



## **IBRO/ISN Neuroscience School, Cairo, 2017**

The IBRO/ISN school was held in Cairo from 1-4 May 2017. The venue for the school was Novotel Airport hotel: <http://www.accorhotels.com/gb/hotel-0502-novotel-cairo-airport/index.shtml>

The hotel is few minutes from arrival halls in airport which facilitated the arrival pick up and departure transportation from and to the airport.

### *The local Organizing committee:*

Dr. Mohamed Salama:	Mansoura University
Dr. Wael Mohamed:	Menoufia University
Dr. Ali Shalash:	Ain Shams University
Dr. Amira Zaky:	Alexandria University

### *List of students:* please refer to attachment 1

**In brief** we had Egyptian, African and Lebanese students. For African students, we selected 6 students from different African countries (Morocco, Tunisia, Sudan, Ethiopia, Nigeria and Cameroon), however, three of them could not get the visa. So, we had to replace by Egyptian students as they apologized in last minutes. Lebanese students covered their air tickets and the school covered their accommodation and all other costs inside Egypt. Eventually, we had a total of 26 students who attended the whole school PLUS more 6 students who attended the clinical training and Parkinson's Disease day.

### *List of faculties:* please refer to attachment 2

In brief, we had a mixture of international and national speakers from different places. Although we had last minutes' apologies from some invited speakers e.g. Maria Stamelou from Greece and Omar El-Agnaf from Qatar , eventually, we had a good number of speakers from all-over the world. Eventually, we ended up with 17 guest speakers from different countries and disciplines.

#### Introduction to the school:

The week-long advanced neuroscience school foresees an intensive day-to-day and face-to-face interactive program on research design and methodologies in neurogenetics, recent advances on genetics of neurological diseases and conditions of the nervous system as well as on translation and implementation strategies for clinical and public health benefits in the African context.

IBRO/ARC/ISN, 2017 school has a main theme of neurogenetics. We believe that the advent of novel genetic analysis techniques e.g. NGS, CRISPR Cas gene editing will revolutionize the way we look to genetic basis of neurological disorders, gene therapies and animal modeling of diseases. Through inviting different international speakers who are experts in the field and supporting the travel and accommodation of students from all Africa, the school offered a unique opportunity for Exchange of knowledge and ideas between scientists and students. This will help in transferring knowledge and creating a cultural and scientific dialogue in an emerging field of neuroscience.

#### School Description

This course is aimed to confront basic scientists with clinical realities and clinicians with the latest advances of preclinical as well as clinical disciplines in neurodegeneration. In the school, different facets of precision medicine were reviewed from both the angle of basic science as well as from a clinical perspective. This created a common language and generated ideas that will allow development of new translational projects of researchers in neurodegenerative disorders.

#### Learning Objectives

At the conclusion of this activity, participants should be able to accomplish the following:

Be able to describe basic science development in neurodegenerative disorders and their clinical implications

Be able to describe the contribution of animal models to neurodegenerative disease mechanisms

List indicators of when to ask for genetic testing and what it may mean for future therapies

Be able to describe the relationship between cognitive dysfunction and motor disturbances

Be able to understand new therapeutic modalities in treating neurodegenerative disorders

#### Participants Competencies

Participants gained competencies in:

Working in interdisciplinary teams

Increasing medical knowledge

Inter-professional communication

It should be underscored that the organizers focused on student-lecturers interaction in unformal atmosphere. There were many occasions where such fruitful interaction occurs; for

instance during coffee break, during outside dinners, and during tourestic scivities. The organizers instructed all lecturers to interact with students and not to be isolated from them. There was no special table or spots dedicated for students and others dedicated to lecturers. All settings were randomly assigned in order that students can interact with different instructor.

