BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Laura E. Martin	Assistant Professor Associate Director of fMRI
eRA COMMONS USER NAME (credential, e.g., agency login) lmartin2	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Kansas, Lawrence, KS	BA	05/01	Dance
University of Kansas, Lawrence, KS	BA	05/01	Psychology
Rice University, Houston, TX	MA	05/04	Psychology:Cog Neuro
Rice University, Houston, TX	PhD	05/06	Psychology:Cog Neuro
University of KS Medical Center, Kansas City, KS	Fellow	06/10	Cognitive Neuroscience

A. Personal Statement

My program of research has focused on the cognitive neuroscience of impulsivity, reward processing, and neuroimaging studies of addiction. Overall these studies employed event related or block design functional magnetic resonance imaging (fMRI) to examine the impact of individual differences in impulsivity on prefrontal and limbic responses to rewarding stimuli (e.g. smoking cues, money, food-images, etc). I have experience running and designing fMRI studies, collecting data on a 3-Tesla Siemens MRI scanner, and analyzing data in both BrainVoyager and AFNI, and training research personnel in research methods and data analysis. In addition, I have worked closely with HBIC physicist, Dr. Phil Lee to develop fMRI scanning procedures to optimize fMRI signals in reward processing/decision-making regions, such as ventromedial prefrontal cortex, which is susceptible to signal loss and will implement these methods in the proposed research. Moreover, as Associate Director of fMRI in the Hoglund Brain Imaging Center, I also have numerous ongoing collaborations in areas of smoking cessation, obesity, social neuroscience, decision-making, resting state fMRI and neuroeconomics.

B. Positions and Honors.

Positions:

2001-2006 Graduate Research Assistant, Department of Psychology, Rice University, Houston, TX (Supervisor: Geoffrey Potts)

2006-2010 Post-Doctoral Fellow, Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS (Supervisor: Cary Savage)

2010-Present Assistant Professor, Department of Preventive Medicine and Public Health, University of Kansas Medical Center, Kansas City, KS

2010-Present Associate Director of fMRI, Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City, KS

Honors:

2005 *Dartmouth Summer Institute in Cognitive Neuroscience*: Selected to attend two-week cognitive neuroscience intensive seminar on brain plasticity and flexibility and constraint during development.

2007-2010 *NIH Loan Repayment Program.* Given to help pay off qualified student loans to individuals conducting clinical research.

2008 *Neuroimaging in Obesity Research Travel Award.* Given to cover travel expenses to attend NIH workshop focusing on neuroimaging in obesity.

2009 *UCLA NITP Advanced Neuroimaging Summer School.* Selected to attend two-week advanced fMRI training course with emphasis on fMRI design and analysis.

Professional Memberships

2002-Present	Cognitive Neuroscience Society
2007-Present	Society for Research on Nicotine and Tobacco
2009-Present	The Obesity Society
2009-Present	Society for Social and Affective Neuroscience
2010-Present	Society for Neuroscience

