

ISN School of Neurobiology – Mendoza, Argentina, 31st August – 11th September 2015

“From Molecules to Systems: Modern Neurobiology at a Glance”

Final Report

Mendoza, Argentina, 28th September 2015

Dear Dr. Dimitra Mangoura
Head of the ISN School's Initiative
International Society for Neurochemistry

I, on behalf of the Organizing Committee, would like to thank you, and in your person to all the members of the ISN School's Initiative Committee and the ISN for your invaluable support to our School of Neurobiology.

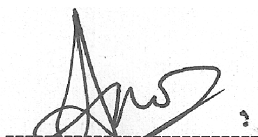
This School was the first to take place in our Cuyo region and to count with the participation of students from all regions of Argentina and neighboring countries.

The School offered a summary of a broad range of topical subjects in modern neurobiology. It covered the fundamentals of the cellular and molecular physiology of the nervous system and linked them to frontier and cutting-edge research in the field. It allowed the participants to actively engage in many practical activities as well as to create a network of contacts with colleagues and academics from top research institutes in Argentina and Chile.

The funding granted by ISN to this event guaranteed that all participants have travel grants, accommodation, transportation to and from the school's venue, lunch and access to high quality laboratory material and equipment. It also made possible for highly qualified scientist from Argentina and Chile to be flown to Mendoza and offered suitable accommodations.

It is then with immense gratitude and a sense of mission accomplished that I submit this report for your consideration. Please note that I am attaching additional supporting documentation and photographs as requested.

Yours sincerely,



Dr. Cristian Acosta

Dr. Cristian Acosta
IHEM-CONICET
Mendoza

1. Activities undertaken

Please note that a fully-fledged and detailed description of each of the activities listed below is provided in the Student's Workbook. This material was handed to the students at the beginning of the School and it is included separately (in pdf format) as part of the present report.

The School activities consisted of:

a. Five lectures of 3 hours each on: basic organization of the nervous system (Dr. A. Seltzer), principles of electrophysiology (Dr. C. Acosta), adaptive mechanisms involved in the response to injury in the nervous system and pain (Dr. Patterson), chronobiology (Dr. E. Muñoz) and mechanistic insights into neurotoxicity in the CNS (Dr. M. Sosa).

b. Five plenary lectures (conference format) of 2 hours each imparted by distinguished scientists from Argentina and Chile, according to the following detail:

"Encoding asymmetry in neural circuits (Part 1). A gene to behaviour approach of brain asymmetry in the zebrafish epithalamus (Part 2)". (Dr. M. Concha)

"Assembly and remodelling of the adult hippocampal circuits". (Dr. A. Schinder)

"Neurobiological mechanisms of the Attention Deficit and Hyperactivity Disorder (ADHD)". (Dr. G. Paglini)

"Time setting of the biological clock by light signals: the role of intrinsically photosensitive retinal ganglion cells". (Dr. M. Guido)

"The role of astrocyte inhibitory molecules in the absence of cerebral repair". (Dr. L. Leyton)

c. Seven laboratory practicals/demonstrations of 5 hours each on:

- Human and rat stereotaxis / Use of the brain atlas
- The zebrafish as a model to study the development of the nervous system
- Modelling of neuronal activity and ion channel regulation (MetaNeuron)
- Lab Rota on several commonly used techniques in the field of Neurobiology, including primary neuronal cell cultures, western blotting, immunohistochemistry, advanced microscopy, intracardiac perfusion and behavioral assessment in rodents
- Generation of surgical models of injury and repair in the peripheral nervous system
- Ganglionectomy and decentralization in rats (SCGx)
- Use of cell lines as models of neurotoxicity induced by glutamate

Please note that in all these activities the students gained hands on experience and were given introductory lectures including video material and recommendations for the correct and successful implementation of the various techniques they acquired training on.

d. Four full days of laboratory sessions (of 6 hours each) per group to discuss, plan and execute a small research project. This activity was carried out by the students in groups of 4-5, each mentored by one of the Professors of the School. The students generated the data, wrote a short report on their findings and on the final day of the School made a 20 minutes presentation of their experiences and results.

e. The School also included a 2 hours module devoted to the presentation by the students of their present topic of research. This exercise demanded ability to communicate essential aspects of their work in a short time plus clarity of concepts. The Faculty board offered tips and recommendations to all presenters on how they could improve their communicational skills.

