

## Alexandra Castillo-Ruiz, Ph.D.

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### Education

- Postdoctoral Fellow** - Georgia State University, Atlanta, GA 2014 - Present  
Neuroscience Institute  
Project: "The effects of birth on the development of the nervous system".  
Mentor: Nancy G. Forger, Ph.D.
- Postdoctoral Fellow** - University of Massachusetts Medical School, Worcester, MA 2010 - 2014  
Department of Neurology  
Project: "Social cues and their effects on the circadian system".  
Mentor: William Schwartz, M.D.
- Ph.D.** - Psychology and Ecology, Evolutionary Biology and Behavior  
Michigan State University, East Lansing, MI 2007 - 2010  
Dissertation title: "Circadian and environmental modulation of arousal and reward systems of a diurnal brain".  
Mentor: Antonio A. Nunez, Ph.D.
- M.A.** - Psychology  
Michigan State University, East Lansing, MI 2004 - 2006  
Thesis title: "Cholinergic projections to the suprachiasmatic nucleus and lower subparaventricular zone in diurnal and nocturnal rodents".  
Mentor: Antonio A. Nunez, Ph.D.
- B.S.** - Agrarian La Molina University, Lima, Peru 1996 - 2002  
Biology Major

### Additional research experience

#### **Field Research Assistant (2003)**

Project: "Ecology of urban birds" of biologist Oscar Gonzalez, Lima, Peru.

#### **Undergraduate Research**, Department of Biology, Agrarian La Molina University, Lima, Peru (2001)

Project: "Preliminary study of the fauna in an Andean micro watershed: El Pachachaca (Huancavelica)".

#### **Undergraduate Internship**, Department of Entomology, International Potato Center, Lima, Peru (1999-2000)

Projects: "Effect of temperature on different solutions containing the *Phthorimaea operculella* Granulosis Virus (PoGV)" and "Effect of the concentration of the virus PoGV on the mortality of the potato moth, *Phthorimaea operculella*" of Dr. Marc Sporleder.

### Publications (peer-reviewed)

- Castillo-Ruiz, A**, Gall, AJ, Smale, L, Nunez, AA (2013) Day-night differences in neural activation in histaminergic and serotonergic areas with putative projections to the cerebrospinal fluid in a diurnal brain. *Neuroscience* 250: 352–363.
- Castillo-Ruiz, A**, Paul, MJ, Schwartz, WJ (2012) In search of a temporal niche: Social interactions. *Prog Brain Res* 199: 267- 280.
- Castillo-Ruiz, A**, Nunez, AA (2011) Fos expression in arousal and reward areas of the brain in grass rats following induced wakefulness. *Physiol Behav* 103 (3-4): 384-392.

- Castillo-Ruiz, A**, Nixon, JP, Smale, L, Nunez, AA (2010) Neural activation in arousal and reward areas of the brain in day-active and night-active grass rats. *Neuroscience* 165 (2): 337-349.
- Castillo-Ruiz, A**, Lundrigan, B (2007) "Lama pacos" (On-line), Animal Diversity Web. [http://animaldiversity.ummz.umich.edu/site/accounts/information/Lama\\_pacos.html](http://animaldiversity.ummz.umich.edu/site/accounts/information/Lama_pacos.html)
- Castillo-Ruiz, A**, Nunez, AA (2007) Cholinergic projections to the suprachiasmatic nucleus and lower subparaventricular zone in diurnal and nocturnal rodents. *Brain Res* 1151: 91-101.
- Williams de Castro, M, **Castillo-Ruiz, A**, Rosas, C (2003) Observaciones preliminares sobre comportamiento prenatal y postnatal de *Rattus rattus* var. *norvegicus* (Linneo 1758) en laboratorio. *Ecologia Aplicada* (2): 23- 26.

