

Curriculum Vitae

Name: Rocco George Gogliotti, Ph.D.

Work Address: Department of Pharmacology
Vanderbilt University Medical Center
23rd Avenue South
1215 Light Hall
Nashville, TN 37232-6600

Phone: (615) 322-6730

Fax: (615) 936-6833

E-mail: rocco.gogliotti@vanderbilt.edu

EDUCATION

1999-2004 Undergraduate, Eastern Michigan University, Ypsilanti, MI
B.S. - Biology, Minor - Chemistry

2007-2012 Graduate Student, Northwestern University, Evanston, IL
Ph.D. Biomedical Research, Emphasis in Drug Discovery

2014 Certificate Program, Vanderbilt University, Nashville, TN
Certificate in College Education

PROFESSIONAL TRAINING AND EXPERIENCE

1999-2004 Student Research Intern, Cardiovascular Department, Pfizer, Ann Arbor, MI

2004-2007 Research Associate, Department of Pediatrics, Children's Memorial Hospital, Chicago, IL

2007-2012 Graduate Student, Human Molecular Genetics Department, Northwestern University, Evanston, IL (Mentor: Christine DiDonato)

2012-2016 Postdoctoral Research Fellow, Department of Pharmacology, Vanderbilt University, Nashville, TN (Mentors: P. Jeffrey Conn and Colleen Niswender)

2016-2017 Research Instructor, Vanderbilt Center for Neuroscience Drug Discovery, Department of Pharmacology, Vanderbilt University, Nashville, TN

2017-present Research Assistant Professor, Department of Pharmacology, Vanderbilt Center for Neuroscience Drug Discovery, Vanderbilt University, Nashville, TN

AWARDS AND HONORS

- 2000 Employee Research Recognition Award, Pfizer
- 2007 First Place, Research Associate Poster Competition. Childrens Memorial Research Center, Research Scholar's Day
- 2009 First Place, Graduate Student Poster Competition. Childrens Memorial Research Center, Biomedical Research Symposium
- 2010 First Place, Poster Competition. Northwestern University, Center for Molecular Innovation and Drug Discovery Poster Day
- 2010 First Place, Graduate Student Platform Presentation Competition. Childrens Memorial Research Center, Biomedical Research Symposium
- 2010 Student Representative, Drug Discovery Curriculum Planning Committee
- 2010 Outstanding Young Investigator Award, Alzheimer's Drug Discovery Foundation
- 2010 Childrens Memorial Research Center Travel Award, Spinal Muscular Atrophy Research Meeting
- 2011 Northwestern University Travel Award, Society for Neuroscience
- 2011 Childrens Memorial Research Center Travel Award, SMA Research Meeting
- 2015 First Place, Pharmacology Retreat, Postdoctoral 3-Minute Thesis, Vanderbilt University
- 2017 Cyagen Animal Model Award Winner
- 2017 First Place, International Meeting on Metabotropic Glutamate Receptors Poster Competition

PROFESSIONAL MEMBERSHIPS

- 2005-2006 The American Society for Human Genetics
- 2006-present Society for Neuroscience
- 2009-present Families of Spinal Muscular Atrophy
- 2012-present Rettsyndrome.org (formerly: International Rett Syndrome Foundation)
- 2014-present American Society for Pharmacology and Experimental Therapeutics

RESEARCH MENTOR

2008-2012 Michael Jorgensen (*research assistant*)
2010 Mona Kinduar (*undergraduate*)
2011 Nicole DiDonato (*undergraduate*)
2012 Joseph Cardona (*research assistant*)
2012 Katrina Emery (*graduate student*)
2012-2014 Rebecca Klar (*graduate student*)
2012-2014 Samantha Kopinski (*undergraduate*)
2013 Robert Paulsen (*undergraduate*)
2014-2015 Frank Sanders Pair (*undergraduate*)
2015 Sahana Nagabhushan Kalburgi (*graduate student*)
2015 Francis J. Prael (*graduate student*)
2015-2017 Rebecca Wiener (*research assistant*)
2016-2017 Nathan Winters (*graduate student*)
2015-present Nicole Fisher (*graduate student*)
2015-present Mathew Loch (*research assistant*)
2017 Sara Naguib (*graduate student*)
2017-present Sheryl Anne Vermudez (*graduate student*)
2017-present Bright Arthur (*research assistant*)
2018-present Susmita Chennareddy (*undergraduate*)

