

CURRICULUM VITAE

RACHAEL BLACKMAN, M.D. Ph.D.

PERSONAL INFORMATION

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EDUCATION

Lafayette College, Easton, PA
B.S., 2004, Honors in Neuroscience; Minor: Anthropology and Sociology

University of Minnesota, Minneapolis, MN
Ph.D., 2013, Neuroscience
Advisor: Dr. Matthew Chafee, Ph.D.
Thesis Title: Neural basis of context processing dysfunction in schizophrenia: A monkey model

University of Minnesota Medical School, Minneapolis, MN
M.D., 2015

POSTGRADUATE TRAINING

Alpert Medical School of Brown University, Providence, RI
Resident in General Psychiatry, 2015-present

HONORS AND AWARDS

Psi Chi, the International Honor Society in Psychology, 2003
Phi Beta Kappa, 2004
Magna Cum Laude, Lafayette College, 2004
American Physician Scientists Association Annual Meeting Travel Award, 2009
Schizophrenia International Research Society Conference Travel Award, 2012
Graduate Program in Neuroscience/Milne-Brandenburg Award, 2012
American Legion Family Brain Sciences Award, 2012
Stark Award for Advanced Scholarship, 2013
Council of Graduate Students Travel Award, 2013
Graduate and Professional Student Assembly Scholarly Travel Grant, 2013, 2014
Graduate and Professional Student Assembly Professional Development Travel Grant, 2014

PROFESSIONAL LICENSURE

Basic Life Support, American Heart Association, renewed 2017
Licensed Medical Doctor, Board of Medical Licensure and Discipline, State of Rhode Island and Providence Plantations, 2018

COMMITTEES AND OTHER APPOINTMENTS

Lafayette College Alumni Admissions Representative, Lafayette College, 2006-present
Psychiatry Residency Recruitment Committee, Department of Psychiatry and Human Behavior,
Alpert Medical School of Brown University, 2015-present
Psychiatry Residency Selection Committee, Department of Psychiatry and Human Behavior,
Alpert Medical School of Brown University, 2016-2017, 2018-present
Psychiatry Resident Peer Mentor, Department of Psychiatry and Human Behavior, Alpert Medical School
of Brown University, 2017-present
Patient Education Development, Addiction and Drug Program Partial Hospitalization Program, Butler
Hospital, 2017
Brown University Psychiatry Residency Program Representative, PsychSIGN Residency Fair, 2018
Brown University Psychiatry Residency Team (Team Leader), NAMI Walks Rhode Island, 2018
Psychiatry Consultation Volunteer, RI Free Clinic, 2018-present

MEMBERSHIP IN SOCIETIES

Sigma Xi, the Scientific Research Society, 2004-present
Society for Neuroscience, 2004-present
American Psychiatric Association, 2006-2010, 2014-present
American Physician Scientists Association, 2008-present
American Association for the Advancement of Science, 2007-present
Academy of Integrative Health & Medicine/American Holistic Medical Association, 2014-present
Rhode Island Psychiatric Society, 2015-present

