

WAKE FOREST SCHOOL OF MEDICINE
Curriculum Vitae

NAME Antoine Gabriel Almonte, PhD

ADDRESS Department of Physiology & Pharmacology
Wake Forest School of Medicine
Medical Center Boulevard
Winston-Salem, NC 27157
(336) 713-0995
aalmonte@wakehealth.edu

EDUCATION

1998 Emory University
Atlanta, GA
BS in Biology, minor in English

2000 Emory University Rollins School of Public Health
Atlanta, GA
MPH in Environmental and Occupational Health

Research Advisor: Fredric Gerr, MD
Thesis: Noise-induced hearing loss in airline pilots.

2011 The University of Alabama at Birmingham
Birmingham, AL
PhD in Neurobiology

Research Advisor: J. David Sweatt, PhD
Thesis: The role of protease-activated receptor-1 (PAR1) in synaptic plasticity and memory.

POSTDOCTORAL TRAINING

2011 - 2014 Postdoctoral Scholar, The University of North Carolina at Chapel Hill School of Medicine, Department of Pharmacology
Research Advisor: Ken D. McCarthy, PhD
Research Project: Astrocytic Gs-GPCR signaling subserving behavior and synaptic function.

2014 - 2017 Postdoctoral Fellow, Wake Forest School of Medicine, Department of Physiology & Pharmacology
Research Advisor: Jeffrey L. Weiner, PhD
Research Project: Basolateral amygdala to ventral hippocampus communication subserving synaptic function, behavior, and vulnerability to alcohol addiction.

EMPLOYMENT

Academic Appointments

The University of North Carolina at Chapel Hill School of Medicine

2011 – 2014 Postdoctoral Scholar, Department of Pharmacology

Wake Forest School of Medicine

2014 -- 2017 Postdoctoral Fellow, Department of Physiology & Pharmacology
2017 -- Present Instructor, Department of Physiology & Pharmacology
2017 -- Present Member, WFSM Center for Research on Substance Abuse and
Addiction

Professional Research Experience

2000 -- 2003 Research Specialist, Emory University School of Medicine, Department of
Pharmacology, Atlanta, GA
Research Project: Glutamate receptor and G-protein coupled receptor function
in epilepsy.

2003 -- 2005 Research Specialist, Emory University School of Medicine, Department of
Pharmacology, Atlanta, GA
Research Project: Anticonvulsant effects of novel neuroprotective drugs.

2005 -- 2011 Graduate Student, The University of Alabama at Birmingham School of Medicine,
Department of Neurobiology, Birmingham, AL
Research Project: The role of protease-activated receptor-1 (PAR1) in behavior
and synaptic function.

2011 – 2014 Postdoctoral Scholar, The University of North Carolina at Chapel Hill,
Department of Pharmacology, Chapel Hill, NC
Research Project: Astrocytic Gs-GPCR signaling subserving behavior and
synaptic function.

2014 – 2017 Postdoctoral Fellow, Wake Forest School of Medicine, Department of Physiology
& Pharmacology, Winston-Salem, NC
Research Project: Basolateral amygdala to ventral hippocampus communication
subserving synaptic function, behavior, and vulnerability to alcohol addiction.

Professional Teaching Experience

2010 Teaching Assistant – Historical Literature Journal Club, Graduate course,
Department of Neurobiology, The University of Alabama at Birmingham

2012 -- 2014 Postdoc Facilitator – First Year Group Research Ethics Training for BBSP
Graduate Students, Graduate course, The University of North Carolina at Chapel
Hill

2013 Guest Lecturer – Introduction to Neuroscience, Undergraduate course,
Department of Psychology, The University of North Carolina at Chapel Hill

2014 – Present Teaching Assistant – Introduction to Electrophysiology Methods, Graduate
course, Department of Physiology & Pharmacology, Wake Forest School of
Medicine

2016 – Present Co-Director – Collaborative Research on Addiction Neurobiology Journal Club,
Graduate course, Department of Physiology & Pharmacology, Wake Forest