RESEARCH SUPPORT-CURRENT

NIMH K01MH112983-01A1 (Gogliotti, RG) **09/19/2017-**
06/30/2021 **95%** **effort**
\$126,333 direct/year

Normalizing E:I imbalance in Rett Syndrome by Modulation of Late Response Genes.
The goal of this award is to examine the consequences of disrupted muscarinic acetylcholine receptor 4 (M₄) expressions and signaling in Rett syndrome patients and model mice. Using distinct M₄ positive allosteric modulators (PAMs), we will expand on our preliminary data demonstrating that this mode of pharmacology normalizes cognitive and social phenotypes in Rett syndrome model mice. Additionally, we will assess changes in M₄ pathway biology in autopsy samples from patients possessing pathogenic DNA-binding, transcriptional repression and destabilizing mutations in the *methyl CpG binding protein 2* gene.

Brain Behavior Research Foundation 24970 (Gogliotti, RG) **01/15/2017-**
01/14/2019 **5%** **effort**
\$35,000 direct/year

mGlu₅ and Beyond: Transcriptional Profiling MECP2- and MECP2-Autonomous Rett Syndrome Autopsy Samples. The goal of this award is to provide support for salary and supplies to perform transcriptional profiling experiments between phenotypically identical groups of Rett syndrome patients with distinct molecular origins. Additionally, we will explore co-administration paradigms for modulators of distinct neuronal subtypes, with the goal of correcting multiple domains of the Rett syndrome phenotype.

RESEARCH SUPPORT-COMPLETED

-2009-2011: NIH T32 AG000260, Drug Discovery Training in Age-Related Disorders
RG3039, a small molecule with big potential in the treatment of Spinal Muscular Atrophy
The goal of this award was to support salary and tuition while I conducted my graduate studies assessing efficacy and safety of a novel treatment for Spinal Muscular Atrophy

-2012-2013: NIH T32-MH065215, Training Program in Neurogenomics
mGlu₇, a novel target for Rett syndrome therapeutics
The goal of this award was to provide salary support for training in neurogenomics, specifically for the study of the basic science underling mGlu₇ receptor's role in Rett Syndrome pathophysiology

-2013-2014: NIH T32-MH093366 04, Training in CNS Drug Discovery
mGlu₇, a novel target for Rett syndrome therapeutics
The goal of this award was to provide salary support for training in CNS Drug Discovery Research, specifically for of the assessment of efficacy of mGlu₇ modulators in Rett Syndrome

-2014: Ruth L. Kirschstein National Research Service Award (*awarded, not accepted)
Temporal Divergence Between Hyperexcitation and Hypoconnectivity in Rett Syndrome
The goal of this award was to provide support for salary and supplies to study the relationship between intervention strategy and disease progression in Rett Syndrome.
*award was decline due to scientific overlap with my Rett syndrome.org fellowship, which provided more funds and a longer duration of support.

-2014-2016: Mentored Training Fellowship, Rett syndrome.org
Temporal Divergence Between Hyperexcitation and Hypoconnectivity in Rett Syndrome
The goal of this award was to provide support for salary and supplies to study the relationship between intervention strategy and disease progression in Rett Syndrome.