PUBLICATIONS

* denotes co-first authors

1. Harty TP, Dib-Hajj SD, Tyrell L, **Blackman R**, Hisama FM, Rose JB, Waxman SG (2006). Na(V)1.7 mutant A863P in erythromelalgia: effects of altered activation and steady-state inactivation on excitability of nociceptive DRG neurons. *Journal of Neuroscience* 26: 12566-12575.
2. Goodwin SJ, **Blackman RK**, Sakellaridi S, Chafee MV (2012). Executive control over cognition: Stronger and earlier rule-based modulation of spatial category signals in prefrontal cortex relative to parietal cortex.
3. **Blackman RK** and Chafee MV (2012). Non-human primate performance on the dot pattern expectancy task after ketamine administration. *Schizophrenia Research* 136 (Supplement 1, Meeting Abstract 8): S93-S94.
4. Abbs B, Achalia RM, Adelufosi AO, Aktener AY, Beveridge NJ, Bhakta SG, **Blackman RK**, et al. (2012). The 3rd Schizophrenia International Research Society Conference, 14-18 April 2012, Florence, Italy: Summaries of oral sessions. *Schizophrenia Research* 141(1): e1-e24.
5. **Blackman RK**, MacDonald AW III, Chafee MV (2013). Effects of ketamine on context-processing performance in monkeys: A new animal model of cognitive deficits in schizophrenia. *Neuropsychopharmacology*, 38(11): 2090-2100.
6. Crowe DA, Goodwin SJ, **Blackman RK**, Sakellaridi S, Sponheim SR, MacDonald AW III, Chafee MV (2013). Prefrontal neurons transmit signals to parietal neurons that reflect executive control of cognition. *Nature Neuroscience* 16(10): 1484-1491.
7. **Blackman RK**, Crowe DA, DeNicola AL, Sakellaridi S, MacDonald AW III, Chafee MV (2016). Monkey prefrontal neurons reflect logical operations for cognitive control in a variant of the AX continuous performance task (AX-CPT). *Journal of Neuroscience* 36(14): 4067-79.

8. **Blackman R**, Philip N, Badre, D (2018). Disruption in working memory gating observed in schizophrenia. *Schizophrenia Bulletin* 44 (Supplement 1, Meeting Abstract F64): S244.
9. Zick JL*, **Blackman RK***, Crowe DA, Amirikian B, DeNicola AL, Netoff TI, Chafee MV (2018). Blocking NMDAR Disrupts Spike Timing and Decouples Monkey Prefrontal Circuits: Implications for Activity Dependent Disconnection in Schizophrenia. *Neuron* 98 (6): 1243-1255.e5.

ABSTRACTS

* denotes primary presenter

1. **Blackman RK*** and Britton GB. The safety signaling properties of feedback stimuli in classical fear conditioning. Presented at the 34th Annual Society for Neuroscience Conference, San Diego, CA, October 23-27, 2004.
2. Harty T*, Dib-Hajj S, Tyrell L, Hisama F, **Blackman RK**, Rose JB, Waxman SG. Nav1.7 mutant A863P associated with erythralgia produces hyperexcitability in neurons of the dorsal root ganglia. Presented at the 36th Annual Society for Neuroscience Conference, Atlanta, GA, October 14-18, 2006.
3. Chafee M*, Jain S, **Blackman R**. Localizing the origin of executive control over distributed processing to prefrontal cortex. Presented at Computational and Systems Neuroscience 2009, Salt Lake City, Utah, February 26-March 1, 2009.
4. **Blackman RK***, MacDonald AW III, Sponheim S, Jain S, Te S, Chafee M. Effect of competing stimuli in a spatial categorization task as a means to study the cognitive deficits observed in schizophrenia. Presented at the 2009 American Society for Clinical Investigation/Association of American Physicians Joint Meeting, Chicago, IL, April 24-26, 2009.
5. Crowe DA*, Goodwin S, **Blackman RK**, Sakellaridi S, Chafee M. Interactions between prefrontal and parietal cortex in the executive control of categorization. Presented at the 41st Annual Society for Neuroscience Conference, Washington, DC, November 12-16, 2011.
6. **Blackman RK***, MacDonald AW III, Sponheim S, Poppe A, Chafee MV. Novel continuous performance task demonstrates spatial context processing deficits in schizophrenia. Presented at the 41st Annual Society for Neuroscience Conference, Washington, DC, November 12-16, 2011.
7. **Blackman RK*** and Chafee MV. Non-human primate performance on the dot pattern expectancy task after Ketamine administration. Presented at the Schizophrenia International Research Society Cognition Satellite Conference, Florence, Italy, April 14, 2012.
8. **Blackman RK*** and Chafee MV. Non-human primate performance on the dot pattern expectancy task after Ketamine administration. Presented at the 3rd Biennial Schizophrenia International Research Society Conference, Florence, Italy, April 14-18, 2012.
9. **Blackman RK*** and Chafee MV. Non-human primate performance on the dot pattern expectancy task after Ketamine administration. Presented at the 27th Annual MD/PhD Student Conference, Keystone, CO, July 6-8, 2012.
10. **Blackman RK*** and Chafee MV. Neurophysiological basis for cognitive control in parietal and prefrontal cortex of monkeys. Presented at the International Congress on Schizophrenia Research, Orlando, FL, April, 21-25, 2013.

