (PD) by focusing on strategies for inducing endogenous neuroprotective mechanisms in animal models.**5 R37 MH43784-14 (Lewis)****4/6/01 - 3/31/06**Role on Project: Co-InvestigatorGranting Agency: NIMHTotal cost: \$3,042,184Title: GABA Neurons and Cortical Circuitry in SchizophreniaDescription: These studies identified the affected subset of cortical GABA neurons in schizophrenia, defined the postsynaptic consequences of alterations in these neurons, and investigated the pathophysiological mechanisms that may have produced these alterations.**KAR1 (Mirnics)****10/1/02 - 9/30/05**Role on Project: Principal InvestigatorGranting Agency: Eli Lilly and CompanyTotal cost: \$340,000Title: Gene expression changes as a result of antipsychotic treatmentDescription: This study focused on the transcriptome effects of two antipsychotic drugs (olanzapine & haloperidol) in a non-human primate model.

1 S10 RR16618-01 (Mirnics)

8/15/02 - 8/14/04

Role on Project: Principal Investigator

Granting Agency: NCCR

Total cost: \$216,770

Title: DNA microarray center

Description: This shared instrumentation grant established a resource that allowed the widespread use of this technology for the neuroscience community.

NARSAD Young Investigator Award 2002 (Mirnics)

07/01/02 - 06/30/04

Role on Project: Principal Investigator

Granting agency: NARSAD

Total cost: \$50,000

Title: Identification and Validation of Molecular Mechanisms Associated with Schizophrenia

Description: This project assessed the function of an unknown gene that we named MK01 by performing electroporation and antisense-microarray studies.

5 P50 MH45156 Lewis (Center Director)

07/01/98 - 06/30/03

Role on Project: Co-Principal Investigator on Project 2

Granting Agency: NIMH

Conte CNMD title: Cortical Circuitry and Cognition in Schizophrenia (Lewis)

Project 2 title: Gene Expression Patterns in Prefrontal Cortical Circuitry (Mirnics and Levitt)

Project 2 total cost: \$400,000

This project used commercially-available cDNA microarrays to define the molecular changes in gene expression that are causal to the changes in dorsolateral prefrontal cortex circuit function associated with schizophrenia.

AFSP (Mirnics)

09/01/01 - 08/31/03

Role on Project: Principal Investigator

Granting agency: American Foundation for Suicide Prevention

Total cost: \$80,000

Title: Complex Patterns of Gene Expression in Suicide: A Study of Subjects with Schizophrenia

Description: This project examined complex gene expression patterns in the prefrontal cortex of subjects with schizophrenia who committed suicide and those who died of other causes.

5 R21 MH62760 (Mirnics)

09/19/00 - 08/31/02

Role on Project: Principal Investigator

Granting Agency: NIMH

Total cost: \$450,000

Title: cDNA Microarray Analysis of Synaptic Transmission

Description: The proposed studies improved experimental designs to allow for sensitive and reproducible assessment of changes in gene expression in neuropsychiatric diseases.

C. PENDING GRANT SUPPORT

1R21MH106038 (PI: Mirnics and Woodward)

9/01/15 – 8/30/17

Role on Project: Principal Investigator

Granting Agency: NIMH

Total Cost: \$ 427,190

Title: Biomarkers of oxidative stress and the brain in mood disorders and psychosis

Description: Assessment of oxidative stress makers and correlation with brain imaging and behavioral phenotype of patients with MDD, BPD and SCZ.

Score: 27 - Percentile: 13

1R21HD088134 (PI: Mirnics)

04/01/16-03/31/18

Role on Project: Principal Investigator

Granting Agency: NICHD (NIEHS)

Total Cost: \$ 427,190

Title: Interaction of Gestational Diabetes and Maternal Immune Activation

Description: This study investigates the combined consequences of diabetes and infection during pregnancy. We propose that these two insults, when combined during pregnancy, have long-lasting consequences on the health of the mother and offspring. To test this hypothesis, we will assess the changes in the blood and placenta of pregnant mice exposed to elevated blood glucose and infection, and the consequences on the offspring.

Review Date: 10/27/2015 by PN

1R01MH110069 (PI: Mirnics)

04/01/16-03/31/21

Role on Project: Principal Investigator

Granting Agency: NIMH (NICHD)

Total Cost: \$ 2,859,068

Title: Preclinical validation of compounds for SLOS treatment

Description: A developmental disability known as Smith-Lemli-Opitz Syndrome (SLOS) is a result of mutations in a cholesterol biosynthesis gene. In a cell model, we recently evaluated 727 compounds that have been already approved for human use, and we found that 40 of these compounds have a potential to normalize cholesterol biosynthesis. The goal of this proposal is to identify and validate which of these compounds could be potential SLOS therapeutic agents.

