

# Basic Sciences in UNESCO

## International Basic Sciences Programme

Prof Nicole MOREAU  
Chair IBSP

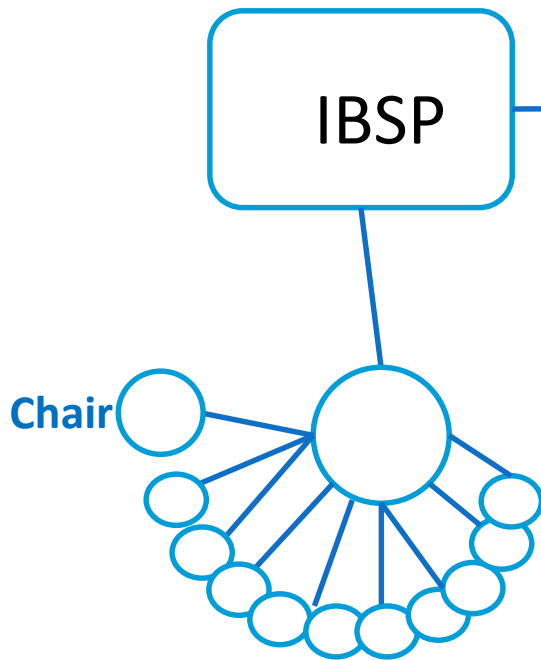
# What is IBSP?

- UNESCO is the only United Nations organization with a mandate on the **Basic Sciences**. The International Basic Sciences Programme (IBSP) was created as an international programme of the organization by a resolution of the General Conference in 2004 (*32 C/Resolution 14*)

## Statutes Art. 1

*1.1 IBSP Aims at the reinforcement of **intergovernmental co-operation** in strengthening national capacities in the basic sciences, sharing scientific knowledge, promoting science education and reducing the divide in the basic sciences **between rich and poor nations***

# Structure of Basic Sciences in UNESCO



Scientific Board

**18 Members** consisting of renowned Scientists representing **all regions** and the **major disciplines** of basic science

## Section of Innovation and Capacity Building

Chief of Section (P-5) – **Exec Sec IBSP**  
Program Specialist (P-3)  
Program Specialist (P-3)  
Assistant Programme Specialist (P-2)  
General Staff (G-4)

Project Appointments, Consultants,  
Interns

## The Scientific Board

- 1.2 *A Scientific Board, is established ... to monitor the IBSP and to advise the Director-General thereon ... The Executive Board shall be kept informed by the D-G of the results of the Committee's proceedings.*
- 2.1 *Members appointed by the DG following consultation with National Commissions for UNESCO, and principal partners of UNESCO in the fields of basic sciences*
- 2.2 *Members shall be scientist engaged in activities in the basic sciences ... equitable geographical ... women scientists ... from international non-governmental scientific organisations... All are specialists serving in an individual capacity.*



- IBSP was established to serve as an entry point for the large number of requests that UNESCO receives from the Member States concerning basic sciences. Its role is to respond to these by providing advice and help in implementation, with input from collaborating institutions (ICTP, TWAS, CERN, SESAME, ISC, Scientific Unions...) and the Scientific Board.
- The IBSP has since become an overarching platform – a network of networks – setup to fulfil UNESCO's unique mandate in the basic sciences and STEM education within the United Nations system. It is the only international platform which puts forward recommendations to the UNESCO governing board on how to improve the status of basic sciences around the globe.
- It is a member of the family of international programmes of UNESCO in science and coordinates its activity with them

# Achievement of past 18 months

- International Years and Days:

Raised the profile of basic sciences and IBSP through IYPT (conferences around the world) which garnered enormous press in international media and was singled out to be reported in the UN SG report at the Next UN General Assembly



United Nations  
Educational, Scientific and  
Cultural Organization



International Year  
of the Periodic Table  
of Chemical Elements



2 Proposals for International

- 1 Category II centre established on Mathematics in Ghana, 1 UNITWIN network established on Biophysics in Armenia, 1 Biotechnology Chair in Turkey

- In preparation:

- the launch of the 2<sup>nd</sup> Engineering Report in 2020
- Equitorial Guinea prize at the AU heads of state summit in 2020

# Strengthen engagements with Category II

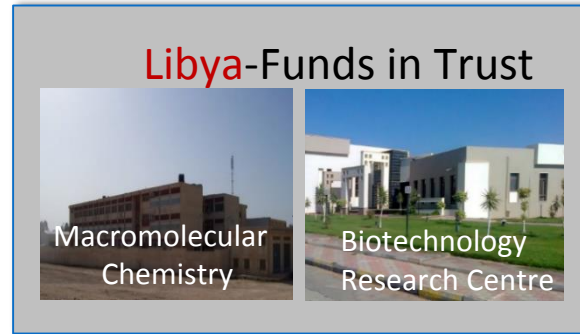
## Centres



(India)



Cameroon



Aalborg Centre for Problem-Based Learning in Engineering Science and Sustainability (Denmark)



