CURRICULUM VITAE

NAME: Kevin G. Becker MAS, Ph.D.

DATE & BIRTH: July 14, 1955, Frederick, MD

HOME ADDRESS: 3511 Overbrook Rd., Baltimore, MD 21208

EDUCATION:

1979-B.S.	Emory University, Biology
1982-M.A.S	Johns Hopkins University, Business Administration
1989- Ph.D.	Johns Hopkins University School of Medicine, Molecular Biology and Genetics

PROFESSIONAL HISTORY:

1979-1982	Tissue Typing Technologist, Laboratory of Immunogenetics Johns Hopkins University School of Medicine, Baltimore, MD
1982-1989	Graduate Student, Department of Molecular Biology and Genetics-Sub department of Immunology, Immunogenetics Laboratories Johns Hopkins University School of Medicine, Baltimore, MD
1989-1992	IRTA Fellow, Laboratory of Developmental and Molecular Immunity National Inst. of Child Health and Human Devel., NIH, Bethesda, MD
1992-1993	Staff Fellow, Laboratory of Molecular Growth Regulation National Inst. of Child Health and Human Devel., NIH, Bethesda, MD
1993-1996	Senior Staff Fellow, Neuroimmunology Branch National Inst. of Neurological Diseases and Stroke, NIH, Bethesda, MD
1996-1998	Special Expert, Laboratory of Cancer Genetics National Center for Human Genome Research, NIH, Bethesda, MD
1998-2004	Unit Head, Gene Expression and Genomics Unit, RRB National Institute on Aging, NIH, Baltimore, MD
2005-Present	Unit Head, Gene Expression and Genomics Unit, RRB Deputy Branch Chief, Research Resources Branch National Institute on Aging, NIH, Baltimore, MD

SOCIETY MEMBERSHIPS:

The American Association for the Advancement of Science
HUGO: The Human Genome Organization
The American Society of Human Genetics

AWARDS AND FELLOWSHIPS:

1983-1987 Pre-Doctoral Intramural Research Training Award.

1989-1993 Post-Doctoral Intramural Research Training Award.
1998 NHGRI Director's award for Research Excellence
1999 USHHS Special Achievement Award
2000 NIA Employee Recognition Award
2001 NIA Staff Recognition Award
2002 NIA Staff Recognition Award
2003 NIA Staff Recognition Award

GRANT SUPPORT:

Functional Genomic Expression Using Focused Neuropsychiatric Microarrays
Theodore and Vada Stanley Research Foundation
PI Marquis P. Vawter Ph.D. Plasticity and Development Section, NIDA, NIH
Co-PI Kevin G. Becker Ph.D DNA Array Unit, NIA, NIH
$49,000 for years 2000-2001

COMMITTEES AND PANELS:

1995-1996 The NIH Postdoctoral Fellows committee
1996-1997 The NINDS DNA sequencing facility committee
April 1998 University of California Campus Laboratory Collaborations (CLC) Program
May 11, 1998 NIH Surrogate Marker Planning Group
July 5, 1998 Special Emphasis Panel for RFA DK-98-010
Immunopathogenesis of Type I Diabetes
July 2001-present NIA Technology Transfer Committee

COURSE FACULTY:

Oct 3 1999 Short Course on cDNA Microarrays, Society for Neuroscience, Miami Beach, FL.
Nov 3 2000 Short Course on cDNA Microarrays, Society for Neuroscience, New Orleans LA.
Nov 10 2001 Short Course on cDNA Microarrays, Society for Neuroscience, San Diego, CA.
July 15-19 Advanced Topics in Molecular Neuroscience, Cold Spring, Harbor New York

INTEREST GROUPS:

1999-present Gene Expression and Genomics Interest Group, NIA; Founder and organizer
2001-2004 Stem Cell Interest Group, NIH, Co-founder and organizer

JOURAL REVIEW:

1999-2002 Editorial Board; *Brain Research: Gene Expression Patterns*
Ad-Hoc Reviewer: *Nucleic Acids Research, Genomics, Diabetes, Biotechniques, Blood, Lancet, J. Neuros Meth., J. Neurosci, Nature Genet., among others.*

CURRENT LABORATORY RESEARCH:

Focus 1. Bioinformatics

We have a number of novel projects developing bioinformatic applications and bioinformatic resources. These include, a) building comprehensive comparative databases of genetic linkage and genetic association data on human autoimmune and inflammatory disorders, b) building a publicly available archival database of biological pathways and, c) development of statistical and computational tools for analysis of gene expression data, d) software development for data mining of gene expression data.