Review Date: 10/29/2015 by DDNS

2R01MH067234-11 (PI: Mirnics)

04/01/16-03/31/21

Role on Project: Principal Investigator, competitive renewal 3rd cycle

Granting Agency: NIMH (NIDA and NIEHS)

Total Cost: \$ 2,749,265

Title: Effects of environmental challenges on genetically modified interneuronal subpopulations

Description: We study how different inhibitory brain cell types control various behaviors, focusing on those that show alteration in schizophrenia. Furthermore, we are trying to understand how this process is influenced by two distinct environmental insults: cannabinoid exposure in adolescence and prenatal maternal immune activation during fetal life. We are taking advantage of a novel transgenic mouse technology developed in the previous grant cycle.

Review Date: 10/01/2015 by PMDA

2R01MHxxxxxxx (PI: Mirnics)

07/01/16-06/30/21

Role on Project: Principal Investigator

Granting Agency: NIMH (NIEHS)

Total Cost: \$ 3,010,211

Title: Vulnerability of DHCR7+/- mutation carriers to aripiprazole and trazodone treatment

Description: This project will test the vulnerability of the DHCR7+/- gene mutation carriers to aripiprazole (an atypical antipsychotic) and trazodone (an antidepressant) exposure. We will test biochemical, gene expression and behavioral consequences of the interaction between the DHCR7+/- gene mutation and treatment, assessing the long-lasting effects on the progeny.

Review Date: January 2015 by NPAS

Several smaller internal grants are also pending.

X. PUBLICATIONS AND PRESENTATIONS

SCIENTIFIC METRICS (Google Scholar/Research Gate) (September 8, 2015):

Lifetime indices:	5-year indices:
<i>Citations: 8,884</i>	<i>citations: 4,727</i>
<i>H-index: 40</i>	<i>H5-index: 31</i>
<i>i10-index: 86</i>	<i>i10-index: 69</i>
<i>Cumulative impact factor: >963</i>	<i>Cumulative impact factor: >350</i>

A. ORIGINAL DATA MANUSCRIPTS – REFEREED ARTICLES (79)

1. Mitchell AC, Dettmer AM, Lopresti BJ, Leak RK, Rockcastle N, Mathis CA, Zigmond MJ, **Mirnic K**, Zhang Z, Cameron JL. (2015) Physical activity protects the striatum against MPTP damage in non-human primates, *J. Neurosci*, in submission (corresponding author for expression profiling).
2. deCampo D, Cameron JC, Miano J, Lewis DA, **Mirnic K**, Fudge J. (2015) Early social stress alters expression of genes involved in neuronal maturation in primate amygdala. *eNeuro*, in submission.
3. Ingason A, Giegling I, Hartmann AM, Genius J, Konte B, Friedl M, Schizophrenia Working Group of the Psychiatric Genomics Consortium (PGC)*, Ripke P, Sullivan PF, StClair D, Collier DA, O'Donovan MC, **Mirnic K**, Rujescu D (2015) Expression analysis in a rat psychosis model identifies novel candidate genes validated in a large case-control sample of schizophrenia. *Translational Psychiatry*, (Impact factor **4.5**), in press.
4. Martin MV, **Mirnic K**, Nisenbaum L, Vawter MP (2015) Olanzapine reverses brain gene expression changes induced by phencyclidine treatment in non-human primates. *Molecular Neuropsychiatry*, 1(2): 82-94, DOI: 10.1159/000430786.
5. Brown JA, Ramikie TS, Schmidt MJ, Báldi R, Garbett K, Everheart MG, Warren LE, Gellért L, Horváth S, Patel S, **Mirnic K**. (2015) Inhibition of parvalbumin-expressing interneurons results in complex behavioral changes. *Mol Psychiatry* (Impact factor **15.1**) 2015 Jan 27. doi: 10.1038/mp.2014.192. [Epub ahead of print], PMID: 25623945.
6. Hackett TA, Guo Y, Clause A, Hackett NJ, Garbett K, Zang P, Polley, DB, **Mirnic, K**. (2015) Transcriptional maturation of the mouse auditory forebrain, *BMC Genomics*, 16(1): 606 (Impact Factor: **4.0**) PMID: 26271746.
7. Garbett KA, Vereczkei A, Kálmán S, Wang L, Korade Z, Shelton RC, **Mirnic K**. (2015) Fibroblasts from patients with major depressive disorder show distinct transcriptional response to metabolic stressors, *Translational Psychiatry*, (impact factor **4.5**) 2015 Mar 10;5:e523, PMID: 25756806.
8. Garbett KA, Vereczkei A, Kalman S, Brown J, Taylor, WD, Faludi G, Shelton RC, Korade Z, **Mirnic K**. (2015). Coordinated mRNA/miRNA changes in fibroblasts of patients with major depression. *Biol Psychiatry*, (impact factor: **9.3**) 2015 Feb 1;77(3):256-65, PMID: 25016317.
9. Brown JA, Sherrod SD, Goodwin CR, Brewer B, Yang L, Garbett KA, Li D, McLean JA, Wikswa JP, **Mirnic K**. (2014). Metabolic consequences of interleukin-6 challenge in developing neurons and astroglia. *J Neuroinflammation* (Impact Factor: **4.4**). 11/2014; 11(1):183. DOI: 10.1186/s12974-014-0183-6. PMID: 25374324.