### **PROGRAM OF THE SCHOOL:**

#### **2nd IBRO-ARC-ISN School**

#### **Neurogenetics from Animal Models to Precision Medicine: Neurodegenerative Diseases in Focus**

**Cairo, Egypt, May 1-4, 2017**

---

#### *Monday: 5-1-2017*

08:00 -10:00	Arrival, hotel check in and networking
10:00-14:00	Parallel Interactive Training Workshop-I: 1-Clinical: Clinical Challenging Cases Rejko Kruger, Luxembourg, Ali Shalash, Egypt, Maria Stamelou, Greece 2-Basic: Behavioral Assessment of animal models ANY MAZE training session Mohamed Salama
14:00-15:00	Lunch
15:00-16:00	Medical data handling through big data analytics Passent El-Kafrawy, Egypt
19:00- 22:00	Reception Dinner Location: Steak Out Grill

#### *Tuesday: 5-2-2017*

08:30- 09:30	Ice breaking session Moderator: Wael Mohamed, Egypt
09:30-10:00	Welcome Speech, Official Opening (Summary and guidelines for the school) Amira Zaky, Alexandria, Egypt
10:00- 10:45	“Courage-PD” Reijko Kruger, LCSB, Luxembourg, Tübingen University, Germany & President of GEPD
10:45-11:30	Genetics of dystonia; Egyptian Experience Ali Shalash, Ain Shams University, Egypt
11:30- 12:00	Coffee Break and networking

---

12:00- 12:45	Peripheral Auto-antibodies: A possible biomarker for brain injury Mohamed B Abou Donia, USA
12:45- 13:30	Both Central and peripheral phrenic-intercostal circuitry mediate respiratory recovery following cervical spinal cord injury. Basem Awad, Mansoura University
13:30- 14:15	DNA repair system and Neurodegeneration. Sherif El-Khamisy, Sheffield University, UK & Zweil City, Egypt
14:15- 15:15	Lunch Break and networking
15:15-16:00	An overview on ISN activities: 20 years experience Amadi Ihunwo, South Africa
16:00- 17:30	Students presentation (9 students/10mn each)
19:30	Dinner
<i>Wednesday: 5-3-2016</i>	
09:00-09:15	Summary of the second day and announcements Amira Zaky, Egypt
09:15-10:00	Pain and comorbid mental disorders Marc Landry, Bordeaux University, France
10:00- 10:45	The intricacy of bioenergetics and oxidative stress in aging brain" Sameh Ali, Zweil city, EGYPT
10:45-11:30	Modelling of Neurological Disorder: promise of iPSCs Wassim Abou El-Kheir, AUB, Lebanon
12:15-13:15	Protective role of Ginger on MPTP neurotoxicity in Mice Ahmad Raafat Bassiouny, Alexandria University, EGYPT
13:15-14:30	Neuro-immune interactions in the central nervous system Toshi Yamachita, Osaka University, Japan
14:30- 15:30	Lunch
15:30- 16:15	Students presentation (9 students/10mn each)
16:15- 17:45	
19:00	Dinner

---

*Thursday: 5-4-2017*

***SATELLITE EVENT: 20<sup>th</sup> GOLDEN HELIX PHARMACOGENOMICS DAY***

08:30-09:00

Best Presentation Award Ceremony

09:00-09:45	Role of APE1/REF in neurodegenerative diseases Amira Zaky, Egypt
09:45- 10:30	Fluvoxamine stimulates oligodendrogenesis in cultured neural stem cells and attenuates CNS inflammation and demyelination in an animal model of multiple sclerosis Kazim Zebara, AUB, Lebanon
10:30- 11:15	Splenda effect on GIT microbiota Mohamed B Abou Donia, Duke University, USA
11:15- 12:00	Basal ganglia Amadi Ihunwo, South Africa
12:00-12:30	Coffee Break and networking
13:00 – 14:00	DAAD opportunities; research and study in Germany Heba Afifi, DAAD Cairo Office
14:15-14:45	Challenges for finding a cure for patients with the CNS injuries Toshi Yamachita, Osaka University, Japan
15:15-18:00	Touristic activities
20:00-23:00	Gala Dinner Nile cruise (Golden Pharaoh floating restaurant)

