



Rachel Marsh, Ph.D.

Assistant Professor of Clinical Psychology (in Psychiatry)
Division of Child and Adolescent Psychiatry
Columbia University Medical Center
New York State Psychiatric Institute
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Field of Specialization

Pediatric Neuroimaging

Academic Training

1997 B.A. Skidmore College, Psychology, Magna Cum Laude
2003 Ph.D. City University of New York, Graduate Center, Experimental Psychology

Traineeship

2003-2004 NIMH-sponsored T32 Postdoctoral Research Fellowship
Department of Child and Adolescent Psychiatry
Columbia University, New York State Psychiatric Institute, New York, NY
2004-2006 NIMH-sponsored Postdoctoral Research Fellowship
Department of Developmental Psychobiology
Columbia University, New York State Psychiatric Institute, New York, NY

Professional Organizations and Societies

Cognitive Neuroscience Society
Organization of Human Brain Mapping
Academy of Eating Disorders
Eating Disorders Research Society

Academic Appointments

2006-present Assistant Professor of Clinical Psychology (in Psychiatry), Division of Child and Adolescent Psychiatry, Department of Psychiatry, Columbia University, NY

Administrative Appointments

2007-present Deputy Training Director of the "Research in Child Psychiatry" NIMH T32 Fellowship Program (T32 MH016434), Division of Child and Adolescent Psychiatry, Department of Psychiatry, Columbia University, NY
2007-present Liaison Director for International Visiting Faculty in Child Psychiatry, Department of Psychiatry, Columbia University, NY

Honors

1997 Magna Cum Laude with Departmental Honors in Psychology
1999-2003 Brooklyn College Teaching Fellowship
2001 Presentation Award, Brooklyn College, NY

2001 Presentation Award, New York University, NY
2006 NARSAD Young Investigator Award

Grant Support

Active Support:

2011-2013 An FMRI Study of Three Neural Systems Implicated in Obsessive-Compulsive Disorder
1R21MH093889 (NIMH), 2 years of funding
Role: Principal Investigator (Multi-PI with H. Blair Simpson, M.D.)
Total direct support requested: \$274,722

2011-2016 A Longitudinal MRI Study of Adolescents with Bulimia Nervosa
1R01MH090062-01A1 (NIMH), 5 years of funding
Role: Principal Investigator
Total direct support requested: \$1,917,972

Past Support:

2006-2011 Self-Regulatory Control and Habit Learning in Adolescents with Bulimia Nervosa
1K01MH077652 (NIMH), 5 years of funding awarded
Role: Principal Investigator
Total direct support: \$819,712

2009-2011 Self-Regulatory Control and Habit Learning in Adolescents with Bulimia Nervosa
3K01MH077652-04S1 (NIMH, ARRA Administrative Supplement), 2 years of funding
Role: Principal Investigator
Total direct support: \$100,000

2010-2011 A Virtual Reality-Based FMRI Study of Learning Systems in Children with Tourette Syndrome
Tourette Syndrome Association, 1 year of funding
Role: Principal Investigator
Total direct support: \$75,000

2006-2008 An fMRI Study of Self-Regulatory Control in Depressed Adolescents with Bulimia Nervosa
NARSAD Young Investigator Award, 2 years of funding
Role: Principal Investigator
Total direct support: \$60,000

2006-2008 Self-Regulatory Control and Habit Learning in Adolescents with Bulimia Nervosa
Sackler Institute for Developmental Psychobiology, Columbia University, 2 years of funding
Role: Principal Investigator
Total direct support: \$60,000

Pending Support:

2011-2012 An MRI Study of Risk-Taking in Disordered Gambling
(NIMH, will be submitted 6/5/11)
Role: Principal Investigator ((Multi-PI with Carlos Blanco, M.D.)
Total direct support requested: \$275,000

Selected Professional Presentations

- 2007
1. Marsh R. Normal brain development. Symposium presented as part of the Research Forum of Neuroimaging at the 54th annual meeting of the American Academy of Child and Adolescent Psychiatry, Boston, MA, 2007.

2. Marsh R. Self-regulatory control and habit learning in Bulimia Nervosa. Symposium presented at the 54th annual meeting of the American Academy of Child and Adolescent Psychiatry, Boston, MA, 2007.
3. Marsh R. Self-regulatory control and habit learning in Tourette Syndrome. Symposium presented at the 54th annual meeting of the American Academy of Child and Adolescent Psychiatry, Boston, MA, 2007.
- 2008
4. Marsh R. Frontostriatal control systems in bulimia nervosa. Symposium presented at the meeting of the Eating Disorders Research Society, Montreal, Quebec, Canada, 2008.
5. Marsh R. The neural bases of multiple memory systems. Symposium presented at the 55th annual meeting of the American Academy of Child and Adolescent Psychiatry, Chicago, IL, 2008.
6. Marsh R. The role of frontostriatal circuits in eating disorders. Symposium presented at the 55th annual meeting of the American Academy of Child and Adolescent Psychiatry, Chicago, IL, 2008.
- 2009
7. Marsh R. Frontostriatal circuits in the development of eating disorders. Grand rounds in the Division of Child and Adolescent Psychiatry, Columbia University, NY.
- 2010
8. Marsh R. Functional abnormalities underlying OCD in adolescents. Symposium presented at the 57th annual meeting of the American Academy of Child and Adolescent Psychiatry, New York, NY, 2010.
- 2011
9. Marsh R. Functional abnormalities underlying OCD in adolescents and adults. Symposium presented at the 66th annual meeting of the Society of Biological Psychiatry, San Francisco, California, 2011.

