

OCPA9 Beijing—A Multi-Faceted Meeting of Chinese Physicists and Astronomers Worldwide and International Colleagues and Friends

Over 400 colleagues, distinguished scientists, postdoctoral associates and students, came to Beijing to participate in the 9th Joint Meeting of Chinese Physicists and Astronomers Worldwide (OCPA9), held at Tsinghua University, July 17-20, 2017 (Fig. 1 Conference Photo).



Fig. 1 OCPA9 Conference Photo. (Click on photo for a higher resolution version.)

The OCPA9 Conference continues the tradition of the previous eight conferences, and follows the OCPA8 Singapore conference, held in 2014. As in the past, the conference featured two main components: (1) latest scientific results, and (2) physics education. The full program included 16 plenary talks, 60 parallel sessions in 13 subfields, 3 general forums, and 2 topical forums. In addition, a well-attended High School program took place on Sunday, July 16, with the participation of 650 selected high school students and teachers from around Beijing, and all parts of mainland China (Fig. 2).



Fig. 2 OCPA9 High School Program, which took place on Sunday, July 16, 2017. Left panel—Prof. Qi-Kun Xue (Vice President, Tsinghua University), delivering a talk to the students. Middle panel—Prof. Albert M. Chang (Duke University; 2015-2016 OCPA President) delivering his talk. Right panel—high school student audience.



Fig. 3 Nobel Laureate, Prof. Steven Chu (Stanford), delivering a public lecture on “Climate Change and Paths to a Sustainable Energy Future,” on the evening of July 16, 2017.

The conference was co-hosted by OCPA—the International Organization of Chinese Physicists and Astronomers, and Tsinghua University. Prof. Albert M. Chang, Duke University and OCPA President 2015-2016, and Prof. Qi-Kun Xue, Vice President, Tsinghua University, served as the respective conference co-chairs. The local organizing institutions included: Tsinghua University, Peking University, the Institute of Physics (Chinese Academy of Sciences), and the Collaborative Innovation Center of Quantum Matter. The program committee co-chairs were Profs. Xincheng Xie (Peking University), Zhong Fang (Institute of Physics CAS), Gui-Lu Long (Tsinghua) on the local side, and Prof. Haiyan Gao (Duke and Duke Kunshan) on the OCPA side. In addition, current OCPA president, Prof. Nu Xu (Central China Normal University and Lawrence Berkeley National Laboratory), was instrumental in much of the organization, including the High School Program. OCPA divisional coordinators and many local colleagues organized the large parallel session program. OCPA vice president Prof. Dongping Zhong organized the APS-OCPA Outstanding Conference Poster Award program.

The themes of the conference were on “New Opportunities in Physics,” and on International Collaboration regarding Physics Education. As such, the topical focus of the scientific program included topological matter, quantum computing, neutrino physics, gravity wave and dark matter detection, next generation particle colliders and photon sources, nanophotonics, and cutting-edge protein structure determination, next generation light-emitting diodes, and novel medical applications such as high resolution ultra-sound imaging. The general forums included a Nobel Laureate/Distinguished Scientist forum (please see below), a Forum on Women in Physics, and a Physics Education Forum on International Collaboration. For the Physics Education Forum, Dr. Amy Flatten (Director of International Affairs for the American Physical Society), and Dr. Joseph Niemela (ITP, Trieste, and the European Physical Society leader for

their Physics for Development Program) were on the forum panel and provided a broad, global perspective. The topical forums were in the accelerator and nuclear areas. As an added attraction, Nobel Laureate Prof. Steven Chu (Stanford) gave a public lecture on “Climate Change and Paths to a Sustainable Energy Future,” to an overflowing and captivated crowd on Sunday, July 16, evening (Fig. 3).



Fig. 4 The Nobel Laureates/Distinguished Scientists Forum on “Different Approaches to Cutting-Edge Research.” The panelist from right to left: Profs. Barry Barish (Caltech), Takaaki Kajita (Univ. Tokyo, ICRR), Steven Chu (Stanford), Shuji Nakamura (Univ. California, Santa Barbara), with Albert M. Chang (Duke University; 2015-2016 OCPA President) on the left.

