KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Connecting the Scientific Community

Keystone Symposia's recently concluded meeting on "**Tuberculosis: Biology, Pathology and Therapy**" was the largest-ever for the organization. Held January 25-30, 2009 at Keystone Resort in Colorado, it attracted a record 633 participants, including 27 speakers and organizers, who traveled to Colorado from 41 different countries. While plenary sessions focused mainly on the biology of how the disease behaves, practical workshops were also held on "TB Drug Discovery: Connecting Academia and Industry" and "Tuberculosis Databases and Bioinformatics Tools."

Keystone Symposia's tuberculosis meeting is typically held every two years and has now been convened seven times; the first meeting took place in Durango in 1995. Attention to the topic has grown in recent years due to the emergence of multi-drug-resistant (MDR) and extremely-drug resistant (XDR) strains of the bacteria which causes TB, as well as the high co-infection rate of TB and HIV in HIV/AIDS patients. While a leading cause of death in the developing world, TB is also of growing concern in the developed world due to increasing levels of global travel and mobility. The disease kills approximately two million people worldwide each year.

Entitled "Tuberculosis: Biology, Pathology and Therapy," the 2009 meeting was part of the Keystone Symposia Global Health Series, which is supported by the Bill and Melinda Gates Foundation. The Foundation funded 54 Global Health Travel Awards that enabled scientists from developing countries to attend the conference. For some, it was the first time they had visited the United States. Mulualem Agonifir Gadena, a Project Leader Ethiopia's only MDR/XDR diagnostic facility, described his excitement at being able to form collaborations with other scientists around the world, leading to new insights and possible funding. "It's a dream come true," he said. Mohamed Ridha Barbouche from Tunisia primarily studies immunodeficiencies in children. It was his second time in the United States as he had previously studied at Cornell University as a post-doc. He commented about the meeting, "The science was excellent, and the fruitful exchanges we had with colleagues were really useful and helpful."

Valerie Mizrahi, a Research Professor at the University of Witwatersrand in Johannesburg, South Africa, spoke on the program about "*Novel and Vulnerable Pathways of DNA Metabolism in Mycobacteria*" and later commented about how the disease is "completely out of control in South Africa" with 1000 new cases per 100,000 people annually (i.e., half a million new cases per year). She is heartened by progress in the field, however, saying, "I have never seen greater scientific activity. More has been done in the last five years than in the last 120 years."

Liz Corbett, a lecturer at the London School of Tropical Hygiene who also works in Zimbabwe as a clinical epidemiologist, echoed these sentiments and said she is "quite optimistic" about the prospects for better diagnostics and drugs. "The field has such dynamism right now; having been quite sleepy, it has woken up."

In his concluding address, Clifton E. Barry III shared his belief that "something fundamentally is changing in the TB field," and that there are "some signs at this meeting that we're near an epiphany." He particularly pointed to the stunning work being done in systems biology using new computer models, as well as various other breakthroughs in studies of chemotherapy and other therapeutic areas.

JoAnne L. Flynn of the University of Pittsburgh, David G. Russell of Cornell University, and Dick N.A. Thomas of Novartis Institute for Tropical Medicine were the scientific organizers of the meeting.

Keystone Symposia will be holding another TB meeting in 2009 called "**Overcoming the Crisis of TB and AIDS**" that is also part of the Keystone Symposia Global Health Series. This is tentatively scheduled for October 20-25, 2009 in Arusha, Tanzania. More information is available at www.keystonesymposia.org/9T2.