


## BIOGRAPHICAL SKETCH Resume 2010

<p><b>NAME</b>                  Palacios, Adrián                  Born 1958                  Chilean Nationality                  Married 1 child  <a href="http://www.cnv.cl/palacios">http://www.cnv.cl/palacios</a>  <a href="http://www.iscv.cl">http://www.iscv.cl</a>                  email: adrian.palacios@yahoo.com</p>	<p><b>POSITION TITLE</b>                  Professor                  Centro Interdisciplinario de                  Neurociencia de Valparaiso                  Facultad de Ciencias                  Universidad de Valparaíso                  Chile</p> 
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### EDUCATION

INSTITUTION	DEGREE	YEAR	FIELD
Sorbonne University Paris V	BS	1982	Psychology
Pierre et Marie Curie University Paris VI	PhD	1991	Neuroscience
<b>TRAINING</b>			
Yale University (TH Goldsmith Lab)	Postdoctoral / Research Assistant	1991-1996	Biophysics
Harvard University (John Dowling Lab)	Visiting Researcher	2001 (3 m)	Sensory Neuroscience
Ecole Polytechnique CREA -CNRS	Visiting Researcher	2008-2010	Computational Neurosciences
INRIA-CORTEX Henri Poincare University Nancy II	Visiting Researcher	2008-2010	Computational Neurosciences

### A. Position and Honors

#### Positions and Employment

1996- Professor, Neuroscience, Faculty of Science, Universidad de Valparaíso, Chile.  
 2006-2007 Postgraduate Coordinator, Faculty of Science, Universidad de Valparaíso, Chile.

#### Other Experience and Professional Memberships

2002-2007 (march) Head of the Neuroscience Ph.D. Program, Universidad de Valparaíso, Chile.  
 2005-2007 (march) Vice president, Chilean Neuroscience Society, Chile  
 2003- Neurosciences French Society, France  
 2000-2002 Director of Master degree in Neuroscience, Universidad de Valparaíso, Chile.  
 2002- Animal Behavior Society, USA  
 2001- Journal Associate Editor, Biological Research  
 2000- The International Society for Neurochemistry, USA  
 1993- Chilean Physiological Society  
 1991- Society for Neuroscience, USA  
 1991- Editor Associate, Behavioral Brain Sciences,  
 1990- Reviewer: Behavioral Brain Sciences (BBS), Journal Comparative Physiology A, Vision Research, Visual Neurosciences,  
 Biological Research, Journal Comparative Biology, North American Journal of Fisheries Management, Evolutionary Ecology  
 Research.

#### Editor

2007 Trends in Cognitive Sciences *Biological Research*, Special edition  
 2003 Tribute to Francisco Varela *Biological Research*, Special edition  
 1996 The senses *Biological Research*, Special edition

#### Honors and Positions

2010 Invited Professor Nancy II, INRIA CORTEX, February-April  
 2009 Invited Researcher INRIA CORTEX October-December  
 2009 Invited Professor Henri Poincare University (Nancy I), INRIA CORTEX January  
 2008 Invited Researcher INRIA CORTEX Novembre-December  
 2003- Senior Investigator. Instituto de Sistemas Complejos de Valparaíso, Chile ISCV  
 2003- Fellow of the Center for Advanced Studies in Ecology & Biodiversity (CASEB)  
 2001 Visiting Research, Molecular Cellular Biology Labs, John Dowling lab, Harvard U, January-April  
 1998 Visiting Professor, Mind / Brain Institute, Johns Hopkins U, October - November  
 1993-1997 Associate Research Scientist, Yale U, EEUU.  
 1991-1992 Postdoctoral Associate, Yale University, EEUU.

1990 Postdoctoral Fellow, Yale U, EEUU.

1990 Postgraduate Fellowship Fundación Philippe y Fundación Simone & Cino del Duca, Francia.

### **Teaching**

Undergraduate and graduate teaching at the Universidad de Valparaiso, and Invited Lectures in the UCH, PUC.

