

ANNOUNCEMENT

Project Atmospheric Brown Cloud (ABC) 2006 TRAINING SCHOOL

Project ABC Science Secretariat Office at the Center for Atmospheric Science
Scripps Institution of Oceanography, University of California, San Diego

Students in climate and environment studies are invited to apply to participate in a special training school conducted by Project ABC during 4-14 December 2006 in Asia.

- Lectures at the Asian Institute of Technology (AIT), Bangkok: 4-8 December
- Travel to Hanimaadoo, the Maldives: 9-10 December
- Training at Hanimaadoo, the Maldives: 11-14 December

Senior students, Post Doctoral Fellows and young scientists involved in atmospheric research, are encouraged to apply by attaching their curriculum vitae (CV) and a brief description of their research by the end of September 2006 via email to "The Course Director" at:

For US students: <ABC_Training-School@fiji.ucsd.edu>

For Asian students: <ABC_Training-School@rrcap.unep.org>

All selected participants will be informed by the end of October 2006.

The school is organized by UNEP-Asia Pacific for Asian students with limited number of slots available for US students. Participants will be supported for all travel and living expenses. Details and background information to follow.

INTRODUCTION

About 60 per cent of the world's population of 6 billion live in Asia. Environmental consequences of Asia's rapid economic development can be far reaching, especially with respect to air pollution at local and regional levels.

A recent international study, the Indian Ocean Experiment (INDOEX), documented the vast extent of the so-called Asian haze, a 3 km thick brownish layer of pollutants hovering over most of tropical Indian Ocean, South, Southeast and East Asia. The haze particles consist of sulfates, nitrates, organics, black carbon and fly ash amongst several other pollutants, which can be transported far beyond their source region, particularly during the dry season.

Potential direct and indirect consequences of the haze involve regional and global climate change, impacts on ecosystem, the water cycle, agriculture and human health.

Significant reduction in the solar radiation reaching the surface; a 50 - 100% increase in solar heating of the lower atmosphere; rainfall suppression; agricultural productivity decline; and adverse human health effects.

Preliminary results also indicate that the build up of the haze, a mash of ash, acids, aerosols and other particles, is disrupting weather systems including rainfall and wind patterns and

triggering droughts in Western parts of Asian Continent. The regional and global impacts of the haze are set to intensify over the next 30 years as the population of the Asian region rises to an estimated five billion people.

CURRENT STATUS

Since 2001, a project called Atmospheric Brown Cloud has been initiated jointly by UNEP and the Center for Clouds, Chemistry and Climate (C⁴) at the Scripps Institution of Oceanography (C4/SIO) with UNEP Executive Director (K. Toepfer and currently, A. Steiner) is the chair of the ABC Steeing Committee and V. Ramanathan of Scripps Institution of Oceanography/UCSD, is the chair of the ABC Science Team. Under Project ABC, scientists establish a network of ground-based monitoring stations throughout Asia to study the composition and seasonal pattern of the haze. UNEP has pledged to facilitate and assist with science, research and capacity building program and bring the results to attention of governments.

The Project ABC website <http://www-abc-asia.ucsd.edu> offers a complete and current description of ABC and related programs.

PROJECT ACTIVITIES

Observatories

Project ABC has been in a process to establish an integrated network of surface air pollution and climate observatories across the entire Asia-Pacific region. These strategically placed observatories will monitor the full extent, morphology and chemical composition, radiative effects and transport of atmospheric aerosols and related atmospheric pollutants as well as the chemical composition of precipitation (Figure 1).



Figure 1: Project ABC observatory system with Maldives and Gosan are the supersites

Training and Capacity Building

The underlying principles of Project ABC include promoting regional capacity building and facilitating interactions between scientific and policy making process. The specific objectives are:

1. to develop the science and capacity to study the issue of aerosols in the region;
2. to assess the impacts of Atmospheric Brown Clouds on health, ecosystem and agriculture, and climate change and water budget under one common framework; and
3. to raise awareness on the issue and promote actions for mitigation.

One unique feature of the scientific training is the ABC Training School.

THE ABC TRAINING SCHOOL

Specifically related to the training and capacity building objective of Project ABC, the Science Team of Project ABC designs a 15-day course for Asian students and postdocs held in Hanimaadhoo, the Maldives. During the course, students will be provided a review on the fundamental principles of climate sciences and intensive hand-on training on modern radiation and aerosol instruments.