School of Medicine

EXTRAMURAL APPOINTMENTS AND SERVICE

Journal Reviewer

Neurobiology of Learning and Memory
PLoS One

PROFESSIONAL MEMBERSHIPS AND SERVICE

2003-Present Society for Neuroscience
2005-Present American Association for the Advancement of Science
2005-Present Molecular and Cellular Cognition Society
2012-Present F1000 Prime Associate Faculty Member for Neuroscience
2014-Present Research Society on Alcoholism
2016-Present American Society for Experimental NeuroTherapeutics

HONORS AND AWARDS

2010 First Place, Graduate Student Poster Presentation, UAB Department of
Neurobiology Retreat
2014 -- 2017 NIAAA/NIH Alcohol Postdoctoral Training Grant (T32)
2016 NINDS/NIH Selected Trainee, Training in Neurotherapeutics Discovery and
Development for Academic Scientists Course, Bethesda, MD
2017 NIAAA/NIH Travel Award, Fourth International Congress on Alcoholism and
Stress, Volterra, Italy

GRANT FUNDING

Currently Active Grants

R01 AA026551 (Weiner) 09/15/17 – 06/30/22
NIH/NIAAA
Neural Substrates of Comorbid Alcohol Use Disorder and Post-Traumatic Stress Disorder
The scientific premise of this application is that a better understanding of the circuitry and
neurobiology that differentiate these vulnerable and resilient populations may reveal novel targets
for the development of more effective treatments for individuals suffering from the comorbid
condition.
Role: Co-I

R37 AA017531 (Weiner) 05/01/14 – 04/30/19
NIH/NIAAA
Synaptic Correlates of Vulnerability and Resilience to Alcohol Use
The goals of this project are to employ neurobiological and behavioral approaches to identify the neurophysiological mechanisms that contribute to ethanol's anti-anxiety effects.
Role: Co-I

Pending Grants

P50 AA025117 (Weiner) 12/01/17 – 11/30/22
NIH/NIAAA
Wake Forest Translational Alcohol Research Center (WF-TARC) (Weiner)
The central goal of the Wake Forest Translational Alcohol Research Center (WF-TARC) is to employ animal models and human subjects research to study behavioral and neurobiological substrates associated with vulnerability (and resilience) to alcohol use disorder (AUD).
Role: Project 4

Past Grant History

T32 AA007565-22 (McCool) 08/04/14-07/25/17
NIH/NIAAA
Alcohol Postdoctoral Training Grant
The goal of this award was to receive postdoctoral training in patch-clamp electrophysiological techniques and animal models of alcohol use disorders. This project was aimed at identifying the neurobiological substrates associated with vulnerability and resilience to alcohol addiction.
Role: Postdoctoral Fellow

BIBLIOGRAPHY

Peer-Reviewed Publications

1. Borges K, Gearing M, McDermott DL, Smith AB, **Almonte AG**, Wainer BH, Dingledine R. (2003) Neuronal and glial pathological changes during epileptogenesis in the mouse pilocarpine model. *Experimental Neurology*, 182:21-34. PMID: 12821374
2. Dravid SM, Erreger K, Yuan H, Nicholson K, Le P, Lyuboslavsky P, **Almonte A**, Murray E, Mosely C, Barber J, French A, Balster RL, Murray TF, Traynelis SF. (2007). Subunit-specific mechanisms and proton sensitivity of NMDA receptor channel block. *Journal of Physiology*, 581(Pt 1):107-28. PMID: 17303642
3. **Almonte AG**, Hamill CE, Chhatwal JP, Wingo TS, Barber JA, Lyuboslavsky PN, Sweatt JD, Ressler KJ, White DA, Traynelis SF. (2007). Learning and memory deficits in mice lacking protease activated receptor-1. *Neurobiology of Learning and Memory*. 88(3):295-304. PMID: 17544303
4. Kang SS, Han KS, Ku BM, Lee YK, Hong J, Shin HY, **Almonte AG**, Woo DH, Brat DJ, Hwang EM, Yoo HS, Chung CK, Park S-H, Paek SH, Lee S, Park J-Y, Traynelis SF, Lee CJ. (2010). Inhibition of the Ca²⁺ release channel, IP3R subtype 3 by caffeine slows glioblastoma invasion and migration and extends survival. *Cancer Research*. 70(3):1173-83. PMID: 20103623
5. **Almonte AG** and Sweatt JD. (2011). Serine proteases, serine protease inhibitors, and protease-activated receptors: roles in synaptic function and memory formation. *Brain Research*. 1407:107-22. PMID: 21782155
6. Clement JP, Aceti M, Creson TK, Ozkan ED, Shi Y, Reish NJ, **Almonte AG**, Miller BH, Miller CA, Wiltgen BJ, Xu X, Rumbaugh G (2012). Pathogenic SYNGAP1 mutations impair cognitive development by disrupting maturation of dendritic spine synapses. *Cell*:151(4):709-23.doi: 10.1016/j.cell.2012.08.045.