10. Brown JA, Horváth S, Garbett KA, Schmidt MJ, Everheart M, Gellért L, Ebert P, **Mirnics K** (2014) The role of cannabinoid 1 receptor expressing interneurons in behavior. *Neurobiol Dis* (impact factor **4.9**), 2014 Mar; 63:210-21. doi: 10.1016/j.nbd.2013.11.001. Epub 2013 Nov 13. PMID: 24239560.
11. Schmidt MJ, Horvath S, Ebert P, Norris JL, Seeley EH, Brown J, Gellert L, Everheart M, Garbett KA, Grice TW, Caprioli RM, **Mirnics K**. (2014) Modulation of behavioral networks by selective interneuronal activation. *Mol Psychiatry*. (Impact factor **15.1**), 2014 May;19(5):580-7. doi: 10.1038/mp.2013.167. Epub 2013 Dec 10. PMID: 24322205.
12. Schmidt MJ, Horvath S, Ebert P, Norris JL, Seeley EH, Brown J, Gellert L, Everheart M, Garbett KA, Grice TW, Caprioli RM, Mirnics K. (2014). Hippocampal immunostaining of CCK-GAD1 transgenic mice. *Molecular Psychiatry* (Impact Factor: **15.1**). 05/2014; 19(5):529. DOI: 10.1038/mp.2014.37.
13. Kálmán S, Garbett KA, Vereczkei A, Shelton RC, Korade Z, **Mirnics K**. (2014) Metabolic stress-induced microRNA and mRNA expression profiles of human fibroblasts. *Exp Cell Res*. (Impact factor **3.7**) 2014 Jan 15;320(2):343-53. doi: 10.1016/j.yexcr.2013.10.019. Epub 2013 Nov 16. PMID: 24246224.
14. Korade Z, Xu L, Harrison FE, Ahsen R, Hart SE, Folkes OM, **Mirnics K**, Porter NA. (2014) Antioxidant supplementation ameliorates molecular deficits in Smith-Lemli-Opitz syndrome. *Biol Psychiatry* (impact factor: **8.93**). 2014 Feb 1;75(3):215-22. doi: 10.1016/j.biopsych.2013.06.013., PMID: 23896203.
15. Schwede M, Garbett K, **Mirnics K**, Morrow EM (2014). Genes for endosomal NHE6 and NHE9 are misregulated in autism brains. *Mol Psychiatry* (impact factor: **15.1**). 2014 Mar;19(3):277-9. doi: 10.1038/mp.2013.28. PMID: 23508127.
16. Bharadwaj R, Jiang Y, Mao W, Jakovcevski M, Dincer A, Krueger W, Garbett K, Whittle C, Tushir JS, Liu J, Sequeira A, Vawter MP, Gardner PD, Casaccia P, Rasmussen T, Bunney WE Jr, **Mirnics K**, Futai K, Akbarian S. (2013) Conserved Chromosome 2q31 Conformations Are Associated with Transcriptional Regulation of GAD1 GABA Synthesis Enzyme and Altered in Prefrontal Cortex of Subjects with Schizophrenia. *J Neurosci* (Impact factor: **7.1**). 07/2013; 33(29):11839-11851. DOI:10.1523/JNEUROSCI.1252-13.2013. PMID: 23864674.
17. Xu L, Korade Z, Rosado DA Jr, **Mirnics K**, Porter NA. (2013) Metabolism of oxysterols derived from nonenzymatic oxidation of 7-dehydrocholesterol in cells. *J Lipid Res*. (impact factor: **4.2**). 2013 Apr;54(4):1135-43. doi: 10.1194/jlr.M035733. Epub 2013 Feb 4. PMID: 23381570
18. Leak RK, Garbett KA, Dettmer AM, Zhang Z, **Mirnics K**, Cameron JL (2012). Physical activity is linked to ceruloplasmin in the striatum of intact but not MPTP-treated primates. *Cell Tissue Res*. (Journal impact factor: **3.7**) 2012 Dec;350(3):401-7. doi: 10.1007/s00441-012-1488-3., PMID: 22940761.
19. Korade Z, Xu L, **Mirnics K**, Porter N (2012) Lipid biomarkers of oxidative stress in a genetic mouse model of Smith-Lemli-Opitz syndrome. *Journal of Inherited Metabolic Disease*, (Journal impact factor: **3.7**), PMID: 22718275.
20. Zhang X, Garbett K, Wilburn B, Gilmore R, **Mirnics K**, Sisodia SS. (2012) A role for presenilins in autophagy revisited: normal acidification of lysosomes in cells lacking PSEN1 and PSEN2. *J Neurosci*, 2012 Jun 20;32(25):8633-48. doi: 10.1523/JNEUROSCI.0556-12.2012. (Journal impact factor: **7.4**), PMID: 22753382.

