

**CURRICULUM VITAE: Farah Domonique Lubin**

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Citizenship: USA

**MAJOR RESEARCH INTEREST**

Epigenetic mechanisms of neural plasticity  
Epigenetic mechanisms mediating the effects of epilepsy  
Neurobiology of learning and memory  
Epigenetic links between immune and brain functions to mediate behavior

**EDUCATION**

1996-2001 Ph.D., Cell/Molecular Biology  
Binghamton University (SUNY), Binghamton, NY  
Advisor: Dennis W. McGee, Ph.D.  
*Dissertation Title: The Co-Regulatory Effect of Extracellular Matrix Proteins and Integrins with Interleukin-1 $\beta$  on Cytokine Secretion by Epithelial Cells*

1992-1996 BS, Major: Biology Minor: Chemistry, *summa cum laude* (Senior Honor Thesis)  
Alabama State University, Montgomery, AL

**POSITIONS HELD**

2009-Present Assistant Professor, Department of Neurobiology, University of Alabama-Birmingham, Birmingham, AL

2009-Present Investigator, McKnight Brain Institute, University of Alabama at Birmingham, Birmingham, AL

2009-present Assistant Professor, Dept. of Cell Biology, University of Alabama at Birmingham, Birmingham, AL

2006-2008 Postdoctoral Fellow, Advisor: J. David Sweatt, Ph.D., Department of Neuroscience, Baylor College of Medicine, Houston, TX  
Department of Neurobiology, University of Alabama-Birmingham, Birmingham, AL

2002-2005 Postdoctoral Fellow, Cain Foundation Labs/Texas Children's Hospital, Advisor: Anne E. Anderson, M.D., Department of Pediatrics-Neurology, Baylor College of Medicine, Houston, TX

1996-2001 Research Assistant, Advisor: Dennis W. McGee, Ph.D., Mucosal Immunology Lab, (Clark Fellowship program), Binghamton University, Binghamton, NY

1995-1996 Research Assistant, Advisor: Eddie Moore, Ph.D., Molecular Biology Lab (MARC/NIH program), Alabama State University, Montgomery, AL

Summer 1995 Research Assistant, Molecular Embryology Lab (MARC/NIH program), Memorial Sloan Kettering Cancer Center, New York, NY

**AWARDS AND HONORS**

2010-Present AES Official Fellows Host

2009- Present Cell Science Journal Review Board

2008-2011 NIMH/NIH Pathway to independence Award (K99/R00 MH082106)

2008 FASEB/MARC Postdoctoral Professional Development and Enrichment Award

2005-2007 NINDS/NIH Research Award (F32NS48811)

2004-2005 NINDS/NIH Microarrays Supplemental Research Award (RO1NS39942)  
2004-2005 AES/Milken Epilepsy Foundation Award  
2002-2005 METPAC SFN Travel Fellowship Grant  
2002 Gordon Conference Travel Award (Synaptic Transmission)  
2002 UNCF-Merck Post-doctoral Science Research Fellowship (alternate)  
2002-2003 NINDS Post-doctoral Supplemental Research Award (RO1NS39942)  
2000 Robert L. Szymanski III memorial Travel Award  
1998 Clifford D. Clark Fellowship Research Award  
1996-2001 Clifford D. Clark Fellowship Academic Award  
1993-1994 Minority Biomedical Research Services Award (MBRS; 2T34GM008167)  
1994-1996 Minority Access to Research Careers Award (MARC; 5T35HL007801)

### **SOCIETY MEMBERSHIP**

2002- Present Society for Neuroscience  
2002- Present American Epilepsy Society  
2002- Present Women in Neuroscience  
2005- Present Molecular and Cellular Cognition Society  
2005- Present Comprehensive Neuroscience Center-UAB  
2008- Present American Physiological Society  
2009- Present Society for Cell Science  
2010- Present Center for Glial Biology in Medicine-UAB  
2010- Present Epigenetics Society

### **AD HOC REVIEWER**

Study Section for National Institute of Child Health and Human Development (NICHD/NIH)  
Cell Science  
Lancet Neurology  
Life Sciences  
Nature Neuroscience  
Neuron  
Neurobiology of Learning and Memory  
Journal of Neurochemistry  
Journal of Neuroscience  
Neuropsychopharmacology

### **TEACHING EXPERIENCE**

2010-Present Course Director: NEUR 707 Cognition and Cognitive Disorders JC, 10 students, University of Alabama at Birmingham, Alabama, AL  
2010-Present Co-Instructor: MGE 756: Epigenetics, 15 Students, 4 Credit hours, Kai Jiao as course director, University of Alabama at Birmingham, Alabama, AL  
2010-Present Co-Instructor: PAT702: Phenotyping Human Disease, 15 Students, 4 Credit hours, Robin G. Lorenz as course director, University of Alabama at Birmingham, Alabama, AL  
2009 Co-Instructor: NEUR 707 Cognition and Cognitive Disorders JC, 12 students, Ling Li as course director, University of Alabama at Birmingham, Alabama, AL  
2009-Present Director/Instructor: NBL 798 Dissertation Research, 2 students, University of Alabama at Birmingham, Alabama, AL  
2009 Co-Instructor: NBL 740 Mechanisms of Learning and Memory, 14 students, 4 credit hours, David Sweatt as course director, University of Alabama at Birmingham, Alabama, AL  
Summer 2009 Instructor: STH 395, Science and Honor Technology Proposal Preparation, 4 students, 1 credit hour, Diane Tucker as Course director, University of Alabama at Birmingham, Alabama, AL

