



PRESS RELEASE

Sciences and Unity in the IAP Conference

4 December 2006, Alexandria

In order to create a better place to live in, and in the hope of reaching a better understanding of ourselves and of the universe, specialized fields of science must co-operate and unite their powers. That was the message conveyed through the different lectures given in the IAP conference on "The Unity of Science" which continued from 2-3 December 2006 and was hosted by the Bibliotheca Alexandrina. The conference of the InterAcademy Panel (IAP) principally aims at developing interdisciplinary interest among its member scientific academies as a means of advancing knowledge and technological progress.

The opening lecture, "Science in Egypt from Imhotep to Zewail", was given on 2 December by Dr Ismail Serageldin, Director of Bibliotheca Alexandrina. The lecture contained an extensive review of the history of science in Egypt with reference to the status of the world at particular points in time. Dr Serageldin shed light on Imhotep, the first architect and physician known by name in written history and whose "proverbs contained a philosophy of life", Merit Ptah (c. 2700 BCE), the first woman in science to be known by name. He also gave several examples of how the Pharaohs, who were essentially "pragmatic people", engaged themselves in problem-solving subjects like medicine, mathematics, astronomy, engineering and so forth. Dr Serageldin also referred to Alexandria's role in past ages as a "hallmark of the community of science" and to the Arab/Islamic civilization which saved and revived past knowledge through translation and new inventions. Muslim scientists, like Jabir Ibn Hayyan, Al Razi, Al Tabari, Ibn Khaldun and Ibn Al Haytham who introduced the experimental method of criticism and caution, made important scientific discoveries. The focus of the lecture gradually turned to modern times; for instance, Mohamed Ali Pasha's role in developing arts and sciences, the Egyptian renaissance that marked the early twentieth century, the 1950's mass-education program that produced such distinguished scientists as Farouk El Baz and, the Nobel-Prize-winner, Dr Ahmed Zewail .

The following two lectures were in the field of mathematical sciences. Professor Jean-Pierre Kahane, a distinguished French mathematician and a member of the French Academy of Sciences, lectured on "Mathematics, between Past and Future." Interested as he is in the history of science, Professor Kahane referred to Galileo's view that "the book of the universe was written in math" and to Plato, whose philosophical ideas concerning fixed and permanent abstract ideas, influenced mathematicians in past and present times. He further commented that "the relationship of math with the past is like its relationship to the future". Moreover, Professor Kahane thoroughly

discussed the relation of mathematics to other sciences, referring to the fact that the new discoveries in physics leave their mark on mathematical theories and that the reverse is true. In a reference to the urban legend regarding women's misrepresentation in mathematical sciences, Kahane claimed that this is a cultural construct and that women, if given the opportunity, would extraordinarily succeed in this area.

In the other lecture, titled "Providing a level playing-field to world citizens through Innovations ICT", Professor Ashok Jhunjhunwala, member of the Indian Institute of Technology, demonstrated how information and communication technologies could be accessible to all citizens. For instance, India's use of innovative techniques as cable and wireless systems facilitated the use of broad-band internet connection in rural villages. ICT was also used in India to improve education as in the introduction of internet-based coaching for exams and skill-based learning courses. Professor Jhunjhunwala asserted that through the use of alternative energy and decentralized power generators in Indian villages, low-cost technology became more far reaching. Villagers sought medical consultation through video conferences and a newly-devised, 300\$ -priced medical kit. Similar innovations were used in examining crop diseases and promoting agriculture. Professor Jhunjhunwala ended his lecture by claiming that "ICT can give an opportunity for those who were left behind".

The conference also included lectures on physical sciences. "Physics, Now and in the Future" was a lecture delivered by the Nobel-Prize winner, Professor David Gross, who is Director of the Kavli Institute for Theoretical Physics. The focus of the lecture revolved around how the unity of science is exemplified in physics, which is a "great provider of tools for all sciences". It has been established that methods of statistical physics were applied in social networks. Professor Gross believes that all natural phenomena could be studied by physics, "the queen of all sciences", and he claimed that physics is now enlarging its scope and its fields of application. The new ways of storing information in computer technology is but one example. In the end of a very informative lecture, Professor Gross said that the "most important product of knowledge is ignorance" and that "the more we know, the more we understand how we do not know."

The next physics- related lecture was on the "Emerging Applications of Intense Lasers in Sciences and was given by Professor Jie Zhang, Director General of the Bureau of Basic Sciences. Professor Zhang focused on how the laser intensity has been advancing by time and on the applications of the ultra-intense lasers in sciences. These applications will bring us into a new era of a sustainable development of our societies since they pose as potential sources in the fields of laser nuclear science, energy and diagnostics.

On the other hand, Dr. Maria Teresa Lago, Full Professor in the University of Porto, Portugal, gave an interesting lecture on attempts at "Uncovering the Universe". She claimed that astronomy is a special field wherein the unity of science is most needed. The new technology in optics and in physics helped in creating more efficient telescopes; hence, more accurate observations. She said that "our current understanding of the cosmological structures and their physical properties, the way they are formed and evolve – from planets and stars to clusters of galaxies - rests firmly on the ability to incorporate techniques, tools and knowledge from many other fields of Science."

Professor Chris Rapley, Director of the British Antarctic Survey gave a lecture on "The Earth's Polar Regions and the International Polar Year 2007-2008" which will start next March. He reviewed many demonstrations on how the Polar Regions are exceedingly affected by climate changes. Satellite and field data verified that these changes are taking place faster than had been predicted even five years ago. Professor Rapley also presented some means of correction through raising public awareness and exerting more influence upon decision-makers.