

# ISN School of Basic Neurosciences

Federal University of Technology Akure (FUTA), Ondo, Nigeria

**20 – 26 October, 2019**



**ISN**  
International Society  
for Neurochemistry



## **Functional Foods / Nutraceuticals : Molecular Impact in the Management / Prevention of Neurodegenerative Diseases**

### **Final Report**

We have successfully completed the ISN School of Basic Neurosciences, FUTA, with the theme “Functional foods/Nutraceuticals: Molecular Impact in the Management / Prevention of Neurodegenerative Diseases. This was the first School of Neurosciences to be hosted by the Federal University of Technology Akure (FUTA), and probably the first to be fully supported by ISN in Nigeria. The main activities of the school held between 20 – 24<sup>th</sup> October 2019. International student participants and faculties arrived in Nigeria on the 19<sup>th</sup> October 2019, and departed between 25 and 26<sup>th</sup> October 2019.

There were over 150 applications to the school from over Africa. Ten international students and 20 local students (from Nigeria) were selected. The international participants include 2 from Cameroun, 1 from Uganda, 1 from Egypt, 3 from South Africa, 2 from Mali, and 1 from Tanzania (who was unable to attend due to ‘last minute’ visa issues). Additionally, 6 applicants from the host institution were selected to participate as local observers.

The opening ceremony of the school was held on Monday 21<sup>st</sup> October 2019, with the Vice-Chancellor of the host institution Prof. J.A. Fawupe, represented by the Deputy Vice Chancellor-Development, Prof P.G. Oguntunde in attendance. During his opening speech, the Vice-Chancellor thanked the ISN for their support towards the hosting of the school in FUTA, and for providing support to convey bright minds from all over Africa to participate in the school. Particularly, the Vice-Chancellor noted that ISN’s continuous interest in neuroscience education in Africa is highly commendable. It is noteworthy that the opening ceremony was covered by the host institution’s Corporate Communications and Protocol (CC&P) Unit which “coordinates the Public Relations functions of the University”, and posted a report of the opening ceremony on the institution social media page (Facebook) highlighting the efforts of ISN towards neuroscience education. See link here:

[https://www.facebook.com/futacommunity/posts/2640140419339850?\\_tn=K-R](https://www.facebook.com/futacommunity/posts/2640140419339850?_tn=K-R).

### **Complete Lists of Participants (including students, faculties and LOC)**

#### **ISN Student Participants (International and Local)**

S/N	NAME	Sex	Country
1	Mbock Michel Arnaud	M	Cameroun
2	Fanta Yadang	F	Cameroun
3	Nabukalu Joyce	F	Uganda
4	Fayza Eid Mohammad	F	Egypt
5	Asmau Shehu Muhammad	F	South Africa

6	Salau Veronica Folakemi	F	South Africa
7	Tosin Abiola Olasehinde	M	South Africa
8	Abdoulaye Tamega	M	Mali
9	Abdoulaye Yalcouye	M	Mali
10	Adedara Adeola	F	Nigeria
11	Love Okoh	F	Nigeria
12	Adelodun Stephen Taiye	M	Nigeria
13	Amany Digal Ladagu	F	Nigeria
14	Emokpae Aghariagbonse Osagie	M	Nigeria
15	Fabunmi Oyesanmi Abisoye	M	Nigeria
16	Fafure Adedamola Adediran	M	Nigeria
17	Ibitoye Precious Chloe	F	Nigeria
18	Tajudeen Omotayo Abdulazeez	M	Nigeria
19	Okute Theresa Owokodonye	F	Nigeria
20	Zaid Muhammad	M	Nigeria
21	Oluwatosin Imoleayo Oyeniran	M	Nigeria
22	Osahon Roli Itohan	F	Nigeria
23	Policy Patricia Adamu	F	Nigeria
24	Nura Bello	M	Nigeria
25	Bolaji O. Oyetayo	F	Nigeria
26	Oparaji, Kenneth Chiedozi	M	Nigeria
27	OLADUN Busayo Timothy	M	Nigeria
28	FASAE Kehinde	M	Nigeria
29	Olatunji Sunday	M	Nigeria
30	Mitiu Idowu Kazeem	M	Nigeria

#### **Other Student Participants (Observer participants from within host institution)**

S/N	NAME	Sex
31	Akintunde Jacob Kehinde	M
32	Dada Felix Abayomi	M
33	Oyeniran Olubukola Helen	F
34	Tolulope Arogundade	F
35	Nwanna Esther Emem	F
36	Okoh Comfort Alero Ofure	F

#### **Faculties**

##### ***Speakers***

1. Prof. Michael Aschner – Departments of Molecular Pharmacology, & Neuroscience, Albert Einstein College of Medicine, New York, USA; Research area: Environmental neurotoxicology, metal neurotoxicity, Parkinson's disease.

