

## Los Alamos Medal recipients selected

*By James E. Rickman*

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Laboratory Fellow Robert Cowan and former Laboratory Director Sig Hecker have been selected as recipients of the 2008 Los Alamos Medal, the institution's most prestigious award.

Established in 2001, the Los Alamos Medal is the highest honor the Laboratory can bestow upon an individual or small group. Laboratory Director Michael Anastasio will present the medals to Cowan and Hecker during a formal awards ceremony and reception.

A distinguished committee selected Cowan and Hecker from a pool of applicants based on stringent criteria. Among other considerations, the review committee determines whether winners have made a contribution that changed the course of science, facilitated a major enhancement to the Laboratory's ability to accomplish its mission, had a significant impact on Lab sustainability, and established a major direction for the institution or the nation.

The committee selected Cowan "based on recognition of his work as a technical leader and an outstanding mentor who is responsible for major enhancements of the Laboratory's ability to accomplish its mission."

Cowan of Atomic and Optical Theory (T-4) is known internationally and respected as the father of numerical atomic physics, according to the committee's recommendation. "His renowned expertise in atomic structure and spectra significantly shaped many scientific disciplines, including equation-of-state and weapons design, spectroscopy, opacity, astrophysics, magnetic confinement fusion, inertial confinement fusion, condensed matter and molecular physics, plasma diagnostics, special line broadening, and basic research," the committee wrote.

Cowan's book, *The Theory of Atomic Structure and Spectra*, documents methods he used in weapons-design calculations and equation-of-state models. Though published originally in 1981, the book still is used today. Cowan's mathematical codes have been utilized in 34 countries and his work has been referenced more than 8,700 times, including 3,000 references to his book alone.

Hecker, Director Emeritus, was selected by the committee "based on his many important and signature contributions to scientific research as a technical staff member, to the management of science at Los Alamos during his brief but critical leadership of the emergent Center for Materials Science and later as Laboratory director, and to national policy, including stockpile stewardship and plutonium aging, engaging Russian nuclear weapons scientists after the collapse of the Soviet Union, promoting the importance of the study of terrorism as an emerging threat, and acting as a senior representative of the nuclear weapons complex in the North Korea nuclear weapons situation."

Hecker's contributions to the science of plutonium metallurgy and his scientific leadership have been recognized by election to the National Academy of Engineering, as a Fellow of the American Physical Society, as a foreign member of the Russian Academy of Sciences, a member of the American Academy of Arts and Sciences. Hecker also received the U.S. Department of Energy's E.O. Lawrence Award, the committee wrote.

As Laboratory director, Hecker helped transition the Laboratory to a post-Cold-War environment and promoted collaboration with Russian nuclear laboratories to secure and safeguard the ex-Soviet stockpile of fissile materials, the committee wrote. "As both a scientist and as a manager, Hecker was a passionate and eloquent spokesman for science, a legacy that will continue to be felt at Los Alamos for many years."

Cowan and Hecker join a small but extremely distinguished coterie of past Los Alamos Medal winners, including Nobel Laureate Hans Bethe, former Laboratory Director Harold Agnew, and Louis Rosen, father of the Los Alamos Neutron Science Center.