- 2009 Co-Instructor: NEUR 723, Experimental Design, 14 students, 2 credit hours, Candace Floyd as Course director, University of Alabama at Birmingham, Alabama, AL
- 2007-2009 Co-Instructor: STH 299, Science and Honor Technology Program-Mechanisms of Learning and Memory, University of Alabama at Birmingham, Alabama, AL
- 2002-2007 Teaching: There were no formal teaching requirements during this postdoctoral training period. However, I had the opportunity to teach various techniques to rotating graduate students and junior post-docs in the lab.
- 1998-1999 Teaching Assistant: Immunology, Binghamton University, Binghamton, NY
- 1995-1996 Teaching Assistant: Physics, Chemistry, Alabama State University, Montgomery, AL

### **UNIVERSITY SERVICES**

- 2010-Present Founding Board Member of the Research Civitan Club of Civitan International, University of Alabama-Birmingham, Birmingham, AL
- 2010 Geropsychiatry Chair Search Committee, University of Alabama-Birmingham, Birmingham, AL.
- 2010 Microbiology Proposal Exam Reviewer (Qualifying Exam), University of Alabama-Birmingham, Birmingham, AL
- 2009-present Neuroscience Graduate Admissions Committee, University of Alabama-Birmingham, Birmingham, AL: The role of the neuroscience admissions committee is to screen potential graduate student applications, and to make recommendations to the Graduate Biomedical Sciences admissions committee.
- 2009-present Neurobiology department secondary faculty appointment committee, University of Alabama-Birmingham, Birmingham, AL: The role of the secondary faculty appointment committee is to review faculty applications for secondary faculty appointment in the neurobiology department and make recommendations to the committee chair (John Hablitz).
- 2010 UAB Postdoctoral Association, postdoctoral research day judge. University of Alabama-Birmingham, Birmingham, AL: The UAB Postdoctoral Association hosts a postdoctoral research day oral competition annually at the WEST PAVILION Conference Center.
- 2009 Postdoctoral Seminar: Obtaining a NIH/K99 Award Seminar, Sponsored by Postdoctoral Association at the University of Alabama-Birmingham, Birmingham, AL.
- 2006-present Summer Program in Neuroscience (SPIN), University of Alabama-Birmingham, Birmingham, AL. SPIN is funded by the National Science Foundation (NSF) Research Experience for Undergraduates (REU) program. Each summer, I provide motivated undergraduates who have demonstrated excellent scientific aptitude with the opportunity to experience independent research in the neurosciences.
- 2007 Alzheimer's Disease Research Center (ADRC) Harper Fellowship. University of Alabama-Birmingham, Birmingham, AL. I provided undergraduates, many on their way to medical school, the opportunity to experience basic science research for the first time in a laboratory setting.
- 2005-2006 Oral qualifying preparatory course, Baylor College of Medicine, Houston, TX. I provided first and secondary graduate students a forum by which they could develop critical reasoning skills through critical reading of the literature and methods for developing research plans and experimental design. All of these skills are instrumental in the preparation for their oral qualifying exams.

### **PUBLIC SERVICES**

- 2010-Present Civitan Research Club (CRC). The purpose of the CRC is to support the goals and mission of the Civitan International Research Center (CIRC) through service to the community. The CIRC is supported by Civitan international, an organization made up of everyday citizens who come together in communities around the world to socialize, learn and serve their neighbors.

- 2008-Present African-American Civic Empowerment Inaugural Fund. The purpose of this organization is to raise money to send young African-American adults from Alabama to national and regional public service and political trainings, conventions and other events so that we are better able to represent and benefit the State in all aspects of public service and politics.
- 2007-Present Faculty Women's Club. The UAB Faculty Women's Club helps create a sense of community among UAB women through programs to welcome newcomers, children's playgroups, intellectually diverse programs, interest groups, and service activities including our scholarship program for deserving women returning to college.
- 2007-Present International League Against Epilepsy (ILAE)-North American Commission initiative in Haiti. This is an effort of the North American Commission, born out of the ILAE, to increase epilepsy awareness in Haiti. A group of Haitian intellectuals called the Haitian League have organized to write grants and facilitate EEG monitoring of patients in rural parts of Haiti.