***Friday: 5-5-2017    Departure***

**SATELLITE EVENT WAS HELD IN PARALLEL ON DAY 3<sup>RD</sup> OF MAY :**

**Parkinson's Disease Educational Course**

From James Parkinson to Personalized Medicine

200 Years of Progress

3<sup>rd</sup> May 2017

	Lecture
9:00-9:15	Parkinson's Disease: story of 200 years Dr Ali Shalash, Ain Shams, Egypt
9:15- 9: 35	Parkinson's Disease: pathophysiology basis Prof Taha Kamel
9:35-10:15	Parkinson's Disease: clinical approach and updates Reijko Kruger Professor of Neurology, Luxembourg University
10:15- 11:15	Challenging Parkinsonism Cases Reijko Kruger

	dR. Ali Shalash, Ain Shams, eGYPT
11: 15-12: 00	Parkinson's Disease: art of management Reijko Kruger Professor of Neurology, Luxembourg University
12:00 – 12:30	Break
12:30- 1:20	Potential biomarkers for Parkinson's disease Mohamed Abou Donia Duke, USA
1:20- 1:40	The nonmotor issues of PD Prof Mahmoud Haron, Ain Shams, Egypt
1:40-2:00	Neuromodulation in Parkinson's disease; is it the future? Prof Nevin Elnahas, Ain Shams, Egypt
2:00- 2: 20	Surgical treatment of PD: updates Prof Ahmed Gaber, Ain Shams, Egypt
2:20- 2:40	DBS for PD: postoperative follow-up Dr Alia Hassan
2:40- 3:00	Closing remarks

### Feed Backs:

I would like to quote some of our attendants rewarding description of our school:

1. Mosaab Awadelkareem: a student from Sudan:

*Dear Dr. Mohamed Salama,*

*Hope this email finds you well,*

*It was a pleasure meeting and interacting with you during recently ended school in Cairo. It was by far the most enlightening experience I've ever had. I have taken away a wealth of knowledge in neurogenetics and neuroscience in general. Also, I learned a lot by meeting people from different scientific backgrounds and cultures.*

*Everything was really well organized and the overall program was balanced between knowledge and fun*

*Again thank you so much for your efforts, time and everything.*

2. Prof. Amadi Ihunwo: "Well done, Mohamed, Well done!"
3. Prof. Hassan Elfawal: I can't believe we could have such thing in Egypt

### Day to day activities:

#### **Day 1:**

The first day began with two parallel sessions:

Session 1: clinical challenging cases; it was a clinical session, different clinical cases from Ain Shams Movement disorders clinics were presented, they were examined by Prof. Reijko Kruger and Dr. Ali Shalash. The examination was followed by discussions with students who have interest in clinical neurology. The discussions were inspiring and stimulated further research collaboration.

Session 2: in parallel with session 1, those interested in basic neuroscience attended the session of translation neuroscience. This was moderated by Dr. Mohamed Salama and discussions involved input from Prof. Hassan Elfawal and Prof. Mohamed B Abou Donia. The main aim of this session was to introduce the students to the field of translational research with focus of translational neuroscience.

After Lunch, All students began second session about analysis of mega data for serving biomedical research. Dr. Passent Elkafrawy took us in a journey showing how computer science and data analysis could be critical in the era of next generation sequencing (NGS) and proteomics.

Dinner and reception was made in Steak Out grill where all speakers and students began interaction and networking. The school bus took us in a city tour in Cairo back from the dinner.

### **Day 2:**

The second day was a full day, it began with ice breaking session by Dr. Wael Mohamed, where attendants began to know each other in a funny and less formal atmosphere. This helped all to refresh and begin their intensive course.

First lecture was given by Prof. Rejko Kruger, president of Genetic Epidemiology of Parkinson's Disease consortium (GEOPD). He showed the GEOPD initiative COURAGE PD, which took attention of all audiences as it opens the door for opportunities in research and training. Next, Dr. Ali Shalash presented the scope of genetics of dystonia with reference to Egyptian experience in this field of research. After coffee break, Prof. Mohamed B. Abou Donia (pioneer of neurotoxicology) presented the use of peripheral blood to diagnose brain damage, through using auto-antibodies against cytoskeletal proteins as biomarkers. This lecture raised a lot of discussions regarding validation and verification of this methods. The rich discussion was joined by Prof. Hassan Elfawal (Dean of American University in Cairo) and an expert of this research track.

