



## VI International Meeting of the Latin American Society for Developmental Biology

26 – 29 April 2012  
Radisson Montevideo, Uruguay

## Support

### **This Event has been National Interest avowed:**

Presidencia de la República  
Oriental del Uruguay

### **Municipal Interest**

Intendencia de Montevideo

### **Ministerial Interest:**

Educación y Cultura  
Salud Pública  
Turismo y Deporte

### **Institutional Interest:**

Facultad de Ciencias  
Facultad de Medicina  
Instituto de Investigaciones  
Biológicas Clemente Estable  
Institut Pasteur de Montevideo

## Welcome message

### *Dear colleagues and friends:*

*Much of the hopes for human progress into the future are pinned on biological research, in all its branches from biomedicine to ecology. All living beings on this planet share a single evolutionary origin, and the best way to know ourselves is to also know the basic mechanisms of life in other species as well as the general mechanisms of biological evolution. Most of these mechanisms act during the early stages of development of organisms, the subject of study of Developmental Biology.*

*LASDB (the Latin American Society for Developmental Biology; <http://lasdbbiology.ning.com/>) was founded in 2003 to promote the study of the discipline in the region. It is a nonprofit association including today over three hundred researchers residing in countries throughout Latin America. One of the main activities of LASDB is the biannual organization of an international meeting, associated with short training courses for graduate students and young researchers. In April 2012 the sixth meeting of the Society will be held in the city of Montevideo, with an emphasis on the relatively young academic discipline known as «Evo-Devo». Evo-Devo involves the fusion of Developmental Biology and Evolution, and it aims at understanding how evolutionary mechanisms arise and act in the embryonic stages of different organisms. To achieve this goal some of the world's greatest exponents of this discipline have been invited to give talks and lectures, together with leading researchers in the region. A selection of students from throughout the Americas will also participate in the previous ten-day course, while satellite symposia are being organized in different Universities of Brazil, Argentina, Chile and Uruguay.*

*Montevideo will warmly welcome the international community of developmental biologists. The capital of a thriving country, embracing the vast estuary of the Río de la Plata and located at the political and cultural center of the region, it presents an ideal setting for a meeting like this. Although the city was founded about 300 years ago, the biggest progress occurred in the twentieth century, thanks to the influx of European immigrants who helped build its own identity while mixing their culture with local tradition. The splendor of the 1920s left a rich architectural that can be enjoyed in the main streets, while more than 20 kilometers of shoreline, mostly decorated by sandy beaches and completely lined by the «rambla», represent the «montevideanos» most treasured value.*

Dra. Nibia Berois

Dra. María Castelló

Milka Radmidovich

Dr. Flavio Zolessi



## **VI International Meeting of the Latin American Society for Developmental Biology**

26 - 29 April 2012  
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### **Organizing Committee**

Dra. Nibia Berois  
- Facultad de Ciencias

Dra. María E. Castelló  
- Instituto de Investigaciones Biológicas - Clemente Estable

Dra. Milka Radmilovich  
- Facultad de Medicina

Dr. Flavio Zolessi  
- Facultad de Ciencias

### **International Programme Committee**

Eddy De Robertis  
(UCLA, Los Angeles, USA)

Roberto Mayor  
(UCL, London, UK)

Guillermo Oliver  
(St. Jude's Children Hospital, Memphis, USA)

Claudio Stern  
(UCL, London, UK)

José Xavier-Neto  
(Laboratorio Nacional de Biociencias, Campinas, Brazil)

# Keynote Speakers



## Jean David

Directeur de Recherche Emérite au CNRS  
Docteur d'Etat ès sciences, 1961, Université de Lyon 1

My scientific activity has always been dedicated to understanding the mechanisms of Evolution, using drosophilid flies as a model family. With over 350 published papers, the major themes are given below:

Past achievements: Natural populations of *Drosophila melanogaster*, African origin and geographic adaptations. Ecological specializations of *D. sechellia* on the toxic fruit of Morinda. Temperature adaptation with two original approaches: male sterility at extreme, low or high, temperatures; chill coma recovery time among geographic races and species. Thermal phenotypic plasticity (Eco-Devo) of quantitative traits: adaptive variations in the shape of the reaction norms.