### **PUBLICATIONS**

22. R.R. Parrish, S. Gupta, and **F. D. Lubin\***. 2010. The epigenetics of memory storage in the brain. *Cell Science*, Jul 27;7(1). **\*Corresponding author**
21. S. Gupta, S.Y. Kim, S. Artis, D.L. Molfese, A. Schumacher, J.D. Sweatt, R.E. Paylor, and **F. Lubin\***. Histone Methylation regulates memory formation. 2010, *J. Neurosci.* March 10, 30(10):3589-3599. **\*Corresponding author**
20. Penner MR, Roth TL, Chawla MK, Hoang LT, Roth ED, **Lubin F.**, Sweatt JD, Worley PF, Barnes CA. Age-related changes in Arc transcription and DNA methylation within the hippocampus. 2010, *Neurobiol. of Aging*, Feb 26. In Press.
19. T. L. Roth, **F. Lubin**, A. Funk, and J. D. Sweatt. Lasting epigenetic influence of early-life adversity on the BDNF gene. 2009, *Biol. Psychiatry*, May 1;65(9):760-69.
18. **F. Lubin\***, T.L. Roth, and J.D. Sweatt. Epigenetic regulation of BDNF gene transcription in the consolidation of fear memory. 2008, *J. Neurosci.* 28(42):10576-10586. **\*Corresponding author**
17. Y. Jiang, B. Langley, **F. Lubin**, W. Renthal, M.A. Wood, D.H. Yasui, A. Kumar, E.J. Nestler, S. Akbarian, A.C. Beckel-Mitchener. Epigenetics in the Nervous System. 2008, *J. Neurosci.* 28(46):11753-11759.
16. H.J. Ahn, C. Hernandez, J. Levenson, **F. Lubin**, H.C. Liou, and J.D. Sweatt. c-Rel, an NF- $\kappa$ B Family Transcription Factor, is Required for Hippocampal Long-term Synaptic Plasticity and Memory Formation. 2008, *Learning and Memory*, 11;15(7):539-49.
15. A.P. Nicholas\*, **F. Lubin\***, P.J. Hallett, P. Vattam, A.R. Crossman, P. Ravenscroft, E. Bezaud, S. Zhou, J.M. Brotchie, J.D. Sweatt, and D.G. Standaert. Striatal Histone Post-Translational Modifications in MPTP Models of Levodopa-Induced Dyskinesia. **\*Co-First author.** 2008, *J. Neurochem.* 106, 486–494.
14. Y.C. Lai, **F. Lubin**, Y. Ren, W.L Lee, A.E. Anderson. Nuclear factor-kappa B regulated transcriptomes in hippocampus during status epilepticus. 2007, *Epilepsia*, 48: 265-266.
13. **F. Lubin** and J.D. Sweatt. The I $\kappa$ B kinase regulates chromatin structure during reconsolidation of conditioned fear memories. 2007, *Neuron*, 20; 55(6):942-57.
12. **F. Lubin**, Y. Ren, X. Xu, and A.E. Anderson. Nuclear Factor- $\kappa$ B regulates seizure threshold and gene transcription following convulsant stimulation. 2007, *J. Neurochem.* 103 (4); 1381-1395.
11. M. Stulic, **F. Lubin**, P. O'Donnell, S. P. Tammariello, and D. W. McGee. Effect of the  $\alpha$ 3 $\beta$ 1 integrin on the IL-1 stimulated activation of the c-Jun N-Terminal Kinase (JNK) in Caco-2 cells. 2007, *Cytokines*, 37(2):163-70.
10. J.M. Levenson, T. Roth, **F. Lubin**, C. Miller, I-Chia Huang, P. Desai, J.D. Sweatt. Evidence that (Cytosine-5) Methyltransferase regulates Synaptic plasticity in the CNS. 2006, *J. Biol. Chemistry*, 9;281(23):15763-73.

9. Y. Ren, L.F. Barnwell, J. Alexander, **F. Lubin**, P.J. Pfaffinger, J.P. Adelman, J.D. Sweatt, L. A. Schrader, A. E. Anderson. cAMP-dependent protein kinase phosphorylates small-conductance Ca<sup>2+</sup>-activated potassium channel, SK2. 2006, *J. Biol. Chemistry*, 28;281(17):11769-79.
8. L. F. Barnwell, X. Xu, **F. Lubin**, and A.E. Anderson. Activity-dependent alterations in kv4.2: A candidate role in epilepsy. 2005, *Epilepsia*, 46: 272-273.
7. **F. Lubin**, L. D. Johnston, J. D. Sweatt, and A.E. Anderson. Kainate mediates NF-κB activation in hippocampus via PI3K and ERK. 2005, *Neuroscience*, 133(4):969-981.
6. **F. Lubin**, X. Xu, and A.E. Anderson. NF-κB gene regulation in status epilepticus. 2005, *Epilepsia*, 46: 113-114.
5. G. Li, **F. Lubin**, and D.W. McGee. α3β1 integrin induced suppression of the Caco-2 epithelial cell IL-1 signaling pathway leading to NF-κB activation. 2004, *Cellular Immunology*, 231(1-2):30-9.
4. **F. Lubin**, V.Leung, and A.E. Anderson. Modulation of hippocampal NF-κB transcriptional activity in the kainate model of epilepsy. 2004, *Epilepsia*, 45:10-10.
3. **F. Lubin**, M. Segal, and D. McGee. Regulation of epithelial cell cytokine responses by the α3β1 integrin. 2003, *Immunology*, 108(2):204-10.
2. D. McGee, **F. Lubin**, and G. Li. Suppression of epithelial cell cytokine responses by the alpha 3 beta 1 integrin is mediated through suppressed NF-kappa B activation. 2001, *Mol. Biol. Cell*, 12:2520-2521.
1. **F. Lubin**, C. Goess , M. Segal, D. W. McGee. Differential effect on IL-6, IL-8, and MCP-1 secretion in intestinal epithelial cell lines by extracellular matrix proteins. 2000, *FASEB* 14 (6): A1200-A1200.