f. Two special Athenaeums:

The beauty of in vivo microscopy: is seeing believing? (Dr. J. Borgonovo and Dr. M. Concha)

Writing successful grant applications and papers. (Workshop dictated by Dr. A. Schinder)

These two activities were especially relevant to our students given their lack of previous training on how to handle, organize and present a body of data, a task of crucial importance when writing up their own research papers. It also encouraged them to think critically and explore the advantages and limitations of modern genetic manipulations, like optogenetics in animal models like the zebrafish.

g. A social event, which consisted of a traditional argentine barbecue (much enjoyed by all participants!) organized in the Sports Centre of the Cuyo National University. This activity took place on Sunday 6th September and was a great opportunity for the students to interact with the Faculty and among themselves in a very relaxed and informal environment. A group picture of this event is also included as part of the report.

The students received a DVD with a large number of key papers and other digital material (including videos and powerpoint presentations) encompassing the whole of the topics covered in the lectures and laboratory practicals. This material was made available to the students through the following Dropbox links:

<https://www.dropbox.com/sh/qu5vksjjaf3qe6q/AAAHvc4hxTesVnzIQJQve-tDa?dl=0>
<https://www.dropbox.com/sh/p0vj4y6gj3hty2t/AACxT81uLUzN2-k40dQhtN5Na?dl=0>
https://www.dropbox.com/sh/ox8zhspmzdur5y9/AAD_YIMBPUpWXcsiEdY8xuxxa?dl=0
<https://www.dropbox.com/sh/wyfi0aof6i8vIm3/AACUbGtH8JG0Js5uvdT7rSKma?dl=0>
https://www.dropbox.com/sh/8r4tm835lj8coji/AADzPK3xmrBdYKlwGJOna_fa?dl=0
<https://www.dropbox.com/sh/tu9bjs1lcv1g00a/AACYR9jxvNKTj-uXSIMoUyJca?dl=0>
<https://www.dropbox.com/sh/d139z52ijz4ngt4/AADfG3h9EKXrZSMVLYykOCzBa?dl=0>
https://www.dropbox.com/sh/mvhp5dm1py4dfd/AABa_-9Qu9RQMOjFfrvNNSJHa?dl=0
<https://www.dropbox.com/sh/2qa20c20d6bcpb5/AAC2AVllqNyPp3nFfvr32Sxca?dl=0>

2. Breakdown of disbursement of funds

ITEM/CATEGORY	AMOUNT IN AR\$	AMOUNT IN USD
Dr. G. Paglini Air ticket	1407.99	155.49
Dr. Concha/Borgonovo Accomodation	2476.00	273.44
Dr. Paglini Accomodation	1238.00	136.72
Dr. Guido Accomodation	619.00	68.36
Dr. Schinder Accomodation	619.00	68.36
Student's Accomodation (Site 1) 13 nights	22944.00	2533.85
Student's Accomodation (Site 2) 13 nights	9641.00	1064.72
Student's Insurance 14 days	2450.00	270.57
Student's Lunches 10 days	19370.00	2139.15
Student's travel grants (air/land fares)	24173.54	2669.63
Handouts, printed material, xeroxed copies, etc.	1286.00	142.02
Workbook	840.00	92.77
Student's breakfasts and coffee breaks	1651.66	182.40
Student's Bus cards	1400.00	154.61
Laboratory reagents	1661.00	183.43
	91777.19	10135.53

OTHER SOURCES OF FUNDING

IBRO-LARC in €	2300.00
The Company of Biologists in £	2000.00
Bioingenieria SA in AR\$	3000.00

IBRO-LARC funding paid for travel grants for all the invited faculty professors except Dr. Paglini. The Company of Biologists funds covered the expenditure incurred by the Organizing Committee to provide a daily coffee break for 30 people, accommodation for Dr. Leyton and the cost of printing lunch vouchers and stationary. It also covered partly for some basic laboratory supplies (gloves, disposable material, etc.). The funds from Bioingenieria covered in full the cost of printing the laboratory handouts.

Please, refer to both, the detailed Excel spreadsheet and bank transfer note attached to this report for details on how the funds from ISN were handled.