C. Selected peer-reviewed publications (in chronological order).

1. George, M.R.M., Mukundan, C.R., Kothmann, D., **Martin, L.**, & Potts, G.F. (2004). Frontal Deficits in Alcoholism: An ERP study. *Brain and Cognition, 54,* 245-247.
2. **Martin, L. E**. & Potts, G. F. (2004). Reward sensitivity in impulsivity. *NeuroReport*, *15*(19), 1519-1522. **PMID: 15194887**
3. Potts, G. F., George, M. R. M., **Martin, L. E.**, & Barratt, E. S. (2005). Reduced punishment sensitivity in neural systems of behavior monitoring in impulsive individuals. *Neuroscience Letters, 397*, 130-134. **PMID: 16378683**
4. Potts, G. F., **Martin, L. E**., Burton, P. C., & Montague, P. R. (2006). When things are better or worse than expected: Medial prefrontal cortex and the allocation of processing resources. *Journal of Cognitive Neuroscience, 18*, 1112-1119. **PMID: 16839285**
5. Stotts, A. L., Potts, G. F., Ingersoll, G., George, M. R. M., & **Martin, L. E.** (2007). Preliminary feasibility and efficacy of a brief motivational intervention with psychophysiological feedback for cocaine abuse. *Substance Abuse, 27*(4), 9-20*.* **PMID: 17347121**
6. Wood, S. M., Potts, G. F., **Martin, L. E.**, Kothmann, D. K., Hall, J. F., Ulande, J. B. (2007). Disruption of auditory and visual attention in schizophrenia, *Psychiatry Research: Neuroimaging, 156*(2), 105-116.
7. Potts, G. F., Wood, S. M., Kothmann, D., & **Martin, L. E.** (2008). Parallel perceptual enhancement and hierarchic relevance evaluation in an audio-visual conjunction task. *Brain Research, 1236*, 126-139*.*
8. **Martin, L.E.**, Potts, G.F., Burton, P.C., & Montague, P.R. (2009). Electrophysiological and Hemodynamic Responses to Reward Prediction Violation. *NeuroReport*., 20(13), 1140-1143. **PMCID: PMC4095766**
9. **Martin, L. E.** & Potts, G. F. (2009). Impulsivity in decision-making: An event-related potential investigation. *Personality and Individual Differences, 46*, 303-308*.* **PMCID:PMC2663910**
10. **Martin, L.E.**, Holsen, L.M., Chambers, R.J, Bruce, A.S., Brooks, W.M., Zarcone, J.R., Butler, M.G. & Savage, C. R. (2010). Neural systems of food motivation in obesity. *Obesity*, 18, 254-260. **PMID: 19629052 PMC Journal: Not NIH funded**
11. Bruce, A.S., Holsen, L.M., Chambers, R., **Martin, L**., Brooks, W.M., Zarcone, J.R., Butler, M.G., & Savage, C.R. (2010). Obese children show hyperactivation to food pictures in brain networks linked to motivation, reward, and cognitive control. *International Journal of Obesity, 34,* 1494-1500. **Not NIH Funded**
12. Bruce, A.S.*,* Black W.R., Bruce, J.M., Daldalian, M., **Martin, L.E**., & Davis, A.M. (2011). Ability to delay gratification and body mass index in preadolescence. *Obesity,* 19, 1101-1102*.* **PMID: 21151018 PMC Journal: Not NIH funded**
13. Potts, GF, **Martin, LE**, Kamp, SM, Donchin, E (2011). Neural Response to Action and Reward Prediction Errors: Comparing the Error Related Negativity to Behavioral Errors and the Feedback Related Negativity to Reward Prediction Violations. *Psychophysiology*, 48, 218-228. **PMCID: PMC2965315**
14. **Martin, L.E.** & Potts, G. F. (2011). Medial frontal event related potentials and neural reward prediction: Do responses matter?, *Brain and Behavior, 77*, 128-134. **PMCID: PMC3159831**
15. Bruce, A.S., **Martin, L.E.,** & Savage, C.R. (2011). Neural correlates of pediatric obesity. *Preventive Medicine, Supplement 1,* S29-35**. PMID: 21291906 PMC Journal: Not NIH funded**
16. Holsen, L.M., Savage, C.R., **Martin, L.E.**, Bruce, A.S., Lepping, R.J., Ko, E., Brooks, W.M., Butler, M.G., Zarcone, J.R., & Goldstein, J.M. (2011). Importance of Reward and Prefrontal Circuitry in Hunger and Satiety: Prader-Willi Syndrome vs. Simple Obesity. *International Journal of Obesity*, 36, 638-647. **PMCID: PMC3270121**

17. Bruce, J.M, Hancock, L, Bruce, A., Lepping, R., **Martin, L.**, Lundgren, J., Malley, S., Holsen, L., & Savage, C. (2011). Changes in brain activation to food pictures following adjustable gastric banding. *Surgery for obesity and related diseases, 8,* 5, 602-608*.* **PMID: 21996599 Not NIH Funded**

18. Clausius, R.L., Krebill, R., Mayo, M.S., Bronars, C., **Martin, L.,** Ahluwalia, J., & Cox, L.S. (2012). Evaluation of the brief questionnaire of smoking urges in black light light smokers. *Nictotine & Tobacco Research, 14,* 1110-1114. **PMCID: PMC34322274.**

19. Bruce, A.S., Lepping, R.J., Bruce, J.M., Cherry, J.B.C., **Martin, L.E.**, Davis, A.M., Brooks, W.M., & Savage, C.R. (2012). Brain responses to food logos in obese and healthy weight children. *The Journal of Pediatrics, 162,* 759-764. **PMID: 23211928 Not NIH Funded**