#### **REVIEWS AND BOOK CHAPTERS**

9. **F. Lubin** 2010. Neurobiology of Learning and Memory Epigenetics addition. Requested by guest Editor Marcelo Wood. Invited review for *Neurobiology of Learning and Memory*
8. **F. Lubin** 2010. Epigenetic Mechanisms in Memory formation. Invited review for *The Neuroscientist*
7. **F. Lubin** 2010. DNA-methylation and memory formation. Role of DNA-Demethylation in Cancer and Development; Samir K Patra (Editor), Moshe Szyf (Co-editor), and Cristina Alves dos Santos (Publishing editor, Springer). Invited review in *Press*.
6. R.R. Parrish, S. Gupta, and **F. D. Lubin**. 2010. The epigenetics of memory storage in the brain. *Cell Science*, Jul 27;7(1).
5. S. Gupta, R. Parrish, and **F. Lubin**. 2009. Epigenetics and Translational Medicine. Translational Medicine: Applications in Psychiatry, Neurology and Neurodevelopmental Disorders; James Barrett, Joe Coyle and Mike Williams (Co-Editors), Cambridge University Press. Invited review in *Press*.
4. T.L. Roth, **F. Lubin**, M. Sodhi, and J.E. Kleinman. 2009. Epigenetics Mechanisms in Schizophrenia. Invited review in *BBA*. Sep;1790(9):869-77
3. N.M. Grissom and **F. D. Lubin**. 2009. The dynamics of HDAC activity on memory formation. *Cell Science*, Jul 27;6(1):44-48.
2. **F. Lubin**, E.D. Roth, J.D. Sweatt, and T.L. Roth. 2008. A novel approach to understanding neural plasticity: epigenetic regulation of the *BDNF* gene. Neural Pathways Research; Editor: Florian L. Pichler. Nova Science Publishers, Inc., NY.
1. T. Patel, S. Morse, and **F. Lubin**. Epigenetics and Age-Related Long-Term Memories. In preparation to *Neurobiology of Learning and Memory*.

#### **MANUSCRIPTS SUBMITTED/ IN PREPARATION**

4. S. Morse, R. Davis, **F. Lubin**. Environmental Enrichment Rescues Age-related Changes in BDNF and Zif268 genes Using Epigenetic Mechanisms. *Neurobiol of Aging*
3. R.R. Parrish and **F. Lubin**. Chromatin Remodeling of the BDNF gene during prolonged seizure activity. *J. Neurosci*
2. S. Gupta, R. Davis, and **F. Lubin**. Regulation of histone methylation during memory formation in the Entorhinal Cortex. *Nature Neuroscience*.

1. N. Grissom, R. Davis, and **F. Lubin**. Histone Methylation as an epigenetic marker of memory extinction. *Neurobiol. of Learning and Memory*

### **SAMPLES OF WRITTEN REPORTS ABOUT MY WORK**

8. 2010- Lubin lab's latest publication in the Journal of Neuroscience 2010, March 10; 30:3589-3599, is recognized in Alzforum: News: "**Histone Methyls Solidify Memories**" and in Epigenie: "**Thank Histone Methylation for the Memories.**" March 17, 2010 Ever notice how certain things can trigger unpleasant memories (like that sushi that gave you food poisoning)? Researchers have long wondered how these "contextual fear memories" get burned into our brains. A new study led by Farah Lubin at the University of Alabama at Birmingham has shown that histone methylation plays an important role in long-term memory formation.

