



Side-by-Side Comparison of the U.S. Senate's National Innovation Act (NIA), its PACE Legislative Package (3 bills) and President Bush's American Competitiveness Initiative (ACI) as of March 2006

Key Issue	Agency	National Innovation Act (NIA) (S. 2109)	Protecting America's Competitive Edge (PACE) Acts – Energy (S. 2197), Education (S. 2198), and Finance (S. 2199)	American Competitiveness Initiative (ACI) President Bush 2/06
Research Funding	National Science Foundation	Doubles funding for research over 5 years (\$860 M to \$840 M/yr) [\$6.44 B (15.6% increase) FY 2007; \$9.8 B FY 2011]	<ul style="list-style-type: none"> Nearly doubles the NSF Research and Related Activities budget 10%/yr over 7 years. [\$4.195 B (FY 2007); \$7.432 B (FY 2013)] Authorizes research grants for early-career scientists and engineers for purposes of pursuing independent research with funding increasing \$6.5M/yr for 5 years [\$6.5 M (FY 2007); \$32.5 M (FY 2011)] 	Doubles research funding over 10 years (~7%/yr) [\$6.02 B (7.8% increase) FY 2007; \$11.16 B FY 2016]
Research Funding				
Research Funding	Department of Energy		<ul style="list-style-type: none"> Nearly doubles budget for basic research, development, demonstration, and commercial application activities over 7 years [\$4.15 B (FY 2007); \$7.08 B (FY 2013)] Establishes Advanced Research Projects Authority – Energy (ARPA-E) [\$300 M (FY 2007); \$1 B (FY 2011)] 	Doubles research funding at DOE Office of Science over 10 years (~7%/yr) [\$4.10 B (14% increase) FY 2007; \$7.19 B FY 2016]
Research Funding				
Research Funding	National Institute of Standards and Technology (Department of Commerce)	Increases R&D funding in collab. w. private sector over 5 years [\$20 M (FY 2007); \$100 M (FY 2011)] to support: <ul style="list-style-type: none"> Activities under the Small Business Innovation Research Program (SBIR), the Small Business Technology Transfer Program, and DoD's Manufacturing Technology Program Development of prototypes for new technologies with the creation of Test Beds Development of an innovation focus at the Manufacturing Extension Partnership (MEP) 	-	Doubles “core” (research and construction) funding over 10 years (~7%/yr) [\$540 M (5.8% decrease) FY 2007; \$1.14 B FY 2016]
Research Funding				
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Research Funding	Department of Defense	<ul style="list-style-type: none"> Allocates 3% of total DOD budget toward science and technology research with 20% of this amount toward basic (6.1) research. This analysis does not cover Defense Advanced Manufacturing 	<ul style="list-style-type: none"> Increases DoD 6.1 basic research budget 10% annually through 2013. [\$1.616 B (6.1) (FY 2007); \$2.862 B (FY 2013)] Authorizes creation of research grants for early-career scientists and engineers for purposes of pursuing independent research with funding increasing \$2.5 M/yr for 5 years [\$2.5 M (FY 2007); \$12.5 M (FY 2011)] Supports recommendations on “deemed export” controls at universities by defining basic R&D is exempt. 	\$5.9 B for basic & applied research in FY '07 = ~ 8% increase in FY 2007 over FY 2006 budget request.
