# New physics school aimed at advancing science in Africa

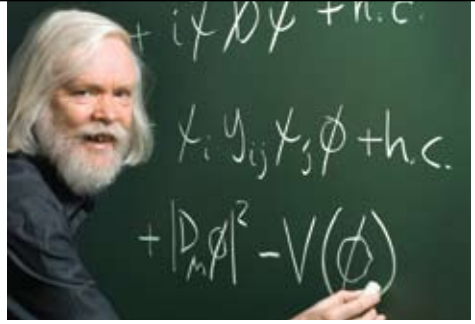

Photo: CERN

What is the matter in the universe made of? How did the universe evolve to what we see today? How will it evolve in the future? These are questions that people have been asking, in different ways, for thousands of years. Today, more than 10,000 scientists from about 100 countries work together on experiments at CERN, Fermilab, and KEK to find answers.

However, some areas of the world are underrepresented in the atlas of particle physics, notably sub-Saharan Africa. Although individual researchers from Ethiopia, Kenya, Madagascar, and Senegal collaborate with CERN, South Africa is the only sub-Saharan country whose research institutions have signed collaborative agreements with the laboratory in Geneva.

This may not be surprising, in view of the other preoccupations of the region. However, it is regrettable: for the African scientists who cannot participate in the great scientific adventure of particle physics; for the global scientific community that is missing out on a vast resource of human brainpower; and for the African countries that are missing out on the benefits that cutting-edge science can bring. In addition to the scientific training of young people and advances in pure scientific knowledge, these benefits include spin-offs in such areas as information technology, electronics, and the use of accelerator and detector technologies in medicine, industry, and energy generation.

Several African countries have recognized the potential benefits of collaboration with large accelerator centers. In 2009, for example, with support from UNESCO, CERN organized workshops for teachers and digital librarians in Rwanda, and groups of teachers from Mozambique and librarians from Rwanda recently underwent training at the laboratory.

These universal aspirations and potential benefits are the motivations behind the effort to establish a new biennial series of African Schools of Physics, the first of which, ASP2010, will be held in Stellenbosch, South Africa, August 1–21.

Organizers expect that 40 of the students will be from Africa and 10 from other regions; this admixture will surely add to the educational value for everyone. African students will receive full financial support. Most participants are expected to be master's degree or PhD students already working in Africa on particle physics, nuclear physics, applied physics, and related fields who are seeking a global dimension to their training. Their future careers are likely to include work on African problems such as the environment and health, as well as academic teaching and basic research.

There have long been other series of physics schools in the region, notably the Chris Engelbrecht schools in theoretical physics. But ASP2010 has a novel profile and will differ significantly in format from established schools in Europe, the United States, and Latin America, reflecting African needs and aspirations.

One distinctive feature of ASP2010 is its scientific scope. In addition to traditional topics in particle physics, it will review general 20th-century physics and new ideas for the 21st century, encompassing both theory and experiments. The curriculum will also address general aspects of information technology, such as distributed grid computing. In another departure, groups of students will work with dedicated mentors in hands-on sessions, with an emphasis on practical applications of physics.

ASP2010 is being organized by an ad hoc group of physicists in South Africa, Europe, and the United States. The contact person is Steve Muanza from the Centre de Physique des Particules in Marseilles, who is originally from Congo. The International Organizing Committee includes Ketevi Assamagan of Brookhaven National Laboratory, originally from Togo, and Stephan Narison of the University of Montpellier, who is from Madagascar. The Local Organizing Committee is made up of South African physicists. One of the most exciting aspects of this project has been the enthusiastic response from a large number of generous sponsors, including major accelerator laboratories and research agencies in France, Italy, Spain, Switzerland, and the United States. The ASP2010 Web site provides more information and lists all sponsors and institutional support: http://africanschoolofphysics.web.cern.ch/.

There has been gratifyingly strong interest from students wanting to participate in ASP2010, particularly students from many sub-Saharan African countries. The participants, mentors, lecturers, and organizers look forward to a unique scientific, educational, and personal experience in August.

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