AEMASE III
A way towards International Science Centres

in partnership with the La main à la pâte Foundation

October 3-4, 2017

Académie des sciences
23, quai de Conti, 75006 Paris

The AEMASE network, launched in 2013 by the science academies of France, Italy, Morocco and Senegal, and the Egyptian Bibliotheca Alexandrina, aims to sensitize decision makers and other partners of educational systems about the urgent need to improve science (STEM) school education across the African-Mediterranean-European (AME) region. A sound science education at compulsory school shapes the minds of young citizens for rationality. It is critical for strong economies and sustainable development relying on innovation and technical progress. To overcome the big global challenges, i.e., climate change, hunger, health, etc. an interdisciplinary science education is also crucial. Achieving these goals implies in-service professional training of science teachers in the lines of well-tested pedagogies such as inquiry-based science education (IBSE). Such a training requires a co-construction between scientists and teacher educators.

After the AEMASE I conference in Rome in 2014, then AEMASE II in Dakar in 2015, where pedagogical methods and strategic expertise have been shared among the AME region, the present Paris AEMASE III conference ambitions to put a step further by launching a network of innovative training international and multilanguage centres called CESAME (Centres for Science Education in Africa, Mediterranean and Europe). There, short international sessions will introduce local teachers and educators of science teachers to the IBSE pedagogy. These teacher educators will adapt the IBSE pedagogy and efficiently spread it over their own countries. It is hoped that this conference will permit the launching of a concrete and ambitious project: with a strong support from governments and sponsors a network of CESAME centres should emerge from this conference!
Honorary President:
Catherine Bréchignac,
Member and CEO of the Académie des Sciences - Institut de France, Ambassador at large for Science, Technology and Innovation, France

Co-Chairs:
- Mahouton Norbert Hounkonnou, President of the Benin National Academy of Sciences, Arts and Letters, Benin
- Odile Macchi, Member of the Académie des Sciences, France

Steering Committee: co-chairs plus
- Friedrich J.W. Hahne, Member of the Academy of Science of South Africa, South Africa
- Pierre Léna, Honorary President of la main à la pâte Foundation and member of the Académie des sciences, France
- Malik Ghallab, Member of the Hassan II Academy of Science, Morocco
- Peter McGrath, Coordinator InterAcademy Partnership, Italy, USA
- Rosalind Mist, Head of Policy, Education, Royal Society, United Kingdom
- David Rios, Royal Academy of Sciences, Spain
- Giancarlo Vecchio, Emeritus Professor of Oncology Accademia Nazionale dei Lincei and Chair ALLEA Science Education Working Group, Italy

Scientific Committee: Steering committee plus
- Mostapha Bousmina, Chancellor of the Hassan II-Morocco Academy of Science and Technology and President of the Network of African Science Academies (NASAC), Morocco
- Carl Figdor, Member of the Royal Netherlands Academy of Arts and Sciences, Netherlands
- Aderemi Kuku, Member of the African Academy of Sciences, Nigeria
- Wandera Ogana, Member of the Kenya National Academy of Sciences, Kenya
- Günter Stock, President of All European Academies (ALLEA), Germany
- Maurice Tchuenté, Member of the Académie des sciences, Cameroon
- Ahmadou Wague, Member of the Académie Nationale des Sciences et Techniques, Senegal

Operational Committee:
- Matthias Johannsen, Executive Director, All European Academies (ALLEA), Germany
- Jackie O’Lang, Executive Director, Network of African Science Academies (NASAC), Kenya
- Anne Andivero, Operations manager, Académie des sciences, France
- Sophie Lageat, assistant manager, Académie des sciences, France

Contact: sophie.lageat@academie-sciences.fr
9:00 Opening session (Grande salle des séances)
Catherine BÉCHIGNAC, Académie des sciences, France
Jean-Michel BLANQUER, Ministry of national education, France
Giandomenico MAGLIANO, Italian Embassy, France
Representatives of Ministries from the AME region
Hamidou BOLY, CEDEAO Commission for Education, Science and Culture, Nigeria

9h45 Session I: Teaching science for human sustainable development (Grande salle des séances)
Chair : Jean-Paul DE GAudemAR, Agence Universitaire de la Francophonie, France
Firmin MATOKO, UNESCO, France
Sharifah Maimunah SYED ZIN, IAP, Malaysia
Fostering peace and harmony through the fusion of civilisations curriculum: a project under IAP SEP
Fouad CHAFIQI, Ministry of education, Morocco
Curriculum scolaire et éducation au développement durable au Maroc

10:45 Coffee break (Salon Bonnefous)

