MANUEL E. DIAZ-RIOS: BIOGRAPHICAL SKETCH

http://md.rcm.upr.edu/anatomyneurobiology/dr-manuel-e-diaz-rios/ http://www.diazrioslab.com/

Professional Preparation

Univ. of Puerto Rico, Rio Piedras Univ. of Puerto Rico, Medical School Cornell University		Biology Anatomy/Neurobiology Neurophysiology	BS PhD Post-doc	1996 2003 2003-2006
2013-present	Associat	Associate Professor, Department of Anatomy and Neurobiology		
2006-2013	Assistant Professor, Department of Anatomy and Neurobiology University of Puerto Rico, Medical Sciences Campus			
2003-2006	Postdoctoral fellow, Cornell University, Ithaca, NY			
1997	Laboratory Research Assistant, Laboratory of Dr. Eva Sykova, Institute of Experimental Medicine and Neuroscience, Academy of Sciences of the Czech Republic, Prague, Czech Republic.			
4000 4007	l abarat	Laboratory Dagaarah Assistant Laboratory of Dr. Sugan Caray		

1996-1997	Laboratory Research Assistant, Laboratory of Dr. Susan Corey,			
	Department of Pharmacology, Univ. of Puerto Rico, Medical Sciences			
	campus, San Juan, PR.			
1992-1994	Laboratory Research Assistant, Laboratory of Dr. Ned Fetcher,			
	Department of Biology, Univ. of Puerto Rico, Rio Piedras campus, San			
	Juan. PR.			

Five Products/Publications Most Closely Related to the Proposed Project (undergraduate coauthors underlined)

- 1. Diaz-Ríos M, Guertin PA, Rivera-Oliver M.Neuromodulation of Spinal Locomotor Networks in Rodents. Curr Pharm Des. 2017;23(12):1741-1752. PMID: 28120724
- Acevedo J, <u>Santana-Almansa A</u>, <u>Matos-Vergara N</u>, <u>Marrero-Cordero LR</u>, <u>Cabezas-Bou E</u>, and Díaz-Ríos M. (2016) Caffeine stimulates locomotor activity in the mammalian spinal cord via adenosine A1 receptor-dopamine D1 receptor interaction and PKA-dependent mechanisms. *Neuropharmacology* 101:490-505. PMID: 26493631.
- Acevedo J and Díaz-Ríos M. Lack of Sensory Input disrupts Spinal Locomotor Behavior in Early Postnatal Development. (2013) J Comp Physiol A Neuroethol Sens Neural Behav Physiol 199(12):1105-16. PMID: 24043359.
- Díaz-Ríos M., Dombeck D., Webb W.W., and Harris-Warrick R. M. Serotonin modulates dendritic calcium influx in commissural interneurons in the mouse spinal locomotor network. (2007) J Neurophysiol 98(4):2157-67. PMID: 17303810.
- 5. Wilson J, Dombeck D, Díaz-Ríos M, Harris-Warrick RM, and Brownstone RM. Two-photon calcium imaging of network activity in XFP expressing neurons in the mouse. (2007) *J Neurophysiol* 97(4):3118-25. PMID: 17303810.

Five Other Significant Products/Publications (undergraduate co-authors underlined)

 <u>Cabezas-Bou E, León-Arbucias J, Matos-Vergara N, Álvarez-Bagnarol Y</u>, Ortega-Guzmán J, Narváez-Pérez K, Cruz-Bermudez N, and Díaz-Ríos M. A survey of energy drink consumption patterns among college students at a mostly Hispanic university. (2016) *J Caff Res.* 6(4):154-162. doi: 10.1089/jcr.2016.0011. PMID: 28078169.

- Zhong G, Díaz-Ríos M, and Harris-Warrick RM. Serotonin modulates the properties of ascending commissural interneurons in the neonatal mouse spinal cord. (2006) *J Neurophysiol* (95(3):1545-55. PMID: 16338993.
- Zhong G, Díaz-Ríos M, and Harris-Warrick RM. Intrinsic and functional differences among commissural interneurons in the central pattern generator for locomotion in the neonatal mouse. (2006) *J Neurosci*. 26(24):6509-17. PMID: 167751383.
- Díaz-Ríos M and Miller MW. Target-specific regulation of synaptic efficacy in the feeding central pattern generator of Aplysia: Potential substrates for behavioral plasticity? (2006) Biol Bull. 210(3):215-29. PMID: 16801496.
- Díaz-Ríos M, and Miller MW. Rapid dopaminergic signaling by interneurons that contain markers for catecholamines and GABA in the feeding circuitry of *Aplysia*. (2005) J. Neurophysiol. 93(4):2142-56. PMID: 15537820.

Synergistic Activities

- Service on scientific review boards (e.g., NSF Activation panel / Craig Nielsen Foundation / NSF Council on Undergraduate Research), peer review for the Journal of Neurophysiology, BMC Medical Genetics, Pharmacological_reports, Current Medicinal Chemistry, Life Sciences, participation in workshop entitled How Organisms Walk the Tightrope Between Stability and Change" (Cold Spring Harbor, NY, 2013) and in the Grass Foundation Neuroscience Outreach Workshop (Woods Hole, MA, 2016).
- Dedication to educating future scientists, especially underrepresented groups in science including Hispanics and women by serving as a mentor in the Society for Neuroscience's (SfN) Committee on Women in Neuroscience (C-WIN) (2008-12; graduate student mentored: Cristian Arredondo, Pontificia Universidad Catolica de Chile) and in the Society for Neuroscience's (SfN) Neuroscience Scholars Program (NSP) (2007-13; post-doc fellow mentored: Anthony Baucum, Vanderbilt University).
- 3. **Participation in numerous outreach programs** including judging local science fairs (public and private middle and high schools) and poster competitions (District and regional Science Fair competitions and the University of Puerto Rico, School of Medicine, Annual Research Forum in Science and Education, 2006 present). Additionally, lab members and PI are active participants in Brain Awareness Week (BAW) held at the University of Puerto Rico, Medical school (2008 present).
- 4. Founder of the "Science Fair Project" (2012 present), were he and other colleagues go to local public schools and help science teachers to develop competitive science fair projects with their students. This project was recently awarded a small grant from the Grass Foundation to additionally provide participating science teachers with basic neurophysiology equipment developed by the non-profit organization "Backyard Brains" for teaching high school students about basic neurophysiology concepts in sensory and motor function.
- 5. **Board member of "Iniciativa Comunitaria" (***www.iniciativacomunitaria.org/***)** which is a nonprofit organization composed of citizens committed to finding solutions and alternatives that contribute to the improvement of the quality of life of marginalized populations in Puerto Rico and abroad, with a focus on safeguarding the rights of this population using a health-based approach.

Expertise

Intracellular and extracellular electrophysiological recording; histological and imaging methods (immunocytochemistry; cell labeling; confocal microscopy; spinning disk microscopy and other calcium-sensitive optical methods); pharmacological methods. Had training with an emphasis in tractable neural circuits, ion channels, electrophysiology, neuromodulation and the sensory, motor and sensorimotor mechanisms underlying behavior in invertebrate (mollusks) and vertebrate (mice) animal model systems.