PMID: 23141534

7. **Almonte AG**, Qadri LH, Sultan FA, Watson JA, Mount DJ, Rumbaugh G, Sweatt JD. (2013). Protease-activated receptor-1 modulates hippocampal memory formation and synaptic plasticity. *Journal of Neurochemistry*. 124(1): 109-22. doi: 10.1111/jnc.12075. PMID: 23113835
8. Adamah-Biassi EB, **Almonte AG**, Grinevich VP, Weiner JL, Bonin KD, Budygin EA. (2015) Real time adenosine fluctuations detected with fast-scan cyclic voltammetry in the rat striatum and motor cortex. *J. Neurosci Methods*. 256:56-62. doi:10.1016/j.jneumeth.2015.08.017. PMID: PMC4651740
9. **Almonte AG**, Ewin SE, Mauterer MI, Carter ES, Weiner JL (2016). Enhanced ventral hippocampal synaptic transmission and impaired synaptic plasticity in a rodent model of addiction vulnerability. *Scientific Reports* 7, Article Number:12300. doi:10.1038/s41598-017-12531-z. Epub 2017 Sep 26.
10. Butler TR, Karkhanis AN, **Almonte AG**, Ewin SE, Weiner JL (2017). Behavioral and neurobiological adaptations in rodent models of ethanol vulnerability and dependence. In preparation.
11. **Almonte AG***, Ewin SE*, Chappell AM, Ariwodola OJ, Weiner JL. (2017). DREADD inactivation of the basolateral amygdala-ventral hippocampus circuit decreases anxiety-like behavior and ethanol drinking. In preparation. (* = co-first authors)

Invited Publications (Editorially Reviewed)

1. Butler TR, Karkhanis AN, **Almonte AG**, Ewin SE, Weiner JL., "Adolescent Social Isolation and Chronic Intermittent Ethanol Exposure: Similarities and Differences Between a Rodent Model of Ethanol Vulnerability and Dependence" *Emotion and Motivated Behaviors: Integrating Animal and Human Neurobiology Research*. Ed. Sangha S, Foti D, in preparation.

PRESENTATIONS AT PROFESSIONAL MEETINGS

1. Lyuboslavsky P, **Almonte AG**, Nicholson KL, Balster RL, Traynelis SF. Neuroprotective and anticonvulsant effects of MK801 stereoisomers. Program No. 99.12 2004 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2004. Online.
2. **Almonte AG**, Lee CJ, Traynelis SF. The role of calcium homeostasis and calcium activated ion channels in migration and invasion of U178MG human glioblastomas. Program No. 233.10 2004 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2004. Online.
3. **Almonte AG**, Wingo TS, White DA, Gu B, Hoffman SW, Stein DG, Holtzman SG, Traynelis SF. Characterization of the behavioral phenotype of the protease activated receptor-1 (PAR-1) knockout mouse. Program No. 686.11. 2005 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2005. Online.
4. **Almonte AG**, Sweatt JD. Activation of protease-activated receptor-1 triggers the extracellular-regulated kinase/mitogen-activated protein kinase cascade in the hippocampus. Program No. 878.26. 2007 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2007. Online.
5. **Almonte AG**, Traynelis SF, Rumbaugh GR, Sweatt JD. Modulation of hippocampal synaptic plasticity via protease-activated receptor-1 (PAR1) function. Bevill Conference on Glial Biology in Medicine, UAB Center for Glial Biology in Medicine 2008.
6. Reish NJ, Guo X, **Almonte AG**, Hamilton PJ, Rumbaugh GR. Low expression of the NMDAR-associated signalling protein, SynGAP1, as a model of abnormal cognitive development. Program No.

678.7. 2009 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2009. Online.