21. Garbett KA, Hsiao E, Kalman S, Patterson PH, **Mirnic K**. (2012) Effects of maternal immune activation on gene expression patterns in the fetal brain, *Translational Psychiatry* (Impact factor **4.5**), 2012 Apr 3;2:e98. doi: 10.1038/tp.2012.24., PMID: 22832908.
22. Xu L, **Mirnic K**, Bowman AB, Liu W, Da J, Porter NA, Korade Z (2012) DHCEO accumulation is a critical mediator of pathophysiology in a Smith-Lemli-Opitz syndrome model. *Neurobiology of Disease*, 45(3):923-9, (Impact factor: **4.8**), PMID: 22182693.
23. Mitchell AC, Leak R, Garbett, K, Zigmond MJ, Cameron JL, **Mirnic K**. (2012) A Distinct BMI Gene Expression Signature in the Motor Cortex and Caudate Nucleus. *Genomics*, 99(3):144-51, (Journal impact factor: **3.4**), PMID: 22227022.
24. Mitchell AC, Leak R, Garbett, K, Zigmond MJ, Cameron JL, **Mirnic K**. (2012) Physical Activity-Associated Gene Expression Signature in Nonhuman Primate Motor Cortex. *Obesity*, 20(3):692-8, 2011(Journal impact factor: **3.4**), PMID: 22016091.
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32. Korade Z, Kenchappa R, **Mirnic K**, Carter BD (2009). NRIF is a regulator of neuronal cholesterol biosynthesis. *J Mol Neurosci*, 38(2): 152-158 (Journal impact factor: **1.7**), PMID: 18677445.
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B. REVIEWS, BOOKS AND BOOK CHAPTERS (38)

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C. RECENT SCIENCE POLICY AND RELATED (26)

1. Mirnics K. on NEWS: [A Bird's Eye View of the Schizophrenia Transcriptome](#), 28 Aug 2012.
2. Mirnics K. on NEWS: [Altered Gene Expression Prioritizes CNVs in Autism](#), 16 Jul 2012.
3. Mirnics K. on PAPER: Malavasi EL. et al., 2012, [SRF Comment](#) on 21 May 2012.
4. Mirnics K. on PAPER: Eykelenboom JE. et al., 2012, [SRF Comment](#) on 21 May 2012.
5. Mirnics K. on PAPER: Zeng H. et al., 2012, [SRF Comment](#) 18 Apr 2012.
6. Mirnics K. on PAPER: Poduri A. et al., 2012, [SRF Comment](#) 18 Apr 2012.
7. Mirnics K. on PAPER: Kerin T. et al., 2012, [SRF Comment](#) 12 Apr 2012.
8. Mirnics K. on PAPER: Schwarz E. et al., 2012, [SRF Comment](#) 15 Mar 2012.
9. Mirnics K. on PAPER: Coughlin JM. et al., 2012, [SRF Comment](#) 5 Mar 2012.
10. Mirnics K. on NEWS: The Life and Times of the Human Brain Transcriptome, [SRF Comment](#) 31 Oct 2011
11. Mirnics K. on PAPER: Silberberg G. et al., 2012, [SRF Comment](#) 18 Oct 2011.
12. Mirnics K. on PAPER: Demontis D. et al., 2011, [SFR Comment](#) 26 Sep 2011.
13. Mirnics K. on PAPER: Van Haren NE. et al., 2011, [SRF Comment](#) 16 Sep 2011.
14. Mirnics K. on PAPER: Roussos P. et al., 2011, [SRF Comment](#) 13 Sep 2011.
15. Mirnics K. on PAPER: Andreasen NC. et al., 2011, [SRF Comment](#) 7 Sep 2011.
16. Mirnics K. on PAPER: Arakelyan A. et al., 2011, [SRF Comment](#) 6 Sep 2011.
17. **Mirnics K.** Comment on Lieberman JA, Stroup TS. The NIMH-CATIE Schizophrenia Study: What Did We Learn? *Am J Psychiatry* . 2011 Aug ; 168(8):770-5.
<http://schizophreniaforum.org/pap/annotation.asp?powID=151889#{116CF925-B8D8-4A27-99C2-5E5C116DCFFC}>
18. **Mirnics K.** Comment on Matevosyan NR. Schizophrenia and Stein-Leventhal syndrome: comorbidity features. *Arch Gynecol Obstet* . 2011 Jul 30.