Four Nobel Laureates participated in OCPA9: Profs. Steven Chu (Stanford), Takaaki Kajita (Univ. of Tokyo-ICRR), Shuji Nakamura (UC Santa Barbara), and C.N. Yang (Tsinghua, Institute of Advanced Studies-IASTU). Profs. Chu, Kajita, and Nakamura each gave a riveting plenary talk in the Monday (July 17) morning opening session chaired by Qi-Kun Xue. Chu spoke on “Bio-imaging, Batteries, and Beyond,” Kajita on “Neutrino Oscillations,” and Nakamura on “Blue-Green Lasers and the Future of Lighting.” The Nobel laureate plenary session was followed by a Forum of Nobel Laureates and Distinguish Scientists. The discussion centered on the topic, “Different Approaches to Cutting-Edge Research.” The forum panelists included Yang,

Nakamura, Kajita, Chu, and Prof. Barry Barish (Nobel Laureate, October 2017; Caltech, LIGO Gravity Wave Detector), with Albert M. Chang as the moderator (Fig. 4). In addition to the invaluable insight put forth by each of the panelists, active audience participation helped make this a truly productive and memorable event.

The plenary talks were uniformly stimulating. The full list of internationally well-known speakers, in addition to Chu, Kajita, and Nakamura, included: Profs. Barry Barish, Hui Cao (Yale; Mesoscopic Optics), Zhong Fang (IoP CAS, on Weyl fermion semimetals), Shangjr Gwo (Taiwan National Synchrotron Radiation Research Center; on the latest synchrotron status), Xiangdong Ji



Fig. 5 Plenary talks delivered by: Profs. Barry Barish (Caltech, LIGO)—left, Yifang Wang (IHEP, Beijing)—middle; and Yu Wei (Southeast University, China)—right.

(Shanghai Jiaotong Univ., and U. Maryland; on PandaX Dark Matter detection), Yuxin Liu (Peking Univ., on Physics Education in China), Chris Monroe (U. Maryland; on ion trap quantum computing), Zhixun Shen (Stanford; on High Tc superconductors), Yigong Shi (Tsinghua, on protein structure), Yayu Wang (Tsinghua; on Topological Insulators), Yifang Wang (IHEP, Beijing; on the future of particle colliders in China), Yu Wei (Southeast University; on Physics Education Research in China), Shoucheng Zhang (Stanford; on Topological Insulators). Fig. 5 shows several speakers.



Fig. 6 A parallel session (left), which took place in Building No. 6 on Tsinghua campus (right).

The 60 parallel sessions on the 13 topical areas (below) saw well-attended sessions (Fig. 6) with many colleagues holding discussions in the hallways during intermission and afterwards. The enthusiasm of the speakers and audience in these parallel sessions was remarkably consistent throughout the conference. There were too many outstanding talks to be able to cover in this short article. The full list of talks will be made available on the OCPAWEB website of the OCPA organization (<http://ocapweb.org/home/>) in the near future. The 13 topical areas include: accelerator physics, atomic and molecular physics, astrophysics and astronomy, biophysics, chemical physics, computation and mathematical physics, condensed matter physics, cosmology and gravitation, high energy and particle physics, nuclear physics, physics education, plasma physics, and statistical & nonlinear physics.

The conference participants came from many regions of the world, making this a truly international conference. Mainland China, US, Japan, Taiwan, Hong Kong, Macau, Singapore, Canada, Europe (UK, Italy), and Australia, were all represented. Of the 16 plenary speakers, 2 were female colleagues (Profs. Hui Cao and Yu Wei). Overall, the percentage of female participants is estimated to be $\sim 12\%$.