The investigators studied histone methylation in the hippocampuses of adult rats that were placed briefly in an unfamiliar training chamber and given electric shocks. When the rats were returned to the chamber 24 h later, they froze in anticipation of a shock, indicating that they had formed long-term memories of the event. Analysis of hippocampal tissue after this contextual fear conditioning revealed some interesting epigenetic changes:

- \* H3K4 trimethylation, an active mark for transcription, was upregulated after conditioning. Mice deficient in an H3K4-specific histone methyltransferase showed defective long-term memory formation, as indicated by decreased freezing behavior.
- \* H3K9 dimethylation, a silencing-associated mark, also increased after fear conditioning.
- \* HDAC inhibition increased H3K4 trimethylation and decreased H3K9 dimethylation after contextual fear conditioning, indicating a link between histone acetylation and histone methylation.
- \* Fear conditioning increased H3K4 trimethylation and changed DNA methylation patterns in the promoters of *Zif268* and *bdnf*, two genes critical for long-term memory formation.

Together, these results suggest that active regulation of histone methylation contributes to long-term memory formation. Don't be afraid to check out all the details the Journal of Neuroscience, March 2010.

7. Neurology Today 2008: By Tom Valeo. Epigenetic regulation of gene expression in memory formation.
6. Dana Foundation 2008: By Tom Valeo. Certain genes apparently predispose some people to mental illness, as family inheritance patterns suggest, but new research demonstrates that environmental influences can alter the way genes express themselves.

This process, known as epigenetics, involves chemical "marks" on the DNA that either stifle or enhance the activity of genes. Epigenetic changes in the brain can affect development, memory and fear, and contribute to mental disorders, according to research presented at Neuroscience 2008, sponsored by the Society for Neuroscience.

For example, altering the methylation of the gene for BDNF, a protein crucial for learning, can block the formation of a normal fear response, according to Farah Lubin, a neurobiologist at the University of Alabama. Aberrant regulation of this gene has been implicated in the development of mental illness.

"In mental disorders including schizophrenia and depression, fear processing is especially relevant," she says.

Lubin and her colleagues induced fear in a rat by inflicting a mild foot shock whenever the animal was placed in a particular training chamber. However, after receiving Zebularine, a cancer drug that affects the methylation of DNA, the rat failed to produce sufficient BDNF in its hippocampus to consolidate the experience into a long-term memory, and therefore did not develop the normal fear response. Since aberrant BDNF gene expression is suspected in psychiatric disorders including schizophrenia, depression and bipolar disorder, manipulating the epigenetic process may lead to new therapies, Lubin said.

5. Faculty of 1000 Biology: evaluations for Lubin FD et al J Neurosci 2008 Oct 15 28 (42):10576-86 "Epigenetic regulation of BDNF gene transcription in the consolidation of fear memory."

<http://www.f1000biology.com/article/id/1124557/evaluation>

4. Nature Reviews Neuroscience p.816-817. Research highlights in Learning and Memory "**Remodel to reconsolidate**" November 2007:8 (11).

3. **Cell p.197,199.** Leading Edge, Neurobiology Select “*A Frightful Change in Chromatin Behavior*” October 19, 2007: 131 (2). Summary: Emerging roles for epigenetic modifications and chromatin remodeling in the nervous system provide the focal point for this issue's Neurobiology Select. Recent evidence shows that changes in chromatin structure are critical to the reconsolidation of fear memories. Other new papers characterize the regulation of neural stem cells by histone acetylation and establish roles for epigenetic modifications and chromatin remodeling in the formation of dendrites and synapses.
2. *Neuroscience Gateway (Nature)*. October 2007. “*Converging roads in a yellow wood*”. Featured Article: Lubin, F.D. & Sweatt, J.D. The I $\kappa$ B kinase regulates chromatin structure during reconsolidation of conditioned fear memories. *Neuron* 55, 942–957 (2007).
1. *UAB News The Kaleidoscope p.1,3.* “*Study eyes retrieval of memories, impact on brain, and immune system*”. September 25, 2007: 42 (34).

