




# NEXT EINSTEIN FORUM

An  AIMS initiative in partnership with the Robert Bosch Stiftung

NEF AFRICA SCIENCE WEEK  
IGNITING THE POWER OF SCIENCE

## EXECUTIVE SUMMARY

The 2019 African Science week in Nigeria was a 3-day event led under the aegis of African Center for Innovation and Leadership Development and hosted by Nile University of Nigeria. Over 350 participants attended the 3-day event. The activities from the 3-day event included: Opening Ceremony, 2-day Boot-camp Workshop, Science & Cocktail and Competition/Closing Ceremony. The Attendees included: Government representatives from Federal Ministry of Science and Technology, Ministry of Education, Nigerian Communications Commission, National Biotechnology Development Agency, National Space Research and Development Agency, Universal Basic Education Board, Corporate Affairs Commission, Secondary Education Board and the National society of Engineers. Representatives from private organizations such as Nile University, Baze University, Abuja Chamber of Commerce and Industry, Successory, Global knowledge, sprout Digital, Network of incubators and Incubators in Nigeria (NINe), Wennovation, New Horizon, Intellectual Apps, Moacular Tech, Harmony Hub and A-Tech Hub. **There were over 300 students from 5 private secondary schools and 26 public secondary schools across Federal Capital Territory (FCT)** and individuals from all walks of life. There were 12 facilitators from 2 organizations in Nigeria who facilitated the bootcamp workshop.

# INTRODUCTION

## INTRODUCTION OF COUNTRY BACKGROUND AND SCIENCE WEEK

### RATIONALE

Science education is very important in the development of any nation in many areas. Science and technology will not be possible without science education<sup>1</sup>. The current situation is such that science teaching and learning ranging from elementary level to the university level are handled as an exercise in the abstract due to inadequately prepared teachers and lack of basic infrastructures. There is also a disconnection and lack of appreciation of the integration of science with society and a poor appreciation the power of science to human developments by Nigerian youths<sup>2</sup>.

The present trend of mass unemployment in Nigeria shows that science and technology education in schools may not adequately prepare Nigerian graduates to function well in society. The courses which should be taught as hands-on and minds-on practical courses are basically taught theoretically; this makes the learners unable to benefit maximally from their education. Hence, development of useful skills necessary for self-reliant living is lacking.<sup>3</sup> Emphasis should be put on effective science education to help lay the needed foundation starting from the primary to, at least, the first year of the tertiary level for students<sup>4</sup>. It is critical for science and technology education to be practical and pragmatic, which was one of the major rationales for the organization of the African Science Week in Nigeria. The three-day event was led by the African Centre for Innovation and Leadership Development, a non-governmental development NGO based in Abuja, Nigeria in partnership with Nile University of Nigeria. One of the primary aims of the African Science Week was to expose students to practical aspects of science and technology and inspire them to a world practical application in STEM that are beyond the walls of their classrooms.

*The 2019 Next Einstein Forum's African Science Week in Nigeria took place in Abuja, October 8 -10, 2019 and comprised six events:*

- Event 1: Opening Ceremony
- Event 2: 2-Day Bootcamp Workshop
- Event 3: Science & Cocktail
- Event 4: Closing Ceremony/ Robotics Competition & Coding Challenge

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<sup>1</sup>Aina Jacob Kola, 2013. Development. *American Journal of Educational Research*. **2013**, 1(7), 225-229 doi:10.12691/education-1-7-2

<sup>2</sup>Aina, J.K. 2012. Challenges and prospects of primary science teaching in Nigeria. *Continental J. Education Research*, 5(2), 32-37

<sup>3</sup>Suleiman Sa'aduMatazu, 2010. The Relevance of Science, Technology and Mathematics Education (STME) in Developing Skills for Self-Reliance: The Nigerian Experience. *African Journal of Teacher Education*. Volume 1, No 1. ISSN 1916-7822

<sup>4</sup>Grace Malachi Brown, 2015. Science and Technology Education in Nigeria: A Historical Perspective. *SCSR Journal of Educational Research (SCSR-JER)*. Volume 1, Issue 1, pp 33 – 41. [www.scholarconsult.com](http://www.scholarconsult.com)

## EVENT 1: OPENING CEREMONY

Description of each event, indicate the number of attendees, female & male ratio, age of attendees, notable guests and other institutions in each event

The first event was the opening ceremony, which took place at Nile University of Nigeria, Abuja on October 8, 2019. The event started at exactly 10:30 am and ended at 12:05pm. The welcome address was delivered by the Vice-Chancellor of Nile university of Nigeria, Prof. Nuri Osman ARAS while the keynote address was delivered by Prof. Ezezika Obidimma. In his keynote Address, Prof Obidimma Ezezika told participants that the African Science Week is running simultaneously in more than 40 countries on the continent. He further harped on the importance of leadership in overcoming career challenges while urging the students to apply whatever they learn within the three-day event in their various schools.