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19. **Mirnic K.** Comment on Engmann O, Hortobágyi T, Pidsley R, Troakes C, Bernstein HG, Kreutz MR, Mill J, Nikolic M, Giese KP. Schizophrenia is associated with dysregulation of a Cdk5 activator that regulates synaptic protein expression and cognition. *Brain*. 2011 Aug;134(Pt 8):2408-21. Epub 2011 Jul 19. <http://schizophreniaforum.org/pap/annotation.asp?powID=151486>
20. **Mirnic K.** Comment on Leitman DI, Wolf DH, Laukka P, Ragland JD, Valdez JN, Turetsky BI, Gur RE, Gur RC. Not Pitch Perfect: Sensory Contributions to Affective Communication Impairment in Schizophrenia. *Biol Psychiatry* . 2011 Jul 13. <http://schizophreniaforum.org/pap/annotation.asp?powID=151516#{3F5790EB-05FE-4A55-8589-E9FA8F6F244D}>
21. **Mirnic K.** From Yugoslavia to endowed chair: six pillars of academic success. *Research Blog@Vanderbilt*, <http://blogs.vanderbilt.edu/research/2011/05/karoly-mirnic-six-pillars/>, 2011.
22. Krystal JH, ... **Mirnic K.** ..., McCandless R (>30 authors): It is time to take a stand for medical research and against terrorism targeting medical scientists. *Biol Psychiatry* 2008; 63(8): 725-7. (Journal impact factor: **8.5**).
23. **Mirnic K.** Comment on Li M, Wang IX, Li Y, Bruzel A, Richards AL, Toung JM, Cheung VG. Widespread RNA and DNA Sequence Differences in the Human Transcriptome. *Science* . 2011 May 19. *Schizophrenia Research Forum* 2011 May 27: <http://www.schizophreniaforum.org/pap/annotation.asp?powID=149552#{149954D149554CCD-B149527A-149541CC-149593B149555-149555D149516F149550B172476}>.
24. **Mirnic K.** Comment on Buonocore F, Hill MJ, Campbell CD, Oladimeji PB, Jeffries AR, Troakes C, Hortobágyi T, Williams BP, Cooper JD, Bray NJ. Effects of cis-regulatory variation differ across regions of the adult human brain. *Hum Mol Genet* . 2010 Nov 15 ; 19(22):4490-6. *Schizophrenia Research Forum* 2010 Nov 5: <http://www.schizophreniaforum.org/pap/annotation.asp?powID=142692#{142698BDF149263-140467-142465E-142699DC142698-142668B142692CF142648EB142694}> .
25. **Mirnic K.** NEWS: Gene Expression Study May Open Window on Brain Development. *Schizophrenia Research Forum* 2009 Jun 15: <http://www.schizophreniaforum.org/new/detail.asp?id=1529#{1544CE8335-8107-1486B-8049-1092B1523A1460F1508}> .
26. **Mirnic K.** Summary of Workshop Regarding Future Use of Stanley Brain Collection Tissue. *Schizophrenia Research Forum* 2007 Dec 30: <http://www.schizophreniaforum.org/pap/readmore.asp?commentID={15678E15618-15677FFC-15674CBE-BDA15675-AB15677EBB13053DA}> .
27. **Mirnic K.** NEWS: Genetics, Expression Profiling Support GABA Deficits in Schizophrenia. *Schizophrenia Research Forum* 2007 Jun 26: <http://www.schizophreniaforum.org/new/detail.asp?id=1358#{C6464577-6464573A6464576A-6464542A6464579-B6464571C6464573-6464577C6464577F6467807DF6464577F}> .
28. **Mirnic K.** Comment on Glatt SJ, Everall IP, Kremen WS, Corbeil J, Sásik R, Khanlou N, Han M, Liew CC, Tsuang MT. Comparative gene expression analysis of blood and brain provides concurrent validation of SELENBP1 up-regulation in schizophrenia. *Proc Natl Acad Sci U S A* . 2005 Oct 25 ;

102(43):15533-8. *Schizophrenia Research Forum* 2005 Oct 21:
<http://www.schizophreniaforum.org/pap/annotation.asp?powID=88073#{D73604EA-88334C-88074FEC-88094BC-E29003B88031CE88074}> .

D. PATENTS (1)

1. Levitt P, Chowdari VK, Nimgaonkar VL and **Mirnic K**. Methods and systems for facilitating the diagnosis and treatment of schizophrenia. US Patent Application: 20030113721, June 19, 2003.

D. INVITED LECTURESHIPS SINCE 2000 (selected from >100)

“Building a better brain microarray – technical considerations”

Clontech, Inc., Palo Alto, CA, USA, 2000.

“Characterization of schizophrenia with cDNA microarrays”

Merck Headquarters, Whitehall Station, PA, USA, 2000.

“Gene expression changes in schizophrenia – cDNA microarray view”

Department of Neuroscience, USUHS, Bethesda, MD, USA, 2000.

“Gene expression changes in schizophrenia- analyzing microarray data”

Bioinformatics, Pitt Workshop, Department of Bioinformatics, University of Pittsburgh, Pittsburgh, PA, USA, 2000.

“Microarrays in human brain disorders”

Department of Human Genetics, University of Pittsburgh, Pittsburgh, PA, USA, 2000.

“Microarrays – technology and choices”

Departments of Pharmacology and Clinical Pharmacology, School of Pharmacy, Microarray Workshop, University of Pittsburgh, Pittsburgh, PA, USA, 2000.

“Molecular characterization of schizophrenia with microarrays – impairment of synaptic function”

Cleveland Clinic, Department of Neuroscience, January 8th, Cleveland, USA, 2001.

“Making and using microarrays”

Microarray Workshop, Magee Womens Hospital, March 8th, Pittsburgh, PA, USA, 2001.