### **INVITED PRESENTATIONS/LECTURES**

2011. **F. Lubin.** Molecular and Cellular connectivity of Histone Methylation changes in hippocampus mediated by the Entorhinal cortex. University of Arizona, Tucson, AZ. Invited by the graduate student Committee on Neuroscience, Lan T. Hoang.
2011. **F. Lubin.** Epigenetic Mechanisms in Memory formation. Annual meeting for the “Winter Conference on Neural Plasticity”. Tahiti. Invited by Drs. Scott Small and Alcino Silva.
2011. **F. Lubin.** Protein Methylation in Memory formation. Keystone Symposium on “Environmental Epigenomics and Disease Susceptibility.” Asheville, NC. Invited by Drs. Randy L. Jirtle, Moshe Szyf and Frederick L. Tyson.
2010. **F. Lubin.** CHDI Foundation workshop on HDAC4 and Huntington’s Disease (HD). Los Angeles, California.
- 2010 **F. Lubin.** Epigenetic Mechanisms in Memory formation. Annual meeting for the “Memory Disorders Research Society on genetics and memory functioning”. Northwestern University, Chicago, IL. Invited by Dr. David Schnyer.
2010. **F. Lubin.** Histones on “Meth”: Epigenetic Mechanisms in Memory formation. Michigan State University, Melbourne, MI. Invited by Dr. Sheba MohanKumar.
2010. **F. Lubin.** Epigenetic mechanisms in the brain: Implications in memory formation and cognitive disorders. Alabama State University, Montgomery, AL. Dr. Shiva Singh
2009. **F. Lubin.** Epigenetic mechanisms in the functioning brain: Implications in memory formation. Meites Lectureship Series at Michigan State University. Invited by Dr. Hongbing Wang
2008. **F. Lubin.** Linking the epigenetic code of Gene regulation to Fear memory formation. Minisymposium. The Society for Neuroscience Annual Meeting, Washington, DC.
2008. **F. Lubin.** Epigenetic mechanisms in the functioning brain: Implications in memory formation and epilepsy. Center for Learning and Memory, Institute for Neuroscience. University of Texas at Austin, Austin, TX.
2008. **F. Lubin.** Epigenetic molecular mechanisms in adult behavior. University of Alabama-Birmingham, Birmingham, AL. Neurology Department, Schizophrenia meeting.
- 2007 **F. Lubin.** Linking the Epigenetic Code of Exon-Specific BDNF DNA Methylation to Fear Memory Formation. Molecular and Cellular Cognition Society Meeting, San Diego, CA.
- 2007 **F. lubin.** Epigenetic mechanisms in memory formation. Science and Technology Honors Program, University of Alabama-Birmingham, Birmingham, AL.
- 2006 **F. Lubin** and J.D. Sweatt. NF- $\kappa$ B Activation and Epigenetic Mechanisms in Memory Formation. University of Alabama-Birmingham, Birmingham, AL. Neurobiology departmental retreat.
- 2002 **F. Lubin,** L.D. Johnston, V.W. Leung, J.D. Sweatt, and A.E. Anderson. NF- $\kappa$ B Activation Following Kainate-Treated Hippocampus. The Society for Neuroscience Annual Meeting, Orlando, FL.
- 1999 **F. Lubin,** J. Wong, and D.W. McGee. Extracellular matrix proteins and the  $\alpha$ 3 $\beta$ 1 integrin receptor modulate Caco-2 cell cytokine secretion. Binghamton University Fall Biological Symposium.
- 1996 **F. Lubin** and D.W. McGee. Regulation of intestinal epithelial cell cytokine secretion by ECM proteins. Binghamton University Fall Biological Symposium.

**SELECTED RESEARCH ABSTRACTS**

35. R. Ryley Parrish and **F. Lubin**. Epigenetic regulation of the NR2B gene in hippocampus following kainate-induced status epilepticus. *American Epilepsy Society* Annual Meeting, Boston, MA, December 2009
34. N. Grissom and **F. Lubin**. Epigenetic NF- $\kappa$ B signaling activity in stress-facilitated Learning. *Molecular and Cellular Cognition Society* Meeting, Chicago, IL. October 2009.
33. S. Gupta and **F. Lubin**. Histone Methylation is dynamically regulated in the entorhinal cortex during consolidation of Long-term Memory. *The Society for Neuroscience* Annual Meeting, Chicago, IL. October 2009.
32. R. Ryley Parrish and **F. Lubin**. NR2B-Chromatin Structure Regulation in the Kainate-model of Epilepsy. *The Society for Neuroscience* Annual Meeting, Chicago, IL. October 2009.
31. M.R. Penner, T.L. Roth, **F. Lubin**, E.D. Roth, L.T. Hoang, J.D. Sweatt, and C.A. Barnes. DNA methylation of Zif268 is not dynamically regulated within the aged hippocampus following spatial behavior. *The Society for Neuroscience* Annual Meeting, Chicago, IL. October 2009.
30. D.L. Molfese, J.D. Sweatt, and **F. Lubin**. Histone methylation in hippocampus during memory extinction. *NIDA Mini-Convention*, Washington, DC. November 2008.
29. **F. Lubin**. Epigenetic Regulation of Genes in Seizure-induced Fear Memory Processing. *Gordon Research Conference* "Mechanisms in Epilepsy and neuronal synchronization." Maine August 2008.
28. D.L. Molfese, J.D. Sweatt, and **F. Lubin**. The molecular persistence of memory: Histone methylation, memory formation, and the molecular markers of extinction. *The Society for Neuroscience* Annual Meeting, Washington, DC. November 2008.
27. L. Pozzo-Miller, **F. Lubin**, S. Campbell, and G. Calfa. HDAC activity is required for BDNF to increase dendritic spine density and quantal neurotransmitter release onto CA1 pyramidal neurons. *The Society for Neuroscience* Annual Meeting, Washington, DC. November 2008.
26. D.L. Molfese, J.D. Sweatt, and **F. Lubin**. The molecular persistence of memory. *18<sup>th</sup> Annual Rush Record Neuroscience Forum*, Baylor College of Medicine, Houston, TX. February 2008.
25. **F. Lubin**, T.L. Roth, and J.D. Sweatt. Linking the epigenetic code of exon-specific BDNF DNA methylation to fear memory formation. *The Society for Neuroscience* Annual Meeting, San Diego, CA. November 2007.
24. T.L. Roth, **F. Lubin**, A. Funk, J.D. Sweatt. The molecular scars of early stress: persisting changes in DNA methylation in a model of maternal maltreatment. *The Society for Neuroscience* Annual Meeting, San Diego, CA. November 2007.
23. D.L. Molfese, J.D. Sweatt, and **F. Lubin**. Regulation of histone methylation in the hippocampus during memory consolidation. *The Society for Neuroscience* Annual Meeting, San Diego, CA. November 2007.
22. D. L. Molfese, J.D. Sweatt, and **F. Lubin**. Regulation of histone methylation during memory formation in the hippocampus. *17<sup>th</sup> Annual Rush Record Neuroscience Forum*, Baylor College of Medicine, Houston, TX. March 2007.
21. D.L. Molfese, J. Levenson, **F. Lubin**, and J.D. Sweatt. NF- $\kappa$ B trafficking and DNA binding in long-term memory. *The Society for Neuroscience* Annual Meeting, Atlanta, GA. October 2006.
20. **F. Lubin** and J.D. Sweatt. Participation of the NF- $\kappa$ B signaling pathway in histone regulation during long-term memory reconsolidation. *The Society for Neuroscience* Annual Meeting, Atlanta, GA. October 2006.
19. **F. Lubin**, J.D. Sweatt, and A.E. Anderson. Recruitment of NF- $\kappa$ B to BDNF gene promoter regions in experimental temporal lobe epilepsy. *Gordon Research Conference* "Mechanisms in Epilepsy and neuronal synchronization." Maine August 2006.
18. **F. Lubin**, X. Xu, and A. E. Anderson. NF- $\kappa$ B gene regulation triggered early by status epilepticus. *The Society for Neuroscience* Annual Meeting, Washington D.C. November 2005.
17. **F. Lubin**, X. Xu, and A.E. Anderson. NF- $\kappa$ B gene regulation in status epilepticus. *The American Epilepsy Society* Annual Meeting, Washington D.C. December 2005.

