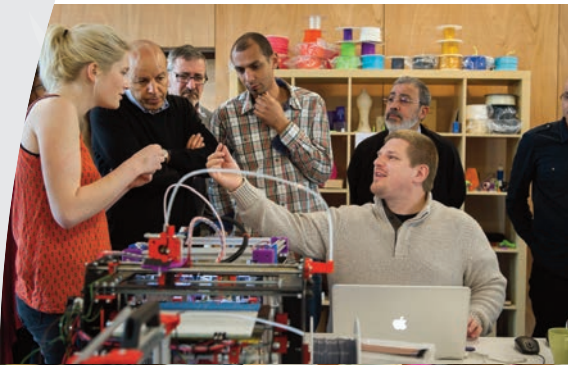




INSTITUT DE FRANCE
Académie des sciences



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 Bréchnac,

Member and CEO of the Académie des Sciences - Institut de France, Ambassador at large for Science, Technology and Innovation, *France*

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

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- **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*
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- **Anne Andivero**, Operations manager, Académie des sciences, *France*
- **Sophie Lageat**, assistant manager, Académie des sciences, *France*

Program

TUESDAY OCTOBER 3, 2017 : STRATEGIC VIEWPOINTS

Venue: Académie des sciences, 23 Quai de Conti, 75006 Paris

- 9:00** **Opening session** (*Grande salle des séances*)
Catherine BRÉCHIGNAC, 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 developping countries : Haïti 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
- Session VI.2 – Successful strategies as a roadmap for CESAME (*Salle Edouard Vuillard*)**
 Chair : **Alain-Jacques VALLERON**, Académie des sciences, France
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 ORSENNA 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
- 9:15** **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 Academu 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
- 11:00** **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
- Session X.2 – Education in agriculture (*Salon Vigny*)**
 Chair : **Moctar TOURÉ**, Academie 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 DÖGE, 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



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