

Report to IUPAP
Commission 12 – Nuclear Physics
Particles and Nuclei International Conference
October 23-30, 2005
Santa Fe, NM, USA

The 17th conference in the "Particles and Nuclei International Conference" series was held, together with satellite meetings, in Santa Fe, New Mexico, USA, on October 23 - 30, 2005. The first meeting in this series was held in 1963 at CERN. The current meeting addressed a wide range of topics in Nuclear, Particle, and Astrophysics including the latest results from, CERN, DESY, Fermilab, Jefferson Lab, the B factories at KEK and SLAC, RHIC and the Pierre Auger Facility. Plenary talks addressed strong and electro-weak interactions in the context of QCD and the Standard Model, tests of fundamental symmetries and recent developments in Astrophysics and Cosmology. The overall program addressed recent searches for the quark-gluon plasma, deconfinement and the restoration of chiral symmetry, investigation of the strangeness and spin content of the nucleon, searches for the electric dipole moment of the electron and the neutron, together with opportunities for the investigation of new neutrino oscillation phenomena, the running of the electro-weak coupling constant, and CP violation in B decays including physics beyond the Standard Model. New results in the strange, charm, bottom and top quark sectors were reported. Presentations in astrophysics and cosmology addressed dark matter, dark energy, structure in the microwave background, and evidence for an accelerating universe, as well as new results in the search for cosmic rays at ultra-high-energies. Plans for new facilities including the CERN LHC, J-PARC, and the International Linear Collider, as well as plans for facility upgrades at Jefferson Lab. and at GSI, were also discussed. In addition to five days of plenary and parallel talks, and a poster session, the program included three satellite meetings addressing future planning for high-energy heavy ion physics at the LHC and at RHIC as well as new opportunities in neutrino physics. Fermilab, KEK, DESY, and BNL laboratory directors and management led an International Forum on their future physics programs with an active public discussion of the implications of these plans. Peter D. Barnes and Martin Cooper served as co-chairs of the five-day PANIC meeting.

All together, over five hundred and fifty participants attended the PANIC meeting plus the satellite events. These included individuals from North America (377), Europe (113), and the Pacific Basin (47), as well as participants from less developed countries. The three satellite meetings had a total of 161 participants. The Scientific Program Committee developed a broad program of 30 plenary and 335 parallel session physics talks in nuclear, particle, and astrophysics while the poster session included about 130 presentations. Over sixty students attended both the conference and a special student program of physics talks and poster sessions organized by Andrea Palounek.

Members of the local organizing committee came from Los Alamos National Laboratory, the University of Colorado-Boulder, the University of New Mexico, and New Mexico State University to organize the operational aspects of the conference. Financial support for the conference was received from the following organizations and institutions: The International Union of Pure and Applied Physics, Brookhaven National Laboratory, Fermilab, Jefferson Laboratory, Los Alamos National Laboratory, the University of New Mexico, the Department of Energy, and the National Science Foundation.

In addition to the PANIC conference a special evening lecture was organized for the general public. Wendy Freedman of the Carnegie Observatories give a lecture entitled "The Accelerating Universe" to an audience of about 250.

The American Institute of Physics will publish the proceedings of the conference.

The next meeting, the 18 th in the series of Particles and Nuclei International Conferences, will take place in Eilat, Israel in 2008. The co-chairs are Itzhak Tserruya (Weizmann Institute, <itzhak.tserruya@weizmann.ac.il>), Daniel Ashery (Tel Aviv University), and Abraham Gal (The Hebrew University in Jerusalem.) November 14, 2005