### **B. Publications (2000-)**

- 19] Palma F, Roncagliolo P, Bacigalupo J, Palacios AG. (2001). Membrane current of retinal rods of *Caudiverbera caudiverbera* (Amphibia: Leptodactylidae): Dark noise, spectral and absolute sensitivity. *Visual Neurosci* 18:663-673.
- 20] Thompson E, Palacios A, Varela F (2002) Ways of coloring: Comparative color vision as case study for cognitive science. In *Vision and Mind: Selected Readings in the Philosophy of Perception*. Ed. by A. Noe, E. Thompson. Chap. 15:351-418. MIT Press, Cambridge, USA. (Reprinted for Behavioral and Brain Science, 1992).
- 21] Chávez AE., Bozinovic F, Peichl L, Palacios AG. (2003) Reflectance In The Genus Octodon (Rodentia): Implications For Visual Ecology Retinal Spectral Sensitivity, Fur Coloration And Urine. *IOVS*. 44:2290-2296.
- 22] Chávez AE, Roncagliolo M, Kurth H, Reichenbach A, Palacios AG. (2003). The Retinal Anatomy and Function of the Myelin Mutant *Talp* Rat. *Brain Research*. 964:144-152.
- 23] Palacios AG, Bozinovic F (2003). An "Enactive" Approach to Physiological & Behavioral Ecology: Thoughts on the table. *Biol Res* 36:95-99.
- 24] Palacios AG, Bacigalupo J (2003). Francisco Varela (1946-2001): Filling the Mind – Brain Gap. *Biol Res* 36:3-6.
- 25] Palacios A, Bacigalupo J. Guest Editors. (2003) A Tribute to Francisco Varela (1946-2001). *Biol Res* 36:1-134.
- 26] Chávez AE., Pannicke T, Roncagliolo M, Reichenbach A, Palacios AG. (2004). "Electrophysiological Properties of Retinal Müller Glial Cells from a Myelin Mutant Rat" *Glia*. 45:338-345.
- 27] Herrera G., Fernández MJ, Pohl N., Diaz M., Bozinovic F., Palacios AG. (2004). Sistema Visual en el Colibrí Austral (*Sebanoides sebanoides*) y el Picaflor Cordillerano (*Oreotrochilus leucoplerus*: Electroretinografía y Coloración. *Ornitología Neotropical* 15:215-222.
- 28] Palacios A, L. Peichl, F. Bozinovic (2004) *La vision ultraviolette du rat degus*. *Pour la Science Cerveau & Psycho* 5:92-95.
- 29] Peichl L, Chavez AE, Ocampo A, Mena W, Bozinovic F, Palacios AG (2005). Eye and Vision in the Subterranean Rodent Cururo (*Spalacopus Cyanus*, Octodontidae). *The Journal of Comparative Neurology* 486:197-208.
- 30] Ocampo-Garcés A, Hernández F, Mena W, Palacios AG. (2005). Wheel-running and rest-activity pattern interaction in two octodontids (*Octodon degus*, *Octodon bridgesi*). *Biological Research* 38:299-305.
- 31] Ocampo-Garcés A, Mena W, Hernández F, Cortés N, Palacios AG. (2006). Circadian chronotypes among wild captured west-andean octodontids. *Biological Research* 39:209-20.
- 32] Brückner G., S. Pavlica, M. Morawski, AG Palacios, A. Reichenbach (2006). Organization of brain extracellular matrix in the Chilean fat-tailed mouse opossum *Thylamys elegans* (Waterhouse, 1839). *J Chem Neuroanat* 32:143-58.
- 33] Goles E, Palacios AG (2007) Dynamical complexity in cognitive neural networks. *Biological Research* 40:381-384
- 34] Cosmelli D, Palacios AG (2007). Networks in cognitive systems and biomedicina: cerebral processes, models and mathematical tools design. *Biological Research* 40:479-485
- 35] Herrera G, Zagal JC, Diaz M, Fernández MJ, Vielma A, Cure M, Martinez J, Bozinovic F, Palacios AG. (2008) Spectral sensitivities of photoreceptors and their role in colour discrimination in the Green-backed Firecrown Hummingbird (*Sebanoides sebanoides*). *J Comp Physiol A Neuroethol Sens Neural Behav Physiol*. 194(9):785-94
- 36] Zagal, J.C., Ruiz-del-Solar, J., Palacios A.G. (2008). Fitness Based Identification of a Robot Structure. *Proc. 11th Int. Conf. on Artificial Life*, pp.733-740, MIT Press, Cambridge, MA.
- 37] Palacios AG. (2009) La Red Encarnada: Cerebro vs Metrópolis. (The embodied network: Brain vs Metropolis). Editorial Ariel, España.
- 38] Delgado LM; Vielma AH; Palacios AG; Schmachtenberg O. (2009) The GABAergic system in the retina of neonate and adult *Octodon degus*, studied by immunohistochemistry and electroretinography *J Comp Neurol*. 514(5):459-472.
- 39] Cure M, Palacios AG (2009) Do Hummingbird see in the Ultraviolet? *The Open Medical Informatics Journal* 3:9-12
- 40] Martinez-Harms J., Palacios A.G., Marquez N., Arroyo M.T.K. and Mpodzis J. (2010) Can red flowers be conspicuous to bees?: *Bombus dahlbomii* and South American temperate forests flowers as a case in point. *Journal Experimental Biology* 213: 564-571. Featured in: Inside JEB: BEES USE ACHROMATIC CONTRAST TO SEE RED. Kathryn Knight *Journal of Experimental Biology* 213, ii (2010).
- 41] Palacios AG, Bozinovic F, Vielma A, Arrese CA, David M. Hunt DM, Peichl L (2010) Retinal Photoreceptor Arrangement, SWS1 and LWS Opsin Sequence, and Electroretinography in the South American Marsupial *Thylamys elegans* (Waterhouse, 1839). *Journal Comparative Neurology* 518(9):1589-1602.
- 42] Schleich CE, Vielma A, Glosmann M, Palacios AG, Peichl L. (2010) The Eyes of Two Subterranean Tuco-tuco Species (Rodentia, Ctenomyids): Histological Characteristics and Retinal Spectral Sensitivity. In press *Journal of Comparative Neurology*
- 43] Alex Vielma, Luz M. Delgado, Claudio Elgueta, Adrián G. Palacios and Oliver Schmachtenberg . (2010). Nitric oxide amplifies the rod response of the rat retina, measured by electroretinography. In press. *Experimental Eye Research*.
- 44] Palacios-Munoz A, Martinez PL, Palacios AG and Martinez A (2010) Critic role of connexin36 gap junction channels in the synaptic transmission in the retina of *Octodon degus*, a diurnal mammal. Submitted *Visual Neuroscience*.
- 45] P. Muñoz , M. Aspé, L.S. Contreras, and A.G. Palacios. (2010) Role of DNA methylation during recognition memory in hippocampus and perirhinal cortex in rats. Submitted *BR*.