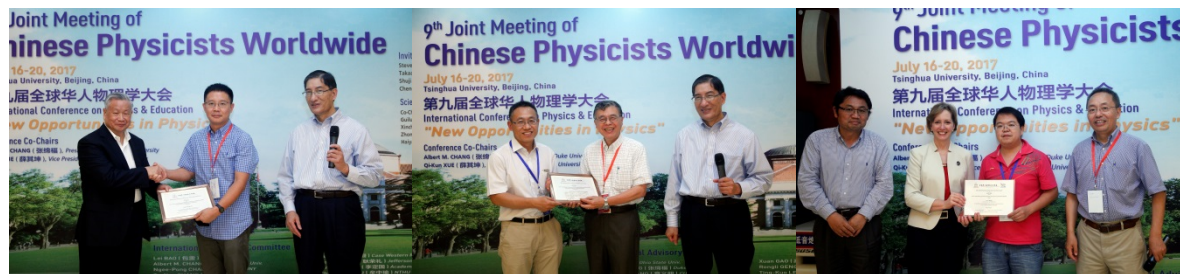


Fig. 7 Left panel—Macronix International Co., Ltd., Chairman, Mr. Miin Wu, presenting the 2016 Outstanding Young Researcher Award to Prof. Haibo Yu (Univ. California, Riverside), with Prof. Albert M. Chang (Duke; 2015-2016 OCPA President) on the right; middle panel—Prof. Tu-Nan Chang (University of Southern California) presenting the 2016 Achievement in Asia (Robert T. Poe Prize) to Prof. Zheng-Ming Sheng (Shanghai Jiao-Tong Univ.); right panel—APS Director of International Affairs, Dr. Amy Flatten, co-presenting the OCPA9 APS-OCPA Outstanding Conference Poster Award to Mr. G.Y Zhang (University of Science and Technology, Hefei, China), along with Prof. Dongping Zhong (Ohio State and OCPA Vice President) on the left, and Prof. Nu Xu (Central China Normal University, Lawrence Berkeley National Laboratory and current OCPA President) on the right.

The conference reception and banquet provided participants the opportunity to socialize in a more informal setting. At the banquet on Wednesday, July 19, the 2016 OCPA Award ceremony took place. The prestigious awards include the Achievement in Asia Award (Robert T. Poe Prize), Outstanding Young Researcher Award (Macronix Prize), the inaugural Outstanding Dissertation Award, and the 2017 APS-OCPA Outstanding Conference Poster Award. Fig. 7 shows several award recipients receiving their Awards. The conference reception, held on

Monday evening in the Gymnasium, featured a large dance floor, and a Tsinghua student traditional music orchestra (Fig. 8). During the reception, conference participants had the opportunity to enjoy good food, good music, and even listen to conference participants sing Chinese opera and karaoke of popular songs.

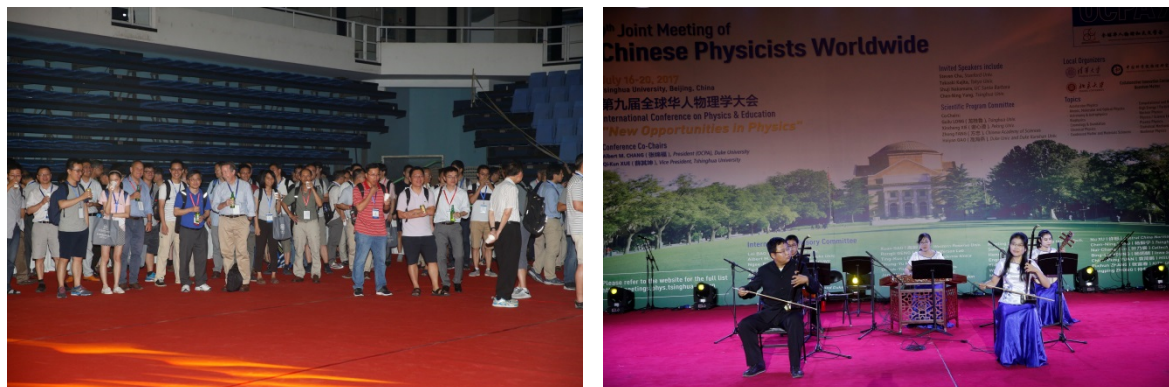


Fig. 8 OCPA9 conference reception scene (left), and the student ensemble playing traditional Chinese music (right).

Tsinghua University was an extraordinary partner for hosting OCPA9. The University provided the venues, manpower and the resources to make OCPA9 a success. In addition, OCPA9 gratefully acknowledges funding support by the organizing institutions, and the China National Natural Science Foundation.



Fig. 9 The Tsinghua team. In the second row, Cuiyun Gan is to the immediate right of Prof. Qikun Xue, with Chang Lin to the left (with flowers). Profs. Yalu Wang and Guilu Long stand to the left of Chang Lin. Wanchen Liang is 3 positions to the right of Cuiyun Gan. Yalan Feng is in the first row, and does not have a light green/yellow T-shirt.

The organization and smooth running of this important conference could not have taken place without the expertise and diligence of the local staff at Tsinghua and student volunteers. Fig. 9 shows Prof. Qi-Kun Xue with the staff: Cuiyun Gan (coordinator), Wanchen Liang (OCA9 Web administrator and registration coordinator), Chang Lin (travel coordinator), and Yalan Feng (conference workbook editor), along with the volunteers.

The next OCPA conference, OCPA10, is tentatively scheduled to take place in 2020, in Taichung city, Taiwan. If the planning is successfully completed, the co-hosts will be the National Chung-Hsing University and the Academia Sinica, Taipei. On behalf of OCPA, I cordially invite you to OCPA10.