“Delineating Novel Signature Patterns of Altered Gene Expression in Schizophrenia”

Building a Better Brain Workshop, Vanderbilt University, May 23-25, Nashville, TN, USA, 2001.

“Analysis of Complex Brain Disorders: Schizophrenia as a Disease of Synapse”

Keynote Speaker, Fifth Dutch Endo-Neuro Meeting, June 4-5, Doorwerth, The Netherlands, 2001.

“Analysis of Complex Brain Disorders with Gene Expression Microarrays”

New Technologies to Catalyze Breakthroughs in Understanding Addiction, ONDCP Workshop, June 16th, San Diego, CA, USA, 2001.

“Gene expression microarrays in brain research: it is all about design!”

Short Course on DNA Microarrays, Society for Neuroscience Annual Meeting, November 10th, San Diego, CA, USA, 2001.

“Schizophrenia as a disease of the synapse”

7th Annual Meeting of the Stanley Medical Research Institute, November 15-16, Bethesda, MD, USA, 2001.

“Analysis of Mental Disorders Using DNA Microarrays”

IPSEN Workshop on Human Genomics; December 3, Paris, France, 2001.

“Analysis of Postmortem Brain Tissue Using DNA Microarrays”
NIH Brain Bank Workshop, March 11-12, Bethesda, MD, USA, 2002.

“DNA Microarrays and Human Brain Disorders”
Neuroscience Symposium on Microarrays in Neuroscience Research, Virginia Commonwealth University (MCV), March 25, Richmond, VA, USA, 2002.

“Transcriptome Changes in Schizophrenia”
Genomics and Psychiatry, Society for Biological Psychiatry, April 4-6, Paris, France, 2002.

“Analyzing the Transcriptome in Brain Disorders”
University of California at Davis, Department of Biotechnology, May 20th, Davis, CA, USA, 2002.

“Microarrays in Brain Research: It’s all about design!”
Short Course on DNA Microarrays, Society for Neuroscience Annual Meeting, November 1st, Orlando, FL, USA, 2002.

“Microarray Experiments: Design and Pitfalls”
Winter Brain Research Convention, January 25-28, Salt Lake City, UT, USA, 2003.

“Schizophrenia as a Disease of Synapse”
Juan March Workshop: *Schizophrenia as a Disease of the Synapse*; February 8-13, Madrid, Spain, 2003.

“DNA Microarrays in Brain Research”
International Congress on Schizophrenia Research, March 29 – April 1, Colorado Springs, CO, USA, 2003.

1st: *“Schizophrenia as a Disease of the Synapse”*
2nd: *“DNA Microarrays in Psychiatry”*
16th ECNP Congress, September 20-24, Prague, Czech Republic, 2003.

“Schizophrenia: From Genomics to Genetics”
XI World Conference of Psychiatric Genetics, October 4-8, Quebec City, Canada, 2003.

“Transcriptome Changes in Schizophrenia”
Intramural Research Program, NIMH, NIH, Bethesda, 2004

“Transcriptome alterations in the prefrontal cortex of primates: effects of olanzapine and haloperidol”
Eli Lilly and Company Research Headquarters, Indianapolis, 2004.

“Presenilin-1 Dependent Transcriptome Changes”
International Society for Neurochemistry, May 13-17, Avignon, France, 2004.

“Transcriptome changes in schizophrenia”
Conference on Schizophrenia, Cold Spring Harbor Laboratories, NY, June 14, 2004.

“Transcriptome profiling of schizophrenia”
MATRICS Conference #6: New Approaches to Assessing and Improving Cognition in Schizophrenia, Potomac, MD, September 9-10, 2004.

“Molecular fingerprints of schizophrenia”
Functional Genomics of Signal Transduction, Mont Sainte-Odile, France, September 17-20, 2004.

“Presenilin-dependent transcriptome changes”

Bioinformatic Analysis of Brain Function, September 29-October 3, Hawaii, HI, 2004.

“DNA microarray analysis of human brain disorders: today and tomorrow”

ACNP Meeting Teaching Day, December 12, 2004 Puerto Rico, PR.

“Transcriptome profiling of schizophrenia”

University of California at Davis, Davis, CA, February 2, 2005.

“Transcriptome profiling of brain tissue: implications for schizophrenia research”

APA annual Meeting, May 21-26, 2005 Atlanta, GA, USA.

“The impact of genomics on schizophrenia: first schizophrenia genes”

8th World Congress of Biological Psychiatry in Vienna, 28 June - 3 July 2005.

“Transcriptome profiling of schizophrenia”

Distinguished International Scholar Seminar Series
Uppsala University, Sweden, September 29, 2005.

“Gene expression in schizophrenia”

2005 Cold Spring Harbor Workshop on Schizophrenia
Cold Spring Harbor, New York, July 9-12, 2005.

“DNA microarray analysis of human brain disorders: today and tomorrow”.

18th ECNP Congress, Amsterdam, October 22 - 26, 2005 (Session chair)

“Gene expression in schizophrenia”

Vanderbilt University, Nashville, TN, Nov 2, 2005

“How to find biomarkers for complex brain disorders?”