### Talks

- Castillo-Ruiz, A** (2014) Wakefulness and chronotype: lessons from diurnal brain. Talk for the XV Latin American Congress on Sleep Medicine, Mexico City, Mexico.
- Castillo-Ruiz, A**, Schwartz, WJ (2013) Socio-sexual cues affect the circadian system of the gregarious grass rat. Talk for the Midwestern Chronobiology Seminar. Michigan State University, East Lansing, MI.
- Castillo-Ruiz, A**, Schwartz, WJ (2013) Socio-sexual cues affect the circadian system of the gregarious grass rat. Data blitz talk presented at the XII Latin American Symposium on Chronobiology, Mendoza, Argentina.
- Castillo-Ruiz, A** (2013) The grass rat: an interesting model to study the brain and the behavior. Part of the Animal Medicine "All-hands" seminar series. University of Massachusetts Medical School, Worcester, MA.
- Castillo-Ruiz, A** (2012) The diurnal grass rat: an attractive model to study circadian rhythmicity at the organismal and supraorganismal levels. Seminar for the Chronobiology Group Journal Club, University of Groningen, Groningen, Netherlands.
- Castillo-Ruiz, A** (2011) Circadian rhythms and the Nile grass rat. Seminar for the Hayes Lab, Brandeis University, Waltham, MA.
- Castillo-Ruiz, A** (2008) Voluntary wheel running in the grass rat, *Arvicanthis niloticus*. Seminar for the Behavioral Biology Group, Michigan State University, East Lansing, MI.
- Castillo-Ruiz, A**, Nunez, AA, Williams de Castro, M (2008) Circadian research in diurnal and nocturnal mammals: concepts and applications. Slide session for the 1st meeting of the Peruvian Society of Mammalogists, Cusco, Peru.
- Castillo-Ruiz, A** (2006) Cholinergic projections to the suprachiasmatic nucleus and lower subparaventricular zone in diurnal and nocturnal rodents. Seminar for the Integrative Neurobiology of Social Processes class, Michigan State University, East Lansing, MI.

### Posters

- Castillo-Ruiz, A**, Mosley, M, Forger NG (2015) Birth: An overlooked event in brain development? Brains and Behavior Retreat, Georgia State University, Atlanta, USA.
- Castillo-Ruiz, A**, Schwartz, WJ (2013) Socio-sexual cues affect the circadian system of the gregarious grass rat. XII Latin American Symposium on Chronobiology, Mendoza, Argentina.
- Castillo-Ruiz, A**, Schwartz, WJ (2013) Socio-sexual cues affect the circadian system of the gregarious grass rat. Gordon Research Conference on Chronobiology, Newport, RI.
- Castillo-Ruiz, A**, Schwartz, WJ (2012) Patterns of c-Fos expression in the lateral habenula and their relation to locomotion and circadian phase in the diurnal grass rat. 13th biennial meeting of the Society for Research on Biological Rhythms, Sandestin, FL.
- Castillo-Ruiz, A**, Schwartz, WJ (2012) The grass rat: an attractive model to study the effects of social cues on circadian rhythmicity. Workshop on "The diversity, evolution and mechanisms controlling activity patterns", Ein Gedi, Israel.
- Castillo-Ruiz, A**, Smale, L, Nunez, AA (2010) Rhythms of neural activity in serotonergic cells with access to the cerebrospinal fluid in a diurnal brain. 40th annual meeting of the Society for Neuroscience, San Diego, CA.
- Castillo-Ruiz, A**, Smale, L, Nunez, AA (2010) Differential effects of voluntary and induced wakefulness in arousal and reward areas in a diurnal brain. 12th biennial meeting of the Society for Research on Biological Rhythms, Sandestin, FL.

**Castillo-Ruiz, A**, Nixon, JP, Smale, L, and Nunez, AA (2009) Wheel-running in day-active and night-active grass rats is related to increased Fos expression in non-dopaminergic cells of the reward system. 39th annual meeting of the Society for Neuroscience, Chicago, IL.

**Castillo-Ruiz, A**, Ramanathan, C, Smale, L, & Nunez, AA (2008) Evidence that neurons of the suprachiasmatic nucleus have access to the cerebrospinal fluid in the diurnal grass rat. 38th annual meeting of the Society for Neuroscience, Washington D.C.

**Castillo-Ruiz, A**, Nixon, JP, Smale, L, Nunez, AA (2008) Basal forebrain activation in day-active and night-active grass rats. 11th biennial meeting of the Society for Research on Biological Rhythms, Sandestin, FL.