Dr. Basem Awad, then, gave an exciting lecture about phrenic – intercostal circuitry in spinal cord injury. The lecture was very useful for those who are interested in animal models of spinal cord trauma. Following that, Prof. Sherief El-Khamisy who is an expert in genetics and its role in neurodegeneration gave a plenary lecture about DNA repair and its role in neurodegenerative disorders. This was followed by Prof. Amadi Ihunwo lecture about ISN, its different initiatives and possible opportunities to attendants. After lectures, we had the first part of students' presentations competition. The evaluation of students was done by Prof Ihunwo to identify best three places this year.

After rest, all school attendants (Students and speakers) had a tour in city followed by dinner in city square mall, Rehab City in new Cairo .

### **Day 3:**

At the beginning of third day, professor Mark Landry presented the relation between pain and comorbid mental disorders. Since Prof. Landry is the president of the Mediterranean Neuroscience Society (MNS), it was a good opportunity to show possible help MNS can offer to the junior neuroscientists. Then Dr. Sameh Ali presented his interested studies on bioenergetics of brain diseases. Sameh is the founder of Center of Aging and associated Disorders (CAAD), at Zweil city, he discussed with different students how they could get involved in reserch and postgraduate studies there.

Dr. Wassim Abou Kheir, then, spoke about use of stem cells as disease model for various neurodegenerative disorders. Then, Dr. Ahmad Refaat talked about the role of Ginger as neuroprotectant against MPTP induced neurotoxicity. He also, gave an overview of mechanisms of neurodegeneration.

Prof. Toshi Yamachita, distinguished professor from Osaka University gave an exciting talk about neuro-immune interaction.

Then, after lunch, we resumed students presentation competing for the best places.

**At the same time-in parallel-** Ain Shams Neurology clinic organized a satellite event about clinical and research aspects of Parkinson's disease. This event (program attached) was a good opportunity for students interested in clinical neurology.

**DINNER** was in New Cairo followed by nice walk inside El-Rehab compound

#### **Day 4:**

The last day began with best presentations award ceremony:

Place 1 was given to Abdulrahman Abushok from Ain Shams University, Egypt, Second place went to Hisham Bahmad from Lebanon and third place was for Ahmed Maraезy , Menia University. The three winners received souvenirs presented by Dr. Amadi Ihunwo.

This was followed by first lecture Dr. Amira Zaky from Egypt who presented recent studies on role of APE1 in neurodegeneration. This was followed by dr. Kazem Zibara from Lebanon who spoke about stem cells in neuroscience. Then Dr. Abou Donia presented the impact of splenda (a common commercial artificial sweetener on gut microbiota and its impact on brain. Amadi Ihunwo , then, gave a nice educational lecture about neuroanatomy and function of basal ganglia. After the coffee break, Ms Heba Afifi the coordinator of German Academic Exchange Services (DAAD) presented a session about opportunities offered from DAAD to study and do research in Germany. Finally, Prof. Yamachita gave a plenary lecture on the hope of cure for patients with CNS damage.

After rest, all the group had the gala dinner in the floating restaurant "Golden Pharaoh" following dinner, we all enjoyed 2 hours cruising in Nile and amused by the night of charming Cairo.

Students of IBRO/ISN 2017 took the initiative of establishing a facebook page for the school group:

[https://www.facebook.com/groups/287837278334515/?multi\\_permalink=290869588031284&notif\\_t=group\\_activity&notif\\_id=1494422457106091](https://www.facebook.com/groups/287837278334515/?multi_permalink=290869588031284&notif_t=group_activity&notif_id=1494422457106091)

The facebook page will serve as a site for their regular meeting, keeping in touch and regular journal clubs.