2. Prof. Monica Bastos - Departments of Molecular Pharmacology, Albert Einstein College of Medicine, New York, USA; Research area: Environmental toxicology, metal neurotoxicity
3. Prof. James O. Olopade – Department of Veterinary Anatomy, University of Ibadan, Nigeria; Research area: Neuroscience, comparative anatomy.
4. \*Prof. Ganiyu Oboh – Functional Food Unit, Department of Biochemistry, Federal University of Technology Akure, Nigeria; Research area: Applied biochemistry, food toxicology, and neurosciences.
5. Dr. Ayodele J. Akinyemi – Research Fellow, Department of Molecular Pharmacology, Albert Einstein College of Medicine, USA; Research area: Food biochemistry, neurotoxicology.
6. Dr. Matthew A. Olude – Department of Animal Production and Health, Federal University of Technology Akure, Ile-Ife, Nigeria; Research area: Environmental neurotoxicology, behavioural neuroscience.
7. Dr Amos Abolaji – Department of Biochemistry, University of Ibadan. Research area: Applied biochemistry, and toxicology.
8. \*Dr. Omamuyovwi M. Ijomone – Department of Human Anatomy/Neuroscience Research Group, School of Health and Health Technology, Federal University of Technology Akure, Nigeria; Research area: Neurotoxicology, neurodegeneration, behavioural neuroscience.

### ***Hands-on Instructors***

9. Idowu S. Oyeleye – Department of Biomedical Technology/Neuroscience Research Group, School of Health and Health Technology, Federal University of Technology Akure, Nigeria. *IBRO/ISN Schools Alumni.*
10. Oritoke M. Aluko – Department of Physiology/Neuroscience Research Group, School of Health and Health Technology, Federal University of Technology Akure, Nigeria. *IBRO/ISN Schools Alumni.*
11. Olayemi K. Ijomone – Department of Anatomy, University of Medical Sciences, Ondo, Nigeria. *IBRO/ISN Schools Alumni.*
12. Leye J. Babatola – Department of Biochemistry, Joseph Ayo Babalola University, Ikeji-Arakeji, Osun, Nigeria.

### **Local Organizing Committee**

1. Prof. G. Oboh
2. Dr. O.M. Ijomone
3. Dr. A. Ademosun
4. Dr B.C. Adedayo
5. Dr. M.A. Olude
6. Dr. A.A. Olabiyi
7. O.K. Ijomone
8. O.M. Aluko
9. S. Oyeleye
10. L.J. Babatola

## **Final programme**

### **Saturday 19 Oct**

Arrival of international participants and faculties

### **Day 1: Sunday 20 Oct**

15:00 – 19:00

City tour & Welcome Cocktail – Facilitated by Local Organizing Committee

### **Day 2: Monday 21 Oct**

Time	Activity	
09:00 – 10:00	Registration	
OPENING CEREMONY		
10:00 – 10:15		Introduction of Guests
10:15 – 10:30		Welcome address – <b>Prof. G. Oboh</b> (Director CERAD, FUTA, Nigeria)
10:30 – 11:00		Vice-Chancellor’s Speech - <b>Prof. J.A. Fuwape</b> (VC, FUTA, Nigeria)
11:00 – 11:40	Opening Lecture	The burden of neurological and neurodegenerative diseases in Africa – <b>Prof. J. Olopade</b> (Professor of Neuroscience and Comparative Anatomy, University of Ibadan)
11:40 – 12:00		Vote of Thanks
12:00 – 12:30	Short Break/Photographs	
12:30 – 13:20	Lecture 1	Dopaminergic perturbation in movement disorders; insights from the <i>C. elegans</i> model – <b>Prof. M. Aschner</b>
13:25 – 14:40	Lunch Break	
14:45 – 15:15	ISN Presentation	ISN Educational Talk; history of ISN, mission, and funding opportunities – <b>Dr. O.M. Ijomone</b>
15:20 – 16:00	Lecture 2	Functional foods/nutraceutical and nutrigenomics; an overview – <b>Prof. G. Oboh</b>
16:05 – 16:25	Short Break	
16:30 – 18:00	Forum 1	Ethics in research – Round table ( <b>Profs. M. Aschner, M. Paoliello, J. Olopade, G. Oboh</b> )
18:00 – 20:00	Dinner	

