

**FINAL REPORT**  
**International Course & Symposium**  
**“Neuron Glia Interactions in health and disease from basic Biology to translational Neuroscience”**

**Title of the course**

“Neuron Glia Interactions in health and disease from basic Biology to translational Neuroscience” - second edition

**Date and place**

September 29<sup>th</sup> - October 4<sup>th</sup>, 2014 – Institut Pasteur de Montevideo, Instituto de Investigaciones Biológicas Clemente Estable, Facultad de Medicina, UdelaR - URUGUAY

**Organizers**

Dr. Luis Barbeito – Neurodegeneration Laboratory – Institut Pasteur de Montevideo  
Dr. Hugo Peluffo – Facultad de Medicina (UdelaR) & Institut Pasteur de Montevideo  
Dra. Natalia Lago – Institut Pasteur de Montevideo  
Dra. Patricia Cassina – Facultad de Medicina (UdelaR)  
Dra. Silvia Olivera – Instituto de Investigaciones Biológicas Clemente Estable (IIBCE)  
Dra. Juana Pasquini - Universidad de Buenos Aires, Argentina

**Teaching Team**

Dr. Alain Chedotal – Institut de la Vision, INSERM, UPMC, Paris, Francia  
Dr. Pablo López – Instituto Ferreira, CONICET, Córdoba, Argentina  
Dr. Felipe Court - Pontificia Universidad Católica de Chile, Chile  
Dra. Juana Pasquini - Universidad de Buenos Aires, Argentina  
Dra. Brigitte Van Zundert - Universidad Andres Bello, Chile  
Dr. Alberto Javier Ramos - Universidad de Buenos Aires, Argentina  
Dra. Ety Benveniste – University of Alabama, United States  
Dr. Luis Barbeito – Neurodegeneration Laboratory – Institut Pasteur de Montevideo  
Dr. Hugo Peluffo – Facultad de Medicina (UdelaR) & Institut Pasteur de Montevideo  
Dra. Natalia Lago – Facultad de Medicina (UdelaR) & Institut Pasteur de Montevideo  
Dra. Patricia Cassina – Facultad de Medicina (UdelaR)  
Dra. Silvia Olivera – Instituto de Investigaciones Biológicas Clemente Estable (IIBCE)

## Timetable Course & Symposium

### COURSE

	Monday 29th	Tuesday 30th	Wednesday 1st	Thursday 2nd
8:00-9:00				
9:00-9:45	Astrocytes overview. Silvia Olivera (UY)	Schwann cells overview. Natalia Lago (UY)	Hands on	<b>Students oral presentation:</b> Hands on
9:45-10:30	Astrocyte reactivity in SNC damage. Patricia Cassina (UY)	Oligodendrocytes overview. Eugenia Isasi (UY)	Hands on	Astrocytes and neurodegenerative diseases. Luis Barbeito (UY)
10:30-11:00	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>
11:00-11:45	Microglial cells overview. Hugo Peluffo (UY)	New strategies to target glial cells. Hugo Peluffo (UY)	Hands on	<b>Students oral presentation:</b> Hands on
11:45-14:00	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>
14:00-16:00	Hands on	Hands on	Hands on	<b>Plenary Lecture:</b> New mechanisms in astrocyte mediated neurotoxicity. Brigitte van Zundert (CHI)
16:00-16:30	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>
16:30-18:00	Hands on	Hands on	Hands on	<b>Plenary Lecture: (17hs)</b> Felipe A Court: Schwann cells: its function on myelination and axonal regeneration

### SIMPOSIUM

**Chairs: Luis Barbeito and Juana Pasquini**

Coordination: Patricia Cassina, Silvia Olivera, Natalia Lago and Hugo Peluffo

Dates and location: 3<sup>rd</sup> and 4<sup>th</sup> October, 2014. IP Montevideo, Montevideo (UY)

#### Friday October 3<sup>rd</sup>

##### Session I: Glia and neuroinflammation

**Chairs Juana Pasquini & Hugo Peluffo**

9:00-9:45 -Conference: "The Role of the JAK/STAT Pathway in Neuroinflammatory Diseases". Ety Benveniste, UAB (USA).