In agreement with IBRO schools guidelines, alumni of this 2nd IBRO School in Egypt elected a class President and a Secretary, who will keep the school group informed of all the future neuroscience activities in Africa. The election results will be posted on the facebookpage.



**Budget:**

Activity	Income	Expenditure
<b>Fund from ISN</b>	<b>Received ISN: 15,000 USD (12,000 Received pre-school)</b>	
Faculty Travel		4,000 USD
Students Travel		1,500 USD
Travel agency (licensing and planning for city tours and visits)		500 USD
Local Transportation		1,000 USD
Clinical session training		1,000 USD
Hotel Accommodation (24 students [who stayed in the hotel in double rooms])		3,500 USD
Lectures halls registration for the whole school period		1,500 USD
Coffee breaks		2,000 USD
<b>Extra fund Remaining</b>	<b>ISN: 3,000 USD</b>	
<b>Total ISN expenditure</b>		<b>15,000 USD</b>
<b>Fund from IBRO</b>	<b>IBRO: 18,500 Euros</b>	
Faculty Travel		3,000 Euros
Hotel Accommodation for faculty (15 speakers in single rooms)		5,000 Euros
Meals (Lunch and Dinners) and Social activities and tours		6,500 Euros
Gala Dinner with a Nile cruise		1,000 Euros
IT support for domain reservation, website establishment, maintenance and online announcement.		1,000 Euros
Administrative work		500 Euros
Printed materials		1,500 Euros
<b>Total Fund expenditure:</b>	<b>18,500 Euros</b>	<b>18,500 Euros</b>

Photo Gallery:



Group photo with lecturers in front and students on the back row.

**Speakers from left:** Wael Mohamed, Marc Landry, Wassim Abou-Kheir, Ali Shalash, Rejko Kruger, Sameh Ali, Mohamed Salama, Amira Zaky, Amadi Ihunwo, Kazem Zibara.

**Students from left:** Nermeen, Sarah, el-Zahraa, Joy, Yared, Hisham, Ali, ahmed, Mahmoud, Mosaab, Sanaa, Dina, Mahmoud, Sayed.



First Lecture by Dr. Salama: Translational Neuroscience





## 2nd IBRO/ISN Neuroscience School

*" Neurogenetics from Animal  
Models to Precision Medicine "*



**1- 4 May 2017**  
**"Novotel Hotel, Cairo, Egypt"**



**ISN**  
International Society  
for Neurochemistry

**Aims and Scope of the School**

The week-long advanced neuroscience school foresees an intensive day-to-day and face-to-face interactive program on research design and methodologies in neurogenetics, recent advances on genetics of neurological diseases and conditions of the nervous system as well as on translation and implementation strategies for clinical and public health benefits in the African context.

**"Organizing committee"**

<p><b>Dr. Wael Mohamed</b> Menoufia Medical School, Egypt</p> <p><b>Dr. Ali Shalash</b> Ain Shams University</p>	<p><b>Dr. Mohamed Salama</b> Mansoura Medical School, Egypt</p> <p><b>Dr. Amira Zaky</b> Alexandria University</p>
--	--











IBRO school Poster



Coffee Breaks were nice opportunity for networking



Dr. Passent El-Kafrawy interactive lecture about mega data analysis.





Dr. Wael Mohamed , breaking the ice!



Dr. Sherif El-Khamisy, showing role of DNA repair system in neurodegeneration.



Prof. Abou Donia and interaction with students.





Prof. Amadi Ihunwo presenting best students presentations prizes. CONGRATULATION!



Prof. Marc Landry and cooperation with MNS!



Contribution from Ain Shams Movement Disorders Clinic (Clinical training & lectures) in PD day. *Rejko Kruger and Ali Shalash in the middle of group photo with Ain Shams Neurology Department Staff.*





Gala Dinner at Nile cruise

Lunch in Novotel hotel



Wael Mohamed, Mohamed Abou Donia, Hassan El-Fawal, Mohamed Salama and Passent El-Kafrawy.