Other Professional Activities

Peer reviewer for the following scientific journals: American Journal of Psychiatry, Archives of General Psychiatry, Journal of the American Academy of Child and Adolescent Psychiatry, Journal of Neuroscience, Neuroimage, Journal of Child Psychology and Psychiatry, and Brain.

Bibliography

Original Peer Reviewed Articles

Published Articles

- 2004
1. *Marsh R, Alexander GM, Packard MG, Zhu H, Wingard JC, Quackenbush G, Peterson BS. Habit learning in Tourette syndrome: A translational neuroscience approach to a developmental Psychopathology. *Archives of General Psychiatry*, 61:1259-1268, 2004.
- 2005
2. *Marsh R, Alexander GM, Packard MG, Zhu H, Quackenbush G, Peterson BS. Perceptual-motor skill learning in Tourette syndrome: Evidence for multiple procedural learning and memory systems. *Neuropsychologia*, 43/10:1456-1465, 2005.
- 2006
3. *Marsh R, Zhu H, Schultz, B, Quackenbush G, Royal, J, Skudlarski P, Peterson BS. A developmental fMRI study of self-regulatory control. *Human Brain Mapping*, 27/11: 848-863, 2006.
- 2007
4. *Marsh R, Zhu H, Skudlarski P, Wang Z, Peterson BS. A developmental fMRI study of self-regulatory control in Tourette Syndrome. *American Journal of Psychiatry*, 164/6, 2007.
- 2009
5. *Marsh R, Steinglass JE, Gerber AJ, O'Leary KG, Wang z, Walsh BT, Peterson BS. Deficient activity in the neural systems that mediate self-regulatory control in Bulimia Nervosa. *Archives of General Psychiatry*, 66/1: 1-13, Jan 2009.
6. Peterson BS, Potenza MN, Zhu Z, Martin A, *Marsh R, Plessen KJ, Wang Z, Yu S. An fMRI study of the effects of psychostimulants on default-mode processing during performance of the word-color Stroop task in youths with ADHD. *American Journal of Psychiatry*, 166(11) 1286-94, Nov 2009.
- 2010

7. Mazzone L, Yu S, Wang Z, Marsh R, Blair C, Peterson BS. An fMRI study of frontostriatal circuits during the inhibition of eye blinking in persons with Tourette Syndrome. *American Journal of Psychiatry*, 167(3):341-349, Mar 2010.
8. *Marsh R, Hao X, Xu D, Wang Z, Packard M, Duan Y, Lui J, Kangarlu A, Martinez D, Garcia F, Tau GZ, Yu S, Peterson BS. A virtual reality-based fMRI study of reward-based spatial learning. *Neuropsychologia*, 48(10) 2912-21, Aug 2010.

2011

9. *Marsh R, Horga G, Wang Z, Klahr K, Berner L, Walsh BT, Peterson BS. An FMRI study of self-regulatory control and conflict resolution in adolescents with bulimia nervosa. *American Journal of Psychiatry*, (published online June 2011, doi:10.1176/appi.ajp.2011.11010094)
10. Wang Z, Maia T, Marsh R, Colibazzi T, Gerber A, Peterson BS. The neural circuits that generate tics in Gilles de la Tourette Syndrome. *American Journal of Psychiatry*, in Press.
11. Horga G, Maia T, Wang P, Wang Z, Marsh R, Peterson BS. Adaptation to Conflict via Context-Driven Anticipatory Signals in the Dorsomedial Prefrontal Cortex. *Journal of Neuroscience*, in Press.

Chapters and Books

2007

1. Bansal R, Chung Y, Dong Z, Duan Y, Gerber A, Hao X, Kangarlu A, Lui F, Marsh R, Plessen KJ, Royal J, Wang Z, Peterson BS. Neuroimaging methods in the study of childhood psychiatric disorders. (2007) In Lewis M (Ed): *Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook*, 4th Edition. Lippincott, Williams & Wilkins, Baltimore, MD.

2008

2. *Marsh R, Leckman J, Bloch MH, Yazgan Y, Peterson BS. (2008) Tics and Compulsions: Disturbances of self-regulatory control in the development of habitual behaviors. In Nelson CA and Luciana M (Eds.), *Handbook of Developmental Cognitive Neuroscience*, 2nd Edition. MIT Press, Cambridge, MA.