9:50-10:10 - "Role of CD300f immune receptor in neuroinflammation after traumatic brain injury". Hugo Peluffo, IPMont/FMed UDELAR (UY)

10:15-10:35 -"CD300f Immunoreceptor contributes to peripheral nerve regeneration by the modulation of macrophage inflammatory phenotype" Natalia Lago, IP Montevideo (UY)

10:40-11:00 - The RAGE/Toll pathway in reactive gliosis and neuroinflammation: A new target for neuroprotection? Javier Ramos, UBA (ARG)

11:00-11:30 Coffee break

11:30-12:15 - Conference: "New genetic tools to study myelination and demyelination in the mouse CNS". Alain Chédotal, Hopital de la Salpetriere (FRA)

12:30-14:00 Lunch

## Session II: Myelin forming cells

*Chairs Babette Fuss & Silvia Olivera*

14:00-14:45 - Conference: "Extracellular cues as regulators of oligodendrocyte differentiation and CNS myelination". Babette Fuss, VCU (USA)

14:50-15:35 - "The intimate relationship between glia and axons during degenerative and regenerative programs" Felipe Court, Universidad Católica (CHI)

15:40-16:40 Coffee break and Poster Session I

16:50-17:35 - "Transferrin and Thyroid Hormone converge in the control of myelinogenesis". Juana Pasquini, UBA (ARG)

17:40-18:00 - "Altered myelination in two models of Glutaric Acidemia type I". Silvia Olivera, IIBCE (UY)

**DINNER**

## Saturday October 4<sup>th</sup>

### Session III: Glial cells and neurodegenerative diseases

*Chairs Luis Barbeito & Patricia Cassina*

9:00-9:45 – Initial pathogenesis in Amyotrophic Sclerosis (ALS): early molecular mechanisms" Brigitte Van Zundert, Universidad Andrés Bello (CHI)

9:50-10:15 – "A role for mitochondria in astrocyte-mediated neurotoxicity" Patricia Cassina, FMed/UDELAR (UY)

10:15-11:15 Coffee break and Poster Session II

11:15-11:35 – "Modulatory role of Myelin-associated glycoprotein against p75<sup>NTR</sup>-dependent apoptosis of motoneurons during postnatal development" Pablo López, Instituto Ferreira (Arg)

11:35-11:55 - Activated microglia alters neuronal interaction through the opening of astrocyte hemichannels. Verónica Abudara, FMed/UDELAR (UY)

11:55-12:35 –"The emerging concept of the cellular microenvironment underlying neurodegeneration" Luis Barbeito, IPMontevideo (UY)

## Closing remarks

## Students Course & Symposium

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# Activity Report

## 1. General Summary

Glial basic biology to clinical relevance was stressed throughout the course, focusing on the different glial roles during development and normal nervous system biology as well as in disorders and strategies for glial-targeted therapeutics. Direct experimental work was accomplished by the students and they presented the results orally to the professors and the rest of the students facilitating scientific interactions.

The overall evaluation of the course was extremely positive. Once finished, we received very favorable comments from the teachers that in addition have broad experience in participating of this kind of initiatives. The students filled out an anonymous survey form at the end of the course (the form is joined below as Annex I). Concerning the 14 questions with quantitative grading (from 1 to 5: 1="very poor", 5="excellent"), the average out of the 24 surveys was 4.5. Constructive suggestions were kept concerning the qualitative comments section, and will be used as valuable input for future events.

## 2. Students applications and appraisal

We received 28 applications from a number of countries around the globe. Among the evaluation criteria, we have given maximum importance to a combination of: 1) application forms, CV and supervisor's letter; 2) Doctoral students 3) Country of origin (to balance all procedences). Following these appraisal criteria, we selected 9 students.

## 3. Scientific highlights

The language used was English throughout the course. Lectures were mainly scheduled in the mornings, with hands-on practical classes in the afternoons. Practical classes were aimed at assessing practical skills and manual competency to obtain astrocyte, oligodendrocyte and microglia purified cultures, and different approaches to detect and quantify glial reactivity in different models of damage or disease emphasizing the differences among the CNS and PNS. We linked the practical skills with the theoretical knowledge gained from lectures and workshop. Posters were up during the whole course, stimulating further interactions throughout. Apart from these scientific discussions, students presented briefly their analyses from the practical classes and were observed and interrogated by the teacher staff.

Invited speakers included regional leaders in most of the topics that presented new findings at the symposium.