Present interests: Systematics and taxonomy of drosophilids with special interest in *Zaprionus* (see Amir Yassin). Phenotypic variability in nature. Morphometrical evolution of quantitative traits: cladic analysis of realized evolvability. Genetics of complex traits, such as sex dimorphism. Pigmentation variation in African Sophophora: a single gene polymorphism restricted to females in many species.



## Walter Jakob Gehring

Is Professor at the Biozentrum of the University of Basel, Switzerland. He obtained his Ph.D. at the University of Zurich in 1965 and after two years as a research assistant

of Professor Ernst Hadorn he joined Professor Alan Garen's group at Yale University in New Haven as a postdoctoral fellow.

In 1969 he was appointed as an associate professor at the Yale Medical School and 1972 he returned to Switzerland to become a professor of developmental biology and genetics at the Biozentrum of the University of Basel. He was Secretary General of the European Molecular Biology Organization, President of the International Society for Developmental Biologists, a Foreign Member of the National Academy of the USA, Great Britain, France, Germany and Sweden. In 1997 he was awarded the March of Dimes Prize in Developmental Biology. In 2000 he received the Kyoto Prize for Basic Science. In 2002 he received the Balzan Prize for Developmental Biology.

Walter Gehring has mainly been involved in studies of *Drosophila* genetics and development, particularly in the analysis of cell determination in the embryo and transdetermination of imaginal discs. He has made significant contributions to the study of the heat shock genes, various transposons and the homeotic genes which are involved in the genetic control of development.



## Enrique Lessa

Professor of Evolution, Facultad de Ciencias - Universidad de la República. Montevideo, Uruguay.

Outline of academic career

· Undergraduate studies: Universidad de la República, Uruguay, 1976-1981. Major: Biology.

· Doctoral studies: New Mexico State University, Las Cruces, USA, 1983-1987. Advisor: Dr. Charles S. Thaeler, Jr. Major: Biology. Minor: Experimental Statistics.

· Postdoctoral training: Museum of Vertebrate Zoology, University of California, Berkeley, 1987-1992. Advisor: Dr. James L. Patton.

· Current positions:

Professor of Evolution, Facultad de Ciencias, Universidad de la República, Montevideo, Uruguay. (1992-1994: Associate Professor; 1994-date: Professor).

Academic Director, Programa de Desarrollo de las Ciencias Básicas (PEDECIBA), Uruguay.

· Honorary positions: Adjunct Professor, Biology Department, and Affiliate, Museum of Southwestern Biology, University of New Mexico, Albuquerque, NM, USA.



## Nicole Le Douarin

Is a developmental biologist, famed for her studies of chimeras, which have led to critical insights regarding higher animal nervous and immune systems.

Le Douarin invented an embryo manipulation technology to produce chimeric embryos, from chicken and quails. She is notable for shedding light on the development of higher animal nervous and immune systems. She showed that precursor cells within the neural crest were multipotent. Her technique has also permitted her to shed light on the development of the blood and immune systems.

Significant Papers:

· Le Douarin N & Teillet M. «Experimental analysis of the migration and differentiation of neuroblasts of the autonomic nervous system and of neuroectodermal mesenchymal derivatives using a biological cell marking technique» *Dev. Biol.* v. 41, pp. 162-184 (1974).