11:15 Session II: Teaching science for human sustainable development (continued) (Grande salle des séances)
Chair : Mosto ONUOHA, Nigerian Academy of science, Nigeria
Svein SJOBERG, University of Oslo & The Norwegian Academy of Science and Letters, Norway
Paradoxes from the OECD PISA-project: should we sacrifice Inquiry-Based Science Education (IBSE) in order to climb on rankings?
Pierre LÉNA, La main à la pâte Foundation, France
Science education: a challenge for justice and human development
Manuela WELZEL-BREUER, University of Education Heidelberg, Germany
Science education for responsible citizenship – some reflections on the scope of sciences centers

12:15 Session III – The CESAME project (Grande salle des séances)
Odile MACCHI, France
Norbert HOUNKONNOU, Benin
co-chairs of the conference
What is a “Centre for Science Education in Africa, the Mediterranean area and Europe” (CESAME) ?

12:45 Lunch (Salon Bonnefous)

14:00 Session IV - Challenges in science teaching and national strategic plans for science education (Grande salle des séances)
Chair : Albert SASSON, Académie Hassan II des sciences et techniques, Morocco
Carl FIGDOR, Institute for Molecular Life Sciences Radboudumc, Netherlands
Good practices of science education hubs and future perspectives in Netherlands
Jacques BLAMONT, Centre national d'études spatiales (CNES), France
IBSE teaching in developing countries : Haiti and others
Fritz HAHNE, Academy of Science of South Africa, South Africa
Renewing STEM education in South Africa and beyond
15:00 Session V - Challenges in science teaching and national strategic plans for science education (continued) (Grande salle des séances)
Chair: Éric WESTHOF, Académie des sciences, France
Dominique ROJAT, Inspection générale de l'éducation nationale, France
Science teaching in France: improving the citizen's culture
Lamberto MAFFEI, Foundation « I Lincei per la Scuola », Italy
Lincei for the school: a new teaching strategy
Wafa SKALLI and Malik GHALLAB, Académie Hassan II des Sciences et Techniques du Maroc, Morocco
Learning science and learning by science in Morocco
Nicolas ANDJIGA, École normale supérieure de Yaoundé, Cameroon
Competence based approach in education in Cameroon: many students and poor means

16:15 Coffee break (Salon Bonnefous)

16:45 Session VI.1 – Existing resources, equipment and expertise for teachers training (Salle Louis Martin Chauffier)
Chair: Catherine CESARSKY, Académie des sciences, France
Petra SKIEBE-CORETTE, Freie Universität Berlin, Germany
Schülerlabore and the German Action Programme on Education for Sustainable Development
Ahmadou WAGUE, Académie Nationale des Sciences et Techniques du Sénégal, Senegal
Science Clubs activities at school in Senegal
Mark LANGLEY, National STEM Learning Centre, UK
Effective STEM Learning - the STEM Learning Approach
Sinobia KENNY, African Institute for Mathematical Sciences, South Africa
Enriching teachers in the absence of mathematics specialists

Suzanna BORDA, University of Geneva, Switzerland
The Fibonacci Project (2010-2013): inspiring practices and lessons learned
Scholastica LAN, Nigerian Academy of Science, Nigeria
Enhancing educational development through mentoring: a case study of the Nas-Schlumberger partnership in Nigeria
Cliona MURPHY, Centre for the Advancement of STEM Teaching and Learning (CASTeL), Ireland
Teach Teachers to Teach about Science
Majia AKSELA, LUMA Centre Finland, University of Helsinki, Finland
The Finnish LUMA model for promoting math, science and technology education

18:00 End of the day

19:30-22:00 OFFICIAL DINNER (Restaurant La Baleine, 47 rue Cuvier 75005 Paris)
Welcome Talk
Erik ORSENN de l'Académie française, France
I feed with science
**Wednesday October 4, 2017: The topics**

Venue: Simone & Cino Del Duca Foundation, 10 rue Alfred de Vigny, 75008 Paris

8:45  
**Session VII - Premise for CESAME centres (Grand Salon)**  
Scenarios proposed by countries for potential CESAME implementations  
Chair: Gaël GIRAUD, Agence française de développement, France

9:15  
**Session VIII.1 – Mathematics and science education (Grand salon)**  
Chair: Joos VANDEWALLE, Royal Flemish Academy of sciences, Belgium  
Gerald A. GOLDIN, Rutgers University, USA  
Best practices in mathematics education  
Xavier BUFF, Université Toulouse III, France  
Mathematics, predictions and climate change  
Barry GREEN, African Institute for Mathematical Sciences, South Africa  
The African Institute for Mathematical Sciences (AIMS) Educational Ecosystem  
Aderemi KUKU, National Mathematical Centre, Nigeria  
Towards More Innovations in Mathematics, Science and Technology Education