11. Chafee MV*, Crowe DA, Goodwin SJ, **Blackman RK**, Sakellaridi S. Transmission of cognitive signals between simultaneously recorded prefrontal and parietal neurons in a rule-based categorization task: Temporal features of the interaction and modulation of reward. Presented at the 43rd Annual Society for Neuroscience Conference, San Diego, CA, November 9-13, 2013.
12. **Blackman RK**, Sakellaridi S, MacDonald AW III, Chafee MV*. Neurophysiological basis of context processing dysfunction in prefrontal and parietal cortex of nonhuman primates in a pharmacological model of schizophrenia. Presented at the 43rd Annual Society for Neuroscience Conference, San Diego, CA, November 9-13, 2013.
13. **Blackman RK***, Sakellaridi S, Crowe DA, Chafee MV. Context processing disruption in the prefrontal-parietal network in a monkey model for schizophrenia. Presented at the 167th American Psychiatric Association Annual Meeting, New York, NY, May 3-7, 2014.
14. Westerberg JA*, **Blackman RK**, Sakellaridi S, Chafee MV. Modulation of neural synchrony in prefrontal and parietal cortex of monkeys as a function of executive processing demand in a context processing task. Presented at the 44th Annual Society for Neuroscience Conference, Washington, DC, November 15-19, 2014.
15. Crowe DA*, **Blackman RK**, Sakellaridi S, Chafee MV. Differential effects of NMDA receptor blockade on precise spike timing in local prefrontal and parietal cortical circuits of monkeys performing an executive control task. Presented at the 44th Annual Society for Neuroscience Conference, Washington, DC, November 15-19, 2014.
16. Zick JL*, **Blackman RK**, Chafee MV, Netoff TI. Application of generalized linear models to investigate functional synaptic coupling and synchrony in an animal model of schizophrenia. Presented at the 24th Annual Computational Neuroscience Meeting, Prague, Czech Republic, July 18-23, 2015.
17. Zick JL*, **Blackman RK**, Chafee MV, Netoff TI. Reduced functional connectivity and synchrony between spiking neurons in a primate model of schizophrenia. Presented at the 45th Annual Society for Neuroscience Conference, Chicago, IL, October 17-21, 2015.
18. Zick JL*, Schultz K, **Blackman RK**, Crowe D, Amirikian B, Netoff TI, Chafee MV. Changes in network dynamics and prefrontal spiking activity in a mouse genetic model of schizophrenia: Implications for connectivity. Presented at the 46th Annual Society for Neuroscience Conference, San Diego, CA, November 12-16, 2016.
19. Zick JL*, Schultz K, **Blackman RK**, Chafee MV, Netoff TI. Information theoretic approach towards identifying changes in cellular-level functional connectivity and synchrony across animal models of schizophrenia. Presented at the 26th Annual Computational Neuroscience Meeting, Antwerp, Belgium, July 15-20, 2017.
20. **Blackman RK***, Philip NS, Badre D. Disruption in Working Memory Gating Observed in Schizophrenia. Presented at the 6th Biennial Schizophrenia International Research Society Conference, Florence, Italy, April 4-8, 2018.
21. **Blackman RK***, Philip NS, Badre D. Disruption in Working Memory Gating Observed in Schizophrenia. Presented at VA Research Week, Providence, RI, May 17, 2018.
22. **Blackman RK***. Measurement-Based Care Survey Implementation in Mental Health. Presented at VA Project Improvement Poster Session, Providence, RI, June 29, 2018.

