

CURRICULUM VITAE

REBECCA G. MARKHAM

EDUCATION

B.A.	1995	Florida International University, Psychology
M.S.	2001	Florida International University, Behavior Analysis
	2005	Marine Biological Laboratory, Neural Systems and Behavior
Ph.D.	2006	Florida International University, Developmental Psychobiology
Postdoc.	2008	University of Texas at Austin, Behavioral Neuroscience (Psy)
Postdoc.	2009	University of Texas at Austin, Section of Neurobiology (Biol)

PUBLICATIONS

Markham, R.G. (in preparation). Autism Spectrum Disorders: Heterotypic behavioral phenotypes unified by perinatal disruptions in neurogenesis.

Markham, R.G. (2009). The optic tectum: A model neural system for comparative neuroethology. *International Society for Neuroethology Newsletter*, 11, 3-4.

Markham, R.G., Shimizu, T., & Lickliter, R. (2008). Extrinsic embryonic sensory stimulation alters multimodal behavior and cellular activation. *Developmental Neurobiology*, 68, 1463-1473.

Markham, R.G., Toth, G., & Lickliter, R. (2006). Perinatally elevated physiological arousal alters perceptual learning in bobwhite quail. *Behavioral Neuroscience*, 120, 1315-1325.

Lickliter, R., Bahrnick, L.E., & Markham, R. (2006). On the role of intersensory redundancy in educating attention and memory to amodal information during prenatal development. *Developmental Science*, 9, 604-615.

Markham, R.G., & Markham, M.R. (2002). On the role of covarying functions in stimulus class formation and transfer of function. *Journal of the Experimental Analysis of Behavior*, 78, 509-525.

Markham, M.R. & Gallogly, R.H. (1997). Does language make humans more than clever apes? A review of Bickerton's *Language and Human Behavior*. *Journal of Applied Behavior Analysis*, 30, 185-186.

ORAL PRESENTATIONS

Markham, R.G. (2007, April). Translational models for system plasticity. Presented in Principles of Neuroscience II, a graduate course in neuroscience at the University of Texas at Austin.

Markham, R.G. (2007, February). Translational model for preterm infants: Experience matters. Presented in the Behavioral Neuroscience Seminar series, Psychology Department, University of Texas at Austin.

Markham, R.G. (2006, April). Sensational experience: Prenatal sound affects postnatal sight in birds. Presented at the East Coast Nerve Net Conference in Woods Hole, MA.

Markham, R.G. (2005, November). Differently timed prenatal auditory stimulation alters postnatal visual system organization in bobwhite quail chicks. Presented at the International Society for Developmental Psychobiology in Washington, DC.

Markham, R.G. (2005, January). Effects of differently timed augmented auditory stimulation on visual system development in bobwhite quail embryos. Presented at the FIU Annual Biology Symposium held at Fairchild Tropical Botanic Garden.

SELECTED CONFERENCE PRESENTATIONS

Markham, R.G., Shimizu, T., & Lickliter, R. (November 2008). Extrinsic embryonic sensory stimulation alters multimodal behavior and cellular activation. Presented at the Society for Neuroscience in Washington, DC.

Markham, R.G., Tennant, K.A., Kleim, J.A., Thomas, N., & Jones, T.A. (November 2007). Training the less-affected forelimb after SMC unilateral infarct alters motor cortical representations among the two hemispheres. Presented at the Society for Neuroscience in San Diego, CA.

Allred, R., Adkins D.L., Maldonado, M.A., Husbands, L.C., Markham, R.G., & Jones, T.A. (November 2007). The pasta handling test: a simple quantitative measure of forepaw dysfunction in rats. Presented at the Society for Neuroscience in San Diego, CA.

Markham, R.G., Shimizu, T., & Lickliter, R. (April 2007). Prenatal stimulation affects multisensory function. Presented at the bi-annual Reprogramming the Human Brain Symposium at the University of Texas - Dallas.

Markham, R.G., & Lickliter, R. (October 2006). Prenatally elevated physiological arousal interferes with perceptual learning in bobwhite quail. Presented at the Society for Neuroscience in Atlanta, GA.

Markham, R.G., & Lickliter, R. (October 2006). Prenatal auditory stimulation modifies ZENK protein expression in telencephalic regions in bobwhite quail chicks. Presented at the annual convention of the International Society for Developmental Psychobiology in Atlanta, GA.

Markham, R.G., & Lickliter, R. (November 2005). Effects of prenatally augmented auditory stimulation on postnatal visually-directed filial behavior in bobwhite quail. Presented at the Society for Neuroscience in Washington, DC.

Markham, R.G., Lickliter, R., & Bahrick, L.E. (March 2005). Intersensory redundancy guides selective attention during prenatal development. Presented at the Comparative Cognition Conference in Melbourne, FL.