Highlight of the event was the panel discussion on “Building Effective STEM Careers”. The panelists include Prof. Musa Mohammed, the dean of Natural and Applied Sciences, Nile University of Nigeria; Engr. Igwegbe Nnenna, Ex-Co, Nigerian Society of Engineers; Engr (Mrs) Biaduo Tanana Uchechi, Senior Manager, Spectrum Administration Department, Nigerian Communications Commission (NCC); and Prof. Ezezika Obidimma, NEF Ambassador who moderated the panel discussion

In total we had 328 attendees at the opening ceremony (194 Females: 134 Males). At the opening ceremony we had representatives of the Federal Ministry of Science and Technology, Nile University of Nigeria, Nigerian Communications Commission, Nigerian Society of Engineers, Abuja Chamber of Commerce and Industry, Corporate Affairs Commission WAAW Foundation, TechQuest, Universal Basic Education Board (UBEB), Secondary education Board (SEB), African Independent Television, teachers and students form 5 private schools and 23 public schools in Federal capital Territory.



*Attendees seated in the auditorium for opening ceremony*



*Prof. Nuri Osman ARAS, the Vice-Chancellor of Nile University of Nigeria delivering the welcome address*

## **EVENT 2: TWO- DAY WORKSHOP**

The Bootcamp Workshop was a two-day event which took place on October 8 and 9 at Nile University of Nigeria and Abuja Chamber of Commerce and Industry. The students were allocated to different workshop classes according to their schools. At Nile University, we had robotics, coding and digital electronics classes while at Abuja Chamber of commerce and Industry, we had robotics, digital electronic, Arduino programming and renewable energy classes. We had 7 workshop classes in all.

### **STEM WORKSHOP BOOT-CAMP: DAY 1**

272 students from 30 schools participated in the Bootcamp/Workshop. The schools included:

1. Government Secondary School, Mabushi: 5 students
2. Junior Secondary School, Pyakasa: 8 students
3. Junior Secondary School, Area 1: 14 students
4. Government Secondary School, Gwarinpa: 5 students
5. Government Secondary School Kubwa: 8 students
6. Government Secondary School, Garki: 5 students
7. Kingsville College Jahi, Abuja: 17 students
8. Government Secondary School Karu. : 5 students
9. Government Secondary School Nyanya: 5 students
10. Government Day Secondary School: 5 students
11. Raberto Schools, Wuse II: 6 students
12. Capville School: 15 students
13. Government Secondary School, TundunWada: 5 students
14. Government Secondary School, Jabi: 7 students
15. Junior Secondary School, Area 10: 14 students
16. Junior Secondary School Apo Legislative Quarters: 14 students
17. Government Secondary School, Lugbe: 10 students
18. Government Girls' Secondary School Duste, Abuja: 5 students
19. Junior Secondary School, Aleita: 10 students
20. Government Day Secondary School, Dutse-Alhaji: 5 students
21. Government Secondary School, Gwagwa: 5
22. Junior Secondary School., Area 11: 10 students
23. Junior Secondary School, Kuchingoro: 5 students
24. Government Secondary School, Wuse zone 3: 5 students
25. Model Secondary School, Maitama: 5 students
26. Junior Secondary School, Piwoyi: 9 students
27. Junior Secondary school, Durumi: 15 students
28. Deogratias secondary School: 35 students
29. Blooms Academy: 5 students
30. Government Secondary School Gwarinpa: 5 students

## **The Workshop Courses include:**

1. **Robotics:** The Robotics workshop was led by Techquest. Participants were provided with robotics kit sets which offered plenty of scope for robot building challenges. The challenge involved a race of some type, robots that use sensors to find something, a test of strength or building a robot that responds to some form of human input. As well as designing therobots.
2. **Digital electronics**  
This workshop was led by Techquest. The participants were provided with brilliant electronics set which they used to explore electricity. They learnt how circuits work and were able to build some projects (traffic light and blinking light) at the end of the workshop.
3. **Coding: Website Design**  
This workshop was led by Techquest. Scratch was used to introduce the participants to programming. This workshop was in two classes. The students learnt the basic concepts of programming which helped in opening their mind, imagination and intellectual capacity to creating animations.
4. **Arduino Programming**  
This was led by WAAW Foundation. The computer programming session was a fun and innovative approach for programming Microcontrollers which was used to design a mini project on traffic light and a push button LED circuit.
5. **Renewable Energy**  
This was led by WAAW Foundation. The participants learnt how to generate power using solar energy and wind energy. The students could give the demonstration at the end of the class where they generate power that could light a LED bulb, pump water using the pressure pump and charge a phone.