### **Congress and Lectures**

More than 100 abstract and talk presentation in congress meetings.

**C. Research Support**

- 2010-2011 INRIA CONICYT Algorithms for Modelling the Visual System (AMVIS). F. Alexander, T. Vieville, B. Cessac, J.C. Zagal, A. Palacios.
- 2009-2011 CNRS-NEUROINFORMATIC Analysis and Modeling of Sensory Transduction to Perception based on experimental data and neural network models. Pi Axel Hutt, Co Invest, T. Vieville, B. Cessac, L. Bougrain, INRIA-CORTEX, D. Cosmelli, PUC. Adrian Palacios, CNV.
- 2006-2009 FIRCA NIH. Senile Degeneration in the Brain of *O degus*, PI A. Kirkwood. 1 R03 TW007171-01.
- 2005-2009 Ring in Sensory Biology. PI. CONICYT- PBCT #ACT45. (<http://www.cnv.cl/anillosensorial/>)
- 2006-2009. MORPHEX. Morphogenesis and gene regulatory networks in plants and animals: a complex systems modeling approach. CONICYT RUE26 Cooperación Internacional. E Goles PI, J Asenjo, A Palacios Co Investigador.
- 2006-2009. MORPHEX. Morphogenesis and gene regulatory networks in plants and animals: a complex systems modeling approach. EC NEST-2005PATH-043322/STREP\_Eric Goles PI, Juan Asenjo, Adrian Palacios Co Investigador.
- 2004-2008 Neuronal visual processing in *Octodon degus* retina. PI. Fondecyt #1040309.

**D. Thesis supervision in my lab (present and past)**

- Postdoctoral Fellows (5)
- Postgraduate Students (11)
- Thesis Committees (17)
- Undergraduate (10)

**E. Collaborations:**

- Computational Neuroscience: [CORTEX INRIA](#) ([F. Alexandre](#), [T. Vieville](#), [B. Cessac](#), [A. Hutt](#), [L. Bougrain](#), France: Financial Support CNRS Neuroinformatique; INRIA-CONICYT).
- Alzheimer Disease ([A. Kirkwood](#), Hopkins University, USA; [N. Inestrosa](#) PUC, Chile: Financial support FIRCA-NIH)
- Sensory Ecology ([F. Bozinovic](#), PUC; [Leo Peichl](#), Max Planck, Germany; [David Hunt](#), Institute of Ophthalmology, England)

**F. Field of Research**

Sensory systems must ultimately be understood at different biological levels, from molecular events to animal behavior seen in their natural ecological conditions. With Francisco Varela we show that Avian (*Columba livia*) uses ultraviolet light to shape its color vision space (*Vision Research*, 32:1947-1953, 1992) and we propose a theoretical framework "Ways of coloring" to this aims published in *Behavioral and Brain Sciences*, 15:1-74, 1992 (along 33 commentaries). At Yale I was working to establish the spectral sensitivities and kinetics response of rods and cones by recording photocurrents with suction electrodes (*J Physiol (London)*. 471:817-829. 1993). We reported UV cones in *Danio aequipinnatus*, a small cyprinid related to zebrafish (*Vis Neuroscien*. 13:411-421. 1996, *Vis Res*. 38:2135-2146. 1998). Moving to the Universidad de Valparaiso in 1997 I started my own lab, focusing in visual sensory ecology from single photoreceptor, electroretinogram (ERG) and reflectance characterization from animals and their microhabitat, that are likely to be used as signals in sexual selection, recognition of conspecifics, camouflage. In retinas slices using patch-clamp, we are studying the retina neural network form by bipolar, amacrine and ganglion cells types and their participation in color vision. More recently we are recording from a population of ganglion cells using multielectrodes MEA array (64X). Furthermore, at the retinal an intricate bioelectrical neural network develop dynamically depending on the background illumination and the behavioral meaning of the task for the animal. We are using mathematical tools to model retinal neural coding. Recently, we start to work in the field of Neurobiology of Learning and Memory, using behavior, biochemistry and synaptic plasticity (LTP, LTD) approaches in *Octodon degus*, a rodent that during aging develop brain marks proper of Alzheimer diseases. Another area of my interest is complexity and I coordinating several multidisciplinary activities in the area of cognitive sciences at the *Instituto de Sistema de Complejos de Valparaiso, Chile* ([www.iscv.cl](http://www.iscv.cl)). For more details see <http://www.cnv.cl/palacios>