Message from William Priedhorsky

Supporting Science in the 21st Century

America is currently facing energy, security, and environmental challenges that, in their scope and complexity, are perhaps unparalleled in the nation's history. In that context, the national laboratories are being called on to provide the scientific breakthroughs that will be needed to develop long-term solutions.

Scientific breakthroughs, however, seldom arise spontaneously from individual talent, but from a critical mass of talented individuals who are supported by an institution committed to basic research. In addition to facilities and equipment, the institution must provide researchers with financial support to pursue what are often high-risk, big-payoff ideas.

Los Alamos and the other national laboratories not only foster a research environment that is conducive to scientific innovation, but through institutional Laboratory Directed Research and Development (LDRD) programs, also provide critically needed financial support. Congress authorizes the labs to spend at their discretion a small fraction of their budgets (capped at 8 percent for National Nuclear Security Administration labs) in order to build technical capabilities and to explore ways to meet future mission needs.

At Los Alamos, that small financial investment has traditionally yielded an exceptional return. The technical output of LDRD researchers—patent disclosures, peer-reviewed publications, and publications cited by other authors—typically accounts for fully one-quarter of the Laboratory's total. Much of the Laboratory's scientific capabilities, from energy security to large-scale infrastructure modeling, from actinide science to nuclear nonproliferation and detection, can be traced to LDRD investment.

More important, LDRD gives Los Alamos the means to recruit and retain the finest scientific talent. Of the 45 technical staff members hired last year, half were former postdoctoral students supported by LDRD projects. Most of the researchers featured in this issue of 1663 have received or are currently receiving LDRD funding.

It is the role of the national laboratories, and especially the national security laboratories, to advance the science that will form the foundation of tomorrow's technology. Through our robust LDRD program, Los Alamos will be able to sustain the scientific workforce required to meet the nation's long-term national security science needs.

Program Director for LDRD