### **Day 3: Tuesday 22 Oct**

<b>Time</b>	<b>Activity</b>	
09:30 – 10:20	Lecture 3	Molecular and cellular mechanisms of neurodegeneration in brain disease – <b>Prof. J. Olopade</b>
10:20 – 10:40	<b>Tea Break</b>	
10:40 – 12:00	Forum 2	Round table: writing/publishing a good paper and the burden of predatory journals – <b>Profs. M. Aschner, Drs. M.A. Olude, &amp; A.J. Akinyemi</b>
12:00 – 13:30	<b>Students’ Presentation</b>	
13:35 – 14:30	<b>Lunch Break</b>	
14:40 – 17:40	<b>Practical sessions 1, 2, &amp; 3</b>	
17:45 – 18:00	<b>Short Break</b>	
18:05 – 19:30	<b>Dinner</b>	

**Day 4: Wednesday 23 Oct**

Time	Activity	
09:10 – 10:50	Lecture 5	Effects of low-level lead exposure on blood pressure; a case study of a Southern Brazilian Population – <b>Prof. M. Paoliello</b>
10:55 – 10:15	<b>Tea Break</b>	
10:20 – 11:10	Lecture 6	Modelling brain diseases using environmental neurotoxicants – <b>Prof. M. Aschner</b>
11:15 – 11:55	Lecture 7	Neurological burden as a consequence of environmental pollution and degradation – <b>Dr. M.A. Olude</b>
12:00 – 13:20	<b>Students' Presentation</b>	
13:30 – 14:55	<b>Lunch Break</b>	
15:00 – 18:00	<b>Practical sessions 1, 2, &amp; 3</b>	
18:00 – 18:30	<b>Short Break</b>	
18:35 – 19:30	<b>Dinner</b>	

**Day 5: Thursdays 24 Oct**

Time	Activity	
09:30 – 10:15	Lecture 8	Understanding the molecular impact of lead (Pb) exposure on dopaminergic system: Role of protein kinase C (PKC) – <b>Dr. A.J. Akinyemi</b>
10:20 – 10:40	<b>Tea Break</b>	
10:45 – 12:00	Forum 3	Grantsmanship I: Leveraging traveling fellowships for career developments; personal perspectives of scientists from developing Africa - <b>Drs. A. Abolaji &amp; A.J. Akinyemi</b>
12:10 – 13:30	<b>Students' Presentation</b>	
13:40 – 14:55	<b>Lunch Break</b>	
15:00 – 18:00	<b>Practical sessions 1, 2, &amp; 3</b>	
18:00 – 18:30	<b>Short Break</b>	
18:35 – 19:30	<b>Dinner</b>	

**Day 6: Friday 25 Oct**

Departure

**Practical sessions**

**Practical session 1:** Basic molecular neuroscience techniques including; DNA and RNA extraction and quantification, Introduction to use of invertebrate models; focus on *D. melanogaster* (fruit-fly) and *C. elegans* as models for brain research – **Instructors:** Amos Abolaji, Ayodele J. Akinyemi, Leye J. Babatola, Opeyemi B. Ogunsuyi, Omamuyovwi M. Ijomone

**Practical session 2:** Basics in rodent neurobehavioural techniques. These will include the use of simple behavioural mazes including; Y-maze, open-field activity, light-dark test, elevated-plus maze – **Instructors:** Oritoke Aluko, Idowu S. Oyeleye

**Practical session 3:** Basic neuroanatomical techniques including rodent brain dissections and isolation of several regions (such as hippocampus, striatum, hypothalamus, cortex, cerebellum, etc.), immunohistochemistry, imaging and digital image analysis (using Image J software) – **Instructors:** Omamuyovwi M. Ijomone, Olayemi K. Ijomone, Matthew A Olude

### **Some Feedbacks**

#### *From the students:*

- Thank you ISN for this wonderful opportunity. It was life changing - Okute Theresa Owokodonye
- ...enriching, enlighten, educating... - Love Okoh
- ISN school was an eye opener and has made me to develop greater passion for neurosciences. – Osahon Roli Itohan
- Attending the Program was really an eye opener for me towards research and research ethics, innovations and creativity as well as in the areas of grant applications – Veronica Folakemi Salau
- I was indeed inspired and enlightened by the lectures and the practical sessions – Olatunji Sunday