Focus 2. Technology Development

We are engaged in developing unique arrays for focused applications and novel experimental approaches to address different classes of multiplex molecular data. Projects include: a) array based nuclear run-on b) assembly of specialty custom cDNA arrays including model species microarrays such as *Drosphila, Aplysia*, and Coral.

Focus 3. Novel Applications of cDNA arrays

Our unit is involved in applications using cDNA arrays that are novel in the field of gene expression analysis and are complementary to our bioinformatic and technological development. Examples of ongoing projects include a) gene expression patterns altered by treatment of a prostate cell line by anti-sense DNA and oligonucleotides, b) studies in schizophrenia and drug abuse; among others, c) a comprehensive analysis of cross species hybridization patterns using human cDNA targets, among others.

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4. Becker, K.G., Swergold, G.D., Ozato, K. and R. Thayer. 1993 Modulation of human LINE-1 expression by the ubiquitous factor YY1. *Hum. Mol. Genet*. 2:1697-1702.

5. Lonergan, M., A. Dey, K. G. Becker, P. D. Drew, and K. Ozato. 1993. A regulatory element in the ∃2-microglobulin promoter identified by in vivo footprinting. *Mol. Cell. Biol.* 13: 6629-6639.

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Myriam Gorospe. Global analysis of stress-regulated mRNA turnover using cDNA arrays. *Proc Natl Acad Sci U S A* 2002 Aug 6;99(16):10611-6

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Submitted:

Erik F. Petersen, Diane Teichberg, Jennifer H. Elisseeff, Kevin G. Becker
and Kam W. Leong. Primogenial Tissue Inceptions Directly From Human Embryonic Stem Cells
Nature Biotechnology

Tao Xie, Liqiong Tong , Una D. McCann, Christopher Cheadle, Kevin G. Becker, William H. Wood III, Diane Teichberg, David M. Donovan, George A. Ricaurte Induction of multiple heat shock genes in mouse substantia nigra by methamphetamine is independent of dopaminergic neurotoxicity Submitted: *Mol Brain Res.*

G. Peter Sawiris, Kevin G. Becker, and Robert G. Rohwer Molecular Differentiation of Bovine Spongiform Encephalopathy by cDNA Microarray Analysis

Kevin G. Becker, Boris Freidlin, and Richard M. Simon. Comparative Genomics of Autism, Tourette syndrome and Autoimmune/ Inflammatory Disorders Submitted: *JADD*

Valeria de Mello-Coelho, Leticia B A Rangel, Michael Radmacher, Chris Cheadle,
Kevin G Becker, Patrice J Morin, Eric H Westin, James E Nagel and Dennis D Taub.
Global Molecular and Histological Alterations within the Aging Thymus: Evidence
for preadipocyte-like cells as a thymic microenvironmental component.

Chun-Ting Lee, Jia Chen, Joseph F. Sanchez, Teruo Hayashi, Shang-Yi Tsai,
Tsung-Ping Su, Kevin G. Becker, Herbert M. Geller and William J. Freed.
Cocaine inhibits proliferation of a central nervous system progenitor cell line by causing G1/S cell cycle arrest and cyclin A2 downregulation.

Irina N. Krasnova, Su-Min Li, William H. Wood III, Kevin G. Becker, Jonathan L. Katz and Jean Lud Cadet TRANSCRIPTIONAL RESPONCES TO REINFORCING EFFECTS OF COCAINE IN THE HIPPOCAMPUS OF RATS

Marcel P van der Brug, J Raphael Gibbs, David W Miller, Kevin Becker and Mark R Cookson
COMPARATIVE CHANGES IN PROTEIN ABUNDANCE RESULTING FROM PROTEASOME INHIBITION OR a-SYNUCLEIN EXPRESSION

Increases in Expression of 14-3-3 Eta and 14–3–3 Zeta Transcripts during Neuroprotection Induced by Δ9-Tetrahydrocannabinol in AF5 Cells. Jia Chen, Chun-Ting Lee, Stacie L Errico, Kevin G Becker and William J Freed

INVITED ORAL PRESENTATIONS

2006

The Genetics Association Database. The Human Variome Project Meeting Melbourne, Australia June 20- 23, 2006.

Illumina gene expression arrays: comparisons with other array platforms. Therapeutic Oligonucleotides Interest Group. Bethesda MD February 27, 2006.

The Genetic Association Database (GAD): the genetics of common disease. NIAID Bioinformatics Summit. Bethesda MD February 17, 2006.