Stanley Research Conference on Biomarkers of Psychiatric Disorders, Annapolis, November 10, 2006

Plenary lecture: *“The role of transcriptome profiling in deciphering neurodegenerative disorders”*

17th International Symposium on ALS/MND, Yokohama, Japan, November 30-December 2, 2006

“Gene expression profile of patients with schizophrenia who committed suicide”

10th Congress of Hungarian Society for NeuroPsychoPharmacology with International Participation
Tihany, Hungary, October 4-6, 2007

“Putative drug targets for schizophrenia: Too few or too many?”

AstraZeneca Pharmaceuticals, Wilmington, DE, October 12, 2007

“Future studies on postmortem brain tissue – where should be go?”

SMRI Neuropathology Symposium, Washington, DC, November 30, 2007.

“Making most of your microarray”

18th International Symposium on ALS/MND, Toronto, Canada, December 1-3, 2007

“Generation of subpopulation-specific cortical gad1 knock-down mice”

Hot Topics, ACNP 46th Annual Meeting Boca Raton Resort & Club, FL, December 9-13, 2007

“Exercise your amyloid! (The neuroprotective effect of physical exercise)”

The Cleveland Clinic, Cleveland, OH, March 10, 2008.

“Transcriptome profiling of schizophrenia: from postmortem work to model animals”

MIT McGovern Institute Symposium: "The Biological Basis Of Psychiatric Disease"

Boston, MA, April 28–29, 2008

“Schizophrenia: from genomics to genetics and function”

Dept of Pathology, Vanderbilt University, Nashville, TN, March 3, 2008

“Transcriptome alterations in the prefrontal cortex of subjects with schizophrenia who committed suicide”

SOBP Symposium “Use of Epigenetic, Genetic, and Molecular Approaches in Suicide Research” Washington,

DC, May 1-3, 2008

“Convergent findings from genome-wide association studies and functional genomics”

Symposium “Genomic studies in schizophrenia, towards understanding the pathophysiology”

50th Anniversary CINP Congress, Munich, Germany, July 13–17, 2008.

“Putative drug targets for schizophrenia: Too few or too many?”

(A less than objective view of a skeptic)

Eli Lilly and Company Headquarters

Indianapolis, July 23, 2008

“Schizophrenia: from genomics to functional imaging”

“Neuroimaging of Developmental Disorders” IBRO Symposium

Dubrovnik, Croatia, 12-16 September 2008

“Gene expression changes in autism”

OSHU/Oregon National Primate Research Center

Portland, April 10, 2009.

“Transcriptome profiling of schizophrenia: from postmortem work to model animals”

Maryland Psychiatric Research Center

Baltimore, April 15, 2009

“Schizophrenia: from genomics to functional imaging”

“Neurogenomics and Neuroimaging of Developmental Disorders” IBRO Symposium

Dubrovnik, Croatia, 1-3 May, 2009.

“Transgenic mouse model for GAD67 down-regulation in cortical interneurons”

12th Congress of Hungarian Society for Neuropsychopharmacology with International Participation

Tihany, Hungary, October 1-3, 2009.

“Schizophrenia: from postmortem findings to novel animal models”

Nathan Kline Institute, Center for Dementia Research, NYU, Orangeburg, NY, February 4, 2010.

“BAC-driven miRNA-mediated in vivo silencing of gene expression in the brain”

43rd Annual Winter Conference on Brain Research, Breckenridge, CO, February 26, 2010

“Novel animal models for studying schizophrenia: BAC-driven miRNA-mediated in vivo silencing of gene expression.”

2nd Schizophrenia International Research Conference, Florence, Italy, April 11, 2010

“The future of human postmortem brain research”

2nd Schizophrenia International Research Conference, Florence, Italy, April 13, 2010

“GABA-ergic dysfunction in schizophrenia: from postmortem studies to animal models”

2nd Schizophrenia International Research Conference, Florence, Italy, April 14, 2010

“Gene expression changes in autism and schizophrenia – signature of environmental exposure”

California Institute of Technology, Pasadena, May 27, 2010

“Synaptic changes in the prefrontal cortex of subjects with schizophrenia”

“Synaptic biology in schizophrenia” Workshop, NIMH, Bethesda, June 2-3, 2010

“Schizophrenia: from postmortem findings to model animals”

Merck and Co, West Point, July 23rd, 2010.

“Schizophrenia: from postmortem findings to model animals”

University of Alabama, Birmingham, September 24, 2010.

“Schizophrenia: from a gene to a disturbed brain function”

13th Congress of Hungarian Society for Neuropsychopharmacology with International Participation
Tihany, Hungary, October 4-6, 2010.

“Gene expression, aging and schizophrenia”

NIMH Symposium: Neurobiological Trajectories of Chronic Mental Illness with Advancing Age Meeting
Rockville, MD, November 1-2, 2010.

