

# CURRICULUM VITAE

## AARTHI PADMANABHAN, Ph.D.

121 Meyran Avenue  
Loeffler Building 108  
Pittsburgh, PA 15206  
Email: padmanabhana@upmc.edu

### BIOGRAPHICAL

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Birth Place: Bangalore, India  
Citizenship: United States of America

### EDUCATION

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#### *POST DOCTORAL TRAINING*

UNIVERSITY OF PITTSBURGH  
2013-PRESENT  
Psychiatry  
Advisor: Beatriz Luna, PhD.

PITTSBURGH, PA

#### *GRADUATE*

UNIVERSITY OF PITTSBURGH  
2008 - 2012

PITTSBURGH, PA

*Ph.D., Cognitive Psychology with a concentration in Cognitive Neuroscience*

- DISSERTATION (2012): *Biological basis of variability in dopamine availability on frontostriatal brain function in adolescence.* Advisor: Beatriz Luna, Ph.D.
- SPECIALTY EXAMINATION PAPER (2011): *Biological basis of variability in brain dopamine in adolescence.* Advisor: Beatriz Luna, Ph.D.
- MASTER of SCIENCE (2011): *Developmental changes in brain function underlying the influence of reward processing on cognitive control.* Advisor: Beatriz Luna, Ph.D.

#### *UNDERGRADUATE*

CARNEGIE MELLON UNIVERSITY  
2001-2005

PITTSBURGH, PA

*B.S., Cognitive Science with a Minor in Communication Design*

### AWARDS

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- 2012 Runner-Up, Outstanding Poster Presentation, Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center
- 2010,2011,2012 Student Honoree, Honors Convocation, University of Pittsburgh
- 2011 George Wang Memorial Student Assistance Fund in Pharmacogenetics, Department of Human Genetics, University of Pittsburgh
- 2009 Dr. Ruth L. Myers Memorial Graduate Award for Excellence in Research, Department of Psychology, University of Pittsburgh
- 2009 Trainee Abstract Award, Organization for Human Brain Mapping

## FELLOWSHIPS

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- 2010-2012 National Science Foundation, Graduate Research Fellowship
- 2009-2010 B<sup>2</sup> Research Training Fellowship (NIH T32 GM081760), Center for the Neural Basis of Cognition
- 2005-2008 Post-Baccalaureate Research Training Award Fellowship, National Institutes of Health

## PUBLICATIONS

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**Padmanabhan, A.,** O'Hearn, K., Garver, K.E, Nawarawong, N., Liu, R., Minshew, N.J., Sweeney, J.A., Luna, B. (2013) *Developmental changes in brain function underlying inhibitory control in autism spectrum disorders.* (Under Review)

**Padmanabhan, A.,** Luna, B. (2013). *Developmental Imaging Genetics: Linking dopamine function to adolescent behavior.* In Brain and Cognition. (In Press).

Luna, B., **Padmanabhan, A.,** Geier, C.F., (2013). *The Adolescent Sensation Seeking Period: Development of Reward Processing and its Effects on Cognitive Control.* (Under Review)

Luna, B., Paulsen, D.J., **Padmanabhan, A.,** Geier, C.F. (2013). *Cognitive Control and Motivation.* In Current Directions in Psychological Science Special Issue: The Teenage Brain. (In Press).

**Padmanabhan, A.,** Geier, C., Ordaz,S., Teslovich, T., Luna, B. (2011). *Developmental changes in brain function underlying the influence of reward processing on cognitive control.* Developmental Cognitive Neuroscience.1(4): 517-29.

Geier, C., **Padmanabhan, A.,** & Luna, B. (2010). *Immaturities in incentive processing and executive function in adolescence.* Neurotoxicity Research. (In press).

Buchsbaum, B., **Padmanabhan, A.,** Berman, K. (2010). *The neural substrates of recognition memory for verbal information: Spanning the divide between short- and long-term memory.* Journal of Cognitive Neuroscience. 23(4): 978-91.

Luna, B., **Padmanabhan, A.**, O'Hearn, K. (2009). *What has fMRI told us about the development of cognitive control through adolescence?*. *Brain and Cognition*. 72(1): 101-13.

## ORAL PRESENTATIONS

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**Padmanabhan, A.**, Hwang, K., Luna, B., (2012 October). Influence of dopamine genes on resting state functional connectivity over adolescence. Oral presentation at the Society for Neuroscience 42<sup>nd</sup> Meeting. New Orleans, LA.