*Arduino Programming workshop at Abuja Chamber of Commerce and Industry (ACCI)*



*Robotics Workshop at Abuja Chamber of Commerce and Industry (ACCI)*

## **STEM WORKSHOP BOOT-CAMP: DAY 2**

STEM Workshop Boot-camp: 246 Students from 29 schools participated:

1. Government Secondary School, Mabushi: 5 students
2. Junior Secondary School, Pyakasa: 8 students
3. Junior Secondary School, Area 1: 14 students
4. Government Secondary School, Gwarinpa: 5 students
5. Government Secondary School Kubwa: 8 students
6. Government Secondary School, Garki: 5 students
7. Kingsville College Jahi, Abuja: 17 students
8. Government Secondary School Karu. : 5 students
9. Government Secondary School Nyanya: 5 students
10. Government Day Secondary School, Karu: 5 students
11. Raberto Schools, Wuse II: 6 students
12. Capville School: 15 students
13. Government Secondary School, TundunWada: 5 students
14. Government Secondary School, Jabi: 7 students
15. Junior Secondary School, Area 10: 14 students
16. Junior Secondary School Apo Legislative Quarters: 14 students
17. Government Secondary School, Lugbe: 10 students
18. Government Girls' Secondary School Duste, Abuja: 5 students
19. Junior Secondary School, Aleita: 10 students
20. Government Day Secondary School, Dutse-Alhaji: 5 students
21. Government Secondary School, Gwagwa: 5
22. Junior Secondary School., Area 11: 10 students
23. Junior Secondary School, Kuchingoro: 5 students
24. Government Secondary School, Wuse zone 3: 5 students
25. Model Secondary School, Maitama: 5 students
26. Junior Secondary School, Piwoyi: 9 students
27. Junior Secondary school, Durumi: 15 students
28. Government Secondary School Gwarinpa: 5 students
29. Junior Secondary School, Lugbe: 10 students

Partner Organizations for Workshop and Science Expo (Facilitators included):

- Techquest Camp
- WAAW Foundation



*Team of Students building robots with the kits provided to them*



*Students trying to design their website*

### **TEACHERS' TRAINING: NUTRITION WORKSHOP**

The Teachers' Training took place on October 9, 2019 at senate room, Nile University. The training started at exactly 11:30am. It was facilitated by Professor Obidimma Ezezika. The training was on Nutrition: Behavioral Change Towards Healthy Diet. There were 9 teachers in attendance.



*Teachers' Training at Senate room, Nile University*

### **EVENT 3: SCIENCE & COCKTAIL**



*Science & Cocktail at Abuja Chamber of Commerce and Industry*

The Science & Cocktail evening event took place on October 9, 2019 at Abuja Chamber of Commerce and Industry. The event commenced at exactly 4:30pm and ended at 6:00pm. There were 15 organizations represented at the event. Prof. Obidimma Ezezika gave an opening speech to educate the attendees on Africa Science Week. The CEO of Network of Incubators and Innovators in Nigeria was represented to give a short presentation on “Building and fostering Innovation and STEM Education in Nigeria”. This event also featured a networking session where attendees created connections and built some partnerships. Represented at the cocktail were some government agencies such as National Biotechnology Development Agency (NABDA) and National Space Research and Development Agency (NASRDA), private institution like Baze University, several hubs such Harmony Hub, A- Tech Hub and some private firms such as Sprout digital and New Horizon. In total, there were 50 attendees at the cocktail.

