

## PREFACE

The twenty-second Particle Accelerator Conference, PAC'07, took place at the Albuquerque Convention Centre in Albuquerque, the largest city in New Mexico, from Monday to Friday, 2007 June 25 to 29. It was attended by over 1350 delegates from 25 different countries (63% North America, 24% Europe, 11% Asia and 2% Other), and was held under the auspices of the two professional societies that oversee and make holding this series of conferences possible, the Division of Physics of Beams within APS, and the Nuclear and Plasma Sciences Society within IEEE. As host of the conference, Los Alamos National Laboratory (LANL) is especially thanked for their many contributions and assistance both prior to and during the conference. The Convention Center was an ideal location for information sharing and discussions between the interdisciplinary aspects of the accelerator community, as well as for related meetings and ad-hoc "rump" sessions.

As an incentive for joining the professional societies, PAC'07 was the first PAC conference to offer reduced conference registration fees for IEEE-NPSS and APS-DBB members, as well as for retirees and students.

Prior to official start of the conference, a PAC'07 sponsored Science Weekend open to the public was a successful event held in the lower lobby of the Convention Center on Saturday June 23. Many young individuals experienced the wonders of magnets, electricity, plasmas and vacuum. On Sunday afternoon June 24, a special student poster session was held to allow young researchers to interact with each other and to provide a forum for reviewing their work by peers in the community.

As at previous conferences in the series, the attendance of 70 young scientists from all over the world was made possible by sponsorship from ANL, APS-DPB, EPS-AG, IEEE-NPSS, LBNL, NSF and TJNAF. In addition, four \$500 cash awards and two honorable mention certificates for best student papers were awarded, sponsored by IEEE-NPSS and EPS-AG.

Stan Schriber, LANL and Michigan State University, Chair of the PAC Organizing Committee (OC) opened the conference. CERN's Lyndon Evans, Leader of the LHC Project, opened the scientific program with a presentation entitled *LHC: Construction and Commissioning Status*. Chan Joshi, UCLA, gave the closing presentation on *Plasma Accelerators – Progress and the Future*. Two hundred and twenty-one invited and contributed oral presentations of very high quality were made during the week.

An excellent scientific program was organized by the Scientific Program Committee (SPC) chaired by Robert Garnett, LANL. It spanned five days, with scientific plenary sessions Monday morning and Friday afternoon. Also in plenary session were the Awards Ceremony and a special session on International Industrial Forums for the ILC. Three parallel oral sessions were held the rest of the week, with seven poster sessions scheduled throughout the week. The scientific program boasted 121 invited papers, 100 contributed oral presentations, and more than 1400 poster presentations, and 1400 contributions are published in the present proceedings.

An industrial exhibition (intermixed with the poster and coffee break areas) took place during the first three days of the conference. Sixty-four companies presented their high technology products and services to the delegates in an excellent atmosphere conducive to discussions. Their participation enhanced the scope of the conference.

The Awards Ceremony in honor of Louis Costrell's many contributions for PAC over the years (now named the Louis Costrell Awards Session) was a highlight of the conference. Lee Teng of ANL received the APS Robert R. Wilson Prize, Jeroen van Tilborg of LBNL and TU-Eindhoven received the APS Award for outstanding doctoral thesis research in beam physics. Two IEEE-NPSS awards went jointly to Satoshi Ozaki and Michael Harrison of BNL for leadership in the successful design and construction of RHIC, and to Victor Malka, CNRS, Palaiseau, for groundbreaking work on laser-plasma accelerators.

The US Particle Accelerator School awards went to Sergei Nagaitsev, FNAL, and to Yaroslav Derbenev, JLAB. Furthermore, Mark Hogan, SLAC; Norbert Holtkamp, ITER (formerly ORNL); Alexander Lumpkin, ANL; Lia Merminga, TJNAF; Sergei Nagaitsev, FNAL and Petr Ostroumov, ANL were announced as newly elected APS-DPB Fellows. Wim Leemans, LBNL and Warren Mori, UCLA were announced as newly elected IEEE-NPSS Fellows relevant to the field of accelerators.

The special Physics Teacher's Day held Wednesday June 27 was a great success because of the time and effort contributed by Hillary Smith, Mike Thout, Dave Swellenbach, Jacob Flanz, Alan Hurd, Bruce Carlsten and S. Y. Lee.

The conference banquet with preceding reception entertained by a traveling mariachi band (Mariachi Nuevo Sonido) was a big success with 1020 attendees. The highlight of the banquet was the Ice Mountain Dance Group, especially the very young members of this local dance troupe. The companion program was well attended and explored

many interesting regions of the Land of Enchantment. Although there were last-minute “glitches” to the Los Alamos area tour, most participants enjoyed the opportunity to see some of the aspects of Los Alamos and the Bandelier National Monument. We apologize to those affected by last minute changes to the tour made by LANL officials.

The main medium for the proceedings of this conference is publication on the JACoW site ([www.jacow.org](http://www.jacow.org)). There will be no hard copy volumes. The processing of the electronic files of contributions prior to, during and after the conference, was achieved by a dynamic team composed of 17 "seasoned experts" and volunteers from the Joint Accelerator Conferences Website (JACoW) collaboration. Thanks to the dedicated, professional job accomplished by this team, a pre-press version of these proceedings was published less than 5 working days after the conference. This final version is published at the JACoW site one month after the conference.

Two significant actions took place during the conference that will have impacts for future PAC conferences in North America. At the PAC OC Tuesday evening meeting it was approved unanimously to join the Europeans and Asians in a three-year-cycle international conference series while maintaining a North American PAC series interspersed with these international conferences such that a PAC type conference (international or North American) will occur in North America on an approximate 18 month separation schedule. The second action was a unanimous approval by the PAC Coordinating Committee (composed of past, present and future PAC, EPAC and APAC chairs) to start the international series of conferences in 2010 in Kyoto, Japan, with 2011 in Valencia, Spain and 2012 in North America (location TBD). Our next North American PAC style conferences will be held in Vancouver, Canada in 2009 and in New York, New York in 2011.

Special thanks on behalf of the attendees, sponsoring agencies and the host go to all who helped in numerous ways before, during and after the conference. Their dedicated and enthusiastic efforts made the conference a success and made the whole process function smoothly. We ran into a number of “glitches” that were handled in a professional and appropriate manner, without detracting from the main aspect of the conference. The success of PAC’07 can be attributed to the efforts of the OC, the SPC, and the LOC chaired by Tsuyoshi Tajima: Shirley Atencio, Alberto Canabal, Michael Carter, John Eddleman, Sherry Hardage, Robb Kramer, Roberta Lopez, Vangie Martinez, Valerie Miller, Christine Petit-Jean-Genaz, William Roybal, Andrea Sanchez, Rich Sheffield, Hillary Smith, Tamson Smith, Lorraine Stanford and Peggy Vigil, and to all of the volunteers from future and past PACs and from our sister conferences EPAC and APAC, who joined the team during the conference proper. All contributed untiringly to making this conference a success.

Sincere thanks to two special individuals who worked many extra hours and gave up much of their usual lifestyle to ensure that this conference would be an outstanding success. Behind the scenes encouraging everyone on the team was Christine Petit-Jean-Genaz, and up front was Lorraine Stanford. Without their support, guidance, encouragement and constant advice, I would not have been able to perform my role as chair of the conference.

Stan Schriber, Chair of the PAC’07 Organizing Committee

A handwritten signature in black ink, appearing to read 'Stan Schriber', written in a cursive style.