The Maldives Climate Observatory in Hanimaadhoo, MCOH, is the South Asian super site for the Project ABC. Its 2000 sqft facility, a generous contribution by the government and the people of the Maldives, is a fully equipped and air conditioned lab with ample classroom space. NOAA provides funding for instrumentation. The Training School was inaugurated in October 2004 (Figure 2).



Figure 2: The October 2004 ABC Training School, held at the ABC Super Observatory in Hanimaadhoo, the Maldives for 15 postdocs and graduate students from Bangladesh, India, Kirgistan, Maldives, Nepal, SriLanka, Thailand.

- For the **2006 ABC Training School**, the UNEP, with funding support from the Swedish International Development Agency (SIDA), will support about 15 graduate students and postdocs from Asia.

In addition, with support from NSF International Division, Project ABC will invite several US students to the School. This modest beginning could be strengthened in the near future to become a significant resource available to US students to interact with Asian counterparts in a unique learning environment.

Some potential lecturers are

1. Prof. V. Ramanathan (C4/SIO)
2. Prof. Paul Crutzen (MPI and C4/SIO))
3. Prof. Henning Rodhe (MISU)
4. Prof. Gregory R. Carmichael (Univ. Iowa)
5. Prof. James Schauer (Univ. Wisconsin-Madison)
6. Dr. Mark Lawrence (MPI)
7. Dr. Lennart Granat (MISU)
8. Dr. Creg Corrigan (C4/SIO)
9. Dr. M. Ramana (C4/SIO)

Potential topics of lectures include:

- Fundamentals of Climate Change and Global Warming.
- Aerosol direct, indirect and semi-direct forcing
- Chemistry and Physics of Atmospheric Brown Clouds
- Impacts of climate change and air pollution on Health, Water and Agriculture.

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The participants will be paid for the travel and living expenses for the training period.)

Appendix—The ANNOUNCEMENT released by UNEP and SIO/UCSD



2006 TRAINING SCHOOL

ATMOSPHERIC BROWN CLOUDS (ABC)

December 2006 in Bangkok, Thailand and Hanimaadhoo, the Maldives



ANNOUNCEMENT

PROJECT ABC-ASIA

Atmospheric Brown Clouds (ABC), widespread layers of brownish haze due to gaseous and particulate species emitted from various sources, such as fossil fuel combustion and biomass burning, reduce the amount of solar energy reaching the earth's surface, and thus have significant implications to the regional water budgets, agriculture and human health. To address these concerns, project **Atmospheric Brown Clouds (ABC) - Asia** was jointly initiated by UNEP and a group of scientists.

TRAINING SCHOOL

Project ABC encompasses capacity building in the region and training of young scientists and senior research students as one of its key programmes. As a part of the ongoing ABC project, jointly funded by the NSF, NOAA, Sida, UNEP and the Ministry of Environment, Energy and Water Resources, Government of Maldives, an **ABC Training School** will be conducted for a period 15 days in **2006 Training School** at the Asian Institute of Technology (AIT) in Bangkok and instrument training at the Maldives Climate Observatory in **Hanimaadhoo**, Maldives, an ABC super observatory.

TRAINING

The participants will be given classroom lectures and tutorials on various aspects of atmospheric brown clouds, as well as hands-on training on operation of a variety of state-of-the-art instruments for atmospheric aerosols, radiation and trace gases measurements, and meteorological observations, and thus facilitated on collection, analysis and interpretation of data obtained. Atmospheric scientists and experts from USA, Germany, Sweden and Japan among others, through teleconferencing if required, will provide lectures and training.

PARTICIPANTS

Senior students, Post Doctoral Fellows and young scientists involved in atmospheric research, preferably from the Asian countries, are encouraged to apply by attaching their curriculum vitae (CV) and a brief description of their research by the end of September to "the Course Director" at:

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For Asian Students: [<ABC_Training-School@rrcap.unep.org>](mailto:ABC_Training-School@rrcap.unep.org)

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FINANCIAL SUPPORT

The participants will be paid for the travel and living expenses for the training period.



Center for
Clouds,
Chemistry &
Climate