**Padmanabhan A.**, Wint, D.P., Dreher, J-C., Kohn, P.D., Roe, K.V., Sarpal, D.K., Lazerow, A., Mattay, V.S., Kolachana, B., Weinberger, D.R., Berman, K.F. (2007 September). *Effects of COMT genotype and COMT inhibition on the neural processing of reward*. Oral presentation at the NIMH Annual Scientific Retreat. Gettysburg, Pennsylvania.

**Padmanabhan A.**, Wint, D.P., Dreher, J-C., Kohn P.D., Roe K.V., Sarpal D.K., Lazerow, A., Mattay V.S., Kolachana B., Weinberger D.R., Berman K.F. (2007 June). *Effects of COMT genotype and COMT inhibition on the neural processing of reward*. Oral presentation at the Organization for Human Brain Mapping 14<sup>th</sup> Annual Meeting. Chicago, Illinois.

## POSTER PRESENTATIONS

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**Padmanabhan, A.**, Hwang, K., Luna, B. (2013 September). *Influence of DA genes on resting state functional connectivity over adolescence*. Poster Presentation at the FLUX Congress for Integrative Developmental Cognitive Neuroscience 1<sup>st</sup> Annual Meeting. Pittsburgh, PA.

**Padmanabhan, A.**, Hwang, K., Luna, B. (2012 June). *Influence of DA genes on resting state functional connectivity over adolescence*. Poster Presentation at the Western Psychiatric Institute and Clinic's 12<sup>th</sup> Annual Research Day, Pittsburgh, PA.

**Padmanabhan, A.**, Hwang, K., Montez, D.F., Luna, B. (2011 December). *Influence of COMT val158met on resting state functional connectivity over adolescence*. Poster Presentation at the American College of Neuropsychopharmacology 50<sup>th</sup> Annual Meeting, Kona, HI.

Marenco, S., Chandramohan, D., Kippenhan, S., Walker, L., Roe, K., **Padmanabhan, A.**, Kohn, P., Mervis, C., Pani, A., Morris, C., Weinberger, D., Pierpaoli, C., Berman, K. (2011 December). *Diffusion Imaging in Individuals with Partial Deletions of the Williams Syndrome Critical Region*. Poster Presentation at the American College of Neuropsychopharmacology 50<sup>th</sup> Annual Meeting, Kona, HI.

**Padmanabhan, A.**, Montez, D., Luna, B. (2010 November). *Influences of encoding and maintenance in neural circuitry underlying visual spatial working memory over development*. Poster Presentation at the Society for Neuroscience 40<sup>th</sup> Annual Meeting, San Diego, CA.

**Padmanabhan, A.**, Liu, R., Nawarawong, N., Terwilliger, R.A., Garver, K.E., Geier, C.F., Minshew, N., Sweeney, J.A., Luna, B. (2010 June). *Developmental changes in brain function underlying inhibitory control in Autism*. Poster presentation at the Organization for Human Brain Mapping 16<sup>th</sup> Annual Meeting. Barcelona, Spain.

**Padmanabhan, A.** Terwilliger R.A., Geier C.F., Luna B. (2009 November). *Developmental changes in brain function underlying reward-based cognitive control*. Poster presentation at the Society for Neuroscience 39<sup>th</sup> Annual Meeting. Chicago, IL.

**Padmanabhan, A.** Terwilliger R.A., Geier C.F., Luna B. (2009 June). *Developmental changes in brain function underlying incentive-based cognitive control*. Poster presentation at the Organization for Human Brain Mapping 15<sup>th</sup> Annual Meeting. San Francisco, CA.

Kippenhan, J.S., Kohn, P.D., Roe, K.V., Mervis, C.B., Morris, C.A., **Padmanabhan, A.**, Pani, A.M., King, E.A., Meyer-Lindenberg, A., Berman, K.F. (2009 June). *Regional gray and white matter anomalies in individuals with small genetic deletions in the "Williams syndrome critical region" of chromosome 7q11.23 revealed by DARTEL-based VBM analysis*. Poster presentation at the Organization for Human Brain Mapping 15<sup>th</sup> Annual Meeting. San Francisco, CA.

Kohn, P.D., Roe, K., Kippenhan, J.S., Coutlee, C.G., **Padmanabhan, A.**, Wei, S-M., Eisenberg, D., Salloum, J.B., Baller, E.B., Berman, K.F. (2009 June). *Hippocampal activation during an event-related 2-D navigational learning task*. Poster presentation at the Organization for Human Brain Mapping 15<sup>th</sup> Annual Meeting. San Francisco, CA.