INTRAMURAL AND EXTRAMURAL ACTIVITIES

2010

Teaching Assistant, Advanced Topics in Drug Discovery, Northwestern University

2011

Student Representative, Drug Discovery Curriculum Planning, Northwestern University

2012

Manuscript Reviewer, ACS Chemical Biology

2013

Planning Committee, Academic Drug Discovery Conference, Nashville, TN

2014

Speaker, Basal Ganglia Club, Vanderbilt University

2015

Guest Lecturer, Modern Drug Discovery –Graduate Level, Vanderbilt University

Guest Lecturer, Modern Drug Discovery –Undergraduate Level, Vanderbilt University

2016

Manuscript Reviewer, Biological Psychiatry

Speaker, Functional Genomics Group, Vanderbilt University

2017

Guest Lecturer, Brain Week, Belmont University

Guest Lecturer, Modern Drug Discovery –Undergraduate Level, Vanderbilt University

INVITED PRESENTATIONS

- **Gogliotti R.G.**, Schillington C. *Aggression and Metabolic Rate in Madagascar Hissing Cockroaches, *Gromphadorhina portentosa**. (EMU Undergraduate Research Symposium, March 2004, Ypsilanti, MI)
- **Gogliotti R.G.**, DiDonato C.J. *Temporal and spatial requirements for Smn in Spinal Muscular Atrophy*. (FSMA Meeting, June 2010, Santa Clara CA)
- **Gogliotti R.G.**, DiDonato C.J. *Temporal and spatial requirements for Smn in Spinal Muscular Atrophy*. (CMRC Biomedical Research Symposium, September 2010, Chicago IL)
- **Gogliotti R.G.**, Niswender C.M. *mGlu₅ positive allosteric modulation as a therapeutic strategy for Rett Syndrome: Weighing the risks and rewards*. (Rett Syndrome Symposium, October 2013, Nashville TN)
- **Gogliotti R.G.**, Klar R., Zamorano R., Rook J., Walker A., Xiang Z., Conn P.J., Niswender C.M., *Metabotropic Glutamate Receptor Potentiation as a Therapeutic Direction in Rett Syndrome*. (IRSF Research Symposium, June 2014, Washington, DC)
- **Gogliotti R.G.**, Niswender C.M., *mGlu₅ and MeCP2-related disorders*. (MeCP2-Duplication Syndrome Family Conference, September 2015, Houston, TX)
- **Gogliotti R.G.**, Klar R., Ghoshal A., Zamorano R., Rook J., Stauffer S., Malosh C., Vinson P, Jones C.K., Lindsley C., Conn P.J., Niswender C.M., *A novel mGlu₅ PAM improves phenotypes and rescues synaptic plasticity defects in a mouse model of Rett syndrome*. (Society for Neuroscience, October 2015, Chicago, IL)
- **Gogliotti R.G.**, Conn P.J., Niswender C.M., *Balancing safety and efficacy with biased allosteric modulators*. (Symposium on Hormones and Cell Regulation, October 2016, Mont Ste Odile, France)
- **Gogliotti R.G.**, Niswender C.M., *Drug Discovery for Autism Spectrum Disorder*. (Belmont University: Brain Awareness Week, March 2017, Nashville, TN)

- **Gogliotti R.G.**, Niswender C.M., *Total RNA-sequencing of Rett Syndrome Autopsy Samples To Facilitate Preclinical Target Identification* (Society for Neuroscience, November 2017, Washington, DC)
- **Gogliotti R.G.**, Niswender C.M., *Cross-species expression profiling for improved target selection in Rett syndrome* (Drug Discovery, Development and Lead Optimization, December 2018, San Francisco, CA)