Names of organizations represented at the Science & Cocktail include:

1. Abuja Chamber of Commerce and Industry
2. Successory Nigeria Limited
3. Global Knowledge
4. Sprout Digital
5. Network of Incubators and Innovators in Nigeria
6. Winnovation Hub
7. New Horizon
8. Intellectual Apps
9. Maoacular Tech
10. TechQuest



11. Harmony Hub
12. A-Tech Hub
13. National Biotechnology Development Agency (NABDA)
14. National Space Research and Development Agency (NASRDA),
15. Nutrido™
16. African Center for Innovation and Leadership Development



*Attendees having their refreshments*



*Networking*

## **EVENT 5: CLOSING CEREMONY/ CODING CHALLENGE, ROBOTICS AND DIGITAL ELECTRONICS COMPETITION**



*Competitors building their robots*

The Competition/closing ceremony held at Nile University on October 10, 2019 and commenced at exactly

10:30am. The Minister of Education for Nigeria was represented by Mr Kehinde Osinaike, who delivered the welcome address at the event. On the panel of Judges were Mrs Lucy Ikpesu (Program manager, WAAW Foundation), Mr Olumide Aderinwale (Operation Manager, TechQuest STEM Academy) and Engr. Ahmed Maigana (Nigerian Communications Commission). Shortlisted students competed on Digital Electronics, Coding and Robotics Competition. The shortlisted names were based on the students' performances during the 2-day bootcamp workshop.

The robotics competition featured students assembling and developing a mobile robot on stage, the students that participated in the coding competition designed a website while the digital electronics competition showcased the students' ability to design traffic light and blinking lights. Winners of the three categories- digital electronics, coding and robotics went home with Google laptops each while the runners-up and the second runners-up were rewarded with Google tablets and brand-new phones respectively. For the robotics competition Government Day Secondary School, Dutse emerged the overall winner and was presented a Google laptop while Government Secondary school Gwarinpa and Government Secondary School, Karu emerged the 1<sup>st</sup> and 2<sup>nd</sup> runner up and were presented with Tablet and Phone respectively. For the coding competition, Raberto school, Wuse II emerged the overall winner and the 1<sup>st</sup> runner up Raberto school, Wuse II while Capville school Dawaki emerged the 2<sup>nd</sup> runner up. Junior Secondary school Area 1, Government Secondary school Garki and Government Secondary school Wuse emerged the overall winner, 1<sup>st</sup> runner up and 2<sup>nd</sup> runner up respectively. All the students who participated in the program were given certificates of participation



Organizing Team for 2019 African science Week in Nigeria



Prof. Obidimma Ezezika delivering the closing remark

The total number of attendees was 350 (201 Females: 149 Males). Attendees include students from 26 public schools and 4 private schools in FCT, teachers, representatives of Nile University, WAAW Foundation, Nigerian Communications Commission, Zenith bank, Ministry of education, Universal Basic Education Board, Secondary Education Board, leadership Newspaper, DailyTrust and TechQuest STEM Academy.

At the end of the closing ceremony, all the students who participated in the 3-day African Science Week were issued Certificate of participation.



*Mobile car robots built by students*



*Prize being presented to overall winner in Robotics Competition*

#### **List of Participants for The Coding Competition**

S/N	Name of Student	Name of School	Prize Won
1	Ibrahim Abigail O.	Raberto	2 <sup>nd</sup> Prize
2	Ruqayyah Oyeleye	Capville Schools	3 <sup>rd</sup> Prize
3	Irhiogbe Olasumbo	Kingsville College	
4	Dorcas Dauda Jummia	Junior Secondary School Lugbe	
5	Agbo Elizabeth Ene	Junior Secondary School, FHA Lugbe	
6	Aisha Bunu	Raberto School	1 <sup>st</sup> Prize

#### **List of Participants for The Digital Electronics Competition**

S/N	Name of Student	Name of School	Prize Won
1	Igbokwe Gabriel	Government Secondary School Garki Area 10	2 <sup>nd</sup> Prize
2	Obam Benjamin	Government Secondary School Wuse	3 <sup>rd</sup> Prize
3	Agode Sirach	Government Secondary School Mabushi	
4	Joel Purity	Junior Secondary School Durumi	
5	Jibril Zainab	Junior Secondary School Kuchingoro	
6	Bright Ikenna	Government Day Secondary School Dutse	
7	Maryam Nurudeen	Junior Secondary School	1 <sup>st</sup> Prize
8	Igwesi Princess	Junior Secondary School FHA Lugbe	

### List of Participants for The Robotics Competition

S/N	Name of Student	Name of School	Prize Won
1	Adesiyan Promise	Government Day Secondary School Dutse	1 <sup>st</sup> Prize
2	Mamudu Onete Mercy	Government Secondary School Kubwa	
3	Ekene Ifiora	Government Secondary School Karu	3 <sup>rd</sup> Prize
4	Hussina Mohammed	Junior Secondary School Apo Legislative Quarters	
5	Gladstone Hanniel	Junior Secondary School FHA Lugbe	
6	Jemila Jubril	Government Secondary School Gwarimpa	2 <sup>nd</sup> Prize