INVITED PRESENTATIONS

1. **Blackman RK.** Development of a cellular model for schizophrenia context processing deficits. Presented at the Center for Cognitive Sciences Spring Research Day, University of Minnesota, Minneapolis, MN, March 5, 2010.
2. **Blackman RK.** Development of a cellular model for schizophrenia context processing deficits. Presented at the Graduate Program in Neuroscience Colloquium, University of Minnesota, Minneapolis, MN, March 19, 2010.
3. **Blackman RK.** Non-human primate model of cognitive dysfunction in schizophrenia. Presented at the Graduate Program in Neuroscience Colloquium, University of Minnesota, Minneapolis, MN, May 4, 2011.
4. **Blackman RK.** Cognitive dysfunction and disrupted cortical processing in schizophrenia: A monkey's tale. Presented at the Graduate Program in Neuroscience Annual Retreat, University of Minnesota, Minneapolis, MN, February 25, 2012.
5. Chafee MV and **Blackman RK.** Schizophrenia as synaptic disconnection: Toward a neural-cognitive model in nonhuman primates. Presented at the Department of Psychiatry Research Brown Bag, University of Minnesota, Minneapolis, MN, November 28, 2012.
6. **Blackman RK.** Modeling Schizophrenia: From Bench to Bedside. Presented at the Department of Psychiatry Grand Rounds, University of Minnesota, Minneapolis, MN, February 6, 2013.
7. **Blackman RK.** What monkeys can tell us about schizophrenia. Presented at the St. Olaf Neuroscience Club, St. Olaf, Northfield, MN, April 17, 2013.
8. **Blackman RK.** Non-human primate model for understanding cognitive dysfunction in schizophrenia in prefrontal networks. Presented at the University of Minnesota Medical Scientist Training Program's (MD/PhD) Annual Retreat, Redwing, MN, July 22, 2013.

GRANTS/FELLOWSHIPS

Marquis Scholarship, Lafayette College, 2000-2004
 Medical Scientist Training Program, University of Minnesota, 2007-2008
 Title: "Medical Scientist Training Program"
 NIH Grant No.: T32 GM008244
 Center for Cognitive Sciences Pre-doctoral Traineeship, University of Minnesota, 2008-2010
 Title: "Interdisciplinary Training Program in Cognitive Science"
 NIH Grant No.: T32 HD007151
 Wilfred Wetzel Graduate Fellowship, University of Minnesota, Fall 2010
 R25 Research Residency Program, Brown University, 2016-present
 Project Title: "Promoting Research Training During Psychiatry Residency"
 NIH Grant No: R25MH101076 (PI: Tyrka)
 Center for Neurorestoration and Neurotechnology Grant, 2017-present
 Project Title: "Cognitive Control Processing in Schizophrenia"
 Grant No.: Seed Project S-17-1; N2864-C (PI: Hochberg)
 Award Amount (2018): \$12,250

TEACHING ROLES

Teaching Assistant, Neurobiology Laboratory, Lafayette College, Easton, PA, 2003-2004
 Brain Awareness Week Presentation, Graduate Program in Neuroscience, University of Minnesota, Minnehaha Academy, Bloomington, MN, 2009
 Brain Demonstration, Graduate Program in Neuroscience, University of Minnesota, Minnesota State Fair, Saint Paul, MN, 2009, 2010, 2011, 2012

Teaching Assistant, Medical Neuroscience Laboratory, University of Minnesota, Minneapolis, MN, Spring 2010

Teaching Assistant, Neuromuscular Junction Module, Itasca Cell and Molecular Neurobiology, Laboratory, University of Minnesota; Itasca State Park, Park Rapids, MN, Summer 2010

Brain Demonstration, Clinical Neuroscience Center, University of Minnesota, Minnesota State Fair, Saint Paul, MN, 2011

Brain Awareness Week Presentation, Graduate Program in Neuroscience, University of Minnesota. Minnehaha Academy, Minneapolis, MN, 2012

Teaching Assistant, Advanced Clinical Gross Anatomy, University of Minnesota Medical School, Minneapolis, MN, September 2013

Resident as Teacher Instructor, Psychiatry and Neurology Clerkship, Alpert Medical School of Brown University, 2017-present (Lectures: Integration Seminar 2017-present; Psychotic Disorders 2018-present)

Didactics Lecturer for PGY1 Psychiatry Residents, Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University, 2018-present (Lecture: Psychopharmacology)