2009

3. *Marsh R, Gorman D, Royal, J, Peterson BS. (2009). Tourette Syndrome and Obsessive-Compulsive Disorder: Disturbances in the Maturation of Frontostriatal Systems. In M. Ernst & J. Rumsey (Eds.), *Neuroimaging in Developmental Clinical Neuroscience*. Cambridge University Press, Cambridge, MA.

Reviews, Editorials, Letters

2007

1. *Marsh R, Steinglass JE, Walsh BT, Peterson BS. Self-regulatory control and habit learning in adolescents with eating disorders. *Current Psychiatry Reviews*, 3/1: 73-83, 2007.

2008

2. *Marsh R, Gerber AJ, Peterson BS. Neuroimaging Studies of Normal Brain Development & Their Relevance for Understanding Childhood Neuropsychiatric Disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 47/11: 1233-51, Nov 2008.

2009

3. *Marsh R, Maia T, Peterson BS. Functional disturbances within frontostriatal circuits across multiple childhood psychopathologies. *American Journal of Psychiatry*, 166/6: 664-74, 2009.
4. *Marsh R. Dysfunctional frontostriatal controls systems in bulimia nervosa. *Future Neurology*, 4/4: 383-387, 2009.

Teaching Experience and Responsibilities

Courses and Lectures

1999-2001	Statistics for the Behavioral Sciences, Department of Psychology, Brooklyn College: 4 hrs weekly Introduction to Psychology, Department of Psychology, Brooklyn College: 4 hrs weekly
2001-2003	Developmental Psychology, Department of Psychology, Brooklyn College: 4 hrs weekly Experimental Psychology, Department of Psychology, Brooklyn College: 4 hrs weekly
2002	Introduction to Psychology, Department of Psychology, Baruch College: 2 hrs daily (summer)
2003	Experimental Psychology, Department of Psychology, Hunter College: 2 hrs daily (summer)

- 2004 Developmental Psychology Seminar, Clinical Psychology Interns, Columbia College of Physicians and Surgeons
- 2006-present Developmental Psychology Seminar, PGYI Child Psychiatry Residents, Columbia College of Physicians and Surgeons
- 2007-present Journal Club, Postdoctoral Research Fellows (NIMH-funded T32 in Child Psychiatry), Columbia College of Physicians and Surgeons

Training Fellowships Sponsored/Mentored

- 2007-2008 Koplowitz Fellowship in Child Psychiatry (Margarita Garcia-Amador, M.D.)
- 2008-2009 Multiple learning and memory systems in cocaine users (Gregory Z. Tau, M.D., Ph.D.)

Teaching Experience and Responsibilities

Courses and Lectures

Statistics for the Behavioral Sciences, Department of Psychology, Brooklyn College: 2/week for 12 months/year, 1999-2001

Introduction to Psychology, Department of Psychology, Brooklyn College: 2/week for 12 months/year, 1999-2001

Developmental Psychology, Department of Psychology, Brooklyn College: 2/week for 12 months/year, 2001-2003

Experimental Psychology, Department of Psychology, Brooklyn College: 2/week for 12 months/year, 2001-2002

Introduction to Psychology, Department of Psychology, Baruch College: 5/week for 2 months/year, 2002

Experimental Psychology, Department of Psychology, Hunter College: 5/week for 2 months/year 2003

Developmental Psychology Seminar, Clinical Psychology Interns, Columbia College of Physicians and Surgeons: 2/year, 2004

Developmental Psychology Seminar, PGYI Child Psychiatry Residents, Columbia College of Physicians and Surgeons: 1/year, 2006-present

Postdoctoral Research Fellowship in Child Psychiatry (T32) Seminars, 3/year, Columbia College of Physicians and Surgeons, 2006-present

Developmental Psychology Seminar, PGY2 Psychiatry Residents, Columbia College of Physicians and Surgeons: 1/year, 2011-present

Supervision of Fellows, Students, and Research Assistants

2 days per week for 12 months/year in research methods, research assistants in the Pediatric Brain Imaging Laboratory, Columbia College of Physicians and Surgeons, 2007-present

1 day per month for 12 months/year, Journal Club for Child Psychiatry Research Fellows, Columbia College of Physicians and Surgeons, 2007-present

Mentoring of Postdoctoral Fellows

Faculty member on an NIMH-Sponsored T32 Postdoctoral Training Grant, Research Fellowship in Child Psychiatry (PI: BS Peterson), Columbia College of Physicians and Surgeons, 2007-present

Margarita Garcia-Amador, M.D., Postdoctoral Fellow in Child Psychiatry, Kopliewicz Fellowship, Columbia College of Physicians and Surgeons, 2007-2008 (Role: Mentor)

Gregory Z. Tau, M.D., Ph.D., Postdoctoral Fellow in Child Psychiatry Columbia College of Physicians and Surgeons (2009-2010) and then recipient of a Mentored Research Training Grant from the American Academy of Child and Adolescent Psychiatry, 2010-present (Role: Mentor)

Rachel Jacobs, Ph.D., Postdoctoral Fellow in Child Psychiatry Columbia College of Physicians and Surgeons, 2010-present (Role: Primary Mentor)