16. D.W. McGee, M. Stulic, **F. Lubin**, P.M. O'Donnell, and B. Rafferty. Effect of activating the  $\alpha 3\beta 1$  integrin on IL-1 stimulated JNK signaling in Caco-2 cells. *The Society for Mucosal Immunology's 12th International Congress of Mucosal Immunology*, Boston, MA. June 2005.
15. **F. Lubin**, V. W. Leung, and A. E. Anderson. NF- $\kappa$ B activation and gene regulation in the kainate epilepsy model. *The Society for Neuroscience Annual Meeting*, San Diego, CA. October 2004.
14. **F. Lubin**, V.W. Leung, L.D. Johnston, A. Varga, C.L. Lee and A.E. Anderson. Kainate-Mediated Transcriptional Activation in Hippocampus. *The American Epilepsy Society Annual Meeting*, Boston, MA. December 2003.
13. K.L. Williams, **F. D. Lubin**, V.W. Leung, M.W. Swank, A.E. Anderson. Proteomic Identification of a Novel Hippocampal MAPK Substrate, TOAD-64, in the Kainate Epilepsy Model. *The Society for Neuroscience Annual Meeting*, New Orleans, LA. November 2003.
12. **F. Lubin**, V.W. Leung, L.D. Johnston J.D. Sweatt, and A. E. Anderson. MAPK Activation and Transcriptional Regulation in the Kainate Model of Epilepsy. *The Society for Neuroscience Annual Meeting*, New Orleans, LA. November 2003.
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10. **F. Lubin**, L.D. Johnston, J.D. Sweatt, and A.E. Anderson. Modulation of NF- $\kappa$ B Activation in Hippocampus. *13<sup>th</sup> Annual Rush Record Neuroscience Forum*, Baylor College of Medicine, Houston, TX. March 2003.
9. **F. Lubin**, L.D. Johnston, V.W. Leung, and A.E. Anderson. Kainate Modulation of NF- $\kappa$ B Activation in Rat Hippocampus. *The American Epilepsy Society Annual Meeting*, Seattle, WA, December 2002.
8. A.E. Anderson, **F. Lubin**, L.D. Johnston, V. Leung, M.W. Swank. Proteomic Analysis of Novel Hippocampal Protein Kinase Substrates in a Kainate Model of Epilepsy. *The Society for Neuroscience Annual Meeting*, Orlando, FL. November 2002.
7. **F. Lubin**, L.D. Johnston, V.W. Leung, J.D. Sweatt, and A.E. Anderson. Modulation of Hippocampal Transcriptional Activation: A Candidate Mechanism in epileptogenesis. *5<sup>th</sup> Annual Pediatrics Fellow's Day*, Baylor College of Medicine, Houston, TX, April 2002.
6. **F. Lubin**, L. D. Johnston, V.W. Leung, J.D. Sweatt, and A.E. Anderson. Modulation of Hippocampal Transcriptional Activation: A Candidate Mechanism in the Kainate Model of Epilepsy. *12<sup>th</sup> Annual Rush Record Neuroscience Forum*, Baylor College of Medicine, Houston, TX. March 2002.
5. D.W. McGee, **F. Lubin** and G. Li. Suppression of epithelial cell cytokine secretion by the  $\alpha 3\beta 1$  integrin is mediated through suppressed NF- $\kappa$ B activation. *Cell Biology Annual Meeting*, Washington D.C. December 2001.
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3. **F. Lubin**, C. Goess, M. Segal and D.W. McGee. Differential effect on IL-6, IL-8, and MCP-1 secretion in intestinal epithelial cell lines by extracellular matrix proteins. Immunology 2000 *AAI/CIS Joint Annual Meeting*, Seattle, WA. May 2000.
2. D.W. McGee, **F. Lubin** and J. Wong. Extracellular Matrix Proteins and integrins modulate intestinal epithelial cell cytokine secretion. *Binghamton University Fall Biological Symposium*. November 1999.
1. **F. Lubin**, and S. Singh. Evaluation of the Evolutionary Conservation of TRAFam/CD40bp/CRAF1. *American Society of Microbiology (ASM) Annual Meeting*, Washington D.C. Fall 1995.