2005

Challenges in the genetic and molecular dissection of human common complex disorders. Center for Disease Control and Prevention, Atlanta, GA December 12, 2005.

The Genetic Association Database. National Institute on Aging Genetics Workgroup, Bethesda MD April 11, 2005.

Beyond lists of genes: Integrating gene expression and proteomic data with other biological data types. Johns Hopkins University School of Medicine, Baltimore, MD Jan 26, 2005

2004

Comparative immunogenomics of autoimmune and inflammatory disorders. 1st International Conference on Basic and Clinical Immunogenomics. Budapest, Hungary October 3-6, 2004.

Integrating gene expression and proteomic data with other biological data types: Human disease associations, Literature mining, and Biological pathways. George Mason University, Manassas, VA Sep 14, 2004

Generation and Analysis of Microarray Based Gene Expression Data. Molecular Biology of Aging, Marine Biological Laboratory, Woods Hole, MA August 19, 2004.

Gene Expression Patterns in Neuropsychiatric Disorders. World Federation of Societies of Biological Psychiatry (WFSBP). Seoul, Korea. July 11,2004

Biological Analysis of Microarray data. Expression array workshop: from analysis to Aging. University of Washington. Seattle, WA June 24, 2004.

Comparative Genomics of Autism, Tourette Syndrome and Autoimmune/Inflammatory Disorders. Department of Neurology, The Johns Hopkins University School of Medicine,

Baltimore, MD May 21, 2004

Integrating gene expression and proteomic data with other biological data types: Human disease associations, Literature mining, and Biological pathways. National Cancer Institute Center for Bioinformatics, Rockville, MD Jan 26, 2004

2003 Integrating gene expression and proteomic data with other biological data types: Human disease associations, Literature mining, and Biological pathways. NIH Microarray Users Group, Bethesda, MD Nov 1, 2003

Bioinformatic tools for microarray data mining. The Johns Hopkins University School of Medicine, Baltimore, MD June 3, 2003

Comparative Genomics of Autism, Tourette Syndrome and Autoimmune/Inflammatory Disorders. National Institute on Drug Abuse, Baltimore MD April 8, 2003

The Promises and Pitfalls of Mining for gold, International Congress on Schizophrenia Research, Colorado Springs, CO March 31, 2003

Microarray Technologies in "Topics in Histocompatibility and Immunogenetics". Georgetown University March 20, 2003

Membrane arrays: Old and new ways to look at gene expression Microarray Technology in Aging, Ventura CA March 14, 2003

cDNA microarrays: a practical approach. USDA, Beltsville, Maryland February 11, 2003.

2002 cDNA Arrays: Old and New ways to look at Gene Expression. Sixth NIH symposium on Therapeutic Oligonucleotides: Antisense, RNAi, triple-Helix, Gene Repair, Enhancer Decoy, CpG & DNA-Chips. Bethesda, MD, December 17, 2002.

Comparative Genomics of human autoimmune/ inflammatory disorders. Autoimmune reactions: from manifestations and mechanisms to therapy. International symposium, Munich Germany June 13, 2002.

Analyzing Microarray Data, American Thoracic Society, Atlanta GA, May 18 2002

Applications of cDNA Arrays in Neuroscience, Seoul National University, Seoul, Korea April 24, 2002.

Putting the “Bio” into Bioinformatics. Korea University, Seoul, Korea April 23, 2002

Applications of cDNA Arrays in Neuroscience. Symposium: Genomic Neurosciences: Recent Advances and Future Directions, Catholic University, Seoul, Korea April 22, 2002.

Micro-Array Technology. American Society of Histocompatibility and Immunogenetics. Baltimore, MD 2002 April 12, 2002.

Putting the "Bio" into Bioinformatics. Functional Genomics of Critical Illness and Injury. Bethesda, MD April 6, 2002

Applications of cDNA Arrays in Neuroscience. Medical College of Virginia, Richmond VA. March 25, 2002

cDNA Array Analysis in Neurobiology and Disease. Adventis Inc., Baywater, NJ. January, 16, 2002.

2001 Analysis of Complex Biological Processes with cDNA Microarrays. Gerontological Society of America, Chicago, Il. November 17, 2001.

Assembly of a Neuropsychiatric cDNA array. Stanley Foundation: 7th Symposium on the Neurovirology and Neuroimmunology of Schizophrenia and Bipolar Disorder. Bethesda, MD , November 15-16, 2001

cDNA Arrays in Neuroscience: Nylon Membrane Based Arrays. Society for Neuroscience, San Diego, CA, November 10, 2001

Design, Application, and Analysis of Membrane Based cDNA Arrays. Nathan Shock Center Bioinformatics Workshop. Rochester, NY, October 19-21, 2001.

