



the global network of science academies

## PRESS RELEASE

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### IAP SEP Beijing Declaration on Science Education and Science Literacy

Leading education researchers and practitioners meeting in China make a series of recommendations calling for the wider uptake of inquiry-based science education (IBSE<sup>1</sup>) methods in more countries around the world.

In particular, the experts call on the world's science academies, private companies, the host nation China and other countries, and UNESCO, to promote IBSE/STEM (science, technology, engineering and mathematics) education.

Members of the IAP Science Education Programme (IAP SEP) Global Council met at the close of the IAP SEP Biennial Conference, held from 28-30 October 2014 in Beijing, China. The theme of the meeting was 'Challenges and Opportunities of Inquiry Based Science Education (IBSE) / Science, Technology, Engineering and Mathematics (STEM) Education'<sup>2</sup>.

As presented in the 2003 'IAP Statement on Science Education'<sup>3</sup>: "Learning science helps children develop the mental and moral predispositions to imagination, humility, rigour, curiosity, freedom and tolerance."

"Many of the challenges facing our growing human population have a basis in science," says Dato Ir. (Dr.) Lee Yee Cheong, Chair of the IAP SEP Global Council/Senior Fellow of the Academy of Sciences Malaysia. "For our society to develop sustainably, within the productive capacity of our planet, science needs to be applied to tackle such issues as climate change, population growth, health, food security, energy security, water management, etc. For this we need an educated population and decision-makers who are science-literate.

"IBSE/STEM education enables the youth of today not to believe and follow any "prophet" unless what he expostulates is proven by hard evidence," continues Lee. "IBSE/STEM education, which should be infused across the whole education curriculum, not only assures the human resource pipeline for the green and clean scientific, engineering and technology devices and systems that will help us to combat the challenges of global poverty and climate change, but it also provides the world with a rational and discerning citizenry that I hope will help ensure peace and security."

The key recommendations from the IAP Beijing Declaration on Science Education and Science Literacy are:

- A call to all IAP member academies of sciences to redouble their commitment to IBSE/STEM education, including reaching out to their national ministries of education and to their national UNESCO commissions and their missions in UNESCO.
- A call to industry to assist national academies of science and their national governments to enhance IBSE/STEM education policies and initiatives to ensure the formation of the creative and innovative human capital that will enable their own enterprises to remain competitive in the increasingly fast-paced science and technology development environment.
- A call to foundations and donors to sponsor the roll-out of IBSE/STEM practices, especially developing countries.



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- A call to China, the host nation of the Beijing Conference, and other nations with rich experience in IBSE/STEM and science outreach activities to share their experiences with the world and to assist in capacity building efforts in other countries, especially developing countries, wishing to implement IBSE/STEM.
- A call to the United Nations Educational, Scientific and Cultural Organization (UNESCO) to include IBSE/STEM in the programme of the UNESCO World Education Forum in Incheon, Korea, in May 2015, and to incorporate IBSE/STEM for quality education and lifelong learning into the United Nations post-2015 development agenda.

*The above Beijing Declaration was endorsed by members of the IAP Executive Committee during their meeting in Paris, France, on 6-7 November 2014.*

#### **Notes for editors:**

IAP – the global network of science academies – is a network of 107 national and regional networks of merit-based academies. Its headquarters are based in Trieste, Italy. For more information on IAP, see: <http://www.interacademies.net>.

More information on the IAP Science Education Programme can be found here:

<http://www.interacademies.net/ProjectsAndActivities/Projects/12250/18276.aspx>

<sup>1</sup> Conceived and initially developed by the International Council for Science (ICSU), so-called Inquiry Based Science Education (IBSE) <sup>1</sup> has been a focus of IAP – the global network of science academies – since 2003.

IBSE can be defined as: “Students progressively developing key scientific ideas through learning how to investigate and build their knowledge and understanding of the world around” (Wynne Harlen, IAP SEP International Advisory Board member).

<sup>2</sup> The IAP SEP Biennial Conference in Beijing had focus sessions on ‘IBSE and Technology Education’, ‘Student Outcomes Assessment’, ‘IBSE and National Development’, and ‘Science Outreach and Society’.

Sponsors included IAP, the CAST Commission on Science Education for Children, the China National Commission for UNESCO, and the CAST Children and Youth Science Centre.

The meeting was organized by the Key Laboratory of Child Development and Learning Science, Ministry of Education of China, and the China International Conference Centre for Science and Technology (CICCST).

Supporting organizations included the Bureau of International Cooperation of the Chinese Academy of Sciences (CAS), and the Academy of Sciences Malaysia.

See <http://www.iapsep2014.cn/>.

<sup>3</sup> 2003 IAP Statement on Science Education: <http://www.interacademies.net/10878/13923.aspx>.

#### **For additional information, contact:**

Peter McGrath, IAP Coordinator, Trieste, Italy: office (+39) 040 2240 571; [mcgrath@twas.org](mailto:mcgrath@twas.org)

Dato Ir. (Dr.) Lee Yee Cheong, Chair of the IAP SEP Global Council/Senior Fellow of the Academy of Sciences Malaysia, Kuala Lumpur, Malaysia: mobile (+60) 122 873 909; [dlyeec@gmail.com](mailto:dlyeec@gmail.com)