20. Bruce, AS, Bruce, JM, Ness, AR, Lepping, RJ, Malley, S, Hancock, L, Powell, J, Patrician, TM, Breslin, FJ, **Martin, LE,** Donnelly, JE, Brooks, WM., & Savage, CR (2014). A comparison of functional brain changes associated with surgical versus behavioral weight loss. *Obesity,22(2),* 337-43*.* doi:10.1002/oby.20630 **PMCID: PMC3946492**

21. Lundgren, J.D., Patrician, T.M., Breslin, F.J., **Martin, L.E.**, Donnelly, J.E., & Savage, C.R. (2013). Evening hyperphagia and food motivation: A preliminary study of neural mechanisms. *Eating Behaivors, 14*, 447-450. **PMCID: PMC3817498**

22. Herrmann, S.D., **Martin, L.E.,** Breslin, F.J., Honas, J.J., Willis, E.A., Lepping, R.J., Gibson, C.A., Befort, C.A., Lambourne, K., Burns, J.M., Smith, B.K., Sullivan, D.K., Washburn, R.A., Hung-Weh, Y., Donnelly, J.E., Savage, C.R. (2014). Neuroimaging studies of factors related to exercise: Rationale and design of a 9month trial. *Contemporary Clinical Trials, 37*, 56-68. **PMCID: PMC3946871**

23. Bruce, A.S., Bruce, J.M., Black, W.R., Lepping, R.J., Henry, J.M., Cherry, J.P., **Martin, L.E.**, Papa, V.B., Davis, A.M., Brooks, W.M., & Savage, C.R. (2014). Branding and a child's brain: An fMRI study of neural responses to logos. *Social Cognitive and Affective Neuroscience, 9,* 1, 118-122. **PMCID: PMC3871732**

24. **Martin, L.E.** (2014). Effects of plain packaging on decision-making and reward for nicotine cigarettes. *Neuroscience and Neuroeconomics*, *3*, 63-73.

25. Black, W.R., Lepping, R.J., Bruce, A.S., Powell, J.N., Bruce, J.M., **Martin, L.E**., Davis, A.M., Brooks, W.M., Savage, C.R., & Simmons, W.K. (2014). Tonic hyper-connectivity of reward neurocircuitry in obese children. *Obesity 22*, 1590-1593. **PMCID: PMC4077951**

26. Bosak, K, **Martin, L.E.** (in press). Neuroimaging of goal directed behavior in mid-life women. *Nursing Research.*

27. Ness, A., Bruce, J., Bruce, A., Aupperle, R., Lepping, R., **Martin, L.**, Hancock, L., Patrician, T., Malley, S., Selim, N., & Savage, C. (accepted). Pre-surgical cortical activation to food pictures is associated with weight loss following bariatric surgery. *Surgery for Obesity and Related Diseases*.

28. Sofis, M., Jarmolowicz, D.P., & **Martin, L.E.** (Accepted). Competing neurobehavioral decision systems and the neuroeconomics of craving in opiod addiction. *Neurscience and Neuroeconomics.*

29. **Martin, L.E.**, Cox, L.S., Brooks, W.M., & Savage, C.R (in press). Winning and losing: Differences in reward and punishment sensitivity between smokers and nonsmokers. *Brain and Behavior*.

D. Research Support

Ongoing Research Support:

R00 DA025153 Laura Martin (PI) 09/15/10 – 07/31/13 (No Cost Extension)
NIH
Studies of reward processing in nicotine addiction and obesity
The goal of this project is to examine neural responses during impulsive decision-making in nicotine addicted, obese and healthy groups using functional magnetic resonance imaging (fMRI).
Role: PI

R01 DK085605 Cary Savage (PI) 04/01/2010 - 03/31/2015
NIH
Neuroimaging studies of reward, impulsivity, and adherence to an exercise program
This study uses fMRI and monetary reward processing paradigms to identify predictors of adherence to a 9-month exercise program in previously sedentary healthy weight and obese participants.
Role: Co-I

R21 CA184834 Seung Lark Lim 05/19/2014 – 05/18/2016
NIH
Neural predictors of self-regulation of smoking urges at a stressful moment.
The goal of this project is to identify neural predictors of decisions to smoke under stress using functional magnetic resonance imaging.