**Castillo-Ruiz, A**, Schwartz, MD, Smale, L, & Nunez, AA (2007) Sources of cholinergic projections to the suprachiasmatic nucleus in the diurnal grass rat. 37th annual meeting of the Society for Neuroscience, San Diego, CA.

**Castillo-Ruiz, A**, Smale, L, Nunez, AA (2006) Cholinergic projections to the suprachiasmatic nucleus (SCN) of the diurnal grass rat. 10th biennial meeting of the Society for Research on Biological Rhythms, Sandestin, FL.

**Castillo-Ruiz, A**, Smale, L, Nunez, AA (2006) Cholinergic projections to the suprachiasmatic nucleus (SCN) of the diurnal grass rat. Society for Neuroscience, Michigan Chapter, Michigan State University, East Lansing, MI.

### **Awards and funding**

Latin American Symposium on Chronobiology Travel Fellowship (2013)

Society for Research on Biological Rhythms (SRBR) Trainee Award (2010)

Department of Psychology Summer Retention Fellowship, Michigan State University (2008)

Department of Psychology Travel Fellowship, Michigan State University (2007, 2008)

Graduate School Travel Fellowship, Michigan State University (2006, 2007, 2008, 2009)

Graduate School Research Enhancement Award, Michigan State University (2005)

### **Teaching experience**

**Course Instructor**, Brain and Behaviour, Department of Psychology, Michigan State University 2009-2010

- Full responsibility for course design including content, delivery and assessment. Also supervision of graduate teaching assistant which included providing feedback on performance and management of the teaching assistantship duties and responsibilities.
- Classes were observed and evaluated by faculty in the Department of Psychology.

**Teaching Assistant**, Brain and Behavior, Human Sexuality, Introductory Psychology, Abnormal Behavior, Developmental Psychology; Department of Psychology, Michigan State University 2004-2009

- Delivered 1-3 lectures/semester. Responsibilities included attending all lectures, preparing exams, grading exams and assignments, keeping grade book, tutoring students, and holding review sessions. Also supervised undergraduate teaching assistants.
- Evaluated highly by instructors and students on performance. One instructor referred to me as a “super TA”.

**Educational Field Guide**, Natural World Program, Peru Verde Non-profit Organization, Lima, Peru 2000-2001

- Worked with elementary and high school students (ages 6-14) in educational visits to protected areas of Lima which included implementing interactive experiments. Also, designed and executed an educational field visit to a Mountain Valley in Lima. The project involved identification of the field area, design of field experiments – in the topics of: fauna, flora, water, soil, man, and pollution –, the preparation of a field workbook, and testing of the project with high school students.

### **Mentoring**

To date I have trained and mentored four undergraduate research assistants, four graduate students, and two visiting graduate students from Kyoto University and the University of Groningen. One former undergraduate student is in medical school, another is in graduate school, and another is a high school teacher.

### **Leadership experience**

Founding member of the Clocks Club of New England, a club that seeks to bring together circadian biologists from interdisciplinary fields in the New England area. To the date we have organized two successful meetings (2014).

Chairperson for the workshop: Asking the right questions in a biological rhythms project, Society for Research on Biological Rhythms Trainee Day, Sandestin, FL (2012).

Assistant coordinator of the Great Lakes Meeting of Chronobiology, Michigan State University, East Lansing, MI (2008).

Assistant coordinator of the VI Congress of Latinoamerican Herpetologists, Agrarian La Molina University, Lima, Peru (2003).

Assistant coordinator of the Preparatory Meeting: Peru, a country of Mountains to 2020: Water, Life and Production, Agrarian La Molina University, Lima, Peru (2002).

### **Professional and community service**

Panelist member for a discussion on: Why lab animals are essential to my research focus/interests/projects, Becker College, Leicester, MA (2012).

Participant in the Mammalogy section of the Darwin Discovery Day at the Michigan State University Museum, East Lansing, MI (2007- 2010).

Guest lecture on "Circadian Rhythms" for a class on Animal Physiology, Agrarian La Molina University, Lima, Peru (2008).

Participant in the Brain Awareness Week, Lansing, MI (2008).

Participant for Community Volunteers for International Programs Speakers Bureau for school children and seniors in the Lansing area, MI (2004-2008).

### **References**

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Antonio A. Nunez, Ph.D.  
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William Schwartz, M.D.  
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