**List of Schools that attended the Closing Ceremony/Competition**

1. Government Secondary School, Mabushi: 5 students
2. Junior Secondary School, Pyakasa: 8 students
3. Junior Secondary School, Area 1: 14 students
4. Government Secondary School, Gwarinpa: 5 students
5. Government Secondary School Kubwa: 8 students
6. Government Secondary School, Garki: 5 students
7. Kingsville College Jahi, Abuja: 17 students
8. Government Secondary School Karu. : 5 students
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26. Junior Secondary School, Piwoyi: 9 students
27. Junior Secondary school, Durumi: 15 students
28. Government Secondary School Gwarinpa: 5 students
29. Junior Secondary School, Lugbe: 10 students
30. Deogratias School, Garki: 33 students

## 1. FINANCIAL REPORT

Detailed financial report (see attached template) with supporting documents, all receipts must be well labeled and equivalent to the amount.

## 2. MEDIA

Share links and other media mentions that the science week in your country got.

1. Africa Science week holds in Abuja  
<https://leadership.ng/2019/10/17/2019-africa-science-week-holds-in-abuja/>
2. Africa Science week 2019: FG Urged to Encourage Teaching of Science Subjects  
[https://youtu.be/a1Is\\_LZaptQ](https://youtu.be/a1Is_LZaptQ)
3. FG urged to improve school's infrastructure  
<https://www.dailytrust.com.ng/fg-urged-to-improve-school-infrastructure.html>

## 3. SPONSORS

List the sponsors of your event with the particular interests you see

- 1) Nile University of Nigeria
- 2) African Center for Innovation and Leadership Development (ACILD)  
ACILD supported the event through the overall coordination, logistics and event planning. It also provided leadership books and souvenirs for participants.
- 3) NUTRIDO: Nutrido supported the event by facilitating the workshops and the STEM roadshow
- 4) Universal Basic Education Board (UBEB)  
UBEB supported the event with teachers to coordinate the students and supervisors from the board.
- 5) Secondary Education Board (SEB)  
SEB supported the event with teachers to coordinate the students and supervisors from the board.
- 6) TechQuest STEM Academy
- 7) WAAW Foundation
- 8) Abuja Chamber of Commerce and Industry
- 9) Nigerian Communications Commission
- 10) Raw Materials Research and Development Agency

## 4. CHALLENGES AND RECOMMENDATIONS

Share with us the various challenges that you encountered and recommendations to address them going forward.

During the 2019 Next Einstein Forum, African Science Week, the following were the challenges that were encountered.

1. Late dispersal of sponsorship letters: We had difficulty getting sponsorship from organizations. Most of the organizations didn't hesitate to mention the late timing of our sponsorship letter with reasons such as; there are processes and procedures to be followed in order to release funds if they are approved and that it will take more than a month or two months as they case may be.
2. Venue: There were issues as regards the venues we used. Firstly, for the participants, they had to be moved from NILE university to Abuja Chamber for Commerce and industry (ACCI) especially on the first day. Some schools were stranded because the buses that conveyed them to the destination already left bearing in mind that the drivers will return to pick up the participants after the day's workshop. This made us to bear the extra cost of transporting the participants to ACCI. Secondly, the facilitators had to split their tool kits and their personnel to attend to participants in both venues. Thirdly, most schools needed all their students to be in on location to enable their teachers follow up on their participation during the workshops. This in turn hindered the students to choose some course outside their location.
3. Late release of promotional materials: The design for promotional materials for ASW in Nigeria were not released until a few days to the event. Promotional materials such as banners were not available for publicity. Souvenirs such as jotters were not customized until a few days to the event.
4. Finance: Generally, arrangements and preparations for the ASW in Nigeria dragged on for too long because money was not readily available to seal the various deals that were already set in motion.

### **Recommendations**

1. Utilizing a single venue for African Science Week will be better suited for the event. This will enable the organizers to keep monitor event proceedings and work out solutions for any emergency need. It will also enable participants and facilitators to be more organized during the workshops.

## **2. WAY FORWARD**

Share with us the different perspective and goal you may plan already for the next Africa Science week or other activities that you plan to undertake as the NEF Ambassador in your country.

N/A

Having organized African Science Week in Nigeria for the last two years from Canada, I have had to rely on African Center for innovation and Leadership Development (ACILD) and Ms. Tinah Orungbemi for the coordination and execution of the event and will be glad to share my experience with other ambassadors who might be organizing such events from outside the country.