“Gene Expression Changes in Schizophrenia: From Postmortem Findings to Model Animals”

The 11th Annual Vanderbilt Genetics Symposium *“Beyond Disease Dichotomy”*
Vanderbilt University, Nashville, TN, October 13, 2010

“GABA-ergic Dysfunction in Schizophrenia: from Postmortem Studies to Animal Models”

Department of Basic Medical Sciences, U of Arizona
Phoenix, AZ, February 17, 2011.

“Neuroimmune Changes in Schizophrenia and Autism”

14th Congress of Hungarian Society for Neuropsychopharmacology with International Participation
Tihany, Hungary, October 6-8, 2011.

“Molecular Psychiatry: dead-end or basis for new therapies?”

14th Congress of Hungarian Society for Neuropsychopharmacology with International Participation
Tihany, Hungary, October 6-8, 2011.

“GABA-ergic Dysfunction in Schizophrenia: from Postmortem Studies to Animal Models”

VA Long Beach Healthcare System
Southern California Institute for Research and Education
Long Beach, CA, December 2, 2011

“GABA-ergic Dysfunction in Schizophrenia: from Postmortem Studies to Animal Models”

Duquesne University, Department of Biology

Pittsburgh, PA, March 1, 2012

“GABA-ergic Dysfunction in Schizophrenia: from Postmortem Studies to Animal Models”
Plenary “State-of-the-art lecture” at 75th Anniversary of Albert Szent-Györgyi's Nobel Prize Award Celebration, March 22-24, 2012, Szeged, HUNGARY.

“GABA-ergic Dysfunction in Schizophrenia: from Postmortem Studies to Animal Models”
Lieber Institute, Baltimore, MD, April 24, 2012.

“Future of Brain Banking: Regulating Access and Sharing”
NIH Biobanking WorkShop, Bethesda, MD, May 15, 2012

“GABA-ergic Dysfunction in Schizophrenia: from Postmortem Studies to Animal Models”
Simmelweis Symposium, Budapest, Hungary, November 9-10, 2012 Section Co-Chair

“Neuroimmune Changes in the Brain of Subjects with Schizophrenia and Autism”
51st ACNP Annual Meeting, Integrative Panel Session, Hollywood, FL, December 4th, 2012

“GABA-ergic Dysfunction in Schizophrenia: from Postmortem Studies to Animal Models”
Dept of Neuroscience, Case Western U, Cleveland, OH, April 17, 2013

“Neuroimmune Changes in Schizophrenia”
Dept of Psychiatry, Case Western U, Cleveland, OH, April 18, 2013

“Neuroimmune Changes in Schizophrenia and Autism”
McLean Hospital, Harvard University, Boston, MA, June 18, 2013

“Neuroimmune Changes in Schizophrenia”
1st Annual Molecular Psychiatry Association Meeting, San Francisco, CA, Nov 8, 2013

“Gene expression changes in the adolescent brain”
The Adolescent Brain Workshop, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, Dec 4, 2013.

“Multi-scale Understanding of Schizophrenia”
Annual ORNL Biomedical Science and Engineering Conference “The Multi-Scale Brain: Spanning Molecular, Cellular, Systems, Cognitive, Behavioral, and Clinical Neuroscience.” May 6-8, 2014 — Oak Ridge, TN.

“Neuroimmune Changes in Schizophrenia and Autism”
Department of Psychiatry, U of Pittsburgh, May 15, 2014

“Neuroimmune Changes in Schizophrenia and Autism”
Department of Psychiatry, University of Illinois Chicago, Nov 19, 2014

“Neuroimmune Changes in Schizophrenia and Autism”
Department of Psychiatry, UT Southwestern, Dallas, TX, Feb 4, 2015

“New Approaches to Finding Treatments: Combining Phenotypic Information with High-Throughput Drug Screening and Disease Models”
2015 ORNL Biomedical Science and Engineering Conference “Collaborative Biomedical Innovations: Data Sciences for Actionable Health Insights” Aug 25-27, 2015 — Oak Ridge, TN.

“Immune System Activation and Predisposition to Brain Disease”
Maryland Psychiatric Research Center (MPRC), November 4, 2015

XI. RECENT COMMUNITY ACTIVITIES

- 1998-2003 Gross anatomy instructor, PA and PT Program,
Seton Hill College, Greensburg, PA
- 2001-2003 Counterdrug Technology Assessment Center (CTAC) task force member
Office of National Drug Control Policy (ODNCP)
Office of the President of the USA
- 2005-2006 South Hills Judo – Treasurer and Board Member
Pittsburgh, PA
- 2005-2006 South Hills Judo – Judo coach of junior team
Pittsburgh, PA
- 2007 - Harding Academy – Parent Ancillary
Nashville, TN
- 2007 - Hobbs Society member
Nashville, TN
- 2007 - Camby Robinson Society member
Nashville, TN
- 2008 - 2014 Nashville Chess Center – Board of Directors
Nashville, TN
- 2008 - Luton Society member
Nashville, TN
- 2010 - Tennessee Chess Association – Board of Directors
Crossville, TN
- 2103 - Oak Leaf Society, Vanderbilt University
Nashville, TN
- 2013 - Bridges Club (advancing diversity)
Ensworth High School, Nashville, TN