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Education	National Science Foundation	<p>Innovation-Based Experiential Learning Program: Authorizes \$10 million in FY '07 and \$20 million thereafter at NSF for a new Innovation-Based Experiential Learning Program that will provide grants to local agencies for STEM fields.</p>	<p>Teacher Recruitment and Retention</p>	<p>Teacher Recruitment and Retention</p>	
Education		<p>Graduate Research Fellowship Program: Authorizes an additional \$34 million per year from FY '07-11 for NSF to expand the Graduate Research Fellowship Program by 250 fellowships per year over five years.</p>	<p>NSF Director to award 2 types of fellowships to math and science teachers:</p> <ul style="list-style-type: none"> • \$10,000 annually for four years to individuals who complete a baccalaureate degree in science, engineering, or mathematics, with concurrent teacher certification, and teach as a full-time mathematics, science or elementary school teacher in a high-need public elementary or secondary school; and 	<p>Proposes an Adjunct Teacher Corps to encourage up to 30,000 math and science professionals to become adjunct high school teachers</p> <p>Improving the Skills of the Existing Teacher Workforce</p>	
Education		<p>Integrated Graduate Education & Research Traineeship Program: Authorizes an additional \$57 million per year from FY '07-11 for NSF to expand the Integrated Graduate Education and Research Traineeship program by 250 traineeships per year over five years.</p>	<ul style="list-style-type: none"> • \$10,000 annually for five years to teachers who have successfully completed a master's degree in science or mathematics education and who undertake increased responsibilities, such as teacher mentoring and other leadership activities. (PACE-Education - S. 2198) <p>Secretary of Education (SoEd) to award grants to departments of mathematics, science, or engineering at institutions of higher education that partner with teacher preparation programs to provide integrated courses of study that lead to a baccalaureate degree in STEM with concurrent teacher certification. (PACE-Education)</p>	<p>Expands the Advanced Placement/International Baccalaureate program to 70,000 additional teachers in math and science courses.</p>	
Education		Department of Education	<p>Professional Science Master's Degree Program: Provides \$20 million in FY '07 and such-sums-as-required afterwards for NSF to award grants to up to 200 colleges and universities to establish Professional Science Master's Degree program.</p>	<p>NSF Director to award merit-based scholarships up to \$20,000 per year for up to four years to students majoring in STEM education who pursue concurrent teacher certification to assist students in paying their college education expenses. (PACE-Education)</p>	<p>Proposes a \$125 million Math Now for Elementary Students program to enable elementary school teacher to learn proven methods and practices to provide students with a solid foundation for more rigorous coursework in middle and high school</p>
Education			<p>Tech Talent Program: Authorizes \$335 million for the STEP "Tech Talent" program at NSF over five years. The new funding authorization would expand the program from \$35 million/year in FY 2007 to \$150 million/year in FY 2011.</p>	<p>Improving the Skills of the Existing Teacher Workforce</p>	<p>Proposes a \$125 million Math Now for Middle School Students program to promote research-based systematic instruction aimed at improving proficiency in algebra for middle-school students</p>
Education	<p>The Tech Talent Expansion Program encourages American universities to increase the number of graduates with degrees in math and science.</p>		<p>Secretary of Energy (SOE) to provide financial incentives to help states establish or expand public, statewide math and science specialty high schools. (PACE - Energy S. 2197)</p>	<p>Encouraging U.S. Students to Study in STEM Fields</p>	
Education	Department of Energy		<p>The Tech Talent Expansion Program encourages American universities to increase the number of graduates with degrees in math and science.</p>	<p>SOE to establish a program at each of the National Laboratories to support a Center of Excellence in Mathematics and Science at one public secondary school located in the region of the national laboratory. (PACE - Energy)</p>	<p>Through increased funding of grants at NSF, DOE-Office of Science, and NIST, the American Competitiveness Initiative is expected to provide support for 10,000 additional scientists, students, post-doctoral fellows and technicians in FY '07</p>
Education		<p>The Tech Talent Expansion Program encourages American universities to increase the number of graduates with degrees in math and science.</p>	<p>SOE to establish summer institutes at each of the National Laboratories, and through grants to universities and other nonprofit entities, to strengthen STEM teaching skills of K-12 teachers, with a particular focus on K-8 teachers. (PACE - Energy)</p>		
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Education Education Education Education Education Education Education Education Education Education Education Education Education Education Education	Department of Defense	<p>DOD SMART Program: Expands DOD SMART Scholarship Program to \$41.3 million per year over 5 years. Authorizes new DOD competitive traineeship program @ \$11M / year over 5 years for innovation-oriented and multi-disciplinary studies.</p>	<p>SoEd to award grants to departments of mathematics, science, or engineering at institutions of higher education that partner with teacher preparation programs to develop and provide part-time, 3-year master's degree programs in math and science education for current teachers. (PACE - Education)</p> <p>SoEd to award \$122 M in grants to nonprofit entities to work with local school districts to provide training to teachers to teach Advanced Placement or International Baccalaureate (AP-IB) programs in mathematics and science, and pre-AP-IB programs in mathematics and science. (PACE - Education)</p> <p>SoEd to convene a national panel to collect proven effective K-12 mathematics and science teaching materials, and create clearinghouse of such materials for dissemination to states and school districts. (PACE - Education)</p>	Proposes a Competitiveness Grants Program to provide supplemental grants for low-income college freshmen and sophomores who completed a rigorous high school curriculum and who maintain at least a 3.0 GPA in college, and juniors and seniors who major in math, science and critical foreign languages (Department of Education).