- International Sustainable Energy Development Centre (Russian Federation)
- International Centre for Basic Sciences (Portugai)
- The Microscience Centre (Cameroon)
- International Centre for Biotechnology (Nigeria)
- Regional Centre for Renewable Energy and Energy Efficiency (Morocco)
- International Centre for Advanced Training and Research in Physics (Romania)
- International Knowledge Centre for Engineering Sciences and Technology (China)
- International Centre for Biological and Chemical Sciences (Pakistan)
- Centre for Basic Sciences and Human Nutrition (Iran)
- International Institute of Earthquake Engineering (Macedonia)
- The Junior Academy of Sciences (Ukraine)
- International Centre of Research and Training in Mathematics (VietNam)
- International Training Centre in Astronomy (Thailand)
- African Institute of Mathematical Sciences (Ghana)

# Strengthen engagement with UNESCO Chairs

Examples:



United Nations  
Educational, Scientific and  
Cultural Organization



UNITWIN Network in  
Global Pharmacy  
Education Development



Network on Research and  
Postgraduate Education in Biophysics,  
Biotechnology and Environmental Health



United Nations  
Educational, Scientific and  
Cultural Organization



UNESCO Chair  
in Energy for  
Sustainable Development

## 76 UNESCO Chairs

Africa: 11

Arab States: 4

LAC: 12

Asia and Pacific: 17

Europe-North America: 32

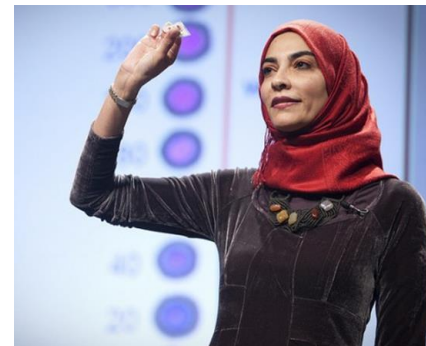


# Capacity Building through Advocacy

## International Year of Crystallography 2014



## UNESCO Goodwill Ambassadors



Hayat Sindi, Biotechnologist

## Prizes and Medals



**Equatorial Guinea Prize  
in Life Sciences**

**Carlos Finlay Prize  
in Microbiology**

**Nanotechnology  
Medal**

**Space Medal**



**International  
Day of Light**

16 May



United Nations  
Educational, Scientific and  
Cultural Organization



International Year  
of the Periodic Table  
of Chemical Elements

# Partnerships that need to be continued and strengthened



International Centre for Synchrotron-Light for Experimental Science and Application in the Middle East (**SESAME**) - Jordan

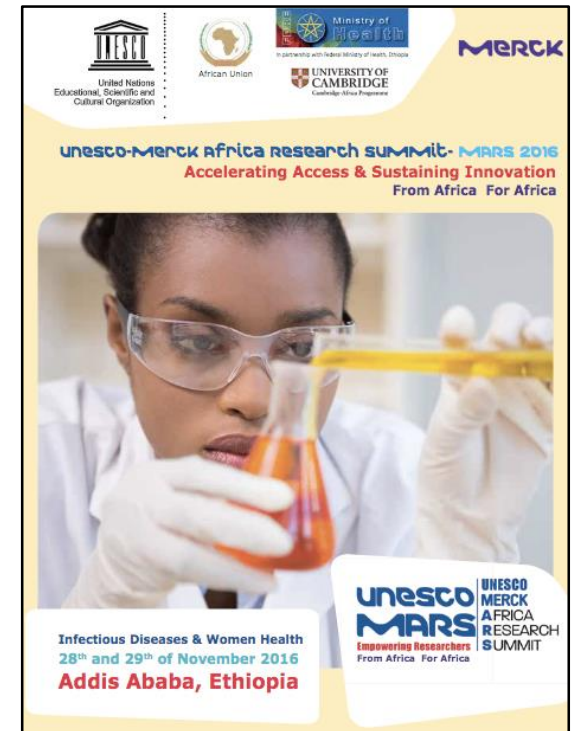
## Green Chemistry for Life



Airbus – Fly your Ideas



The **CERN-UNESCO Schools for Digital Libraries** are week-long training sessions for librarians at research institutions in Africa and the Middle-East.



***The need for science-based sustainable development is today greater than it has ever been before if the UN SDGs are to be attained. These issues could be:***

- How to use effectively IBSP to advice MS on emerging issues such as **Artificial Intelligence** in addressing developmental needs in increasing **agricultural productivity**, **biotechnology**, **interdisciplinary medical research**, **energy sustainability**, **economy and recycling of natural resources...**
- **Establish interdisciplinary and trans-disciplinary centres of excellence and networks in the global south on areas of important national developmental agendas and strengthen mentorship programmes in Science and Technology**
- **Find innovative ways to improve the culture of science, through innovative STEM education programmes in schools and improving the interphase between scientific research and public understanding and trust in science**

## Emerging Issues beyond 2021

### Very important to be stressed:

- To ensure that the results of IBSP activity in capacity building and education in Basic Sciences will bear fruit, it is to be recommended that they be followed by actions in the domain of **engineering**.
- This is essential to provide opportunities for the acquired knowledge to be followed by effective actions and concrete realisations by the educated people



Merci