7. **Almonte AG**, Rumbaugh GR, Sweatt JD. Protease-activated receptor-1 (PAR1) function modulates hippocampal synaptic plasticity. Program No. 715.9. 2009 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2009. Online.
8. **Almonte AG**, Rumbaugh GR, Sweatt JD. Protease-activated receptor-1 (PAR1) function in memory formation and synaptic plasticity. Conference Abstract: 2010 South East Nerve Net (SENN) and Georgia/South Carolina Neuroscience Consortium (GASCNC) Conferences, Emory University, Atlanta, GA. Oral presentation.
9. **Almonte AG**, Qadri LH, Sultan FA, Mount DJ, Rumbaugh GR, Sweatt JD. Protease-activated receptor-1 (PAR1) modulates hippocampal memory formation and synaptic plasticity. Bevill Conference on Glial Biology in Medicine, UAB Center for Glial Biology in Medicine 2010.
10. **Almonte AG**, Boyt KM, McCarthy KD. Astrocytic Gs signaling underlying behavior and synaptic function. Bevill Conference on Glial Biology in Medicine, UAB Center for Glial Biology in Medicine 2012.
11. Adamah-Biassi EB, **Almonte AG**, Bonin KD, Weiner JL, Budygin EA. Effects of ethanol on real-time adenosine dynamics in the rat striatum. Research Society on Alcoholism, 2015.
12. **Almonte AG**, Ewin SE, Ariwodola OJ, Carter ES, Weiner JL. Adolescent social isolation enhances excitatory synaptic activity in the hippocampus. Gordon Research Conference on Alcohol and the Nervous System, 2016.
13. **Almonte AG**, Ewin SE, Carter ES, Weiner JL. Adolescent social isolation enhances excitatory synaptic activity and reduces long-term potentiation in the rat hippocampus. Research Society on Alcoholism, 2016.
14. **Almonte AG**, Ewin SE, Carter ES, Weiner JL. Adolescent social isolation differentially affects synaptic function and plasticity along the dorsoventral axis of the hippocampus. Fourth International Congress on Alcoholism and Stress, Volterra, Italy, 2017.
15. Ewin SE, Morgan JW, McMullen NP, **Almonte AG**, Carter ES, Weiner JL. Chronic intermittent ethanol exposure increases anxiety-like behavior and hippocampal synaptic excitability. Research Society on Alcoholism, 2017.
16. **Almonte AG**, Ewin SE, Chappell AM, Carter ES, Weiner JL. Increased hippocampal circuit excitability following adolescent social isolation. Research Society on Alcoholism, 2017.
17. Ewin S, **Almonte AG**, Carter ES, Weiner JL. Adolescent social isolation increases excitatory synaptic activity in the rat nucleus accumbens core. Program No. 601.1. 2017 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2017. Online

INVITED EXTRAMURAL PRESENTATIONS AND SEMINARS

1. 2010 The University of North Carolina at Chapel Hill School of Medicine, Department of Pharmacology, Chapel Hill, NC
2. 2010 Tufts University School of Medicine, Department of Neuroscience, Boston, MA
3. 2014 National Institute of Environmental Health Sciences/NIH, Synaptic & Developmental Plasticity Group, Research Triangle Park, NC
4. 2014 Wake Forest School of Medicine, Department of Physiology & Pharmacology, Winston-Salem, NC

5. 2014 University of Iowa Carver College of Medicine, Department of Molecular Physiology and Biophysics, Iowa City, IA
6. 2017 Wake Forest School of Medicine, Department of Physiology & Pharmacology, Integrated Physiology & Pharmacology Graduate Program Student Seminar Series, Winston-Salem , NC

DIDACTIC/SYSTEMATIC INSTRUCTION

Wake Forest School of Medicine, Graduate School
Course Co-Director, Collaborative Research on Addiction Neurobiology Journal Club
2016-Present

MENTORING RELATIONSHIPS:

Graduate Students

2015 – Present	Sarah E. Ewin Integrative Physiology & Pharmacology Graduate Program
2016 -- Present	James W. Morgan Neuroscience Graduate Program
2016 -- Present	Nathan P. McMullen Neuroscience Graduate Program

PUBLIC OUTREACH

2015 -- Present	Kernersville Cares for Kids, Brain Awareness Week Outreach Program
2015 – Present	Sci-Tech Technology Institute Outreach Program