· «Tracing of Cells of the Avian Thymus through Embryonic Life in Interspecific Chimaeras» (1975)

· «The Neural Crest» (1982)

· «Mapping of the Early Neural Primordium in Quail-Chick Chimaeras: I. Developmental Relationship between Placodes, Facial Ectoderm and Prosencephalon» (1985)

· «Post-natal Development of a Demyelinating Disease in Avian Spinal Cord Chimaeras» (1986)

· «Cell line segregation during peripheral nervous system ontogeny» *Science* (1986)

· N. M. Le Douarin, S. Creuzet, G. Couly, and E. Dupin, Neural crest cell plasticity and its limits,» *Development* 131, 4637-4650 (2004).

## Conference Room

Day 1 – Thursday 26<sup>th</sup>

13:00 Registration

15:00 Opening ceremony  
Minister of Education and Culture of Uruguay – Ricardo Ehrlich

15:15 Lecture 1

Evo-Devo: new excitements in an old field  
**Jean David**, *France*

16:00 Oral Session 1  
Chair: Flavio Zolessi

Control of leaf development by micrnas and the evolution of their networks  
**Javier Palatnik**, *Argentina*  
Novel signals regulating chloroplast biogenesis and leaf development  
**Patricia León Mejía**, *Mexico*

17:00 *Coffee Break*

17:30 Oral Session 2  
Chair: Nibia Berois

ISDB/MOD Lecture: Stem cells and the evolution of the nervous system  
**Jochen Wittbrodt**, *Germany*  
Evolution and development of the nervous system by expansion, duplication and divergence of neural circuits  
**Detlev Arendt**, *Germany*  
The developmental biology of *Rhodnius prolixus* and the evolution of segmentation processes  
**Rolando Rivera Pomar**, *Argentina*

Selected Abstracts:

·Snail2-PHD12 interaction recruits an epigenetic repressive complex that mediates neural crest epithelial-mesenchymal transition  
**Pablo Hernán Strobl-Mazzulla**, *Argentina*

·Bases for modeling directed cell migration as a self-organized process emergent from local stochastic interactions. Deterministic and stochastic components compose the dynamics of the directed cell migration.  
**Melina Rapacioli**, *Argentina*

20:00 Opening Reception  
«Patio de la Fuente» - Palacio Santos  
18 de Julio 1205 esquina Cuareim



# Conference Room

Day 2 – Friday 27<sup>th</sup>

- 08:30 Oral Session 3  
Chair: José Xavier-Neto
- Somites without a clock  
**Claudio Stern**, *United Kingdom*  
Shaping tissue polarity in the developing laterality organ of zebrafish  
**Miguel Concha**, *Chile*  
Multivesicular endosomes as Wnt-signaling organelles in development and disease  
**Edward De Robertis**, *United States*
- 10:00 *Coffee Break*
- 10:30 Oral Session 4  
Chair: Pablo Wappner
- Origin, development & evolution of the chordate body plan  
**Billie Swalla**, *United States*  
Cis-regulatory architecture and the evolution of convergent phenotypes  
**Nicolás Frankel**, *Argentina*
- Selected Abstracts:  
· The evolution of HoxD expression when digit 2 becomes the most anterior digit: implications for the bird wing controversy  
**Alexander Vargas**, *Chile*  
· Limited sex but lots of buds in the colonial chordates  
**Federico Brown**, *Colombia*
- 12:00 Lecture 2
- What do we know about speciation?  
**Enrique Lessa**, *Uruguay*
- 12:45 Free time for lunch
- 14:45 Oral Session 5  
Chair: Nadia Monesi
- Developmental Evolution: Insights from the Unconventional Model Organism, *Parhyale hawaiiensis*  
**Nipam Patel**, *United States*  
The role of ATRX in gene expression and chromatin dynamics during the *Drosophila* development  
**Mario Zurita**, *Mexico*
- Selected Abstract:  
· *Zonda*: A novel *Drosophila* gene involved in growth control  
**Mariana Melani**, *Argentina*
- 16:00 Poster Session 1 + Coffee Break  
*Picasso Room*