Social events accompanying the course were very much appreciated: few dinners, "poster and beer" sessions and the final *asado* were additional opportunities for informal interactions and discussions. We put forward a web-based tool for interaction and dissemination of material and information, using moodle (<https://intranet.pasteur.edu.uy/moodle/>). The final program, all the lectures and valuable accessory material, are in the site, with access to students and teachers. Discussion forums were also initiated during the course. The moodle site will stay alive for some time, to allow students a free access for further questions and analysis of information.

## **4. Organization**

### **a) Academic organization**

The program, invited speakers list and final selection of students were worked out in tight coordination between the organizers.

A dedicated web page (<http://www.pasteur.edu.uy/index.php/es/proximoscursos/485-curso-y-simposio-glia-2nd-edition>) and e-mail (GLIA2014@pasteur.edu.uy) were set early on during organization, allowing for advertisement and efficient interaction with applicants and invited speakers.

The organizers defined the topics that would be included, formed the teaching team, contacted the speakers and outlined the timetable. They also selected the students to each practical activity taking into account the student profile, background and scientific interests.

A final evaluation process was ensured, whereby all the students filled out anonymously a survey form (see Annex 1 below), once the course was over. Through the moodle site, we will also proceed for a mid-term evaluation, attempting to monitor the actual impact of the course and symposium on the students' own science projects.

### **b) Administrative organization**

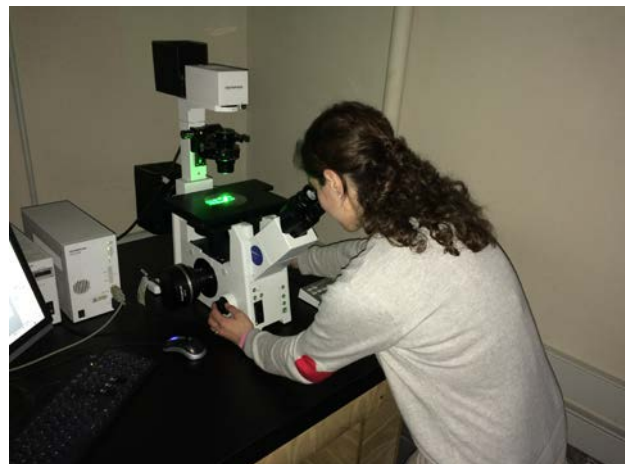
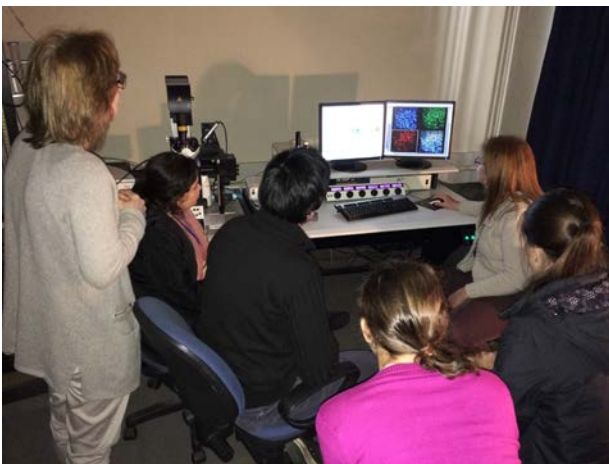
The Unidad de Gestión Científica (UGC) of the IP Montevideo took care of every non-academic detail, from scheduling flight arrivals and departures to dealing with food, hostage and travel providers. Natalia López from the UGC executed these and other tasks with high professionalism.

Budgetary balance was achieved, greatly acknowledging the different agencies that contributed to the Course: Committee for Aid and Education in Neurochemistry (CAEN), National Multiple Sclerosis Society, Agencia Nacional de Investigación (ANII), International Brain Research Organization (IBRO), PEDECIBA, Facultad de Medicina and the Institut Pasteur de Montevideo.

## **5. Looking forward**

We expect to continue with this course and symposium as a bi-annual activity and become both as well recognized activities in the agenda of regional courses in Neuroscience, with the further purpose of creating a Regional Advanced School devoted to the study of glial cells. We also would like to encourage the participation of clinicians in both the course and the symposium.

## Photos about the Course & Symposium



## Expenditures

Description	Amount USD
Reagents for practical/lab activities	
Meals	1645
Teaching	
Student Per Diem	
Stationery (CD, etc.)	
Tickets	
Accommodation	4035
Urban Transportation	
Other (bank fee – no receipt)	280
<b>TOTAL</b>	<b>5960</b>

Amount received USD 5970.-

Original documents kept at the Institut Pasteur de Montevideo.

This activity was supported by:

