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## Invest more now

By Newt Gingrich and Bart Gordon

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Throughout history, national security has been dependent on economic prosperity, and visa versa. An economically strong America is better able to defend itself. Likewise, the nation's ability to defend itself is a prerequisite to maintaining the infrastructure and other elements of a strong national economy.

Unfortunately, the nation has forgotten one of the most important ways our economic prosperity and national security are linked — investment in fundamental scientific research. Investments made in fundamental scientific research after World War II and during the Cold War have been essential to making our fighting men and women today the best equipped in the world. These previous investments and the new knowledge they generated also made enormous contributions to our economic vitality.

But our commitment to that defense-oriented fundamental research — the kind of research that pays off not in a year or two but in the long run, sometimes decades in the future — has eroded. If we do not renew this commitment, it will harm our global economic competitiveness as well as the effectiveness and safety of our troops.

The extraordinary technologies upon which today's military equipment is based come from an extraordinary research and development enterprise. The foundation of that enterprise is the basic scientific research funded by the Department of Defense. Unfortunately, the national commitment to investing in basic defense research has waned in recent years, with funding levels essentially flat for several years and the overall percentage of the Pentagon budget devoted to such research significantly less than it was in the 1980s.

While spending on overall defense research and development has increased significantly over this period, this spending has been focused on development and testing of major weapons systems and advanced technologies. Yet even these advanced weapons systems are dependent on fundamental discoveries made years or even decades ago.

We take for granted advances in military equipment from decade to decade, but imagine having fought wars from World War II to the defeat of the Taliban in Afghanistan and Saddam in Iraq without the use of radar, lasers, stealth technology, fiber-optic-based communications, satellite and global positioning system (GPS) navigation, and precision guidance technologies. These technologies have at least one thing in common — all are the end result of basic research — much of which, by the way, took place on the campuses of our nation's universities.

Most of them have something else in common. Consider how some of these technologies — GPS, radar, lasers, fiber-optic communications — have been converted to civilian uses in areas ranging from manufacturing and transportation to telecommunications and health care, with great benefit to our economy and our quality of life. And then there is the Internet, which was the result of defense researchers looking for a fail-safe communications network

that could survive a nuclear attack.

In addition to creating specific "dual-use" technologies, defense research plays an important role supporting scientific fields essential to both our economy and our security. Historically, the Defense Department has invested heavily in research in the physical sciences and engineering. More than one-third of all engineering research comes from the Defense Department, and it is one of the largest supporters of research in electronics, computers, mathematics, aeronautics, material science, mechanics and the environmental sciences, especially oceanography.

President Bush and Congress have shown over the past decade that they understand the importance of basic research to the economy and to our health. First, Congress, with both the Clinton and Bush administrations, doubled the size of the National Institutes of Health, laying the groundwork for extraordinary advances in biomedical research.

Last year, the president took the next logical step — his most important new economic proposal — doubling basic research in the physical sciences and engineering at three key research agencies that fund basic university research: the National Science Foundation, the Department of Energy Office of Science and the National Institute of Standards and Technology.

Notably absent from the president's proposal, however, were major increases for basic research at the Defense Department. But like the research supported by these other agencies, funding for basic defense research is essential to our economic competitiveness.

Therefore, we are joining the Task Force on the Future of American Innovation, a coalition of business and academic organizations, in calling on the president to add Department of Defense research to his competitiveness initiative, make this a part of his State of the Union address later this month, and include it in his budget in February.

National security and economic competitiveness are linked in reality — they should be linked by national policy as well.

*Newt Gingrich is the former speaker of the House. Rep. Bart Gordon is chairman of the House Committee on Science and Technology.*