#### **MENTORED POST-DOCTORAL FELLOWS**

Nicola Grissom (PhD, 2009)      Neurobiology Department, UAB. Farah D. Lubin, Mentor.

Gaston Calfa (PhD, 2006)      Neurobiology Department, UAB. Lucas Pozzo-Miller, Farah D. Lubin, Co-Mentors.

Joaquin Lugo (PhD, 2006) Neuroscience Section, Baylor College of Medicine. Anne Anderson, Farah D. Lubin, Co-Mentors.

### **MENTORED GRADUATE STUDENTS**

Ryley Parrish (2009-present) Neuroscience Program, UAB. Farah D. Lubin, Mentor.

Swati Gupta (2008-present) Cellular and Molecular Biology Program, UAB. Farah D. Lubin, Mentor.

Hyung Jin Ahn (PhD, 2007) Neuroscience department, Baylor College of Medicine. Currently a Postdoctoral Fellow at the University of Texas, Austin, TX. J. David Sweatt, Farah D. Lubin, Co-Mentors.

David L. Molfese (MS, 2003) Neuroscience department, Baylor College of Medicine and Neurobiology Program, School of Medicine, UAB. Currently a Postdoctoral Fellow at University of Houston. J. David Sweatt, Farah D. Lubin, Co-Mentors.

Adam Funk (2007) Cellular and Molecular Biology Program, UAB. Rotation student January-April 2007

### **MENTORED UNDERGRADUATE STUDENTS**

Sarah Morse, Program Science and Technology, UAB. December 2008-Present.

Toral Patel, Program Science and Technology, UAB. December 2008-Present.

Brittney Carver, Program Science and Technology, UAB. December 2009-Present.

Amanda Benton, Curriculum Biology, UAB. September 2007-Present.

Dominik Rose, Curriculum Respiratory Therapy, UAB. December 2006-May 2008.

Carmella Montgomery, Curriculum Biology, UAB. April 2007-May 2008.

Rahel Lynes, Summer Program in Neuroscience, UAB. Oakwood College, Huntsville, AL. June-August 2007.

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Kelli Baalman, Summer Program in Neuroscience, UAB. Rockhurst University, Kansas City, MO. June-August 2006.

Aswin Sundararajan, Neuroscience department, Baylor College of Medicine. Drexel University. November 2005-April 2006.

### **Ph.D. THESIS ADVISORY COMMITTEES**

2010-University of Alabama at Birmingham (UAB): Christina Croney, Neuroscience Program (Ph.D. candidate)

2009-University of Alabama at Birmingham (UAB): R. Ryley Parrish, Neuroscience Program (Ph.D. candidate)

2009-University of Alabama at Birmingham (UAB): Swati Gupta, Neurobiology (Ph.D. candidate)

2009-University of Alabama at Birmingham (UAB): Faraz Sultan, Neurobiology (Ph.D. candidate)

2009-University of Alabama at Birmingham (UAB): Shay Hyman, Neurobiology (Ph.D. candidate)

2008-University of Alabama (UA): Nakia R. Marshall-Robinson (Ed.D. candidate)

### **Distinguished Individual Fellowships:**

**Toral Patel**, J.L. Bedsole Scholars fellowship Award; **Sarah Morse**, UAB Center for Aging Award; **Swati Gupta**, T32 GM08111-23/CMBD program, Molecular and Cellular Cognition Society Winter School Scholar Program Award, Zurich Switzerland; **Nicola Grissom, Ph.D.**, Travel Award to the National Summit on Gender and the Postdoctorate, sponsored by the National Postdoctoral Association (NPA) and the National Science Foundation