JOURNAL ARTICLES

1. Wang, X., Gargalovic, P., Wong, J., Gu, J. L., Wu, X., Qi, H., Wen, P., Xi, L., Tan, B., **Gogliotti, R. G.**, Castellani, L. W., Chatterjee, A., and Lusis, A. J. (2004) Hylip2, a new gene for combined hyperlipidemia and increased atherosclerosis. *Arteriosclerosis, thrombosis, and vascular biology* **24**, 1928-1934
2. Heier, C. R., **Gogliotti, R. G.**, and DiDonato, C. J. (2007) SMN transcript stability: could modulation of messenger RNA degradation provide a novel therapy for spinal muscular atrophy? *Journal of child neurology* **22**, 1013-1018
3. Gavrulina, T. O., McGovern, V. L., Workman, E., Crawford, T. O., **Gogliotti, R. G.**, DiDonato, C. J., Monani, U. R., Morris, G. E., and Burghes, A. H. (2008) Neuronal SMN expression corrects spinal muscular atrophy in severe SMA mice while muscle-specific SMN expression has no phenotypic effect. *Human molecular genetics* **17**, 1063-1075
4. **Gogliotti, R. G.**, Hammond, S. M., Lutz, C., and DiDonato, C. J. (2010) Molecular and phenotypic reassessment of an infrequently used mouse model for spinal muscular atrophy. *Biochemical and biophysical research communications* **391**, 517-522
5. Hammond, S. M., **Gogliotti, R. G.**, Rao, V., Beauvais, A., Kothary, R., and DiDonato, C. J. (2010) Mouse survival motor neuron alleles that mimic SMN2 splicing and are inducible rescue embryonic lethality early in development but not late. *PloS one* **5**, e15887
6. Kular, R. K., **Gogliotti, R. G.**, and Opal, P. (2010) Cpd-1 null mice display a subtle neurological phenotype. *PloS one* **5**
7. **Gogliotti, R. G.**, Lutz, C., Jorgensen, M., Huebsch, K., Koh, S., and DiDonato, C. J. (2011) Characterization of a commonly used mouse model of SMA reveals increased seizure susceptibility and heightened fear response in FVB/N mice. *Neurobiology of disease* **43**, 142-151
8. **Gogliotti, R. G.**, Quinlan, K. A., Barlow, C. B., Heier, C. R., Heckman, C. J., and DiDonato, C. J. (2012) Motor neuron rescue in spinal muscular atrophy mice demonstrates that sensory-motor defects are a consequence, not a cause, of motor neuron dysfunction. *The Journal of neuroscience : the official journal of the Society for Neuroscience* **32**, 3818-3829
9. **Gogliotti, R. G.**, Cardona, H., Singh, J., Bail, S., Emery, C., Kuntz, N., Jorgensen, M., Durens, M., Xia, B., Barlow, C., Heier, C. R., Plasterer, H. L., Jacques, V., Kiledjian, M., Jarecki, J., Rusche, J., and DiDonato, C. J. (2013) The DcpS inhibitor RG3039 improves survival, function and motor unit pathologies in two SMA mouse models. *Human molecular genetics* **22**, 4084-4101