P30 AG035982 Swerdlow (PI) 07/01/2011 - 06/30/2016
NIH
University of Kansas Alzheimer's Disease Core Center
With the aging population, age-related disorders such as dementia are rising in prevalence at an unprecedented rate. Promoting and supporting clinical and translational research into neurodegenerative disorders may lead to important prevention and treatment strategies.
Role: Other key personnel

Completed Research Support:

F32 DA23327 Laura Martin (Fellow)/Cary Savage (Mentor) 06/17/2007 - 04/30/2009
NIH
Nicotine Addiction and Reward Processing: An fMRI Investigation
The goal of this project is to gain additional training in functional magnetic resonance imaging methodologies as well clinical training in nicotine addiction. The research plan examines impulsivity and the neural systems of reward in nicotine addiction.
Role: PI (Post-doctoral Fellow)

K99 DA025153-01A1 Laura Martin (Fellow)/Cary Savage (Mentor) 05/01/2009 - 09/14/2010
NIH
Studies of reward processing and impulsivity in nicotine addiction and obesity
The goal of this project is to examine neural responses to rewards and punishments in nicotine addicted, obese and healthy groups using functional magnetic resonance imaging (fMRI).
Role: PI (Post-doctoral Fellow)

R03 DA030868 Laura Martin (PI) 09/30/2010 – 08/31/2012
NIH
Neural Mechanisms Associated with Nicotine Addiction and Obesity Co-Morbidities
The goal of this project is to examine neural responses associated with co-morbidities of nicotine addiction and obesity using functional magnetic resonance imaging (fMRI).
Role: PI

As Part of UL1 TR000001 Barohn/Arronson (MPI)
NIH/Heartland Institute for Clinical and Translational Research (Frontiers)
No Number Laura Martin (PI) 03/01/2013 - 02/28/2014
Pilot and Collaborative Studies Funding Program
NIH/Heartland Institute for Clinical and Translational Research (Frontiers)
The goal of this project is to identify brain responses to smoking cues in light smokers. Achieving this objective will provide an understanding of smoking reward among light smokers. We will test the working hypothesis that light smokers are more responsive to smoking cues than non-smoking cues.
Role: PI

KUMC Research Institute Clinical Pilot Program Kelly Bosak and Laura Martin (Co-PIs) 05/10/11 – 5/9/12
KUMC Research Institute

Neuroimaging study of goal directed behaviors in overweight women
The pilot study based on the dual system account of behavior will validate an instrumental discrimination task (decision task) as a proxy of goal-directed behavior, and the associated brain activations on fMRI in non-diabetic overweight (BMI 25-30 kg/m2) perimenopausal women at increased cardiometabolic risk.
Role: Co-PI

As part of UL1 TR000001 Barohn/Arronson (MPI)
NIH/Heartland Institute for Clinical and Translational Research (Frontiers)
Frontiers Pilot and Collaborative Studies Funding Program Jennifer Lundgren (PI) 9/15/11 – 2/28/12
Functional neuroanatomy of impulsivity in obese shorter and longer sleepers
The goal of the proposed research is to investigate neural responses associated with impulsive decision making in obesity.
Role: Co-I

As part of UL1 TR000001 Barohn/Arronson (MPI)
NIH/Heartland Institute for Clinical and Translational Research (Frontiers)
No Number Robin Aupperle (PI) 03/01/2012 - 02/28/2013
Pilot and Collaborative Studies Funding Program
Frontiers Heartland Institute for Clinical and Translational Research
An estimated 20% of veterans who experience combat will develop posttraumatic stress disorder (PTSD). Due to ongoing political conflicts, the prevalence of PTSD doubled from 1997-2005 and continues to rise, greatly increases treatment demands. Over 50% of PTSD patients either do not complete or do not achieve optimal response to first-line cognitive-behavioral and pharmacologic treatments. It is therefore imperative that research be conducted to identify novel interventions for this disorder.
Role: Co-I

No Number Amanda Bruce (PI) 01/01/2011 - 12/31/2013
Agriculture and Food Research Initiative/ National Institute of Food and Agriculture
This research will determine how the human brain responds to the technologies as compared to the price changes and will identify whether brain activations predict consumers' choices over (and thus willingness-to-pay for) the technologies.
Role: Consultant