Lickliter, R., Carlsen, R., & Markham, R.G. (June 2004). Amount of prenatal visual experience affects neural plasticity and postnatal visual responsivity in bobwhite quail chicks. Presented at the annual convention of the International Society for Developmental Psychobiology in Aix, France.

Toth, G., Markham, R.G., & Lickliter, R. (May 2004). Effects of prenatal arousal level on selective attention and perceptual learning in bobwhite quail embryos. Presented at the biannual convention of the International Conference for Infant Studies, Chicago, IL.

Bahrack, L.E., Lickliter, R., & Markham, R.G. (May 2004). Intersensory redundancy can educate selective attention during prenatal development. Presented at the biannual convention of the International Conference for Infant Studies, Chicago, IL.

Lickliter, R.L., Bahrack, L.E., & Markham, R.G. (November 2003). Intersensory redundancy educates attention to amodal information during prenatal development. Presented at the annual convention of the International Society for Developmental Psychobiology, New Orleans, LA.

Markham, R.G. (May 2001). The role of covarying functions in stimulus class formation and transformation of function. Presented at the annual convention of the Association for Behavior Analysis, New Orleans, LA.

FUNDING

F32 NS060437-01

08/19/08-01/31/11

NINDS

Neurobiological mechanisms of perinatal brainstem plasticity

This grant involved NINDS-approved sponsor transfer of the F32 listed below. It supports research examining the electrophysiological mechanisms of neuronal development in the gerbil auditory brainstem medial superior olive near hearing onset, just days after birth.

Sponsor: Nace Golding

F32 NS060437-01

02/01/08-08/18/08

NINDS

Use-dependent modulation of neural and behavioral function after cortical infarct

This grant provided the stipend for work on the behavioral effects and neural correlates of reach recovery following unilateral stroke in adult rat sensorimotor cortex.

Sponsor: Theresa Jones

American Heart Association (AHA) Postdoctoral Fellowship

07/01/07-01/31/08

This grant funded the awardee to begin conducting research on behavioral mechanisms of adult unilateral sensorimotor stroke recovery.

Sponsor: Theresa Jones

TECHNICAL SKILLS

Proficient in setting up electrophysiology (*in vivo* human GSR / *in ovo* heart rate / *in vivo* intracortical microstimulation mapping / slice sharp electrode / slice patch clamp recording) rigs. Proficient in lab bench techniques including molecular biology (RNA isolation, RT-PCR, northern blots), immunocytochemistry, stereotaxic rat CNS surgeries, and perfusions. Also proficient with avian and rat behavioral assays.

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science (AAAS)

International Society for Developmental Psychobiology (ISDP)

International Society for Neuroethology (ISN)

Society for Neuroscience (SfN)

PROFESSIONAL SERVICE

Editorial Assistant, *Behavioral Development*, 1995 – 1996
President, Developmental Mental Health Student Association, 2003 – 2004
GSO Representative, Molecular and Cellular Biology Club, 2005 – 2006
Reviewer, *Brain Research Bulletin*, 2009

SELECTED HONORS

Outstanding Achievement Award, Florida International University 1995
Phi Kappa Phi Member, 2005
Neural Systems and Behavior Course Endowed Scholarship Fund, MBL, 2005
NIH Grant for Neural Systems and Behavior Course, MBL, 2005
Extended Research Award, Institute for Neuroscience, Grass Laboratory, MBL, 2005
Sandra G. Wiener Dissertation Award, Int'l Society for Developmental Psychobiology, 2005
Developmental Graduate Student Award, Psychology Department, FIU, 2006

RESEARCH EXPERIENCE

Lab Coordinator and Graduate Research Associate; Developmental Psychobiology Laboratory; Department of Psychology; Florida International University, Miami, FL 33199. Duration: August 2001 – August 2006. Duties: Facilitating startup of nationally recognized, federally funded research laboratory; collecting and analyzing data. Supervisor: Robert Lickliter, Ph.D. During this time, I forged collaborations with the following labs:

Graduate Research Assistant; Women Studies Center; Florida International University, Miami, FL, 33199. Duration: January 2001 – August 2001. Duties: Performing statistical analyses on a large data set for investigating same-sex domestic violence using SPSS; preparing a presentation on gender issues and academia at FIU delivered to the university President; evaluating grant applications. Supervisor: Suzanna Rose, Ph.D.

Graduate Research Assistant; Behavior Analysis Laboratory; Department of Psychology, Florida International University, Miami, FL 33199. Duration: April 1997 - April 1999. Duties: Coordinated a nationally recognized research program; established and maintained administrative structure, recruitment, and operations. Supervisor: Michael Markham, Ph.D.