Wei, S-M., **Padmanabhan, A.**, Kohn, P.D., Kolachana, B., Weinberger, D.R., Berman, K.F. (2009 June). *Interactions between Brain-Derived Neurotrophic Factor Val<sup>66</sup>Met Genotype and Sex Affect Hippocampal Regional Cerebral Blood Flow during Rest*. Poster presentation at the Organization for Human Brain Mapping 15<sup>th</sup> Annual Meeting. San Francisco, CA.

Wei, S-M., **Padmanabhan, A.**, Roe, K.V., Kohn, P.D., Kolachana, B.S., Weinberger, D.R., Berman, K.F. (2008 November). *Brain-derived neurotrophic factor val<sup>66</sup>met polymorphism differentially affects regional cerebral blood flow during working memory and rest*. Poster presentation at the Society for Neuroscience 38<sup>th</sup> annual meeting. Washington D.C.

Roe, K.V., Coutlee, C.G. Mervis, C.B. Kohn, P., Kippenhan, J.S., **Padmanabhan, A.**, Marenco, S., Morris, C.A., Meyer-Lindenberg, A. and Karen F. Berman, K. F. (2008 July). *Anomalous neurofunctional lateralization in Williams Syndrome*. Slide presentation at the International Williams Syndrome 12<sup>th</sup> Annual Meeting. Garden Grove, CA.

**Padmanabhan, A.**, Kohn, P.D., Nichols, L.M., Kolachana, B., Weinberger, D.R., Berman, K.F. (2008 May). *Effects of BDNF val66met genotype on regional cerebral blood flow and functional connectivity during working memory*. Poster presentation at the Society of Biological Psychiatry 63<sup>rd</sup> Annual Meeting. Washington D.C.

**Padmanabhan A.** Wint D P, Dreher J-C, Kohn P D, Roe K V, Sarpal D K, Lazerow A, Mattay V S, Kolachana B, Weinberger D R, Berman K F. (2007 December). *Effects of COMT genotype and COMT inhibition on the neural processing of reward*. Poster presentation at the American Council for Neuropsychopharmacology Annual Meeting.

Roe, K.V., Kohn, P.D., Kippenhan, J.S., Griffin, E., **Padmanabhan, A.**, Berman, K.F. (2007 November). *The role of prefrontal-hippocampal circuitry in learning a novel lexicon*. Poster presentation at the Society for Neuroscience 37<sup>th</sup> Annual Meeting. San Diego, California.

**Padmanabhan A.**, Wint, D.P., Dreher, J-C., Kohn P.D., Roe K.V., Sarpal D.K., Lazerow, A., Mattay V.S., Kolachana B., Weinberger D.R., Berman K.F. (2007 June). *Effects of COMT genotype and COMT*

*inhibition on the neural processing of reward.* Poster presentations at the Organization for Human Brain Mapping 14<sup>th</sup> Annual Meeting. Chicago, Illinois.

Roe, K.V., Griffin, E., **Padmanabhan, A.**, Nichols, L.M., King, E.A., Sarpal, D., Baller, E.B., Kippenhan, J. S. , Kohn, P.D., Berman, K.F. (2007 June). *Neural systems underlying lexical acquisition.* Poster presentation at the Organization for Human Brain Mapping 14<sup>th</sup> Annual Meeting. Chicago, Illinois.

King, E.A., Furman, D.J., Kohn, P.D., Kippenhan, J.S., Nichols, L., **Padmanabhan, A.**, Sarpal, D.S., Baller, E.B., Roe, K.V., Meyer-Lindenberg, A., Berman, K.F. (2007 June). *Orbitofrontal cortex activity measured with positron emission tomography during social and nonsocial reversal.* Poster presentation at the Organization for Human Brain Mapping 14<sup>th</sup> Annual Meeting. Chicago, Illinois.

**Padmanabhan A**, Wint D.P., Kohn, P.K., Sarpal, D.K., Furman, D.J., McInerney-Leo, A., Meyer-Lindenberg, A., Lopez, G., Nussbaum, R., Berman, K.F. (2006 November). *Altered prefrontal function in medication-free Parkinson's disease during working memory.* Poster presentation at the Society for Neuroscience 36<sup>th</sup> Annual Meeting. Atlanta, Georgia.

Wint, D.P., Apud, J.A., Dreher, J-C., Kohn, P.D., Sarpal, D.K., **Padmanabhan, A.**, Lazerow, A., Mattay, V.S., Kolachana, B., Weinberger, D.R., Berman, K.F. (2006 November). *Effects of COMT inhibition and genotype on neural activation during reward anticipation.* Poster presentation at the Society for Neuroscience 36<sup>th</sup> Annual Meeting. Atlanta, Georgia.