10. **Gogliotti, R. G.**, and Conn, P. J. (2016) Pharmacological Treatments for Autism Spectrum Disorder: Will Emerging Approaches Yield New Treatments? *Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology* **41**, 376-377
11. **Gogliotti, R. G.**, Senter, R. K., Rook, J. M., Ghoshal, A., Zamorano, R., Malosh, C., Stauffer, S. R., Bridges, T. M., Bartolome, J. M., Daniels, J. S., Jones, C. K., Lindsley, C. W., Conn, P. J., and Niswender, C. M. (2016) mGlu5 positive allosteric modulation normalizes synaptic plasticity defects and motor phenotypes in a mouse model of Rett syndrome. *Human molecular genetics* **25**, 1990-2004
12. Ponnazhagan, R., Harms, A. S., Thome, A. D., Jurkuvenaite, A., **Gogliotti, R. G.**, Niswender, C. M., Conn, P. J., and Standaert, D. G. (2016) The Metabotropic Glutamate Receptor 4 Positive Allosteric Modulator ADX88178 Inhibits Inflammatory Responses in Primary Microglia. *Journal of neuroimmune pharmacology : the official journal of the Society on NeuroImmune Pharmacology* **11**, 231-237
13. **Gogliotti, R. G.**, Senter, R. K., Fisher, N. M., Adams, J., Zamorano, R., Walker, A. G., Blobaum, A. L., Engers, D. W., Hopkins, C. R., Daniels, J. S., Jones, C. K., Lindsley, C. W., Xiang, Z., Conn, P. J., and Niswender, C. M. (2017) mGlu7 potentiation rescues cognitive, social, and respiratory phenotypes in a mouse model of Rett syndrome. *Science translational medicine* **9**
14. Abe, M., Seto, M., **Gogliotti, R. G.**, Loch, M. T., Bollinger, K. A., Chang, S., Engelberg, E. M., Luscombe, V. B., Harp, J. M., Bubser, M., Engers, D. W., Jones, C. K., Rodriguez, A. L., Blobaum, A. L., Conn, P. J., Niswender, C. M., and Lindsley, C. W. (2017) Discovery of VU6005649, a CNS Penetrant mGlu7/8 Receptor PAM Derived from a Series of Pyrazolo[1,5-a]pyrimidines. *ACS medicinal chemistry letters* **8**, 1110-1115
15. Fisher, N. M., **Gogliotti, R. G.**, Vermudez, S. A. D., Stansley, B. J., Conn, P. J., and Niswender, C. M. (2017) Genetic Reduction or Negative Modulation of mGlu7 Does Not Impact Anxiety and Fear Learning Phenotypes in a Mouse Model of MECP2 Duplication Syndrome. *ACS chemical neuroscience*
16. Stansley, B. J., Fisher, N. M., **Gogliotti, R. G.**, Lindsley, C. W., Conn, P. J., and Niswender, C. M. (2017) Contextual Fear Extinction Induces Hippocampal Metaplasticity Mediated by Metabotropic Glutamate Receptor 5. *Cerebral cortex*, 1-14
17. **Gogliotti, R. G.**, Fisher, N. M., Stansley, B. J., Jones, C. K., Lindsley, C. W., Conn, P. J., and Niswender, C. M. (2018) Total RNA Sequencing of Rett Syndrome Autopsy Samples Identifies the M4 Muscarinic Receptor as a Novel Therapeutic Target. *The Journal of pharmacology and experimental therapeutics* **365**, 291-300

UNDER REVISION

18. Joffe M. E., Santiago C. I., Stansley B. J., Maksymetz J., **Gogliotti R. G.**, Engers J. L., Nicoletti F., Lindsley C.W., Conn P.J. (2018) Disrupted crosstalk between metabotropic glutamate receptor subtypes mGlu3 and mGlu5 underlies cognitive inflexibility following acute stress. *Neuropsychopharmacology* (Under Revision)

IN PREPARATION

19. **Gogliotti R. G.**, Senter, R. K. Conn P. J., Niswender C. M. (2018) mGlu Modulation in Microglia Regulates Glutamate Release *Ex Vivo*. (In Prep.)
20. Fisher N. M., **Gogliotti R. G.**, McDonald A., Conn P. J., Niswender C. M. (2018) Loss of mGlu7 precipitates Rett Syndrome-like phenotypes in mice. (In Prep.)
21. **Gogliotti R. G.**, Fisher N. M., Arthur B., McDonald A., Lindsley C. W., Conn P. J., Niswender C. M. (2018) Common Rett syndrome mutations engender signature gene expression profiles in patients and model mice. (In Prep.)
22. **Gogliotti R. G.**, Arthur B., Fisher N. M., Chennandry S., McDonald A., Lindsley C. W., Conn P. J., Niswender C. M. (2018) CDKL5-dependent MeCP2 phosphorylation mediates Rett syndrome-like phenotypes in rodents (In Prep.)
22. Reed C., **Gogliotti R. G.**, Blobaum A. L., Arthur B., Fisher N. M., Chennandry S., Lindsley C. W., Conn P. J., Niswender C. M. (2018) Synthesis and optimization of a novel mGlu7 negative allosteric modulator: VU6012962 (In Prep.)