Research Assistant; Behavior Analysis Laboratory; Department of Psychology, Florida International University, Miami, FL 33199. Duration: May 1995 - April 1997. Duties: Collecting and analyzing data for experiments investigating operant-responder interactions with both human and animal (Long-Evans hooded rat) populations. Supervisor: Michael Markham, Ph.D.

Research Assistant; Cognitive Processes Laboratory; Department of Psychology; Florida International University, Miami, FL 33199. Duration: August 1995 - March 1996. Duties: Collecting and analyzing data for experiments on the “tip-of-the-tongue” phenomenon in humans, and implicit memory in partially blind human participants. Supervisor: Bennett Schwartz, Ph.D.

TEACHING EXPERIENCE

I taught the following courses as the sole Adjunct Instructor within the Department of Psychology, Florida International University, Miami, FL 33199. Unless otherwise noted, prep was typical for a lecture course.

Developmental Psychology Senior Laboratory (5 credits); Fall 1999; Spring 2000. Duties: Course curriculum planning and design. Duties included editing and grading individual research projects; mentoring students in data collection and statistical analyses for their research projects; lecturing; and devising and grading essay exams.

Research Methods in Psychology, Summer A 1998; Spring 2000; Summer B 2000. Duties: Course curriculum planning and design. Duties included lecturing; devising and grading essay exams; editing and grading research proposals.

Introduction to the Experimental Analysis of Behavior, Fall 1998; Summer B 1999

Human Growth and Development, Spring 1999

Psychology of Infancy and Childhood, Summer A 1999

Introduction to Psychology, Fall 1999; Summer A 2000

APPLIED EXPERIENCE

Behavior Analyst; ARC Broward, Inc; Therapeutic Intervention Program; Duration: July 2000 - November 2000. Population: Children ages 7 - 12 years old diagnosed with Autistic Spectrum Disorder; children's behaviors were too severe for mainstreaming. Duties: Conducting assessments, developing Behavior Support Plans, training in and monitoring program implementation. Supervisor: Wendy Roth, Ph.D., B.C.B.A.

Senior Behavior Therapist; Behavior Solutions; Duration: January 2000 - July 2000; Population: Typical children with behavior problems and their families. Duties: Conducting functional assessments and writing plans for skill acquisition; parent training. Supervisor: Emily Branscum, M.S., C.B.A.

Behavior Programming Specialist; Self-employed. Duration: October 1998 - December 1999. Population: Children diagnosed with Autistic Spectrum Disorder. Duties: Conducting functional assessments and writing behavior programs for behavior reduction and skill acquisition; parent training. Supervisor: Emily Branscum, M.S., C.B.A.

Behavior Therapist; Behavior Therapy Group; Duration: April 1997 - April 1999. Population: Children diagnosed with Autistic Spectrum Disorder. Duties: Implementing behavior programs for skill acquisition and behavior reduction. Supervisor: David Lubin, Ph.D.; FL-C.B.A.

ACADEMIC REFERENCES

Robert Lickliter
Professor / Ph.D. Mentor
Psychology Department
Florida International University
11200 SW 8 Street
Miami, FL 33199
(305) 348-3441
Robert.Lickliter@fiu.edu

Lorraine Bahrck
Professor
Psychology Department
Florida International University
11200 SW 8 Street
Miami, FL 33199
(305) 348-2842
bahrck@fiu.edu

Sarah Bottjer
Professor
Department of Biological Sciences
University of Southern California
Los Angeles, CA 90089-2520
(213) 740-9183
bottjer@usc.edu

Lidia Kos
Associate Professor
Department of Biological Sciences
Florida International University
11200 SW 8 Street
Miami, FL 33199
(305) 348-6678
Lidia.Kos@fiu.edu

Toru Shimizu
Professor
Psychology Department
University of South Florida
4202 East Fowler Avenue, PCD 4118G
(813) 974-0352
shimizu@cas.usf.edu

Jonathan Tubman
Professor, Psychology Department
Associate Vice President for Research
Associate Dean,
Research University Graduate School
Florida International University
11200 SW 8 Street
Miami, FL 33199
(305) 348-3024
tubman@fiu.edu

Catherine Carr
Professor
Department of Biology
University of Maryland
College Park, MD 20742
(301) 405-2085
cecarr@umd.edu

Bennett Schwartz
Professor
Psychology Department
Florida International University
11200 SW 8 Street
Miami, FL 33199
(305) 348-4025
bennett.schwartz@fiu.edu

Philip Stoddard
Professor
Department of Biological Sciences
Florida International University
11200 SW 8 Street
Miami, FL 33199
(305) 348-0378
stoddard@fiu.edu