	National Science Foundation	<p>Services Science Study</p> <p>Requires NSF Study on How federal government should support Services Science through research, education and training.</p>	<p>Encouraging U.S. Students to Study in STEM Fields</p> <p>Authorizes SoEd to award merit-based scholarships up to \$20,000 per year for up to four years to assist STEM students in paying their college expenses. (PACE - Education)</p> <p>Authorizes through fiscal year 2011 an independent research program for scientists and engineers who have completed their professional degrees within 10 years of the date of enactment of the <i>Act</i>. (PACE - Education)</p>	<p>NOTE: This comparison does not address existing programs at NSF which are not included in the new ACI.</p>
	Department of Education		<p>SoEd grants to nonprofit entities to work with local school districts to increase the number of students who take pre-AP-IB and AP-IB courses in mathematics and science, and take and pass the AP-IB exams in mathematics and science. (PACE - Education)</p>	
	Department of Energy		<p>Leverages the Involvement of the Business/Industry Community in Improving STEM Education</p> <p>Provides for a tax credit of up to \$500,000 annually to employers who provide qualified education to maintain or improve employees' knowledge in science or engineering.</p>	<p>Leverages the Involvement of the Business/Industry Community in Improving STEM Education.</p>



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Immigration Immigration Immigration	Department of Justice	<p>H-1B Visas: Sense of Senate that U.S. should retain foreign nationals who have received master's or higher degrees in STEM fields from U.S. institutions either through H-1B Visa Program or as employment-based immigrants</p>	-	-
Immigration Immigration Immigration Immigration Immigration Immigration Immigration Immigration Immigration Immigration Immigration Immigration Immigration Immigration	Department of Justice	<p>Calls for U.S. immigration law to help retain foreign graduate degree holders in science, technology, engineering and mathematics through both H-1B Visa Program or as employment-based immigrants.</p> <p>Calls for improvements in Government's technology infrastructure to aid in processing of applicants.</p>	<p>Creates:</p> <ul style="list-style-type: none"> New "F-4" student visa for doctoral candidates studying in the fields of math, engineering, technology, or the physical sciences <p>Exempts the following categories of people from the numerical limitations on employment-based immigrants:</p> <ul style="list-style-type: none"> Aliens who have earned an advanced degree in science, technology, engineering, or math and have been working in a related field in the United States under a temporary visa during the 3-year period preceding their application for an immigrant visa; Certain aliens who have shown "extraordinary" abilities in their line of work or who have received a "national interest waiver"; and Immediate relatives of aliens who are admitted as employment-based immigrants. <p>It is the sense of the Senate that DHS, State Department and related supporting agencies should:</p> <ul style="list-style-type: none"> Further improve efficiency and convenience in the granting of visas to foreign students and researchers while protecting national security; Extend MANTIS clearance for foreign researchers for the duration of a specified scientific research program while balancing security concerns; Improve review of the technology-alert list; Improve efforts to better facilitate travel for scientific conferences. 	<p>"Increases our ability to compete for and retain the best and brightest high-skilled workers from around the world by supporting comprehensive immigration reform that meets the needs of a growing economy, allows honest workers to provide for their families while respecting the law, and enhances homeland security by relieving pressure on the borders."</p>



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<p>Taxes</p> <p>Taxes</p> <p>Taxes</p> <p>Taxes</p>	<p>Internal Revenue Service (IRS)</p> <p>(Department of the Treasury)</p>	<p>Research & Experimentation (R&E) Tax Credit. Reforms and Makes permanent the R&E tax credit</p> <p>Employer Incentives for STEM Training of Employees</p>	<ul style="list-style-type: none"> Doubles the current R&E credit (20% to 40%) and makes it permanent. Expands the credit to allow 100% of the cost of all research conducted by consortia, small businesses, federal laboratories and universities. Provides for a tax credit of up to \$500,000 annually to employers who provide qualified education to maintain or improve employees' knowledge in science or engineering. Requires Treasury Report that compares U.S. tax policies w. other nations and their impact on innovation investment in the U.S. 	<p>\$4.6 B for R&E Tax credits in FY '07</p> <p>\$86 B for R&E Tax credits over next ten years</p>
<p>Other Issues</p>	<p>Department of Health & Human Services</p> <p>Department of Justice</p> <p>Department of Commerce</p> <p>Department of Labor</p>	<p>“Sense of the Senate” on Health Care Information Technology</p> <p>“Sense of the Senate” on Patent quality and leveraging the patent data base (making it more searchable).</p> <p>Establish Presidential Council on Innovation for sustained focus on innovation driving competitiveness</p> <p>Establish Advisory Group on the Valuation of Intangibles</p> <p>Requires Sec. of Treasury, along w. Sec. of Education and Sec. of Labor, to study potential of tax exempt Lifelong Learning Accounts for education and training purposes.</p>	<p>Establishes a President's Innovation Award, administered by the Office of Science & Technology Policy (OSTP) to recognize innovation in science and engineering in the U.S.</p>	<p>Establishes Career Advancement Accounts for individuals for training and other employment services.</p>