**Padmanabhan, A.**, Wint, D.P., Kohn, P.K., Sarpal, D.K., Furman, D.J., McInerney-Leo, A., Meyer-Lindenberg, A., Lopez, G., Nussbaum, R., Berman, K.F. (2006 June). *Altered prefrontal function in medication-free Parkinson's disease during working memory.* Poster presentation at the Organization for Human Brain Mapping 13<sup>th</sup> Annual Meeting. Florence, Italy.

Kippenhan, J.S., Kohn, P.D., Meyer-Lindenberg, A., Furman, D., Chang, W-L., Sarpal, D., **Padmanabhan, A.**, Berman, K.F. (2006 June). *Viewing novel objects in a simple spatial context activates anterior hippocampus in fMRI.* Poster presentation at the Organization for Human Brain Mapping 13<sup>th</sup> Annual Meeting. Florence, Italy.

## INVITED LECTURESHIPS

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- What can brain studies tell us about adolescent behavior? (2013). Invited Speaker, Tri-Beta, the Biological Sciences Honor Society, University of Pittsburgh Pittsburgh, PA
- What can brain studies tell us about adolescent behavior? (2012). Invited Speaker, Dorseyville Middle School, Pittsburgh, PA

## REVIEWING

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### ASSISTED REVIEWS

Brain and Cognition (March, 2013)

Proceedings of the National Academy of Sciences (April, 2012)

Child Development Perspectives (December, 2011)  
Developmental Cognitive Neuroscience (April, 2011)  
Neuron (April, 2011)  
Child Development Perspectives (August, 2011)  
Trends in Cognitive Science (May, 2011)  
Biological Psychiatry (July 2007)

## RESEARCH EXPERIENCE

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LABORATORY OF NEUROCOGNITIVE DEVELOPMENT  
UNIVERSITY OF PITTSBURGH  
01/2013-PRESENT  
*Post Doctoral Associate*  
*Advisor: Beatriz Luna, Ph.D.*

PITTSBURGH, PA

### *Research focus*

- Using developmental imaging genetics to elucidate the role of a changing dopamine system on frontostriatal brain function in adolescence
- Neuroimaging studies of resting state functional connectivity over adolescence in autism spectrum disorder

LABORATORY OF NEUROCOGNITIVE DEVELOPMENT  
UNIVERSITY OF PITTSBURGH  
08/2008 - 12/2012  
*Graduate Student Fellow*  
*Advisor: Beatriz Luna, Ph.D.*

PITTSBURGH, PA

### *Research focus*

- Neuroimaging studies of reward processing and cognitive control in adolescence
- Using developmental imaging genetics to elucidate the role of a changing dopamine system on frontostriatal brain function in adolescence
- Neuroimaging studies of inhibitory control over adolescence in autism spectrum disorder

SECTION ON INTEGRATIVE NEUROIMAGING  
NATIONAL INSTITUTE OF MENTAL HEALTH  
06/2005 - 06/2008  
*Post-Baccalaureate Intramural Research Training Fellow*  
*Advisor: Karen F. Berman, M.D.*

BETHESDA, MD

### *Responsibilities*

- Recruited and screened participants and administered consent protocols
- Collected fMRI and PET data from patient and control populations
- Studied biological and neural mechanisms of neuropsychiatric disorders (Schizophrenia, Williams's Syndrome, Parkinson's Disease) in the context of reward processing, visual-spatial processing and working memory respectively

- Studied the genetic mechanisms of neural circuitry in reward processing and working memory
- Processed and analyzed functional imaging data using various imaging statistical packages
- Presented results through talks and posters at national and international scientific conferences
- Assisted in the development of fMRI and PET paradigms for control and patient populations

COGNITIVE NEUROSCIENCE SECTION  
NATIONAL INSTITUTE OF NEUROLOGICAL  
DISORDERS AND STROKE

BETHESDA, MD

06/2004 – 08/2004

*Pre-Baccalaureate Intramural Research Training Fellow*

*Advisor: Jordan Grafman, Ph.D.*

*Responsibilities*

- Administered a behavioral study regarding the effects of prefrontal cortex lesions on attitude formation
- Analyzed behavioral data using SPSS
- Co-authored manuscript on the study
- Created and presented a poster for the NIH annual Summer Student Poster Day
- Assisted in the administration of several other studies exploring the role of attitudes on behavior