#### *From faculties:*

- It was indeed a nice program. Good that ISN is keeping up its support for neuroscience education in Africa. The enthusiasm amongst the students is commendable and has to be encourage continually. I enjoyed interacting with the students, and I am sure I will be hearing from a bunch of them. I'll do my best to help. – Prof. Michael Aschner
- It was an interesting school and well organized. Great work, kudos. – Prof. James Olopade (ISN Council Member)

**Expenses of ISN School of Basic Neurosciences, FUTA**

<b>Item</b>	<b>Income (USD)</b>	<b>Expenditure (USD)</b>
	<b>ISN: 28000</b>	
<b>Travels</b>		
Travel expenses for faculties		6250
Travel expenses for students (international and local)		8300
<b>Accommodation</b>		
Accommodation for faculties		2940
Accommodation for students		3600
<b>Feeding</b>		8250
<b>School materials</b>		
Bags		1500
Tags and notepads		350
Secretariat & printing		550
<b>Others</b>		
Local transport expenses		500
Socials		900
<b>Total</b>		<b>33140</b>
<b>ISN Full Awarded Support: 35000 USD</b>		

\*Organizers / Hosts

**Ganiyu Oboh, PhD (ISN Member ID: 23998)**

Professor of Applied Biochemistry and Toxicology

Head, Functional Food and Nutraceuticals Unit,

Department of Biochemistry, School of Sciences, Federal University of Technology Akure,  
Nigeria

**Omamuyovwi M. Ijomone, PhD (ISN Member ID: 21256)**

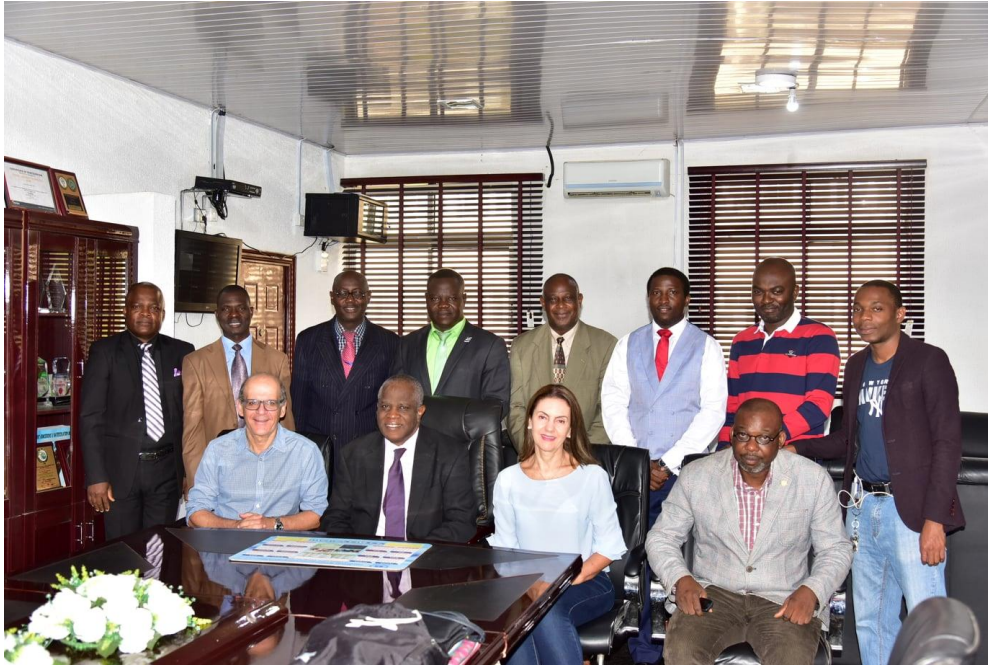
Lecturer / Early Researcher

Group Leader, The Neuro- Lab

Department of Human Anatomy, School of Health and Health Technology, Federal University of  
Technology Akure, Nigeria



## Photo Gallery



Group photographs of ISN school faculties with the VC, FUTA and other principal officers of the host institution during a courtesy visit to the VC.



Group photograph with the DVC-Development after the opening ceremony





Faculties and students



Some faculties and students



Sitting (L-R): Profs. Michael Aschner, Ganiyu Oboh, James Olopade, Monica Paollielo  
 Standing (L-R): Drs. Matthew Olude, Omamuyovwi Ijomone



Students' presentations



Learning and socials...





Practical sessions...



More socials and foodies...