3. People who received ISN funding

List of Students selected to take part in the Course "From Molecules to Systems: Modern Neurobiology at a Glance" Mendoza, Argentina, 2015

Name e-mail address	ID Number	Country of Origin	Affiliation
BERTUCCI, Juan jbertucci@intech.gov.ar	31.994.446	Argentina	INTECH - Bs As
BUSOLINI, Fabricio fabriciobusolini@gmail.com	31.632.779	Argentina	UNSL- San Luis
CABRERA ZAPATA, Lucas lcabrerazapata@immf.uncor.edu	35.965.688	Argentina	INIMEC - Córdoba
COLQUE, Celeste colquecarina@gmail.com	31.760.982	Argentina	CRILAR - La Rioja

FARIAS ALTAMIRANO, Luz Estefania luzver86@hotmail.com	32.039.463	Argentina	IHEM - Mendoza
FLORES, Carolina carolina.flores.munoz@gmail.com	16.495.634-2	Chile	Univ Valparaiso Chile
GALLOL, Ezequiel gallolezequiel@gmail.com	34 .144.038	Argentina	Histología UNSL
IBARRA, Solange ibarra@ibr-conicet.gov.ar	32.630.635	Argentina	IbiolMol - Rosario
MAGRINI HUAMÁN, Rocío nahimemagrini@gmail.com	33.688.034	Argentina	UNSJ – San Juan
MARTOS SCHOTT, Yanina yaninamartos@gmail.com	29.083.500	Argentina	Fisiología – UBA – Bs As
MEDORI, Mara mara_medori@hotmail.com	35.660.045	Argentina	UBA-BsAs
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OLMOS CARRENO, Cindy clolmosc@unal.edu.co	95.312.033 AN302119	Colombia	UBA-Bs As
PALOMINOS CHACON, M Fernanda mfpalominos@ug.uchile.cl	16.945.738-7	Chile	UCH-Valparaiso Chile
PENACCHIO, Gisela gpennacchio@mendoza-conicet.gov.ar	31.130.206	Argentina	IMBECU-Mendoza
RAMIREZ, Mauricio m.ramirez045@gmail.com	16442959-8	Chile	Univ. Valparaiso. Chile
REYES, Cristofer cristopher.reyes.o@gmail.com	16.455.020-6	Chile	Univ. Valparaiso Chile
SOLER GARCIA, Florencia fsolergarcia@gmail.com	34.747.999	Argentina	UNSL-San Luis
TOLOSA, María José maria_jose_tolosa@hotmail.com	29.994.019	Argentina	IMBICE-La Plata
TRONCOSO, Mariana mtroncoso@fcm.uncu.edu.ar	29.385.709	Argentina	IHEM - Mendoza
UZAIR, Ivonne iuzair@mendoza-conicet.gov.ar	34.952.840	Argentina	IMBECU - Mendoza
VAZQUEZ NAVARRETE, Jaqueline vasqueznavarrete.j@gmail.com	16.813.569-6	Chile	Univ. Valparaiso Chile
ZALOSNIK FIGUEROA, María Inés mi.zalosnik@gmail.com	32.157.082	Argentina	CIQUIBIC-Córdoba

Total: 23 students

Classed by Origin:

From Mendoza : 4

From other parts of Argentina: 13

From other countries: 6

Classed by Gender:

Females: 16

Males: 7

The following Faculty members also received support from ISN funding:

Dr. Miguel L. Concha – University of Chile, Santiago, Chile.

Dr. Janina Borgonovo – University of Chile, Santiago, Chile.

Dr. Mario E. Guido – CIQUIBIC-CONICET, Faculty of Chemistry, National University of Cordoba, Argentina.

Dr. Lisette Leyton – University of Chile, Santiago, Chile.

Dr. Gabriela Paglini – INIMEC-CONICET and Faculty of Medicine, National University of Cordoba, Argentina.

Dr. Alejandro F. Schinder –Institute Leloir Foundation (FIL), Buenos Aires, Argentina.

4. Illustrative photographs

Please, refer to the attached files. There are group photographs suitable for publication in the ISN website and also of potential promotional value for the ISN School's Initiative.

5. Evaluation

There is an instance of internal and external evaluation on the performance of the School conducted by the Organizing Committee and PROBIOL (the University PHD program). As part of this ongoing evaluation process all participants of the School (including students, academics and Faculty members) have been sent a short survey. The results of this survey will become available at some point within the next two months.