INFANT COGNITION LABORATORY  
CARNEGIE MELLON UNIVERSITY

PITTSBURGH, PA

08/04 – 05/05

*Research Assistant*

*Advisor: David Rakison, Ph.D.*

*Responsibilities*

- Assisted in participant recruitment
- Ran a habituation study on infants' ability to categorize objects' labels, parts and motion
- Analyzed the habituation data
- Created and presented a poster at the annual "Meeting of the Minds Symposium" at Carnegie Mellon

DEPARTMENT OF PSYCHOLOGY  
CARNEGIE MELLON UNIVERSITY

PITTSBURGH, PA

01/04 – 05/04

*Research Assistant*

*Advisor: Kenneth Kotovsky, Ph.D.*

*Responsibilities*

- Assisted in the running of experiments regarding how context can affect semantic memory
- Investigated possible mechanisms that allow for retrieval and recognition of solutions to complex problems
- Applied these mechanisms to understand aspects of problem solving in complex real-world situations like engineering design

## TEACHING EXPERIENCE

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Department of Psychology, University of Pittsburgh  
09/11-12/11

Pittsburgh, PA

*Teaching Fellow, Research Methods*  
*Supervisor: Erik Reichle, Ph.D.*

### *Responsibilities*

- Led a research methods lab section.
- Held bi-weekly lectures and administered assessments relating to conducting experiments in psychology
- Taught statistics (ANOVA), experimental design and implementation, manuscript writing and ethics
- Graded papers

Department of Psychology, Carnegie Mellon University  
01/05 - 05/05

Pittsburgh, PA

*Teaching Assistant, Introduction to Psychology*  
*Supervisor: Kenneth Kotovsky, Ph.D.*

### *Responsibilities*

- Led two recitation sections twice a week to go over material covered in lecture
- Wrote and administered weekly quizzes
- Graded papers, quizzes and exams
- Held exam review sessions

## MENTORING

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Hot Metal Bridge Post-Baccalaureate Fellowship Program, University of Pittsburgh  
2010 - 2012

Pittsburgh, PA

*Student Mentor*

David S. Baginski, FSC, Scholars Program  
2011 - 2012

Pittsburgh, PA

*Mentor*

## TECHNICAL SKILLS

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*Programming Languages:* Java, Java Script, HTML, UNIX Shell, Bash, MATLAB, R

*Relevant Software:* SPM99, SPM5, AFNI, SUMA, FSL, LENS, SPSS, Maya, Microsoft Office

*Task Development:* E-prime, Presentation

*Operating Systems:* Windows, MacOS, Unix, Linux

*Neuroimaging:* Operating 1.5 and 3-Tesla GE MRIs



## SERVICE

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### FLUX CONGRESS

FOR INTEGRATIVE DEVELOPMENTAL COGNITIVE NEUROSCIENCE  
09/2013

Pittsburgh, PA

*University of Pittsburgh Local Planning Committee*

### DIVERSITY COMMITTEE

08/2009 - PRESENT

Department of Psychology, University of Pittsburgh  
*Secretary*

Pittsburgh, PA

### COLLOQUIUM COMMITTEE

08/2009 - PRESENT

Center for the Neural Basis of Cognition  
*Co-Chair*

Pittsburgh, PA

## RELEVANT COURSEWORK

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### PSYCHOLOGY AND NEUROSCIENCE

Cognitive Psychology, Carnegie Mellon University

Cognitive Neuroscience, Carnegie Mellon University

Cognitive Neuropsychology, Carnegie Mellon University

Perception, Carnegie Mellon University

Neurobiology of Mental Illness, National Institutes of Health, Bethesda, MD

Attention and Perception, University of Pittsburgh

Human Memory, University of Pittsburgh

Cognitive Development, Carnegie Mellon University

Cellular Neuroscience, Carnegie Mellon University

Functional Neuroanatomy, University of Pittsburgh

Topics in Clinical Psychology: Behavioral Genetics, University of Pittsburgh

Topics in Clinical Psychology: Autism, University of Pittsburgh

### STATISTICS AND RESEARCH METHODS

Experimental Design in the Behavioral and Social Sciences, Carnegie Mellon University

Research Methods in Cognitive Psychology, Carnegie Mellon University

Functional Magnetic Resonance Imaging, Carnegie Mellon University

Applications of Perceptual and Cognitive Psychology, Carnegie Mellon University

ANOVA, University of Pittsburgh

Regression, University of Pittsburgh

Statistical Models of the Brain, University of Pittsburgh

### PROGRAMMING

Fundamental Data Structures and Algorithms, Carnegie Mellon University

Principles of Programming, Carnegie Mellon University