Analysis of Complex Biological Processes with cDNA Microarrays. Gordon Research Conference: Biology of Aging-from Genetics to Physiology, Queens College, Oxford University, Oxford, England, July 22-26, 2001.

Microarrays as a Tool in Neuroscience. Symposium; Microarrays: an Emerging Paradigm in Biotechnology and Drug Discovery, Eli Lilly, Inc. , Indianapolis, IN May 29, 2001.

cDNA arrays: a genomic approach to the study of complex disorders. The University of Pennsylvania School of Medicine, Philadelphia, PA May 15, 2001.

cDNA arrays: a genomic approach to the study of complex disorders. The UMDNJ-Robert Wood Johnson Medical School , New Brunswick NJ April 16, 2001.

Comparative Genomics of Autoimmune Diseases and Susceptibility/ Resistance to Infectious Diseases. The Association for Research in Vision and Opthamology, Ft. Lauderdale, FL April 29-May 4, 2001.

Comparative Genomics of Autoimmune Diseases and Susceptibility/ Resistance to Infectious Diseases. The American Academy of Allergy, Asthma, and Immunology, New Orleans, LA, March 16-21, 2001.

Comparative Genomics of Autism, Tourette's syndrome, Dyslexia and Immune Disorders. Microbiology, Immunology and Toxicology of Autism and Other Neurodevelopmental Disorders, Banbury Center, Cold Spring Harbor Laboratory February 11-14 , 2001

cDNA arrays: a genomic approach to the study of complex disorders. The University of Kentucky School of Medicine, Lexington Kentucky, January 24, 2001.

2000 Comparative Genomics of Autoimmune Diseases and Susceptibility/ Resistance to Infectious Diseases. The Dutch-German Immunological Society Annual Meeting, Dusseldorf Germany November 29, 2000.

cDNA Arrays in Neuroscience. The Society For Neuroscience Annual Meeting, New Orleans Louisiana, November 4, 2000.

cDNA microarrays: a practical approach. The University of Texas Health Sciences Center, San Antonio Texas, November 8, 2000.

cDNA microarrays: a practical approach. The University of Maryland School of Medicine, Baltimore Maryland September 18, 2000.

cDNA microarrays: a practical approach. Merck Corporation, West Point, PA August 8, 2000.
cDNA micrarrays in neuroscience research: a practical approach. The Society for Biological Psychiatry Chicago, Il May 13, 2000.

Comparative Genomics of Autoimmune Diseases and Susceptibility/ Resistance to Infectious Diseases. The European Federation for Immunogenetics. Montpellier, France April 3-7, 2000.

cDNA microarrays: a practical approach. Symposium: Microarray Gene Chip Technology, The University of Tennessee-Memphis March 8, 2000.

Analysis of neuroinflammation using cDNA microarrays. The University of British Columbia, Vancouver BC, Canada January 21, 2000

1999 cDNA micrarrays: a practical approach. Institute for Biological Sciences, The National Research Council, Ottowa, Canada December 3, 1999

Clustering of Candidate Loci in human autoimmune diseases. Parke-Davis/ Institut de Recherche Jouveinal Paris, France Nov 24, 1999.

cDNA Arrays in Neuroscience:Resources and Experimental Strategies. Short Course: Society for Neuroscience. Miami, FL October 23, 1999

cDNA arrays in the study of inflammatory processes in the brain. The 5th Altschul Symposium: The role of Inflammation in Mediating Damage Following Stroke and Neurotrauma Saskatoon, SK, Canada. August 19, 1999

cDNA arrays in the study of complex gene expression in the brain. Korean Society of Medical Biochemistry and Molecular Biology, Seoul, Korea April 21, 1999.

1998 cDNA microarrays in the study of human autoimmune diseases. Chiroscience Corporation, Bothell, WA. December 15, 1998.

Use of cDNA microarrays for the quantitative analysis of gene expression. National Institute on Aging, Baltimore MD, July 28, 1998.

1997 Clustering of non-MHC susceptibility candidate loci in human autoimmune diseases. The Center for Neurological Diseases, Harvard Institute of Med., Harvard Medical School, Boston MA, Oct 10, 1997.

1996 Use of cDNA microarrays for the quantitative analysis of gene expression. 6th Int. Workshop on the Identification of Transcribed Sequences. Edinburgh, Scotland. October 3-5, 1996.