- ways to better protect physical infrastructure (power plants, buildings, etc.)
- improved identification techniques
- prevention of and response to biological and chemical attacks
- social research on causes of terrorism and reactions to terrorism

Development in these areas has been assisted with $40 billion funded through the *Emergency Appropriations Act*, passed in response to the September 11th attacks. Federal counter terrorism R&D in FY 2002 appropriations nearly triple the FY 2001 funding level and will continue in FY 2003 and 2004. Federal counter-terrorism R&D is funded through 11 different federal agencies.

Environmental Issues: climate change, air and water quality.
Further research on the effects of humans on the global climate. Improvement in air and water quality in the US. Also, investigating ways to deal with the issues of the Kyoto Protocol.

Energy Issues: development of alternative energy sources, and conservation.
Seeking ways in which to encourage more efficient use of fossil fuels, fuel efficient practices, alternative energy sources and new ways to generate energy.

Education: furthering research and encouraging studies in math and science.
The need for the scientific and engineering communities to come together and address the increasing workforce and education concerns, especially the declining number of students majoring in math and science-related fields. Continuing to keep US education system and universities open to foreign students, who help further the advancement of US society.

Future Opportunities for Collaboration with the European Union.
The US has shown recent motivation to work towards encouraging further opportunities for collaboration between the US and EU R&D systems.

Societal Outcomes of R&D and Public Accountability.
Greater public influence over the direction of new technology which will help to ensure the integrity of the R&D process. Encourage R&D policies that work toward societal solutions and outcomes. Better integration of science policy with other areas of policy, initiated by the White House. The solving of urgent social problems where basic science has not been deployed, especially where technology is displacing people. Rather than seeking ways to control problems after they have occurred, seek long term solutions to prevent problems from happening.

New Science and New Facilities.
The advances in nano-technology, biotechnology and materials will require massive computing power, not easily available to the postgraduate researchers. The NSF program for very high power distributed computing, available over very high speed Internet, to major and small universities in every US state - perhaps all North American universities - is a program in its second year. This could be the "surprise" strategy that catches other countries out of step, although those with a high-speed countrywide Internet infrastructure are in the best position to compete with the US in this frontier. In FY 2003, funding for seven major projects is requested through the NSF. Five projects initiated in FY 2002 and prior years include: Construction of the Atacama Large Millimeter Array (ALMA); the Large Hadron Collider (LHC); the Network for Earthquake Engineering Simulation (NEES); the South Pole Station Modernization Project (SPSM); and Terascale Computing Systems. Two new projects are proposed: EarthScope and the National Ecological Observatory Network (NEON) Phase I.