19:00

## Oral Session 6

Chair: Manoel Luis Costa

Molecular control of cell death during limb development

**Jesús Chimal-Monroy**, *Mexico*

Modeling Treacher Collins Syndrome in zebrafish

**Nora Calcaterra**, *Argentina*

Current views into the development of the lymphatic vasculature

**Guillermo Oliver**, *United States*

20:30

LASDB assembly



## Conference Room

Day 3 – Saturday 28<sup>th</sup>

- 08:30 Oral Session 7  
Chair: Ernesto Maldonado
- Development of the hagfish, *Eptatretus burgeri*, and origin of the vertebrate head  
**Shigeru Kuratani**, *Japan*  
Strategies for vertebrate head patterning Involving Wnt signaling  
**José García-Abreu**, *Brazil*
- Selected Abstracts:
- A new effect of MARCKS phosphorylation produced by PKC in differentiating neurons  
**Andrea Toledo**, *Uruguay*
  - Contractile activity and mechanical properties of epithelial cells during morphogenesis  
**Nicole Gorfinkiel**, *Spain*
- 10:00 *Coffee Break*
- 10:30 Oral Session 8  
Chair: Guillermo Lanuza
- Principles of regeneration in urodeles  
**Panagiotis Tsonis**, *United States*  
Functional organization of a stem cell niche in the mammalian spinal cord  
**Raúl Russo**, *Uruguay*  
Spinal cord regeneration in *Xenopus*  
**Juan Larrain**, *Chile*
- 12:00 Lecture 3
- EMBO Lecture  
The development and evolution of eyes and photoreceptors  
**Walter Gehring**, *Switzerland*
- 12:45 Free time for lunch
- 14:45 Oral Session 9  
Chair: Horacio Merchant
- Stem cells and Regeneration in Planarians  
**Alejandro Sánchez-Alvarado**, *Estados Unidos*  
From the stress of amputation to a 3D asymmetric reconstruction in hydra  
**Brigitte Galliot**, *Switzerland*
- Selected Abstract:
- Role of Armadillo Repeat Domains of SPAG6, a protein from sperm flagella  
**Rossana Sapiro**, *Uruguay*
- 16:00 Poster Session 2 + Coffee Break  
*Picasso Room*

# Scientific Programme

19:00

## Oral Session 10

Chair: Sally Moody

A bipolar view of lens placode formation

**Irene Yan**, *Brazil*

Sense organ specification: uncovering ancestral gene regulatory networks

**Andrea Streit**, *United Kingdom*

Coordinated gene expression during late embryonic development of the nervous system in *Drosophila melanogaster*

**Rafael Cantera**, *Uruguay*

20:30

## Banquet

**Club Banco Comercial**

*Rambla Rep. Del Perú 1588*



## Conference Room

Day 4 – Sunday 29<sup>th</sup>

- 9:30 Oral Session 11  
Chair: Katy Krull
- Stem cells and transdifferentiation during retina regeneration  
**Katia Del Río-Tsonis**, *United States*  
The Neogenin 1 (Neo1) receptor mediates Sonic Hedgehog (Shh) driven neural precursor cell proliferation and tumor growth  
**Verónica Palma**, *Chile*  
Control of the cell cycle: a lesson from retinal progenitor cells  
**Rafael Linden**, *Brazil*
- 11:00 Lecture 4
- ISDB/MOD Lecture  
The neural crest, an important asset in the development and evolution of vertebrates  
**Nicole Le Douarin**, *France*
- 11:45 Free time for Lunch
- 13:45 Oral Session 12 - Developmental Dynamics Session  
Chair: Gary Schoenwolf
- Genetic regulation of gastrulation movements in zebrafish  
**Lilianna Solnica-Krezel**, *United States*  
5´ Hox genes regulate digit patterning by controlling the wavelenght, of a turing-type mechanism  
**María A. Ros**, *Spain*  
Combinatorial codes regulate major cell signaling pathways during development  
**Joseph Yost**, *United States*
- 15:15 Closing ceremony
- LASDB President - Jose Xavier-Neto  
Best poster awards