9:45  
**Session VIII.2 – Science education for health (Salon Vigny)**  
Chair: Esther MWAIKAMBO, Tanzanian Academy of sciences, Tanzania  
Peter McGrath, InterAcademy Partnership, USA and  
André RADLOFF, Smithsonian Institution, USA  
IBSE programmes and infectious diseases  
Arnaud FONTANET, Institut Pasteur, France  
The Global Health e-Academy: What role for MOOCs in Africa?  
Mario STEFANINI, Accademia Nazionale dei Lincei, Italy  
The SCIESA project in Italy

10:30  
**Coffee break (Hall)**

11:00  
**Session IX.1 - Science education for climate change (Grand salon)**  
Chair: Mahouton Norbert HOUNKONNOU, Benin National Academy of Sciences, Arts and Letters, Benin  
Philippe BOUSQUET, Université de Versailles Saint-Quentin en Yvelines, France  
Climate sciences and education in France: challenges, actions, future  
David WILGENBUS, La main à la pâte Foundation, France  
Creating an international Centre for Climate Change Education, a joint initiative of La main à la pâte and IPCC  
Nejib KALLEL, GEOGLOB Laboratory, Tunisia  
Teaching Climate Change in School

11:30  
**Session IX.2 - Science education for biodiversity and sustainability (Salon Vigny)**  
Chair: Étienne GUYON, ESPCI ParisTech, France  
Gabrielle ZIMMERMAN, La main à la pâte Foundation, France  
How to teach biodiversity: the experience of a large-scale project by La main à la pâte  
Sergio CARRÀ, Politecnico Milano, Italy  
The world in an alembic: problems and initiatives for a sustainable future  
Joe NIEMELA, The Abdus Salam ICTP, USA/Italy  
Developing potential with hands-on activities: from teacher-training to socially responsible outreach
12:00 Session X.1 - Science education for digital society and computer science (Grand salon)
Chair: Sameh SOROR, Academy of Scientific Research and Technology, Egypt
Marco GIORDANO, Conservatory “A. Casella” - L’Aquila, Italy
Coding and computational thinking in the school curriculum
Maurice TCHUENTE, University of Buea, Cameroon
Distance education for teachers: lessons learnt from IFADEM
David RIOS, Royal Academy of Sciences, Spain
Exploring science with low cost social robots
Atinuke ADEBANJI, Kwame Nkrumah University of Science and Technology, Ghana
Curing computational thinking deficiency with a CESAME seed

12:00 Session X.2 – Education in agriculture (Salon Vigny)
Chair: Moctar TOURÉ, Académie Nationale des Sciences et Techniques du Sénégal, Senegal
Agricultural Education in Senegal: Challenges, opportunities and options
Aissetou DRAMÉ YAYÉ, Université Abdou Moumouni, Niger
Challenges and opportunities in agricultural education and training in Africa: the ANAFE experience
Michel SEDOGO, Académie Nationale des Sciences, Arts et Lettres, Burkina-Faso
Challenges and prospects in agricultural and rural education and training in Burkina Faso
Michel DRON, Université Paris sud/Saclay, France
Education in Agronomy in French speaking countries involving France and Africa: history and lessons for the future

13:15 Lunch (Salle à manger)

14:30 Session XI – Panel: Programs and perspectives by foundations and institutions supporting education (Grand salon)
Chair: Jean-François BACH, Académie des sciences, France
Didier ROUX, R&D Saint Gobain, France
Saint-Gobain: Research and Education
Katherine BLANCHARD, the Smithsonian Institution, USA
Leadership and Assistance for Science Education Reform (LASER): the infrastructure for independent, sustainable, and locally relevant Science Centers
Paula DÔGE, The « Haus-der-kleinen-Forscher » Foundation, Germany
The « Haus der kleinen Forscher » Foundation - one way to foster STEM learning across Germany
Olivier QUINLAN, the Raspberry Pi Foundation, UK
Learning through digital making
Teresa FERNANDEZ DE LA VEGA, Women for Africa Foundation, Spain
Women as protagonists in the house of science

16:15 Session XII - Launching the CESAME project (Grand salon)
Chair: Pierre CORVOL, Académie des sciences, France
The CESAME steering committee
The roadmap towards the CESAME network of intercontinental science houses

16:45 End of the conference
Sponsoring institutions